

Project End Report

March 2025



Executive Summary

This report provides a comprehensive overview of the National Lottery Heritage funded Lost Peatlands of South Wales project (LPSW), summarising the multifaceted activities and outcomes achieved in the delivery phase from July 2021 to March 2025.

The project's primary goals were to restore and manage degraded peat habitats to mitigate climate change impacts and boost biodiversity in the uplands, and to engage Valley communities by offering opportunities to increase knowledge, skills, wellbeing and access to ultimately connect residents with their unique cultural and natural landscape. The initiative was delivered through six integrated programmes: Restoration & Management, Learning & Establishing Best Practice, Access, Health, Wellbeing & Communities, Awareness Raising, and Project Management.

Key environmental achievements include the restoration of over 240 hectares of peatland and the management of 491 hectares of mixed habitats. A range of restoration techniques was employed—such as peat damming, ground smoothing and sphagnum moss planting—to raise and stabilize water tables and encourage the return of specialist bog plant species. These efforts were complemented by rigorous monitoring programmes led by project ecologists and Swansea University, which provided quantitative evidence of enhanced vegetation recovery, water retention and improved ecosystem function.

In parallel with the ecological restoration, the project significantly advanced local environmental education and community engagement. Over 1700 participants attended project events, ranging from 'Bog Tours' to health and wellbeing focussed workshops. The outdoor learning programme connected over 200 pupils from primary and secondary schools to the project through hands-on lessons, field trips, and practical activities designed around key themes such as biodiversity, peatland restoration, and climate change.

Teacher training and school grounds improvements further contributed to embedding environmental stewardship in local educational settings. Additionally, a suite of training and adult learning sessions boosted local capacity in conservation practices and practical outdoor skills, with participation exceeding targets and fostering a network of community groups and volunteers.

Improved access was another critical pillar of the project. By creating a network of circular and long-distance walking routes—including the flagship Peatland Way—the project not only facilitated public exploration of the 'Alps of Glamorgan' but also showcased the landscape's heritage and natural beauty. Digital tools such as a mobile app supported these efforts by providing real-time information and enhancing the visitor experience.

While the project encountered challenges—including minor shortfalls in restoration area due to natural site variability, work delays stemming from market forces, and logistical issues related to site accessibility—the adaptive management approach enabled the team to overcome these obstacles. Lessons learned from these experiences have been documented to inform future initiatives in peatland restoration and community-led conservation efforts.

Overall, the Lost Peatlands project has set a new benchmark for landscape-scale restoration and sustainable habitat management that also informs and involves the people in surrounding communities. Its integrated approach has not only advanced scientific understanding and best practice in peatland restoration but also strengthened community bonds to local heritage and the natural environment.

The project's legacy is expected to persist through continued monitoring and robust frameworks for sustainable management, alongside arrangements for further funding to expand the partnership and its goals, ensuring lasting environmental and social benefits for the region.

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1. INTRODUCTION & OVERVIEW

1.1. Report Overview

This report summarises and discusses all Lost Peatlands of South Wales project activity during the delivery phase of July 2021 to March 2025. It assesses success in comparison to project aims and objectives, as well as Heritage Fund expected outcomes. It also sets out post project legacy arrangements, makes recommendations, and highlights all lessons learned throughout the process of delivering a multifaceted landscape scale project.

The work was delivered through six programmes:

1. Restoration & Management (peatlands & other habitats)
2. Learning & Establishing Best Practice (training & monitoring)
3. Access (walking routes)
4. Health, Wellbeing & Communities (public outreach)
5. Awareness Raising (communications)
6. Project Management (including budget)

The report uses this same structure to communicate information, with a summary to start and discussion to end each work programme. Individual work streams are covered in detail where needed, however for efficiency in communication, the amalgamation of work streams under broad headings such as 'Community Events' has been carried out where deemed suitable. If further information for context and discussion is available and/or needed, the reader will be signposted to either the appendix or supporting documents.

1.2. Supporting Documents

The topics covered in this delivery report have been informed by the following reports and working documents - all non-technical documents can be made available bilingually on request:

- LPSW Project Documents
 - Budget and Cash flow
 - Work Delivery Plans
 - Conservation Plan
 - Management Plans
 - Post Project Arrangements & Legacy Plan
- LPSW Ecology and Hydrology Report (Final)
- Coed Lleol - Lost Peatlands Engagement – Final Report
- Swansea University - Student Research Summary
- 'Peatland Learning Resources' – a pack for educators
- ERS Ltd External Evaluation – Final Report

1.3. Author & Contributors

This report has been written to satisfy the conditions set out in the LPSW Partnership Agreement and in fulfilment of the National Lottery Heritage Fund reporting process. It has been authorised by Neath Port Talbot Council (lead partner) on behalf of the partnership.

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- D. Make improvements to access and interpretation of the area. This will encourage people to use and visit the area. (HF1, HF3, HF5, HF7)
- E. Inform and demonstrate best practice and high environmental sustainability throughout all aspects of the project. (HF5, HF7)

1.4. Report Limitations

This report provides a snapshot of project activity and aims to communicate key messages in the most efficient way possible. As such, fine detail on specific tasks and work streams may not be covered. However, if questions do arise which are not covered in this report, or the appendix and supporting documents, please contact NPT Council’s Countryside and Wildlife team.

The information in this report also relates the data available at time of reporting (March 2025). There will be elements within project outcomes that are subject to change (e.g. hydrology and vegetation cover at restored peatland sites), and naturally, ongoing monitoring and assessment will be carried out through post-project legacy arrangement.

1.5. Project Aims, Objectives & Outcomes

- A. To restore and manage the upland habitats of the Lost Peatlands area. This will help reduce the impacts of climate change and encourage the recovery of ecosystems to increase the area’s biodiversity. (HF2, HF3, HF7)
- B. Attract and encourage the exploration of the Lost Peatlands area. We will provide opportunities for people to enjoy and benefit from the landscape. This will connect both local people and visitors to the area’s wealth of heritage. (HF1, HF3, HF6)
- C. Provide opportunities to local communities to learn and actively get involved with the Lost Peatlands area. This will engender a greater sense of stewardship. (HF1, HF2, HF4, HF5, HF6, HF7)

Key Project Outputs

Target numbers at project start	
People Engaged with Community Activities	686
People Trained	588
People benefitting from Health and Wellbeing Programmes	176
Unskilled Volunteer Days	170
Skilled Volunteer Days	390
Professional Volunteer Days	20
Area of peat restored	256.27 ha
Area of habitat managed	491ha

Heritage Fund Outcomes:

- HF1 – A wider range of people will be involved in heritage
 - HF2 - Heritage will be in better condition
 - HF3 - Heritage will be identified and better explained
 - HF4 - People will have developed skills
 - HF5 – People will have learnt about the heritage, leading to change in ideas and actions
 - HF6 – People will have greater well-being
 - HF7 – The local area will be a better place to live, work or visit
- The results of these outcomes are covered in 'Snapshots' for each programme.*

P.1 Restoration & Management

Snapshot

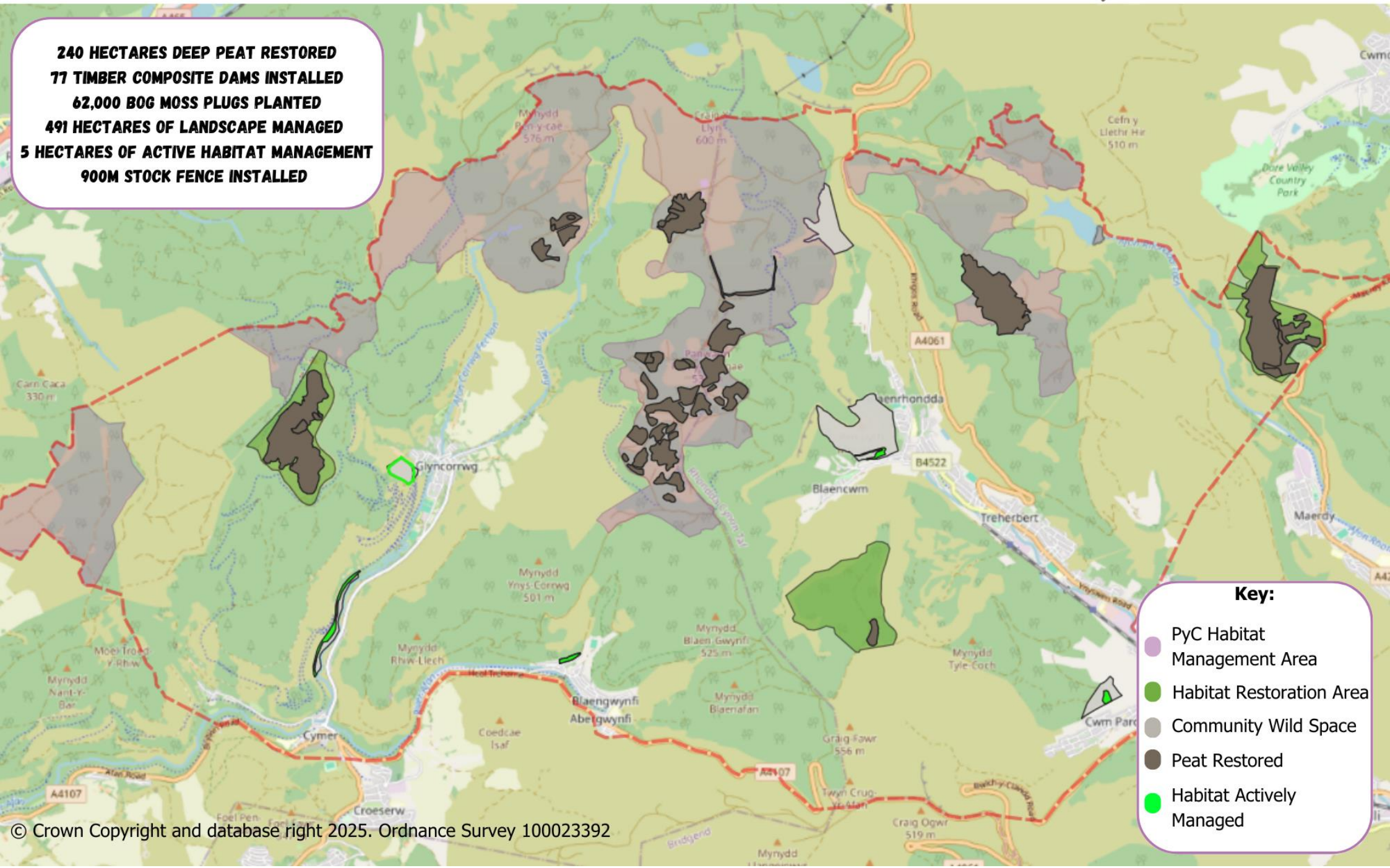
Heritage Fund Outcomes

HF2 - Peat & other habitats have been restored or managed & are in better condition

HF7 - Environment improved & more resilient to climate change, wildfire & flooding



240 HECTARES DEEP PEAT RESTORED
77 TIMBER COMPOSITE DAMS INSTALLED
62,000 BOG MOSS PLUGS PLANTED
491 HECTARES OF LANDSCAPE MANAGED
5 HECTARES OF ACTIVE HABITAT MANAGEMENT
900M STOCK FENCE INSTALLED



Key:

- PyC Habitat Management Area
- Habitat Restoration Area
- Community Wild Space
- Peat Restored
- Habitat Actively Managed

2. Peatland Restoration (1A)

2.1. Summary

This work programme aimed to restore and manage upland blanket bog habitats to help reduce the impacts of climate change and encourage the recovery of ecosystems to increase the area's specialist biodiversity.

Restoration works at all Habitat Restoration Areas (HRA) primarily aimed to "re-wet" degraded peat bodies through the removal of artificial drainage installed during forestry ground preparation. The primary objective was the return of a year-round near surface water table that will create the eco-hydrological conditions required for peat bog habitats and species.

With all planned sites complete, the total area of deep peatland restored was 240 ha, falling only slightly short of the target of 251Ha. The reasoning for this small shortfall reflects actual conditions on the ground, versus what remote mapping and standard surveys can predict. The nature of all the sites as upland mosaic habitats including blanket bog areas results in transitions areas from deep peat to shallower peat or mineral soils, and as such restoration only took place where peat of sufficient depth for the methods to be effective was found.

A mix of restoration methods were adopted and designed to:

1. Raise and stabilise water table levels within the peat
2. Encourage the spread of mire specialist species within the peatland area
3. Not negatively impact protected species on sites where they are present.

Another aim of this programme was to inform and demonstrate best practice with regards to peatland restoration. As such, project ecologists and Swansea University were tasked to survey and monitor ecological and hydrological condition to determine the success of interventions and inform ongoing management and best practice. The summarised results are covered in 2.7 with full detail and in-depth analysis covered in the Lost Peatlands Ecology and Hydrology report.

2.2. Castell Nos HRA

This large purple moor grass dominated site was degraded through historic forestry drainage operations and wildfire. However, due to unsuitable conditions for tree growth (peat) and repeated wildfires, forestry coupes covered only a small portion of the site. As such, restoration methods focussed on:

1. Peat damming: using wet peat to form barriers in drainage channels to hold back water
2. Cross tracking: driving an excavator over ridge and furrow drainage channels to help smooth the area and reduce undulations
3. Timber dams: installed in larger drainage/erosion features to hold back water
4. Sphagnum moss inoculation: to encourage peatland species to return to site faster



Figure 1: Castell Nos HRA - aerial shows blocked plough lines and 'borrow pits' where peat has been extracted and used for dams. Image: LPSW

Adaptation to original site plans was needed which impacted timing, restoration areas and costs. Works were originally planned for the winters of 2022 and 2024 (year 2&4), however with delays experienced elsewhere at Cregan HRA, effective conversations within NRW enabled this site to be brought forward to year 1, and 23Ha of restoration was complete in the north of the site.

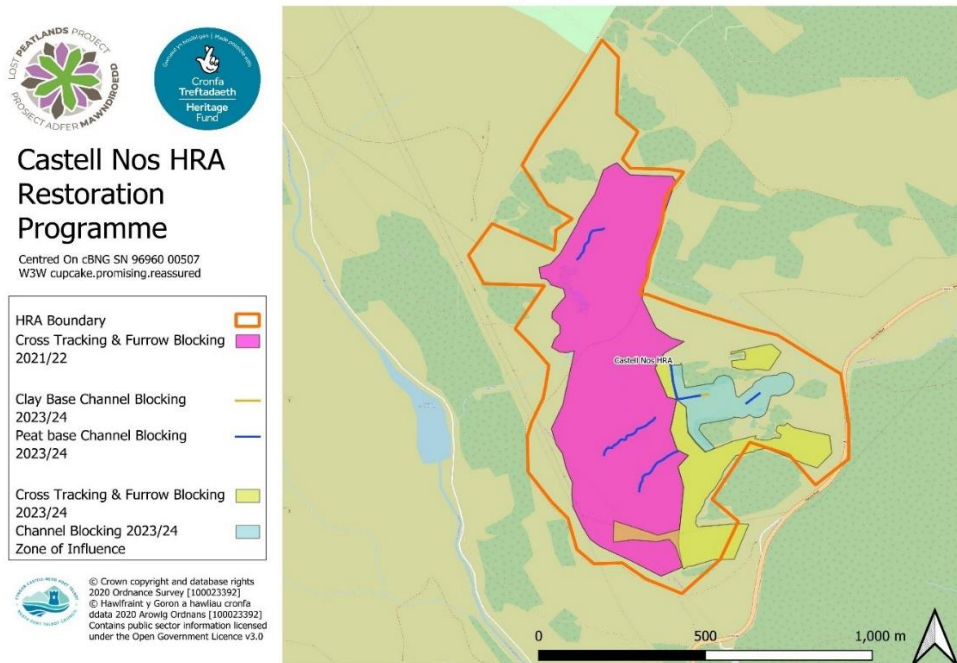


Figure 2: Castell Nos HRA - completed peatland restoration areas. Source: LPSW Ecologist Final Report

Discussions on plans for the remainder of site then highlighted the need for more in depth peat surveys, following the revelation that existing forestry coupes were unable to be removed due to constraints within the forestry works programme. As a result, new areas of deep peat were identified nearby (within the original site boundary) which offset the areas of peat identified under the forestry coupes. Adapted plans were then agreed upon for the remainder of the site.

As a result, a further 12.9 Ha of restoration was carried in years 3 & 4 including cross-tracking, peat damming and 77 dams used to block larger erosion features or deep drains. The original specification for these works called for timber dams in line with peatland restoration works in other projects, however conversations with contractors on site identified scope to use compound dams (a mix of timber and peat) and wide peat dams in some locations instead, due to issues installing the timber. The dams were installed successfully and held water, but a few were subsequently damaged in the storms of winter 2024 and may require remedial action. The partnership is exploring funding options for these emergency unforeseen repairs.

Therefore, a total of 35.55Ha of blanket bog was restored at Castell Nos with good results and hydrological monitoring confirms a higher water table (discussed in 3.6). The unexpected yet pleasing presence of water vole resulted in additional surveys and Ecological Clerk of Work (ECOW) checks prior to and during restoration (see 2.8).



Figure 3: Castell Nos HRA - timber dams in large erosion feature. Image: LPSW

The total cost of restoration works at site was £107,373 with an overspend of £49,727 (see 2.9; n.b. costs exclude sphagnum planting).

Monitoring results show good signs of success for hydrology and vegetation (see 3.6), and the successful planting of sphagnum moss has furthered restoration efforts (see 2.7).

2.3. Cregan HRA

This large previously afforested site required a more typical forest to bog restoration treatment to other HRA sites due to the presence of tree stumps and brash remaining from recently felled forestry coups:

1. Ground smoothing: stumps flipped and pushed back into peat with any prominent uneven surfaces re-profiled to create a flatter peatland. This allows near-to-surface water levels and faster recolonisation of vegetation species
2. Peat damming: using wet peat to form barriers in drainage channels to hold back water
3. Sphagnum moss inoculation: to encourage peatland species to return to site faster

Delays to timing of works was experienced at this site which was originally planned for restoration in winter 21/22 (year 1).

The sale of timber proved the main driver for time delays. With remaining forestry coupes classed as sold at project start, the buying contractor soon after went into liquidation, meaning another procurement exercise was required. This, coupled with fluctuations in market prices for fuel and timber, led to further delays with felling operations not taking place until winter 22/23. However, soon after (2023), 48Ha of peat restoration was successfully delivered to specification with good visual results such as retained surface water at dam locations.

There was a need to adjust methods where shallower peat was discovered at boundaries, but this adaptive approach also allowed other newly discovered deeper peat areas to be worked on.



Figure 4: Cregan HRA - large drainage channel blocked with peat dams. Surrounding bare areas had recently been 'ground smoothed'. Image: LPSW

There was also a need to carry out extensive ECoW checks for breeding bird presence which enabled the contractor to work in Spring. Intensive surveys were carried out by partnership ecologists, and with the nature of this site being recently felled, no negative impacts on biodiversity were realised. Whilst site specific conditions resulted in this arrangement for an extended restoration window was low risk and beneficial to the project delivery timeline, it would not be a recommendation of the project to carry out

restoration outside of winter months. Should any signs of wildlife harm be identified, operations would need to cease immediately, and this can have knock on impacts to contracts and costs for downtime once contract has started. It could however provide a back-up option for situations where timescales are limited, and the risk of non-delivery is considered greater for a valid reason. Should this be the case, staff resource for enhanced ECoW works would have to be available and wildlife should be prioritised in decision making.

Total costs for site were £184,300, resulting in an underspend of £1,275 (n.b. costs exclude sphagnum planting).

2.4. Cwm Saerbren HRA

This site was significantly reduced in size for the delivery phase due to concerns over alterations to hydrology of the neighbouring coal spoil area.



Figure 5: Cwm Saerbren HRA - borrow pits and blocked drainage channels. Image: LPSW

The peatland condition was similar to that of Castell Nos, where only pockets of forestry have grown following wildfires and unsuitable growing conditions. As such, 2.55Ha of cross tracking, peat damming, and minor stump flipping was carried out with good results where hydrological monitoring confirms a higher water table (discussed in 3.6). Resulting 'borrow pits' (small excavations alongside plough lines to source peat for dams) are more steep-sided than at our other sites, but the overall result of restoration is satisfactory.

Total costs for site were £9,950 with an overspend of £2,508.

2.5. Pen Y Cymoedd Windfarm (PyC)

Restoration at Pen y Cymoedd Wind Farm Habitat Management Area has been delivered by NRW at 7 sites during the delivery phase.



Figure 6: PyC Habitat Management Area (pink), with restored peatland sites (brown), Source: NRW

The total peatland area of 154ha has been treated, encompassing the various management techniques used at HRA sites, but with the addition of conifer regrowth removal/mulching (a new management technique very pertinent to the project area) and a one-off trial of complete removal of

stumps to ground smooth, however this method proved more intrusive/time hungry, and raised questions over storage following removal.

Much like other sites, an adaptive approach was needed to identify areas of shallow or deep peat as the contractor worked through the landscape. Immediate visual results are positive in similar ways to HRA sites, with standing water and vegetation return showing signs of success. Long term effects will be realised through additional monitoring efforts funded by Vattenfall and carried out by Swansea University.

Match funding of £770,565 was spent for this work, surpassing the target amount of £763,500 by £7,065.

Work on the Pen Y Cymoedd Habitat Management Area has been critical for the project, not only for the important match funding element, but also to exemplify all that a landscape initiative like this should aspire to, which is the restoration and proper management of multiple habitat types over a wide area.

2.6. Monitoring

With the key measures of restoration success being determined by water levels, vegetation cover and no negative impacts on protected species, the core monitoring activities were successfully carried out during the delivery phase by Swansea University and project ecologists.

Given the primary aim of restoring near surface water levels within peatland habitats, the hydrological monitoring focuses on the depth of water below the ground surface in areas of restoration works. To provide appropriately quantitative data, dipwells were installed and fitted with automatic water level loggers to record the water table within the peat at a high frequency over an extended time period. These automatic water level readers (AWLRs) have taken readings every hour since the development phase (June 2020) and remain installed for future monitoring. 5 AWLR's were installed at each HRA, with an additional 10 at Cregan HRA (installed by NRW prior to the project in 2016 as part of the Nant Cregan wetland project design). 9 additional ALWRs and 27 manual dipwells were installed by Swansea University during the delivery phase of the project.



Figure 7: Peatland 'dipwell' housing an automatic water level reader. Image: LPSW

In summary, water table depth has risen significantly at two of the three upland peat restoration areas; Castell Nos and Cwm Saerbren. The data from the final site, Cregan, shows a positive trend but will only become clearer in future analyses as equipment was damaged during restoration works and needed to be replaced mid-project. Data for post-restoration hydrological response was also limited by the later-than-planned works at site.

Methods for collecting vegetation cover data included 284 2x2m quadrats across all sites and looked at species assemblages to determine whether bog species increased after re-wetting degraded bogs. An additional 45 2x2m quadrats were set up by Swansea University in the delivery phase to identify potential links between greenhouse gas levels and vegetation which will form

part of the added value work for the project legacy. For wildlife species, surveys were carried out for water vole, birds and bats.

For vegetation, Castell Nos shows strong positive trends, with mire specialists expanding across much of the site. Cregan HRA is currently at a transitional stage as expected from the restoration methods utilised, but positive indicators (Sphagnum/Moss, Drosera/Sundew) are emerging. Cwm Saerbren shows positive signs for vegetation response in the works areas. However, the wider Cwm Saerbren site that was not restored has proved valuable as a modified/unrestored control state to compare against.

The main protected species focus was water vole. This endangered species is expanding at Castell Nos, likely due to improved habitat conditions. Borrow pits and ditch blocking (creating increased open water) appear to have enhanced habitat suitability and areas of suspected presence were avoided during works. The work completed in the project area for water vole was among the first of its kind in the UK and has effectively developed best practice for peatland restoration where upland water vole may be present.

Wider bat and bird species assemblages vary by site, reflecting habitat composition. In the short term, signs appear positive with some evidence of more species using the sites after restoration works and patterns will become clearer in the medium to long term with a continuing monitoring programme.

Alongside the work undertaken in line with the overall restoration objectives, additional ecological and habitat condition monitoring to quantify the wider effects on the landscape - including carbon exports and a suite of additional value monitoring - was undertaken by Swansea University and looked at greenhouse gas fluxes, catchment modelling, heavy metal contamination, invertebrates and the physical properties of the peat itself.

No major changes in waterborne carbon export (i.e. peat leaving site in water run-off) were noted during the works periods when comparing restoration areas to both afforested and long term unforested reference sites. The results are positive; however, it was noted that if more in channel measures could be taken to capture physically larger aspects of peat export during works, this would reduce the overall loss of carbon from the sites.

Co-located monitoring efforts from Swansea University will highlight changing greenhouse gas dynamics for the sites as the vegetation recovery continues.



Figure 8: Greenhouse gas emissions data collection on a recently restored peatland site. Image: LPSW

2.7. Sphagnum Planting

Sphagnum mosses are very much the bog building species in the project area and are critical to functional peatland systems. Whilst remnants of species cling on after decades of forestry cover and may potentially spread given the right conditions to thrive (i.e. high-water levels), assistance to enable the faster recolonisation of bog mosses is a progressive restoration method.

A contract worth £47,430 enabled 60,000 plug plants to be grown using a Welsh mix of sphagnum which were then planted as follows:

Castell Nos: 32,000

Cregan: 30,000

Minor challenges were met at both sites during planting. At Castell Nos HRA, where dense vegetation exists (e.g. purple moor grass), planting in peat proved difficult and raised questions as to whether ground preparation (e.g. strimming) would improve planting and growing conditions. A similar issue was encountered at Cregan HRA where either brash or tree roots would impede access for planters. However, with very large sites to plant, suitable areas were identified for successful planting. Whilst numbers of plug plants appear high, only a small percentage of deepest peat areas were planted, therefore should additional resources be available, this type of work could be expanded to improve habitat recovery times.

Visual signs of growth post-planting indicated immediate success with plug plants doubling in size after one year (on average). Multiple vegetation quadrats at planting locations will allow the assessment of growth in coming years through the comparison of relative percentage cover in planting areas vs non-planting areas on sites. Therefore, the delivery of this enhancing restoration method would be recommended for other peatland projects where conditions allow. Specific monitoring of planted *Sphagnum* success has been identified as an emerging evidence gap for multiple projects of this size and scale, and further recommendations would be that specific monitoring plots for planted species success and growth rates be undertaken.



Figure 9: Sphagnum moss 'hummock' containing a Welsh species mix. Image: LPSW

2.8. Licensing & Compliance (Water Vole)

As discussed in the monitoring summary, water voles were present at Castell Nos and as such required project ecologists to acquire a license prior to work commencement at site, which mitigated impacts during restoration.

The license required the adoption of measures to not only ensure no harm to water voles and the water vole population present but also the implementation of measures that would enhance the site for the species. In summary, this consisted of the incorporation of works methods that minimised risk to water voles through the regular survey for and avoidance of burrows in restoration areas or close proximity to restoration areas. This was ensured through a 10m no works buffer around any active burrows identified.

Habitat enhancements were further delivered through the creation of open water habitat across the site via the retention of open peat dam borrow pits and plough/ furrow damming. This led to a net increase in open water habitat and associated suitable water vole foraging habitat. The licence process also requires annual monitoring of the water vole population and reporting to NRW on the work outcomes and results.

2.9. Discussion: Successes, Challenges, Lessons Learned & Recommendations

There have been very positive outcomes because of works carried out by the project. Considering peatland restoration in South Wales is a fairly new and emerging land management practice – especially in a forest to bog context – the immediate results of key performance indicators are promising.

The slight shortfall of total peatland hectares restored is justifiably explained by the nature of fringe and other areas within sites becoming too shallow to restore. More intense surveys could determine precise peat depths (e.g. 20-meter grid surveys opposed to 100-meter grid), however the significant time required to do this may be outweighed by approaching sites with an adaptive attitude for the ground conditions encountered during delivery. Added to

this, the precise calculation of positive benefits to surrounding peat areas (i.e. raised water tables) could also be a way of determining exact areas of 'restored' peatland, however this is a question that requires further investigation and applies to all forest to bog restoration projects.



Figure 10: Castell Nos HRA - restoration in action. Excavators are modified to have wider tracks to reduce the risk of sinking

The contract management framework developed by NRW for delivery on PyC for peatland restoration was utilised by the project and allowed for work to be progressed using established processes which were designed to be adaptive if required. The lack of peatland contractors in the sector remains a risk to all peatland restoration projects and addressing this issue was not something the project could directly address outside of project delivery. However, through good relationship building between NRW and the sole contractor engaged (who carried out all restoration works besides from sphagnum planting), the project was able to facilitate skills development, and the assets of this contractor have proved to have been invaluable. This resulted in all sites being complete within a tight timeframe which is a challenge for all grant funded initiatives.

The only suggested improvements to contract management would be to establish clearer communication channels with contractors to ensure any equipment on site is not damaged (e.g. dipwells at Cregan HRA in this case). It would also be useful to maintain communication from pre-contract commencement meetings onwards for all staff (including supporting staff such as ecologists) and contractors. This would ensure specifications are met and/or adjusted where needed, and all available knowledge and advice is utilised.

The restoration delivery partner (NRW) faced challenges in terms of staffing and budget cuts. A peatland officer post was budgeted for, however NRW struggled to retain an officer continuously throughout the project. Further staff resources were needed to assist, with significant support from NRW South West Team existing staff members. A continuous post-holder would no doubt have improved the efficiency of delivery, particularly through maintaining a consistent communication channel between the project partners.



Figure 11: Castell Nos HA - timber dams installed

The main challenge faced during the delivery phase was restoration costs. The impact of Brexit, Covid-19 and the Cost-of-Living crisis cannot be undersold, and it is considered a key achievement for the project to have navigated these high impacts on the economy without the need to source extra funding or negatively impact project deliverables elsewhere.

Market forces directly affected project delivery through a variety of means, such as timber prices (resulting in delays at Cregan HRA), changes to fuel duty (red diesel tax increases) and generally higher costs for contractors to run their own operations. There was a need to divert surplus funding from elsewhere in the project for Castell Nos (e.g. from NRW staff post savings), where the cost of restoration was double that budgeted for. Whilst some of this cost could be attributed to the above economic pressures, more informed planning - particularly around timber dams - would have allowed higher amounts to be budgeted for.

Despite the above, the flexibility and supportive guidance from NLHF enabled the project to absorb costs through contingency budgets and savings on various costs headings, and as a result the delivery of peatland restoration to the highest possible standard of quality was prioritised.

Another challenge faced and lesson learned was the timing of restoration works at each site. Whilst discussions were held and plans agreed for the timing of key operations to take place (e.g. forestry felling), further discussion and planning was needed to be undertaken once the delivery phase started. This highlights the need for clearer and wider consultation processes within large partner organisations. In addition to this, timing was also impacted by external market forces, therefore it is recommended that for forest to bog restoration projects with limited timeframes to complete work, site selection (e.g. post-felling peatland sites) should be a key consideration in project planning.

Thankfully, owing to the partnership's innovation and resilience, solutions were identified and enacted. However, whilst planned restoration was delivered, the main impact on outcomes after time delays was on the monitoring element of the project, where less data was able to be collected and analysed.

A challenge was also faced for the restoration work programme timings due to the need for additional staff resources to undertake works outside of the typical season, and in areas with newly discovered protected species presence, to maintain legislative compliance. This was overcome during the delivery phase but did place significant strain on core staff resource requiring flexibility and additional support from the wider partnership. Whilst these challenges were overcome, it highlights the need to complete as much work as possible within the typical work season.



Figure 12: Cregan HRA: Adder basking in the sun, encountered during vegetation surveys. Image: LPSW

Demonstrating and contributing to industry best practice principles was a valuable outcome and area of success. The project structure with Swansea University staff and students working alongside project ecologists proved key for the delivery of core monitoring which may otherwise not have been possible through separately run contracts. With work delivered as added value to the project also being essential to understanding the restoration responses, the project has received notable praise for its monitoring procedures and has effectively shared knowledge on industry best practice at conferences, online webinars and on-site events with the target audience being the peatland/conservation community throughout Britain and beyond.

The need for a good condition peatland site for effective data comparison to degraded/restored sites was a key learning outcome for the monitoring programme, however, with the vast majority of peatlands in the area being badly degraded, good quality 'control' sites are challenging to locate.

It is highly recommended that post-project data collection and analysis be continued, and as such has been scheduled by Swansea University (discussed in section 17). Given the project's location being strategically important within the UK (i.e. largest southerly connected upland blanket bog and hence amongst first to be impacted by climate change), the project is well placed to input into the conversation of peatland conservation, allowing gaps in the scientific literature to be filled, and the multiple benefits associated with this work to be realised.

The planning and monitoring for works of this nature involves many hours of on-site activity and given the poor condition of local blanket bogs through historic ploughing and forestry operations, the health and safety of staff must be a key priority for projects like this. Lone working was enabled through the use of 'buddy systems' and technology (emergency beacons), however, given the rough terrain and isolated site locations, lone working should be minimised where possible.

3. Habitat Management (1B)

3.1. Summary

The proper management of all habitat types in a wider landscape is critical to nature recovery and the proper functioning of associated ecosystem services. With a range of habitat types at Community Wild Space (CWS) sites, including grassland, woodland, heathland, coal spoil and rhos pasture, a variety of management methods were proposed. Full details can be found in the relevant habitat management plans. Whilst all sites were managed in line with their habitat management plans, through contractors and volunteers, a total of 5.4Ha were subject to more specific active management through a variety of management techniques and interventions.

3.2. Gwynfi CWS



Figure 13: Gwynfi CWS - meadow management through cut and collect works. Image: LPSW

Meadow management through cut and collect regimes was the main method of controlling scrub at this heathland and grassland habitat area. Increasing floral diversity was also the expected outcome through this tried and tested method of reducing nutrient loads and encouraging wildflower growth. Cut and collect contracts were carried out on 3 occasions at site, with the 4th planned in year 3 being missed due to a contractor licensing issue.

3.3. Glyncorrwg CWS

A conservation grazing trial was proposed for this site to decrease rank vegetation (purple moor grass) for biodiversity gains and to decrease fire load material.



Figure 14: Glyncorrwg CWS - sorting pen for grazing cattle. Image: LPSW

This work stream faced many challenges throughout the delivery phase, starting with a delayed grazing report and identification that a water source would be needed at site for guaranteed animal welfare. Fencing was erected soon after as planned and within budget, however the specifications were not met by the chosen contractor who used machinery and materials not suitable for site. The fence line was also incorrect which led to a further need to realign the fence ensuring the site sits within NRW managed land. Further complications with regards to available graziers resulted in the site not being grazed during the delivery phase.

However, infrastructure is now fully functional and in place, and through legacy arrangements with NRW, discussions with potential local graziers are being held and efforts will be made to use this site for conservation grazing in future.

3.4. Cymmer CWS

Habitat management at this site consisted of the removal of invasive non-native species (INNS, Himalayan balsam) and reduction of scrub.

11 events with 45 volunteers managed to treat 2.5Ha of INNS and scrub during the delivery phase.

3.5. Blaenrhondda CWS

The removal of invasive non-native species (H. balsam) was the sole management technique at this site, with 45 volunteer days treating an area of 0.9Ha throughout the delivery phase.

3.6. Hendre Mynydd CWS

No management works were required at this hillside heather dominated site. Ad-hoc surveys for reptiles were carried out, with data being made available in the Ecology and Hydrology final report

3.7. Cwm-Parc CWS

Bracken control was carried out on two occasions covering 1Ha of the site through contractors who used both brush cutters and a robo-flail. Unfortunately, management with a roller to tackle the entire site, whether horse drawn or by quad, was deemed unsuitable due to the presence of large stumps (previously hidden by bracken).



Figure 15: Cwmparc CWS - bracken control with robo-flail and roller. image: LPSW

3.8. Monitoring Results

CWS monitoring objectives were site specific and were focussed on generally improving the diversity of vegetation on site by removing scrub, INNS, bracken or introducing grazing.

The grazing introduction at Glynccorrwg was ultimately not able to start during the delivery phase of the project and so the benefits of that management will only truly become clear over the post-delivery period.

Changes to how and where the vegetation removal took place on sites did limit the efficacy of the monitoring quadrats, as much of the management undertaken was through volunteer action, and access issues resulted in the work focus being outside of the locations covered by quadrats. This has been identified as a key lesson for development of future monitoring programmes.

However, effective assessment of the works was still possible from surveys completed by project ecologists. This was achievable where quadrats and work areas did overlap, plus walkover surveys were undertaken in line with the Phase 1 surveys completed in the development phase.

As a result, for areas where vegetation management was undertaken, the pressures of INNS and scrub for Blaenrhondda, Cymmer and Glynccorrwg were effectively lessened; bracken dominance for Cwmparc was decreased with no effect on breeding birds, and the cut and collect for grassland diversity at Gwynfi was effective.

Long-term data collection post-delivery will be essential to track vegetation succession.



Figure 16: Cymmer CWS - volunteers remove Himalayan balsam Image: LPSW

3.9. Discussion: Successes, Challenges, Lessons Learned & Recommendations

Successes in this programme can be attributed to physical habitat management work being carried out within the scope of the project after overcoming various limitations and restrictions. There were good outcomes in reducing INNS and scrub at various sites, and aside from the lack of grazing at Glyncorrwg, the overall aims of the project were realised. Continual effort to ensure these pressures do not return will be needed for the works to be effective in the long term, and further monitoring will provide evidence for long term trends in species diversity.

Accessibility of sites was the immediate issue faced, where difficult and restrictive ground conditions (e.g. steep banks, dense overgrowth, tree stumps etc) created challenges to full scale delivery. For contractors, the main impact was not being able to control as much bracken as expected at Cwmparc, and for volunteers, difficult access to most sites limited the amount of work that could be carried out safely. Despite these challenges, suitable areas were identified and managed.

Volunteering numbers were also fewer than hoped, potentially due to a lower-than-hoped interest in ecological surveying and a low variety of tasks on offer. A limited amount of time was available for core project staff due to a busy delivery schedule elsewhere. Building momentum with groups is essential and a lack of regular events at each site, as well as smaller than expected accessible work areas, limited this engagement opportunity. It is therefore recommended that for volunteer efforts to have highest impact, careful planning for site selection in terms of accessibility and a variety of achievable management tasks on offer is critical. Suitable staff resource is also crucial in forming volunteer groups, where progression training and the attraction of additional funding can lead to group formation and sustainability, resulting in the stewardship of local wild spaces.

The conservation grazing trial faced many issues, and whilst some of these elements were unavoidable (e.g. consultants and contractors not sticking to specifications), careful consideration to other factors like the need for a sustainable water source could have led to faster delivery. However, the

main reason for not having a grazer in place at project end is because of uncertainty around the politically changing landscape of agricultural governance and funding in Wales with details of the Sustainable Farming Scheme yet to be finalised. However, NRW have committed to use this site for grazing in the interim, at least, as a holding pen for grazing animals on their way to Pen Y Cymoedd windfarm (an initiative that would be very beneficial for proper landscape management in the area). A more permanent arrangement for conservation grazing at the site also forms part of the post project legacy arrangements, and it is fully intended to find a suitable long-term grazer.



Figure 17: Cymmer CWS - college students participate in a volunteer day of scrub clearance. Image: LPSW

P.2 Learning & Establishing Best Practice

Snapshot

Heritage Fund Outcomes

- HF1 - People from a wide range of backgrounds have been engaged
- HF3 - People have a better understanding of project aims & objectives
- HF4 - People have learnt skills & informed best practice
- HF5 - Attitudes to local heritage have improved
- HF6 - People have greater health & wellbeing from being in the outdoors
- HF7 - The area is a better place to live, work or visit



91 LESSONS (INCLUDING 19 FIELD TRIPS)



42 SCHOOL GROUNDS IMPROVEMENTS



746 PARTICIPANTS TRAINED



131 UNIVERSITY STUDENTS EDUCATED

4. School Outdoor Learning Programme (2A)

4.1. Summary

Educating our future generations is paramount for safeguarding our heritage and environment. It is also crucial to provide good opportunities for pupils to develop skills and arm them with knowledge to improve their own prospects and wellbeing.

As such, the project is proud to have engaged 6 primary schools and 1 secondary school from the local area who participated in the project's Outdoor Learning Programme. This included class lessons, the use of school outdoor spaces, field trips, teacher training, school grounds improvements and the provision of educational resources.

These methods have allowed the project to connect pupils to nature and teach them about their surrounding landscape. This has led to increased understanding of environmental issues, and most importantly, how to tackle them and plan for a positive future.

4.2. Schools Lessons

Schools received 3 full days of engagement activities per year, over 3 academic years leading to 91 lessons including 19 excursions to project sites. The number of pupils engaged was approximately 200. The key themes covered were biodiversity, peatland restoration and climate change over the 3 years respectively.

The key learning objectives in Year 1, within the theme of biodiversity, were for pupils to be able to investigate, map and record existing habitats and invertebrates within their school grounds and consider how to increase their school's biodiversity. The opportunity to build bug, bird and butterfly houses for installation in school grounds was provided. Visits also took place at a

nearby project Community Wild Space where habitat investigations and sensory activities were undertaken to learn about local heritage, biodiversity and the project's top ten species.

The theme of peatland restoration in Year 2 had learning objectives based around science investigations looking at the properties of different soils to determine the unique characteristics and significance of peat. Pupils modelled peatland restoration and investigated the properties of Sphagnum moss. Visits took place at Castell Nos Habitat Restoration Area where pupils were able to view completed restoration and undertake Sphagnum planting. Activities delivered on site linked to historic land use changes and the site's suitability for restoration where carbon storage capacity of trees was determined and compared to that of peat.



Figure 18: Cymer Afan primary school pupils receive outdoor education on a field trip to Pen Y Cymoedd windfarm. Image LPSW

In Year 3, the theme of climate change was investigated through a visit to Pen Y Cymoedd windfarm, delivered in collaboration with Vattenfall. Pupils were asked to consider what climate change is, what can cause temperature rises and what evidence there is/effects there are for climate change. Areas of the windfarm were visited to introduce the idea that renewable energy and peatland restoration can be solutions to the issue of climate change and pupils were encouraged to write their own carbon reducing pledges.

Pupils subsequently engaged in a series of workshops to solidify learning from previous years and to provide the opportunity to learn new skills. Workshops were delivered on the following themes: wildlife photography, balsam removal, pewter casting (on the project's top ten species) and song writing to capture all they learnt over their time with the project. The song can be viewed here <https://youtu.be/UxMSSuSeUjk>

4.3. Teacher Training

The training of teachers at the schools involved with the project took place both formally and informally. Teachers and teaching support staff were present during sessions in school and on site and gained an understanding of the project along with their pupils.

27 staff at YGG Ynyswen received an INSET delivered by project staff on outdoor learning which presented ideas for delivering the new 'Curriculum for Wales' in the outdoors, with activities linking to peatlands. 3 staff at Treorchy comprehensive school also received this training afterschool to meet their professional training needs prior to them cascading the information and emphasising the need for outdoor learning to colleagues through a whole school INSET connected to the school's Health and Wellbeing provisions/curriculum (HF6). 48 staff from the 4 Federated primary schools in the Afan Valley came together for an INSET delivered by project staff in collaboration with project partner NRW. Ideas and resources to deliver numeracy, literacy and health and wellbeing in the new 'Curriculum for Wales' was addressed with a peat/environmental focus.

4.1. Discussion: Successes, Challenges, Lessons Learned & Recommendations

The outdoor learning programme was developed by consultants prior to the implementation of the 'Curriculum for Wales', which became statutory for schools in September 2022. Consequently, it was necessary to change the intended content of the outdoor learning programme to reflect these curriculum changes.

It was felt that to fully achieve the desired outcomes from the learning programme, additional teaching time would need to be allocated and therefore 3 days of sessions were delivered to schools each year instead of the intended 2. Similarly, to ensure retention of information by pupils between sessions and to better align with 'topics' 'being taught in schools, delivery was undertaken over a shorter period as opposed to the recommended one-half day session per term approach outlined in the original programme.

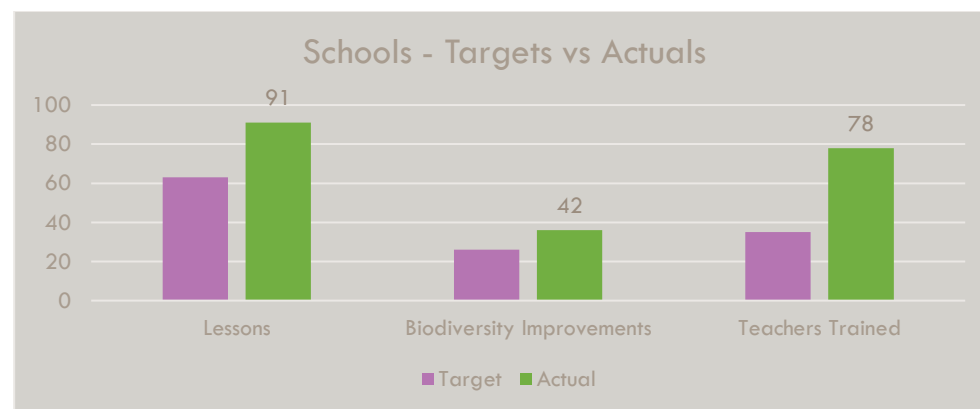


Figure 19: Added benefits were realised for schools, pupils and teachers

The original programme intended for pupils to progress through three levels during the four years of the project. Although this was achieved with YGG Ynyswen (being a class formed of children of the same age that would move up the school together), most project schools had mixed age group classes, so adaptation of the approach was needed to deliver the learning objectives

to the remaining schools. As such, only those pupils initially in Year 3 followed the programme through.

The use of surveys to capture feedback on sessions from pupils proved challenging. Pupils found it difficult to engage with the format adopted by our independent evaluators for data capture and although the Community and Education Officer could collect initial feedback in the form of oral answers to yes or no questions and scored questions, the quantitative data is perhaps not as reflective as that collected anecdotally through conversations with pupils.

Also, the collection of survey data relied upon action from teaching staff and as expected given pressures on staff time and despite the Community and Education officer chasing schools, a substantial proportion of pupil feedback forms were not returned. Additionally, questions were generic to the whole project but perhaps should have been specific to what was being taught each year. Recommendations are that more engaging ways should be used to collect feedback from schools and more time built into the programme to collect the data. However, the peat bog song demonstrates the learning achieved and retained from engagement with the project.

It should also be noted that many pupils reported that they did not enjoy sessions when the weather was less favourable, leading to negative feedback, despite site visits being scheduled for summer months. The remoteness of some project sites and access to welfare facilities was also a challenge. Although this is to be expected and all field trips were compliant with health and safety best practice, it would be a recommendation to engage pupils at sites with the option of indoor space and facilities should there be inclement weather.

It is essential that landscape projects continue to engage with schools to ensure that learning about heritage, leading to changes in ideas and actions, is achieved for school communities. Lessons should be designed to meet the requirements of the 'Curriculum for Wales' and the timing of sessions should ensure maximum benefit to schools in terms of the learning objectives they are endeavouring to achieve through topic work. It is challenging to obtain feedback from pupils so asking pupils to produce specific pupil led outputs (e.g. Peatbog song) to demonstrate their learning is also recommended.

5. School Grounds Improvements

(2B)

5.1. Summary

The improvement of school grounds for biodiversity was delivered as part of the outdoor learning programme. The provision of bog gardens and creation of ponds are examples of 42 interventions in total – 10 more than planned for originally thanks to additional funding being attracted to the project. The full list of improvements can be found in Appendix A.



Figure 20: 'bog garden' provided for Croeserw primary school. Image LPSW

A particular success was realised through the availability of additional match funding from Welsh Governments Local Places for Nature Grant, administered by the Countryside and Wildlife team of NPT council. This resulted in new outdoor classroom areas being delivered for Glyncoerrwg Primary School, with features incorporated to improve biodiversity. This improvement transformed an area of the school that had deteriorated during

the pandemic and was no longer fit for purpose. The additional funds enabled NPT project primary schools to receive a bug hunting box, and improvements to Croeserw Primary School were also undertaken through the installation of a willow weaved structure to host small outdoor learning sessions.

Each of the 7 schools received green infrastructure improvements and pupils had the opportunity to be involved in the process. Success of this work in terms of benefits for biodiversity rests on the proxy that all inputs are proven methods of attracting and supporting wildlife, therefore given this investment, the habitats of project school grounds has been improved.

5.2. Discussion: Successes, Challenges, Lessons Learned & Recommendations

The addition of nature-based inputs into project schools has been well received by faculties and pupils alike. There has been good opportunity for schools to input ideas, get involved with installation and maintenance and indeed attract additional funding to enhance efforts.

Challenges in terms of access and timing were overcome through good communication between project and school, and potential risks around post-project maintenance of assets were overcome by the presence of groundskeepers or dedicated staff.

Glyncorrwg Primary School presented substantive opportunities for biodiversity gains due to the simple fact that almost all of the grounds are concreted over. As such, advice was needed from green infrastructure experts within NPT Council to devise effective ways of enacting tangible change. This resulted in more funding being directed towards this school.

With Welsh Government declaring a nature emergency in 2021, the need for wildlife habitat to be championed at every opportunity is evident. And with the beneficial coupling of school ground improvements with outdoor education and pupil wellbeing, this type of engagement and investment would be recommended for all schools.



Figure 21: Cymmer Afan primary school enjoy a field trip to Pen y Cymoedd windfarm to learn about renewable energy and climate change. Image LPSW

6. Adult Learning & Training (2C)

6.1. Summary

Training opportunities were found to be in high demand for local residents, visitors and followers of the project.

The skill sets of individuals engaged ranged from those looking to start out in the nature/outdoor sector to professionals seeking to enhance their own development. And with the target figure being surpassed by a good margin, the need for this type of outreach and service is evident.

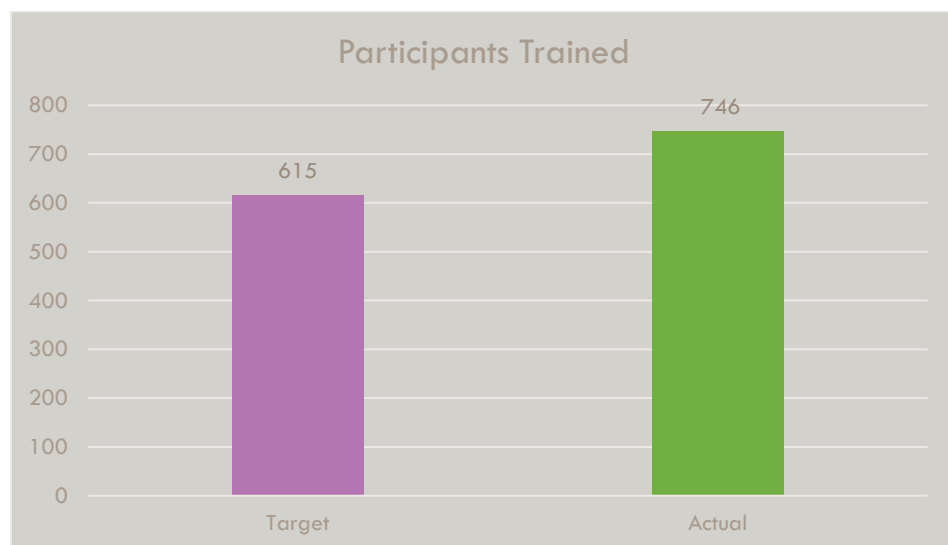


Figure 22: The training programmes attracted high numbers of individuals

6.2. Nature Training

This mix of work streams (introduction to nature/guided walks, wildlife recording and ecological surveying) aimed to attract and train participants and volunteers.

32 guided walks at CWS/HRA sites and 2 online training webinars attracted 183 participants (205 target) and led to 32 volunteers being trained.

Good feedback was received for guided walks (e.g. wildlife; peatlands; renewable energy) and these events served as a good introduction to CWS/HRA sites and raised the profile of the project as they intended to do.

6.3. Higher Level/Professional Training

The wide range of topics covered in this training work stream proved highly popular and attracted 294 participants (target 263). The list of courses offered both on site and online enabled continued professional development for participants and best practice principles to be shared and received by the project.

Table 1 shows the variety of professional training events hosted by the project

Training Topic	Location	Attendees
Reptiles	Online	32
Biodiversity in Forestry Estate (x2)	PYC Windfarm	17
Water vole	Castell Nos HRA	9
Planning Policy for Ecologists (x2)	Online	77
Ecology of Brownfield Sites	Online	11
Sphagnum Moss ID (x2)	PYC Windfarm	22
Camera Traps	Cregan HRA	3
Hydrology of Peatlands	Castell Nos HRA	16
Fungi ID (x2)	Cwm Saerbren HRA	31
Peatland Restoration (x2)	PYC Windfarm	17
Bryophyte ID	Glyncorrwg CWS	13
Nature Photography	PYC Windfarm	8
Communication Skills	Online	10
	TOTAL	294

The target audience of this work stream was higher level learners looking to study niche topics based on nature - and more specifically - the habitats, wildlife and topics the project focussed on.

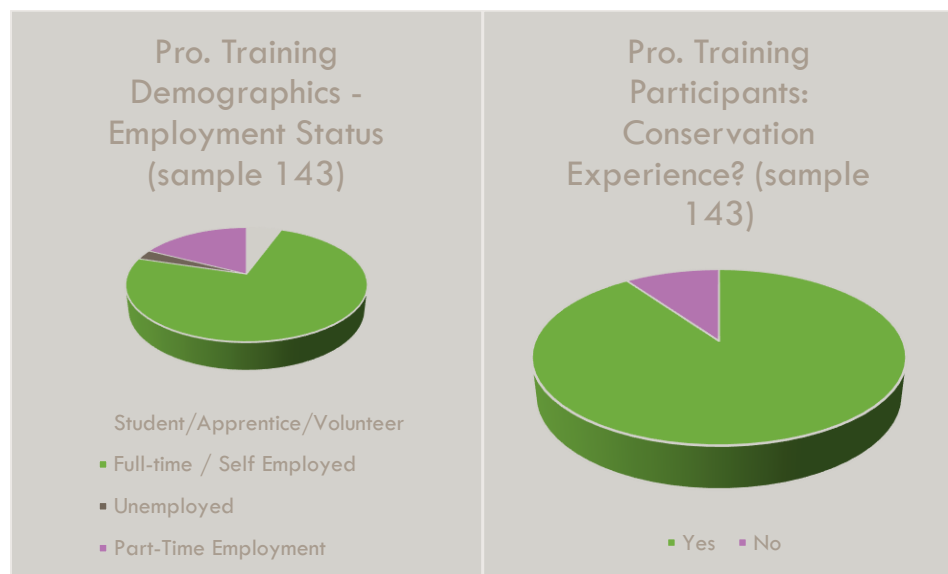


Figure 23: Unsurprisingly, professional training mostly attracted individuals already working in or associated with the conservation sector although many project volunteers did also attend these events

Despite many successes, the match funding element to this work stream was not fully realised, falling slightly short by £1,560 of a £6,425 target. This was mainly due to the final course scheduled (peatland in the planning process - over 70 tickets sold) being cancelled following uncertainty from trainers regarding the course content and political climate at the time. However, with good feedback on the courses offered, quality training on important topics that may not have been made easily available elsewhere was delivered for many individuals in the conservation sector.

6.4. Agored Training

Skills programmes (via Agored qualifications) were offered throughout the project by Coed Lleol in order to help boost self-esteem by building skills,

support local groups to gain the skills required to support their activities, and to support those looking for CPD and other employment-related skills.

A total of 91 people gained an Agored accreditation through the project across 48 outdoors skills sessions (although the overall attendance figure was higher, as some participants chose not to complete the full qualification).

During the first year of the project (whilst still exiting Covid lockdowns) an online Agored course was delivered for vulnerable people who were not able to access the outdoors. This had a total of 6 regular participants, although another 6 individuals joined sessions as their health allowed.



Figure 24: Participants gain Agored credits through a willow weaving course. Image LPSW

The Agored units offered included:

- Sustainable Use of Natural Resources: To develop an understanding of the ecology and use of natural resources (both positive and negative) in upland peatland environments.
- Exploring craft resources: To develop knowledge of weaving craft materials, tools and equipment and techniques for their safe use. With a focus on willow weaving and use of other local natural materials.
- Coppice products: To develop skills and knowledge for coppicing and using this material to produce coppice products via green woodworking.
- Practical skills in the outdoors (to support session volunteers and local groups): An introduction to practical skills when learning in the outdoors. This course covers a wide range of skills from building and safely managing a campfire, to identifying local species of flora and fauna, knots for practical use and building a temporary shelter.

6.5. Health Walk Leader Training

Health Walk Leader training was developed and delivered by Coed Lleol. The training was offered to facilitate the opportunity for people to feel confident in their skills to voluntarily lead low level, short walks in their communities to support health and wellbeing. That in turn would promote more local walking groups to be available. The training covered the benefits of walking for health, the responsibilities of a leader and how to plan and prepare for a walk.

A mixture of face-to-face and online options were offered in response to community requests. The face-to-face sessions were mainly indoor learning with a tutor, with an hour practice walk at the end. Online sessions were delivered over 2 evening sessions, with a day in between to create and do a practice walk.

Coed Lleol worked with Ramblers Cymru and Pembrokeshire Coast National Park to progress in-house training, which further developed into an Agored unit for accreditation being available for participants. By working with these wider organisations, Coed Lleol ensured the training was tailored for people

in the Lost Peatlands area but also contributed to best practice across Wales. 60 people were trained in the second two years of the project including local volunteers, third sector organisations, local health services and local environment group leaders.

6.6. Practical Techniques - Carpentry and Stone Walling

A small number of events were planned for this work stream (5 in total), however with an identified need for progression training, 11 training days were arranged that attracted 35 people (target 20). 12 of these received a six-week course on outdoor carpentry and produced timber benches for project walking routes.



Figure 25: 'Path Guardian' volunteers sit on their recently built and installed timber bench at Cwmparc CWS. Image LPSW

The stone walling course was also extended with a two-day event attracting 10 people, although demand for this skill was extremely high.

Practical heritage type skills were also delivered through the Health & Wellbeing work stream and reported separately, but this type of training, as well as the need for progression training (where one course leads on to the next and develops individual's skill sets) were identified as being highly desirable to the people within local communities.

6.7. Knowledge Exchange

An underestimate of how popular and in demand the key themes that the project focussed on was realised here, and the adaptability and skill set of core staff allowed an added element to the project's outreach arm. Over 11 events - including talks at conferences, project site visits and online webinars - attracted 302 participants: far surpassing the target of 45.

The dissemination of information mostly focussed on peatland restoration and monitoring and allowed the project to share ideas, successes and lessons learned, whilst also learning from colleagues within the conservation sector.

On two occasions the project presented at the International Union for the Conservation of Nature (IUCN) Peatland Conferences allowing the project to inform best practice on a national and international platform. The project was also included in the IUCN's 'Forest to Bog demonstrating success' publication and subsequent webinar, evidencing that best practice principles were being shared with the wider peatland community. This guiding document can be found [here](https://www.iucn-uk-peatlandprogramme.org/sites/default/files/2024-03/Demonstrating%20Success%20Forest%20to%20Bog_small.pdf):

https://www.iucn-uk-peatlandprogramme.org/sites/default/files/2024-03/Demonstrating%20Success%20Forest%20to%20Bog_small.pdf

In addition, the approach of using external grant funding and partnership working to deliver peatland restoration and the associated community benefits was included as a case study in the policy briefing [Local Authorities and Sustainable Peatland Management: Current Opportunities and Future Possibilities for Local Action](#) by Dr Victoria Jenkins.

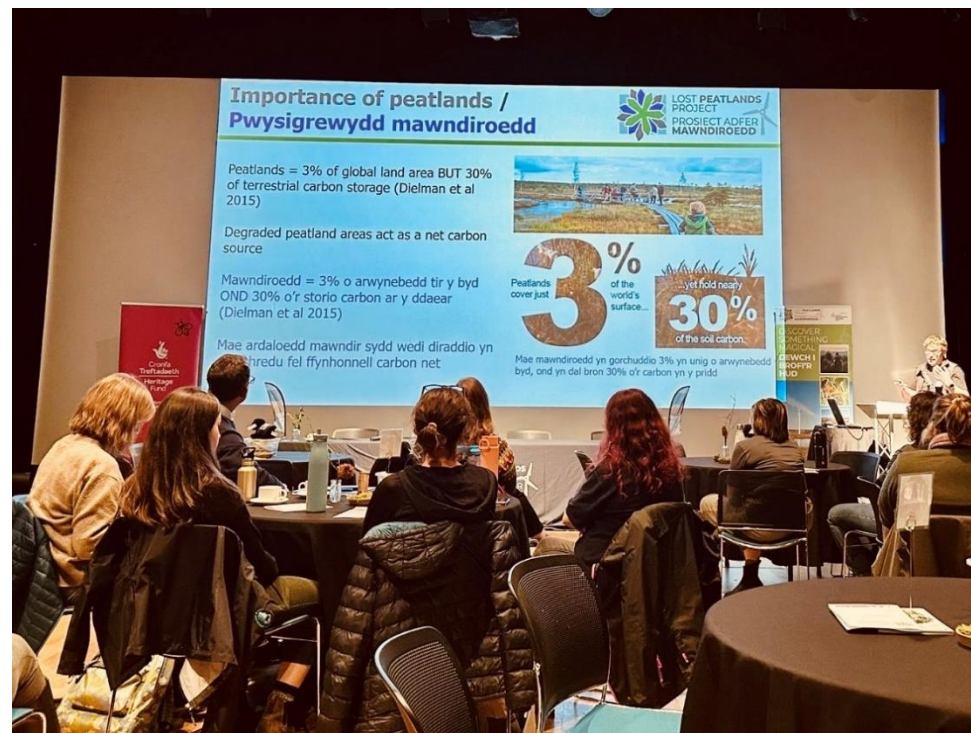


Figure 26: peatland restoration presentation at the Lost Peatlands conference. Image LPSW

Other high-profile examples of knowledge exchange events were hosting the National Peatland Action Programme 'Forest to Bog exemplar' and the British Soil Association conference delegates at project restoration sites. Presentations at the Chartered Institute of Ecological and Environmental Management Welsh conference and the attendance at the National Eisteddfod were also highlights of this work stream.

6.1. Discussion: Successes, Challenges, Lessons Learned & Recommendations

The adult learning and training programme saw many successes through its event delivery. To offer opportunities to residents of deprived communities

that previously had little on offer for skills building, has been a key outcome of the project's outreach.

The Agored programme was particularly useful in attracting people with limited existing skills, introducing new topics and ideas, and then assisting participants to gain formal accreditation. It is therefore recommended that this type of training is promoted based on the tangible outputs being the reward for hard work carried out.

Other recommendations to be taken forward from this work include:

- A greater variety of heritage skills to be offered (straw craft and natural paints and dyes were identified as priorities)
- Trialling Agored courses with schools and NEET (Not in Education, Employment or Training) groups
- Continue and expand local training options that look to elevate people's skills and interest as a pathway to professional progression and employment support
- Offer WIN (Wellbeing In Nature) level 2 and 3 courses, which are designed to develop skills for professionals (in various fields) or those looking to gain relevant knowledge to move into the nature wellbeing sector

Health Walk leader training offered much the same in terms of providing useable skills for both newcomers and people that already work in the wellbeing or outdoor environment. Recommendations to be taken forward from this work include:

- Providing a mentoring approach to help people take the next step to delivering walking programmes in the project area
- Provision of additional volunteering opportunities, to support Lost Peatlands guided walks (to help encourage and build further confidence for those who completed the training)
- Continue offering the training as a certified Agored course

Heritage skills proved highly popular with participants and acted as a useful draw for people who may be interested in the outdoor/conservation sector, but who may be more practical by nature and prefer to learn through a

hands-on approach. It is therefore recommended that this type of training be incorporated into wider outreach efforts with a focus on progression training to enable the sustainable development of people's skills and interests.

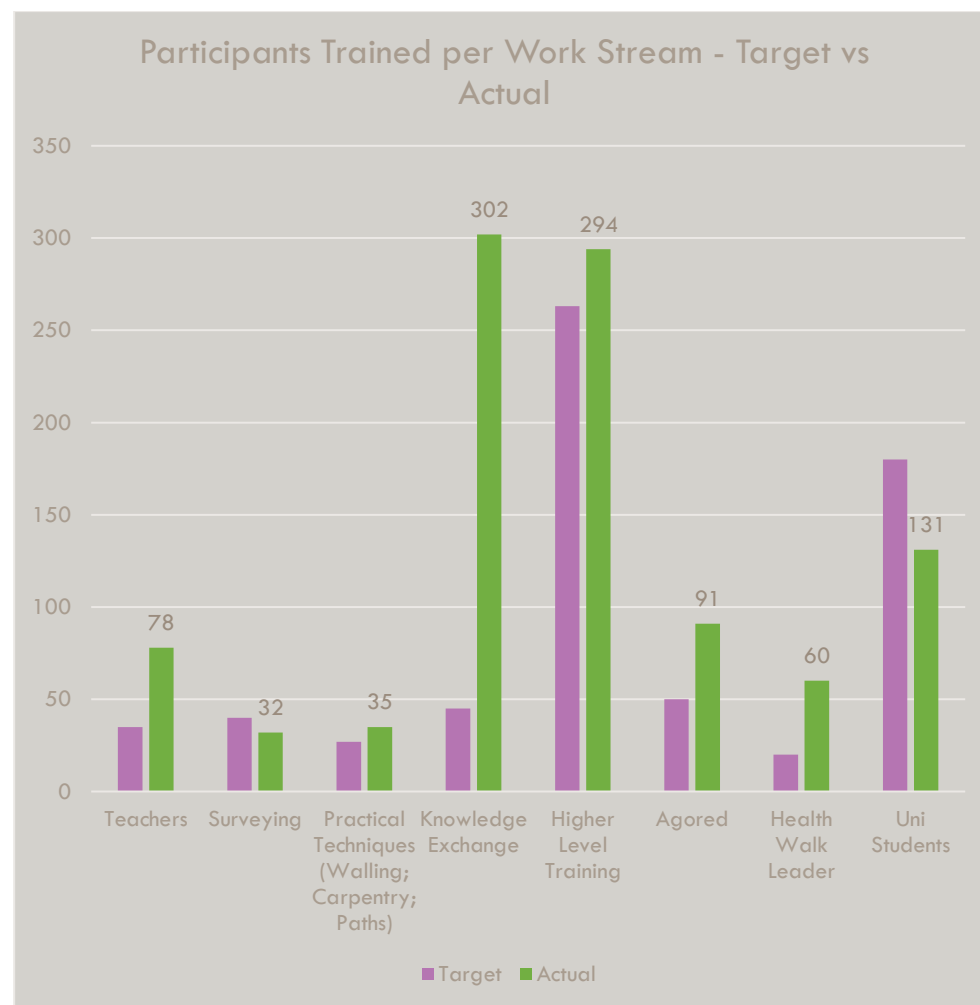


Figure 27: Data shows that knowledge exchange, teacher training, Agored, and health walk leader training far exceeded expectations for attendee numbers



Figure 28: College students learn outdoor carpentry skills whilst also contributing units to their Duke of Edinburgh awards. Image LPSW

There were challenges to converting participants receiving ecology training into volunteers to assist with project monitoring. Uptake for this was lower than hoped, with limited numbers of volunteers supporting ecological survey work. A 'peatland passport' was offered in year 3 to enable a training and progression log, however this unfortunately didn't attract many newcomers. There were various reasons for this low uptake after healthy engagement numbers, but site accessibility and insurance cover; event regularity and complex/niche learning topics could be the main drivers here.

With a busy works programme and limited staff resource to deliver specialised ecology training, added assistance from local nature enthusiasts would have enhanced the opportunities offered. However, in a fast-paced world where time is tight for many, the dependence on volunteers to commit to delivering a programme of events is not recommended during project planning.

This programme successfully exchanged knowledge on the niche subjects covered by project activity (e.g. peatland conservation and ecology), and many successes were evidenced through high engagement numbers and multiple requests for tailored training and talks. It would be recommended that this be recognised as a high-impact outreach method for raising awareness on key project messages, and as such, planning for regular project attendance at larger public events (such as conferences) would increase both reach and learning which is critical in an emerging conservation sector.



Figure 29: Professional training on sphagnum moss identification. Image LPSW

For professional/higher level training, the main challenge related to charging nominal fees for tickets, including:

- price setting (profit vs loss vs competition vs accessibility)
- online ticket sales (Eventbrite was the solution, however GDPR had to be considered carefully)

- Possible mixed messaging as to which project events were free and which were not (n.b. project volunteers did receive a 100% discount code).

The element of profit vs loss was noted as a challenge when organising these events as predicting how much income certain topics would attract was difficult. However, the above factors were overcome and as a result a 'gap in the market' was identified for this type of low-cost niche training. A particular success to note in this work stream was the attraction of professional volunteers who offered their own skills to train participants. Considering the target audience of this work stream was individuals seeking continued professional development, this guaranteed attendee interest and enthusiasm leading to a possibly more attractive output and reward for those offering their time and knowledge free of charge.

7. University Academic Study (2D)

7.1. Summary

The added benefit to project outcomes realised through partnership working with Swansea University has been notable.

Monitoring and evaluation has been vital for determining the success of interventions made on peatland sites. As discussed throughout Programme 1, a suite of methods was used to measure change and assess outputs. With experience gained and collaboration demonstrated, the project has been able to contribute to best practice principles for the restoration and monitoring of peatlands.

To achieve the above, a blend of dedicated lecturers, fieldworkers and students delivered more than was expected for this work stream, in what must be recognised as a very challenging landscape and limited timeframe.

7.2. Student Projects

The education of university students (BSc; MSc; PhD) proved instrumental in gaining base knowledge on ecology and hydrology topics relevant to peatland restoration. A total of 131 students took part in project-specific lectures which was less than predicted during project formation (180 target), however this is noted as being due to lower levels of enrolment (specifically foreign students) following Brexit. However, of those engaged, an impressive 21 student projects were carried out as summarised below:

Table 2: Student projects undertaken for the project. Source: Swansea University Student Research Projects report

Table 1. Summary of the student project undertaken for the Lost Peatlands Project

No. of projects / students	Type of Qualification	Level of qualification
6	BSc	Bachelor of Science (undergraduate)
11	MSc	Master of Science (postgraduate)
2	MRes	Master of Science by Research (postgraduate)
2	PhD	Doctorate (postgraduate)

Further detail on these projects can be found in Appendix B with full information available within the Swansea University – Student Research Summary report in the Appendices of the Ecology and Hydrology Report. There were many important topics covered through this work, and it is hoped that some will result in peer reviewed papers for scientific journals.

7.1. Discussion: Successes, Challenges, Lessons Learned & Recommendations

The project structure with Swansea University staff and students working alongside core ecological staff for the project proved key for the delivery of core monitoring, with work delivered as added value to the project also being essential to understanding the restoration responses. With core monitoring tasks carried out to sufficiently evidence the impact of project activity, the

additional monitoring topics introduced through this programme (and University partnership) are recognised as being highly beneficial.

Field trips to restoration sites faced the same challenges as other events where upland areas are remote and degraded peatlands are difficult to navigate safely, however, careful planning allowed successful visits to site, bringing context to lecture topics.



Figure 30: Swansea University students at Cregan HRA. Image LPSW

These trips are likely to have built confidence for those students who decided to carry out research in the project area. Arrangements for risk assessments, insurances and lone working were all lessons learned along the way, but access to these sites has proved invaluable experience for students.

One particular project touched on a topic related to project activity and very pertinent to local communities: flooding.

A feasibility study was carried out during the development phase of this project and found that within the parameters of land ownership, resources and limited existing evidence, it was not possible for the project to carry out natural flood management interventions or measure their impacts with regards to land management in the uplands (e.g. forestry operations and peatland restoration). However, this subject was often discussed throughout project activity and remains a topic to be explored.

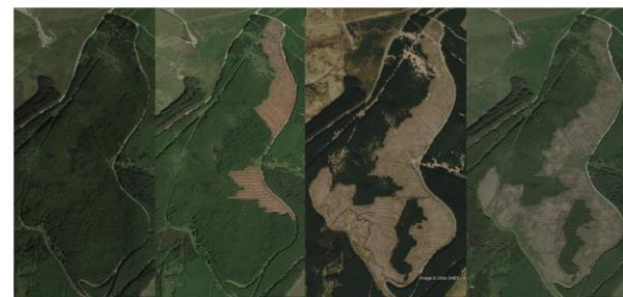


Figure 19. Satellite imagery of the Cregan site (Google Imagery) showing forest cover at start of study and end of study. Images L-R: August 2016, June 2018, April 2020, July 2021 – condition remained until end of this study. Felling started May 2018 – and was completed by March 2019.

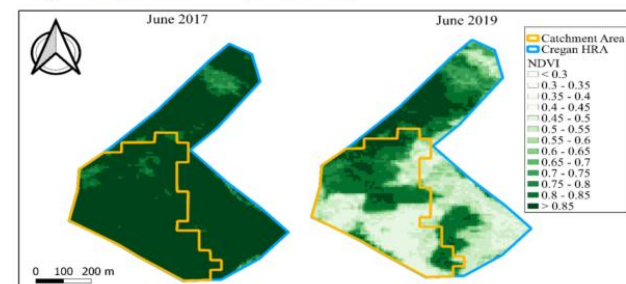


Figure 20. Vegetation mapping using NDVI index of Cregan site before felling in 2017 and after felling 2019 showing catchment area of the NRW water flow monitoring station (orange). Note not all of the Cregan Nant catchment was felled. Watershed delineation identified that the data for the Nant Cregan stream is representative of approximately 29.3 ha of drainage from the Cregan HRA site.

Figure 31: Excerpt from a student project that researched catchment modelling at Cregan HRA. Source: Swansea University Student Research Projects report

One student project found that post-tree felling, water run-off from the uplands was lower than previously observed, raising questions as to the efficacy of drainage ditch blocking to slow water flows and hence reduce flooding downstream. This study alone cannot answer this question; however, it does highlight the need to investigate the potential benefit of land management in the uplands above flood affected valleys, and how peatland restoration could contribute to natural flood management.

P.3 Access

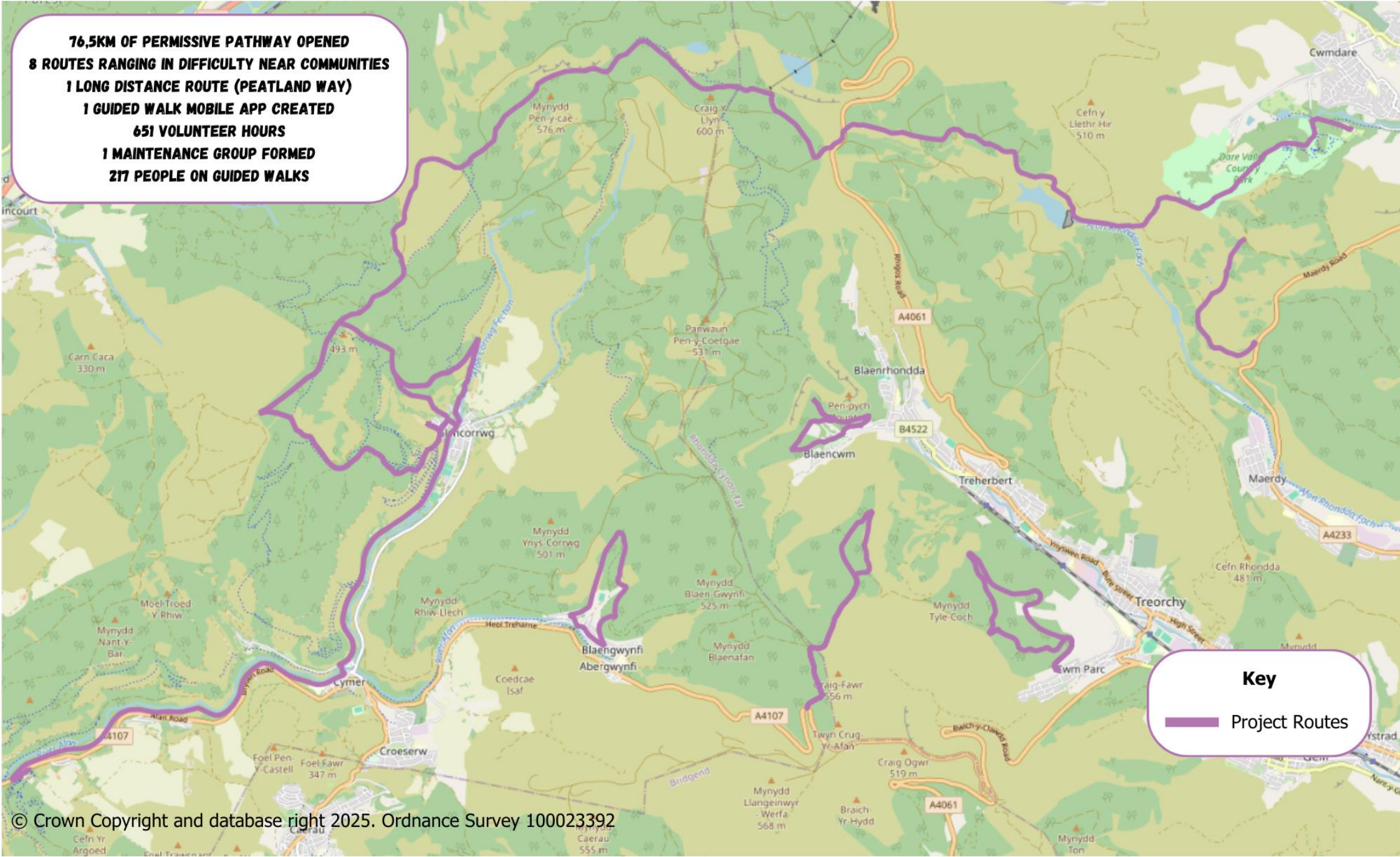
Snapshot

Heritage Fund Outcomes

- HF1 - People from a wide range of backgrounds have been engaged
- HF6 - People have greater health & wellbeing from spending time in the outdoors
- HF7 - Access to the local area has been improved



76,5KM OF PERMISSIVE PATHWAY OPENED
8 ROUTES RANGING IN DIFFICULTY NEAR COMMUNITIES
1 LONG DISTANCE ROUTE (PEATLAND WAY)
1 GUIDED WALK MOBILE APP CREATED
651 VOLUNTEER HOURS
1 MAINTENANCE GROUP FORMED
217 PEOPLE ON GUIDED WALKS



Key
— Project Routes

8. Access

8.1. Summary

Encouraging exploration of the Lost Peatlands landscape by improving access in the area was an important outcome for the project.

To enable this deliverable, a series of circular routes were created at project sites in addition to a long-distance one-way route: The Peatland Way.

To enable ease of access for the public, a range of walk lengths and difficulties are offered, including one fully accessible route for wheelchair users.



Figure 31: Llyn Fach on Craig y Llyn mountain. A view point along the Peatland Way. Image LPSW

Several methods were utilised and delivered to inspire local communities and visitors to experience the 'Alps of Glamorgan'. These included:

1. Guided Hikes (105 participants)
2. Mobile App: Lost Peatlands Explorer (1021 downloads)
3. Digital maps (available on website & via email)
4. Way marker posts (65 installed)
5. Interpretation panels (6 Interpretation panels)
6. Path maintenance volunteering (651 hours)

All routes follow existing paths and are either found on Public Rights of Way, forestry tracks or already formed pathways in open access land, therefore no major groundworks were needed to form these routes and are considered low maintenance in nature.

8.2. Project Routes

9 walks covering 76.5km are currently open to the public as 'permissive' routes. These are located at all CWS and HRA sites, with the Peatland Way navigating its way across of the entire project area.

Table 3: Project routes

Route	Length (km)	Difficulty
Cymmer CWS	4	Easy (wheelchair accessible)
Glyncorwg CWS	5	Hard
Cregan HRA	9	Moderate
Gwynfi CWS	3.5	Moderate
Cwm Saerbren HRA	6	Easy
Blaenrhondda CWS	3.5	Moderate
Cwmparc CWS	5.5	Moderate
Castell Nos HRA	7	Moderate
Peatland Way (linear)	33	Hard

The routes encounter a wide variety of habitats including woodlands, meadows, peatlands, moors and rivers and also pass through a historic landscape of scheduled ancient monuments, forestry and windfarms. Along the way, far reaching views of deep incised valleys and glacial lakes, Swansea Bay to the west, the Bristol Channel to the south and the entire panorama of Bannau Brecheiniog (Brecon Beacons) to the north can be seen. Walks that start and end in communities intend to entice people to enter the uplands from valley bottoms, whilst learning about heritage along the way by using the mobile app or passing an interpretation panel.



Figure 32: Hikers successfully complete the Peatland Way

The Peatland Way starts in Dare Valley Country Park and ends in Afan Forest Park, covering 33km and taking around 8 hours to complete. With steady inclines and declines on either side of an upland plateau, this flagship route takes in all that's offered by the Lost Peatlands landscape.

8.3. Access Counters

To measure change in the presence of walkers at project routes a series of access counters were installed at the following locations:

Table 4: Access counter locations

Site	OS Grid Reference
Gwynfi CWS	SS 89168 96653
Blaenrhondda CWS	SS 92485 99136
Peatland Way (Cregan)	SS 85089 99424
Peatland Way (Castell Nos)	SN 96820 01593
Peatland Way (Pen-y-Cae)	SN 88636 03400

Data for Gwynfi and Blaenrhondda dates back to the development phase of the project (2020), whereas the Peatland Way counters were installed at the start of the delivery phase (July 2021) to assess use of this route and the uplands in general. The following graph shows people presence during the lifecycle of the project, with an enlarged version found in appendix F:

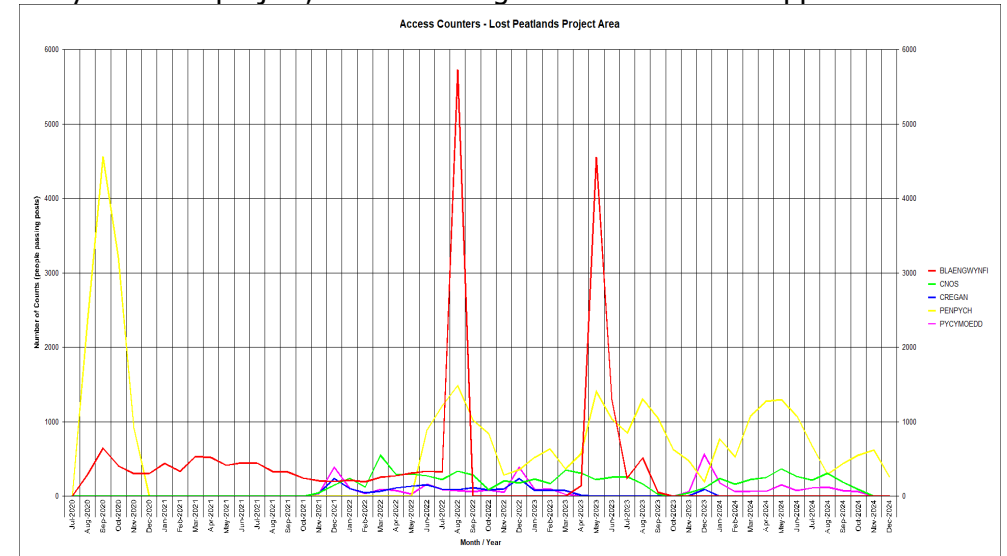


Figure 33: Access counter data shows steady numbers of people using project routes, however no significant upward trend was observed. This could be attributed to several factors, including equipment damage, delayed permissions for route opening & lower than hoped use of the paths.

Unfortunately, two of the access counters were damaged during the delivery phase at Cregan HRA and Gwynfi CWS, both due to unexpected path and forestry track maintenance operations. As a result, data was not retrievable for the last year of the project at these locations.

Given the nature of all walks being on routes that cross publicly accessible land, it is hard to determine the precise impact of activity on people presence at project locations. However, the data shows a steady use of project routes throughout the delivery phase, with busier periods observed in summer months being no surprise. Pen Pych (Blaenrhondda CWS) is by far the most used site, owing to the good accessibility to site with a car park and walking paths to the mountain top. Gwynfi CWS also saw spikes of high activity in summer months, which could be attributed to school holidays. Another observation is that during Covid-19 lockdowns, people were using local spaces more, and this data does show that steady use (albeit slightly less) is still evident. With further analysis of specific sites at specific times, it would be possible to evidence that through project activity, more people were accessing their local landscapes both during and after community events.

8.4. Discussion: Successes, Challenges, Lessons Learned & Recommendations

Project activity has enabled more people to access the outdoors with confidence and increased knowledge. As a result, positive feedback has been received on the work carried out and experiences offered, especially regarding the mobile app. and its usability.

A dedicated volunteer group - the self-named 'On Track' group (although named in project documents as 'Path Guardians') – has been set up in collaboration with a key stakeholder 'Welcome to our Woods' who now support the group full time. Individuals helped install posts and cleared vegetation on routes over the latter half of the project. The group, averaging at around 8 people who meet every Tuesday, benefitted from progression training on outdoor carpentry (delivered in collaboration with the Down to Earth Project) that resulted in skill development and 2 benches now installed at viewpoints on project routes. Outdoor first aid training was also delivered for the group in efforts to prepare them for post-project monitoring and maintenance of routes in RCT.

Ramblers Cymru (a key stakeholder) unfortunately had funding/staffing issues so were not able to contribute to project activity as expected, and as such path maintenance volunteers and the guided hikes work stream suffered consequently. Therefore, the formation of the On Track group was a valued outcome and guided walks were offered by the project team and volunteers for the group.

Post project maintenance responsibilities lie with NRW for forestry tracks, who in part will be supported by the 'On Track' group and Countryside & Wildlife department of NPT Council and RCT Council.



Figure 34: Volunteers install a way marker post at the Cwm Saerbren HRA circular route

The main challenge faced revolved around timing of permissions to open routes, which had they have been granted sooner, would have led to more engagement and visitors to project sites. Permitted works on the NRW managed Welsh Government Woodland Estate took longer than planned, meaning that paths were not advertised widely until after the second

summer of the delivery phase. Further issues on certain routes revolving around other public users (e.g. mountain bikes) and post project maintenance responsibilities were also challenges to overcome and resulted in the momentum of the 'On Track' group being impeded; however, all project routes were fully complete in year 3. Thorough discussions on route locations are essential when planning projects with time-limited deliverables, as is consultation within organisations both before and during project delivery. Timing is crucial for time-limited projects and more engagement would have been achieved with an improvement to communication.

A lesson learnt from this programme relates to reliance upon stakeholders. It would be advised to not base project activity on contributions from stakeholders that are not officially signed up as a partner (in this case Ramblers Cymru). Whilst the reality is that partnership projects like this will likely attract added benefit and good collaboration with stakeholders (as has been the case here), deliverables should only be planned if resources, time and ample budget is afforded to the project. Stakeholders can provide significant added value to a project, but the reliability of contributions can be difficult to judge, especially when dealing with community groups or third sector organisations that are highly reliant upon grant funding to support their core staffing. A different way of expressing predicted stakeholder involvement and contributions, separate to official project outcomes, may provide clarity for future projects, while ensuring the potential valued contributions of such stakeholders are still able to be recognised.

It is recommended that access improvements within this landscape are continued to be prioritised by partner organisations where it is in their power and scope to do so. Most of the project area is 'open access' (i.e. public land) - and although this is a positive aspect for local communities - poor signage, accessibility and information on local heritage can lead to exclusion for large numbers of people who may not have the confidence or knowledge to explore this wilderness on their doorstep.

It would also be recommended that to determine exact figures for people using walking routes, the placement of access counters has to be carefully considered. Precise results to show exactly how many people have been attracted outdoors due to project activity would only be achievable for paths that are either newly formed or distinct from others in the area. Nevertheless, the inclusion of access counters on project routes proves that

people do indeed access these areas, and therefore enhanced signage and interpretation would benefit these users.



Figure 35: View from Pen Pych Mountain, above Blaenrhondda CWS. Image LPSW

P.4 Health, Wellbeing & Communities

Snapshot

Heritage Fund Outcomes

HF1 - A wide variety of people have improved the environment & attended events

HF2 - Habitats have been accessed, managed & conserved

HF3 - People have better understanding of local biodiversity & ecosystems

HF4 - Skills have been learned, developed & used

HF5 - Local heritage is better understood & people have engaged with it

HF6 - People have greater health, wellbeing & connection to nature

HF7 - The local environment has been improved and used



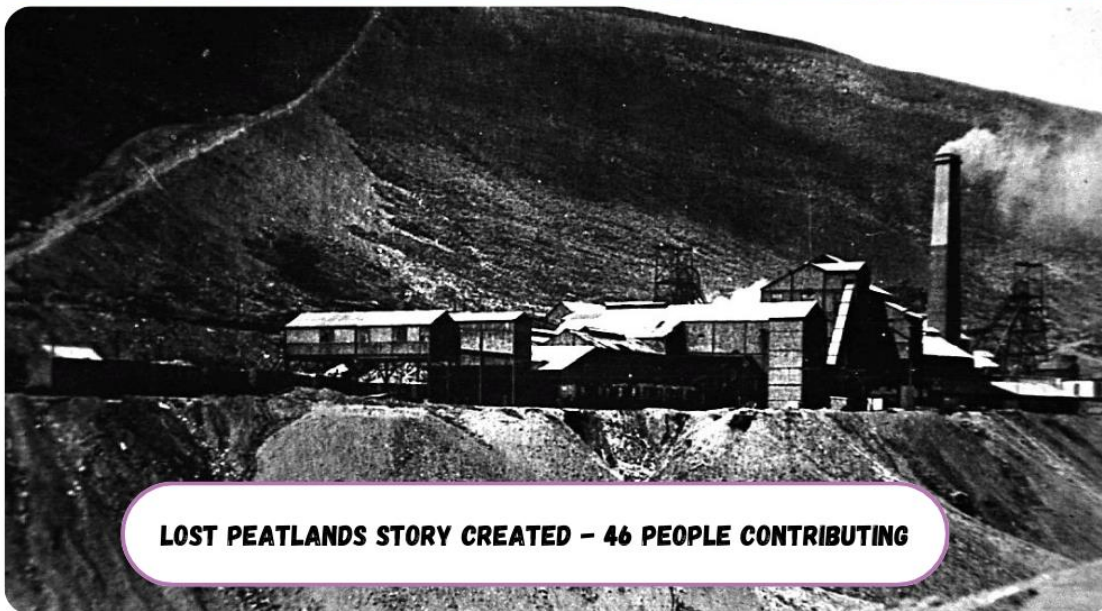
LOST PEATLANDS
PROJECT
PROSIECT ADFER
MAWNDIROEDD



384 VOLUNTEER DAYS / 2335 VOLUNTEER HOURS



642 PUBLIC EVENT ATTENDEES



LOST PEATLANDS STORY CREATED - 46 PEOPLE CONTRIBUTING



618 HEALTH & WELLBEING PARTICIPANTS

9. Volunteering (4A)

9.1. Summary

The volunteering element of the project had mixed results in terms of engagement numbers and volunteer hours. On the whole, activities attracted conservation minded participants who tackled management tasks, and most work stream targets were achieved, however the overall figures of volunteer days and the associated non-cash match funding element were lower than hoped. This was mostly due to barriers faced for surveying in the uplands which is covered later, but despite challenges, project volunteers still managed habitat, learnt skills and contributed to a total of 384 volunteer days and 2335 hours.

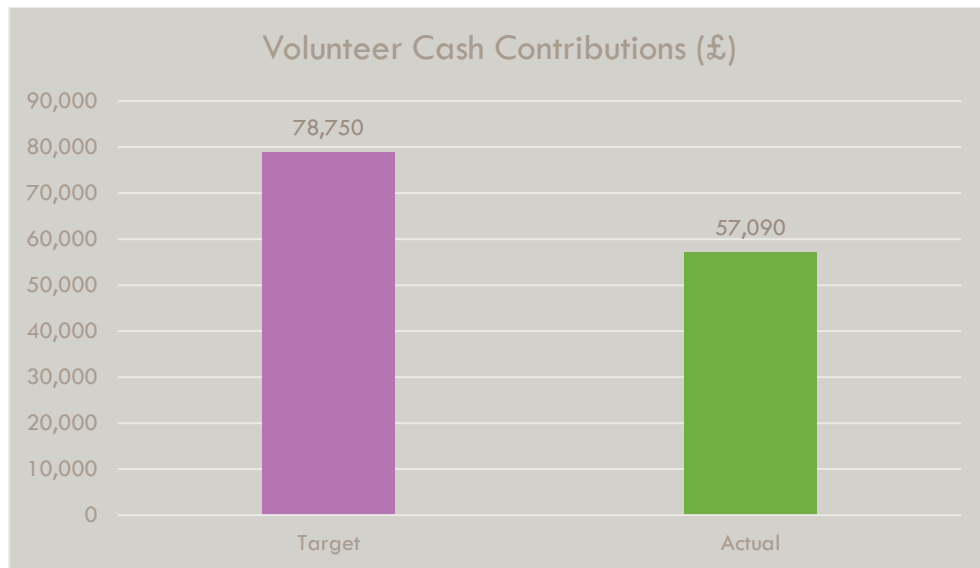


Figure 36: Volunteer match funding was not realised in full due to lower-than-hoped bird and bat surveyors where access issues were encountered. Professional volunteering however far exceeded its target and helped increase this non-cash contribution value

9.2. Control of Conifer Regeneration

The removal of Sitka spruce saplings from peatland sites is an important management technique with regards to habitat health. It proved popular with the 28 volunteers who enjoyed the physical nature of this task. 6 events were held at a trial site on Pen Y Cymoedd windfarm – not the planned HRA sites – based purely on-site accessibility and availability of trees within a short walking distance. It was necessary to communicate clearly why removing trees (which are usually considered important for climate change) was needed in this context, leading to a good opportunity for learning.

The removal of sitka spruce saplings will be required at all project sites in future so should be factored into long term management plans for these areas.



Figure 37: Volunteers planting Sphagnum (bog) moss at PyC windfarm. Image LPSW

9.3. Sphagnum Planting

This task was by far the most popular in terms of verbal feedback from

volunteers. This is likely linked to the direct correlation between planting and greening bare peat soils, with a clear outcome benefit. Similar challenges to other tasks in peatlands were faced regarding rough terrain and bad weather, however small pockets of accessible peatland were identified leading to 38 volunteer days over 5 events.

Added benefit was realised for this work stream where Swansea University applied for extra funding from the Royal Anniversary Trust to create Sphagnum beds to grow bog moss, which was then subsequently planted on project sites by students.

9.4. Invasive and Scrub Management

Habitat management at CWS sites revolved around the removal of Himalayan balsam and control of scrub. This type of task is classed as fairly accessible to new volunteers as it's not physically demanding, and low skill based. As such, 21 events brought about 106 volunteer days. Many of these volunteers were from the younger generation, either taking part in their Duke of Edinburgh award, or part of a college field trip. Whilst a good area of habitat was tackled, the issue of invasive non-native species requires far wider efforts to eradicate them from CWS sites. However, as a tool for education on conservation topics, this task proved useful.

9.5. Vegetation Surveys

Uptake for volunteer surveying at both CWS and HRA sites was lower than hoped. This is not overly surprising given that it is a specialist skill and access to project sites was not easy. Efforts were made to train 13 volunteers leading to 21 survey days, however the continuation of data collection after these events unfortunately didn't materialise so will not be able to form a part of the post-project monitoring programme as originally planned.

9.6. Bat & Bird Surveys

This volunteer task was another example of site accessibility being a barrier to easy engagement, as well as the potential over expectation of local groups

and volunteers to carry out data collection. The main challenge revolved around lone working safety concerns and group insurance cover to access the Welsh Government Woodland Estate. These technical difficulties and valid health and safety concerns proved problematic in allowing ad-hoc surveys to take place in the uplands. Efforts were made to facilitate group visits leading to 29 volunteer days; however staff time restraints restricted the opportunity to further this work, and most data to satisfy ecological monitoring was carried out by project staff.



Figure 38: A group of volunteers survey for birds at Castell Nos HRA. Image LPSW

9.7. Path Maintenance

Despite early setbacks with the loss of a key stakeholder who was key to this work stream, 88 volunteer days contributed to the formation of project access routes, surpassing the target of 60. More pleasingly, the formation of the 'On Track' group alongside a stakeholder organisation has aided in arrangements for post project maintenance of project routes. This group

meets regularly on Tuesdays, and as such the project was able to arrange progression training and skill building to prepare individuals to take ownership of their local environment.

9.8. Discussion: Successes, Challenges, Lessons Learned & Recommendations

Volunteering played a role in managing habitats whilst providing training and learning experiences along the way. A main benefit derived from volunteering was realised through awareness raising of project aims. The lower-than-expected numbers overall should not reflect negatively on those who assisted the project, and valuable lessons were learned by the project team to take forward.

As can be seen in the above graph, besides from surveying tasks, the opportunities on offer attracted the expected number of volunteers.

The main challenges revolved around access to sites. The health and safety of volunteers must be prioritised and given that most of the peatland sites are badly degraded, they are extremely tricky to navigate safely. CWS sites (beyond existing paths) were also hard to navigate, with either overgrowth or steep banks creating access issues. It was therefore necessary to locate safe areas at each site that were suitable for public outreach, and whilst successfully identified and engaged at, these areas were limited by size.

Without insurances and permissions in place, lone surveyors would not have been able to collect data on breeding birds or bats at HRA sites, and this barrier (along with the remoteness of sites) has led to lower than anticipated interest in carrying out this survey work. Whilst advice on requirements was offered, along with the potential for insurance cover to be funded for local conservation groups, the momentum needed to achieve target numbers was unfortunately not realised.

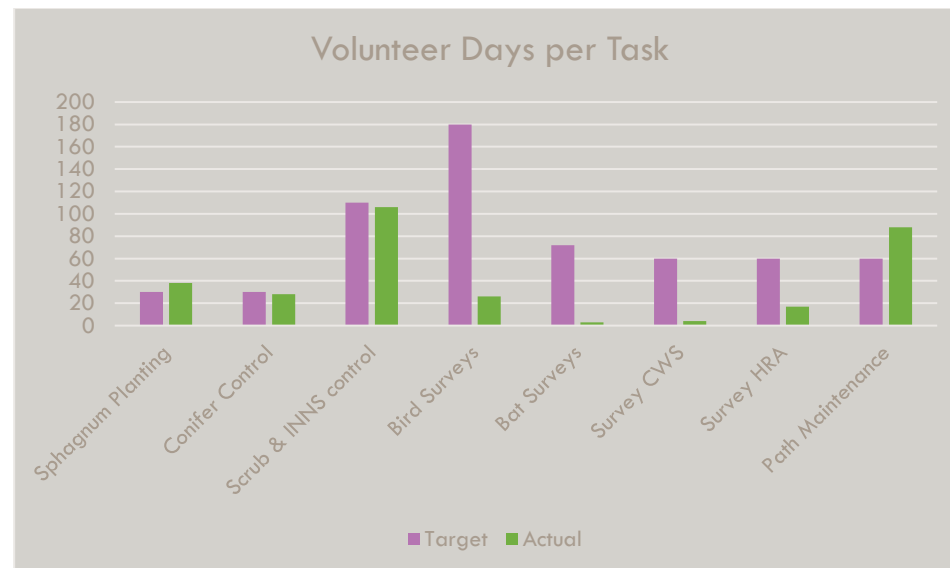


Figure 39: Volunteer numbers were lower than expected for surveys, but generally met targets for hands on conservation and maintenance tasks.

Another lesson learnt by the project was that greater regularity was needed and that greater support and opportunities for volunteers would be better served with more dedicated staff time resources being allocated. Scheduling regular sessions to build momentum and group sizes was a challenge with the project staff resources available.

During the project activity delivery, it was realised that welfare availability was a key issue. For some events early on, welfare facilities were sometimes lacking due to the nature of having to move between sites too frequently. A welfare unit was purchased and used, and events were scheduled to run concurrently at sites and on regular days throughout summer, however, the size of the project area and extensive outreach programme meant presence at one site was usually no longer than around one month per year. This lesson was learned by the end of year 2 and acted upon with the focussed support of the 'On Track' path maintenance group. Sessions were held weekly; tasks were clearly set beforehand and appropriate facilities and transport for access was in place. As a result, the group grew in terms of size and skill sets, and the new-found momentum delivered good work.

The difficulty in engaging survey volunteers is a lesson learnt, albeit similar difficulties have been experienced by other projects in the area. Further investigation and knowledge sharing between conservation organisations working in the region may provide further insight. A clearer platform for people to access volunteer opportunities in the sector and a more joined up approach across projects and organisations may be helpful to present more options for volunteering in the future.

It is therefore recommended that for landscape scale projects like this, where there are multiple sites to manage and communities to engage with, appropriate planning should carefully consider site accessibility/facilities, achievability of management tasks and ample staff resource to enable regular sessions.

It would also be recommended that the diversification of volunteer roles be investigated to allow a wider breadth of people to become involved. The project attracted many types of volunteer – not all of which were specifically conservation focussed – but offered their skills such as arts, music and research which were highly beneficial for project outcomes. Therefore, remaining open to ad-hoc volunteer opportunities should be factored in during planning.

10. Community Events (4B)

10.1. Summary

A total of 47 public events were hosted at project sites and community centres during the project delivery phase. Engagement activities were targeted at the wider community and designed to attract local residents and visitors to get involved with engaging tasks and get an insight into project activity without committing to volunteering, training or health & wellbeing workshops. As such, these 'one off' events were introductory and informative in nature and proved successful by attracting 642 participants.

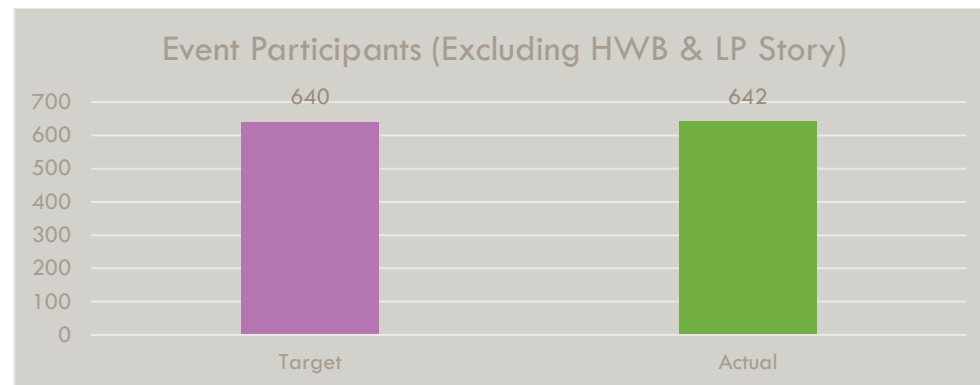


Figure 40: Public events proved popular at valley and upland locations

10.2. Wild blitz / Family Fun Day



Figure 41: A guided nature walk and talk at Blaenrhondda CWS during a wild-blitz and family fun day. Image LPSW

These highly popular days were held at CWS sites in each of the two valleys and offered a range of activities including guided nature walks, arts and craft, educational games and the option to find and record local wildlife.

142 adults and children took part in these days that were all held on weekends in the school summer holidays. An added bonus to this 'larger' type of event was the attraction of project stakeholders who collaborated by bringing their own tables & activities resulting in an interesting mix of information and entertainment.

10.3. Arts & Craft

With a focus on the seasons of the year and the project's top 10 species, 4 events were held at local community centres and attracted 32 participants. Prioritising the use of natural materials enabled some of the key messages of the project to be shared and led to conversations and feedback to reflect the need for utilising the arts to communicate sometimes complex scientific/environmental information. This method of simplifying topics and presenting them in possibly more engaging way through the arts has been identified as both effective and recommended for similar projects to expand upon in future.

Following the delivery of initial sessions, it was determined that these events were most effective when offered as support for community events already taking place rather than standalone events advertised to the general public. Supporting existing craft groups and a community family event increased engagement numbers and provided greater reach for education on nature issues through the Arts.

10.4. Guided Walks

A series of walks at project sites proved a popular method of relaying knowledge on local heritage – both natural and historic. Led by core staff, partnership members and specialist (or 'professional') volunteers, 21 events took place at project sites and attracted 208 participants. Themes included nightjar (by far the most popular), various other wildlife species, nature

sounds and renewable energy. This work stream also enabled project access routes to be launched and promoted through guided hikes.

10.5. Celebration Events

In addition to the project launch which involved a week of online and on-site events, two major celebration events were held at the end of the delivery phase.

The Lost Peatlands conference was held at the Gwyn Hall in Neath and aimed to communicate all that the partnership has achieved. With a focus on peatland restoration and monitoring, presentations were delivered by project ecologists, Swansea University, NRW and Vattenfall. The outreach arm of the project was also covered with presentations on education, health and wellbeing, and a project summary. 66 delegates enjoyed the day which was recorded and is available here:

<https://youtu.be/kWCA-JoN8Yo>



Figure 42: Storytelling at the Project's celebration and thank you event, Glynccorwg. Image LPSW

The project celebration had a different target audience and served more as a thank you to project volunteers, participants and stakeholders. An enjoyable informal evening of presentations, storytelling, live music, arts and craft was held at Glyncorrwg Mountain Bike Centre and attracted 45 guests.

10.6. Bog Days

The presence and importance of peatlands was a key message for the project, as was attracting people into the uplands, so naturally the 'Bog Days' held were somewhat of a flagship activity on offer.



Figure 43: A 'Bog Tour' of Cregan HRA for residents of Glyncorrwg

Whilst 90 people enjoyed tours of project peatland sites (target 72), there was a need to adapt approaches where complications to site accessibility were met. Bog Days offered guided walks at HRA sites and were scheduled

on weekends (typically on 'international bog day' or 'world peatlands day'). Numbers were very low and thought to be due to the very remote location of meet points, and unpredictability of weather. It was also not appropriate to ask participants to drive their own vehicles on forestry roads, so in response to these factors, a 'Bog Bus' (multi-people vehicle) was rented for the latter half of the project. This transformed our engagement approach and allowed the offer of 'Bog Tours' where local community groups and project participants/stakeholders were offered easy access to the uplands on guided tours of several project peatland sites.

10.7. Discussion: Successes, Challenges, Lessons Learned & Recommendations

For efficiency in analysis, two work streams (intro. to nature & knowledge exchange) have been brought into this discussion, as although within the training programme, they can be classed as public events.

In terms of people engaged, there have been many successes within this work programme. There was a need early on to adapt the original project plans to reflect staff resource, carry out proper marketing and timing events to attract maximum participation. This was managed to the degree that participant numbers exceeded what was expected.

The analysis shows that certain events could be classed as 'more efficient' in terms of staff resource and people engaged, with family fun days, knowledge exchange and celebration events proving the highest figure for average attendees per event. It must be noted however, that for knowledge exchange and celebration events, higher figures were achieved due to the larger size of captive audience either at conferences or online webinars.

The less 'efficient' events were introduction to nature/wildlife recording and bog days. For the former, this series of events were maybe less well marketed than others, and time of events also needs consideration (e.g. daytime vs evening vs weekend). For bog days, the low numbers experienced when asking participants to make their own way to site was offset by the high popularity of bog tours with suitable transport provided – a key recommendation for landscape scale projects.

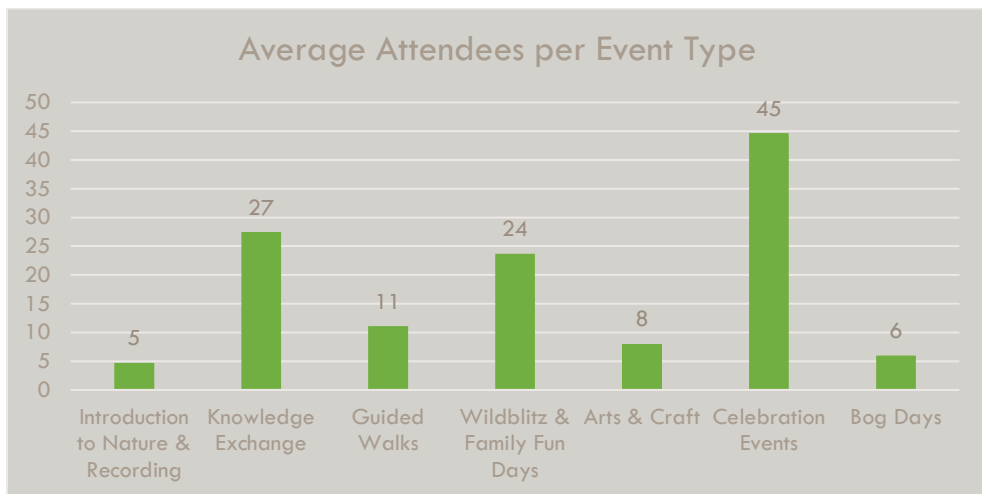


Figure 44: Data shows which events attracted the most participants on average, suggesting that planned larger events with sufficient advertising may attract higher engagement numbers when time resource is limited for project staff

Event regularity was also an issue, where staff time limitations and less engagement from volunteer walk leaders than expected led to sometimes sporadic events being held when time allowed. To introduce regularity, two summer schedules were devised, offering public events every Monday evening (guided walks etc), Tuesday days (volunteering) and one weekend event per month (Appendix D). Although this was received well by followers of the project, numbers were not as high as hoped. The possible reasons for this are multiple (and discussed throughout this report), however, with good effort from the core team, engagement numbers did rise, and the project did offer free events on a regular basis, albeit spread across a large project area.

Due to the project's size, on the ground presence of prolonged activity in individual communities was tricky. This is likely a challenge for all projects of this nature, where difficulties are encountered when covering large areas with multiple communities. However, as this lesson was learned, more focus on working with existing community groups (e.g. libraries, museums and community centres) proved successful in attracting higher numbers of participants and building links with the communities.

Therefore, it is a recommendation that events are based on quality over quantity, with the quality element constituting input from communities on what's delivered and when, plus a focus on relationship building with existing groups that are already established and seeking support.

Trial events were held to integrate volunteering with the health and wellbeing workshops and found participants had greater interest in nature volunteering activities when they are run alongside a wellbeing or heritage craft skill activity. This could increase volunteer numbers by providing a gentle alternative during the events and opens the experience by making it more inclusive and attractive for a wider audience.

Another challenge encountered was accessibility to sites. Having a range of habitats to showcase was beneficial to outreach, however accessing CWS & HRA's was difficult for a variety of reasons including:

1. Parking and vehicle access: forestry roads were not suitable for private cars and raised issues around recovery services.
2. Toilet facilities: portaloos were used and a welfare unit purchased, however transporting it regularly was problematic, as was regular cleaning when located in remote locations.
3. Difficult terrain: peatland sites were mostly inaccessible and potentially dangerous to navigate, therefore forest-track-side engagement was preferred. Short paths on to peat were identified and walkable for more able participants.
4. Other challenging engagement areas: Gwynfi, Cwmparc, Glyncorrwg, Hendre Mynydd CWS sites were not as easy to access due to vegetation growth and some areas of difficult terrain. This led to a preference of CWS sites for public events that were more universally accessible

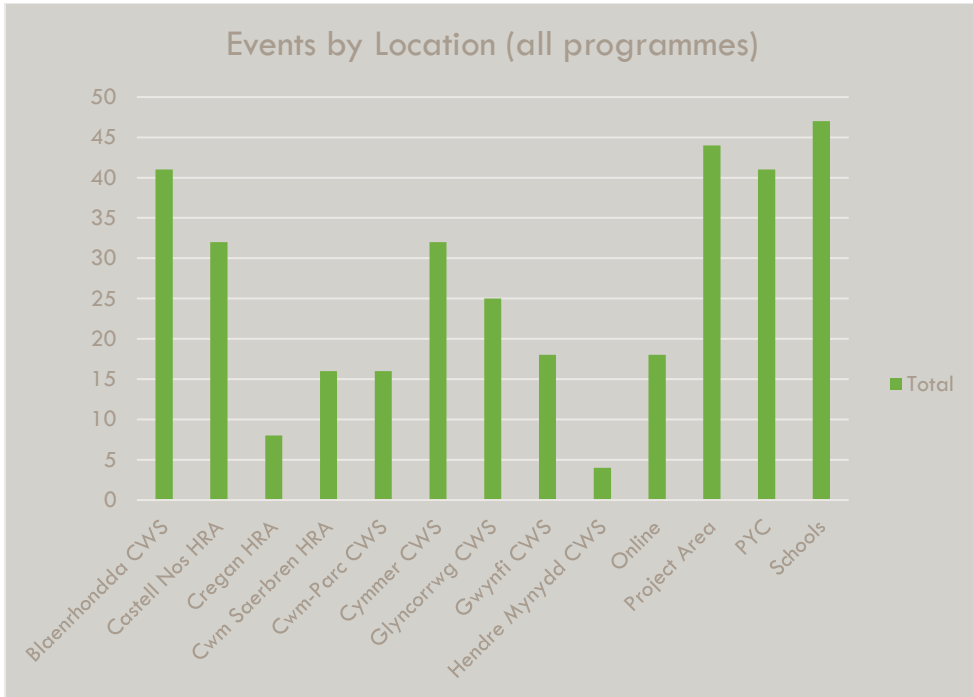


Figure 45: Accessibility of sites dictated event numbers at each, with Blaenrhondda CWS, PyC windfarm and Castell Nos HRA being the most used sites

Access constraints were however overcome by utilising the more easily accessible locations within the project for public outreach, including Blaenrhondda CWS, Cymmer CWS, Castell Nos HRA and Pen Y Cymoedd windfarm. Inclement weather and the aforementioned co-working with community groups saw events also occur at other sites within the project boundary (e.g. community centres). It must also be added, although Cregan HRA was accessible by forestry tracks and a valuable site to discuss peat restoration, the delay in restoring this site led to few events being held there.

With this and other lessons learnt in mind, it would therefore be recommended for a smaller number of fully accessible sites with proximity to local communities and transport links be used for public engagement. From those locations, periodic visits to sites considered less accessible but important for project aims could be offered.

11. Health & Wellbeing (4C)

11.1. Summary

Coed Lleol/Small Woods worked with local people and support agencies to provide activities that promoted healthy lifestyles, skill building and positive wellbeing.

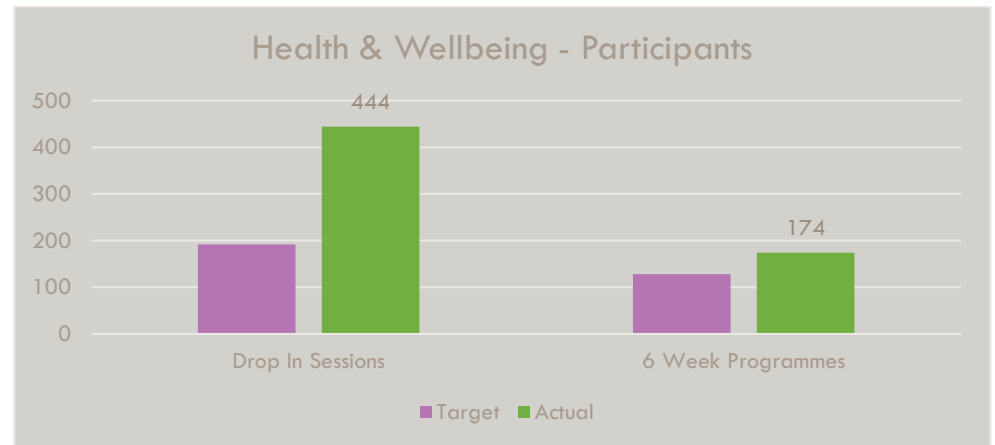


Figure 46: Attendee numbers for the health and wellbeing programme far exceeded expectations and received notable praise from participants

Participants took part in a range of outdoor activities (or indoor if the weather was poor) that celebrated the local area and its natural resources. People had the opportunity to cook over an open fire, learn bush craft skills, partake in wellbeing techniques (e.g. mindfulness and yoga), and numerous other craft and heritage skills workshops. Guided walks and foraging activities were also undertaken.

This programme far exceeded its targets proving that this type of outreach is in very high demand for the types of communities the project has engaged with. The full Health and Wellbeing report is available on request.



Figure 47: Families enjoy outdoor crafts and campfire cooking in Cwm Saerbren woods

11.2. Drop In Events

These sessions were aimed at individuals looking to engage with events on a more flexible and varied platform. The health and wellbeing co-ordinator was key to effective community outreach and collaborated with local groups and service providers to gauge interest in particular tasks, and then delivered them with the needs of community members in mind. As such, 444 participants attended 45 drop-in workshops with an impressive average of 10 people per session.

11.3. 6 Week Programmes

10 programmes each running over 6 consecutive weeks were aimed at both adults and children and allowed people to learn about and become more connected to nature with a range of activities, learning opportunities and games on offer. These well-structured sessions attracted 174 participants who benefitted from long term engagement, which also provided a reliable source of social connection and support networks for those who may have been in need. Again, these programmes were informed by community feedback and designed to meet the needs of those seeking health and wellbeing support.



Figure 48: Residents of Cwmparc learn heritage skills using natural materials

11.4. Discussion: Successes, Challenges, Lessons Learned & Recommendations

Detailed analysis of information collected from participants was carried out by Coed Lleol and offer a great insight into successes, feedback and lessons learned.

Results from survey questions based on the Five Ways to Wellbeing (<https://www.nhs.uk/mental-health/self-help/guides-tools-and-activities/five-steps-to-mental-wellbeing/>) illustrated a positive experience for many participants on the 6-week programmes and the drop-in sessions. What was especially notable was that there was over 90% agreement from adult and child participants that they had been enjoyable, had been taught new skills and knowledge, and had made them feel happy. Over 85% also said they felt more connection to local green spaces and nature and were motivated to get more involved in environmental activities and programmes in the future.

While 41% of adult participants identified as infrequent users of green space before the activities, 50% said they were frequent users afterwards. The number of frequent users increased by 38% after engagement, which is considered to be a huge achievement. In the family groups, 71% children agreed that they will use green spaces frequently going forwards.

64% of adults showed an increase in self-reported wellbeing after engagement with the project, and for 55%, this was a statistically significant increase. While 20% of participants reported an increase in health, with 46% noting an increase in physical activity levels – although 50% reported a decrease here – these lower numbers could be explained by the activities being chosen for not being too physically demanding, to avoid physical stressors in the isolated rural environments often used for sessions. However, a statistically significant increase in wellbeing for more than half of attendees is considered a successful outcome.



Figure 49: Infographic shows positive feedback from health and wellbeing participants. Source: Coed Lleol Final Evaluation Report

Table 8 Change in visits to the project area, before and after engagement (n=32)

Visiting frequency	Before	After	Increase
Never	19%	9%	-9%
Infrequent	41%	16%	-25%
Moderate	28%	25%	-3%
Frequent	13%	50%	38%



While many people said there was no way to further improve upon what was offered – 61% of respondents did not answer this question or specifically answered that no improvements could be made, as they had enjoyed it so much already – those suggestions that were made included:

- better advertising of programmes
- more of them, longer-term options and evening/weekend options
- transport or venues closer to home
- a permanent structure/venue
- improved toilet facilities

In line with Coed Lleol’s other social forestry work, we have seen huge positive benefits for individuals and communities engaging with nature-based activities, and this trend is also shown in the research. We know that, not only does spending time in nature improve wellbeing, reduce stress-related markers and improve mental health outlooks – especially in deprived communities - but an improvement in feeling connected to nature has been shown to increase pro-environmental and pro-conservation behaviours. At this time of climate and biodiversity crisis, this two-fold benefit to people and the natural environment should not be underestimated.

12. Lost Peatlands Story (4D)

12.1. Summary

This programme set out to tell the story of landscape change and connect local people and visitors to natural and historic heritage. By doing this, awareness raising of the area’s wealth of history was achieved.

A large amount of research was carried out in the development phase of the project (found in the Conservation Plan) and set a good base of information to expand upon during the delivery phase. To enhance the baseline data, much effort was focussed on collecting information specific to project communities by engaging directly with residents and history groups. As such, 54 people contributed to the Lost Peatland Story outputs through meetings and events.



Figure 50: Glyncorrwg looking N West - 1938 - Copyright 'The Francis Frith Collection'

12.2. Outputs

There were several platforms used to disseminate information gathered through the Lost Peatlands Story work stream.

The Lost Peatlands Explorer App (see 14.2) enabled site specific information to be communicated to users in situ. This digital output is the project's flagship method of raising awareness on local heritage. As a guided walking app, users are alerted when at points of interest in the landscape and will receive a wide variety of information ranging from myth and legend, ecology and geology, plus personal accounts of local history. Voice recordings recount resident's stories such as their time as a youth in the uplands, industrial era anecdotes and ancient history legend, leading to a personal touch when celebrating the area's history.

The project website is another digital output where the story of landscape change is told in a more formal and time-line focussed way for online visitors. Much of this work involved collating all information gathered and condensing it into a more focussed piece of literature, which was carried out by the project team and volunteer students of history at Swansea University. In addition, several YouTube videos were produced that didn't specifically cover the Lost Peatlands Story but did cover landscape change and natural heritage in the area.

Other methods of communicating the Lost Peatlands Story were at public events (e.g. guided walks would usually include site specific heritage details) and at the project celebration and conference, where 'Tales from the Lost Peatlands' was written and performed by a professional storyteller. Heritage information has also been included in the Lost Peatlands Learning Resources packs for schools.



Figure 51: Alan Davies records his account of a childhood playing on Pen Pych Mountain. This story can be found on the Lost Peatlands Explorer App. Image LPSW

12.3. Discussion: Successes, Challenges, Lessons Learned & Recommendations

The successful collection of local heritage data has enabled existing literature to be enhanced with more niche and local pieces of cultural information on the local landscape. The project has also succeeded in pioneering new and innovative ways of communicating heritage through the Mobile App.

The challenge faced was how best to communicate, present and record this information, and although solid outputs were created and awareness of local heritage is considered to have been raised, there is plenty more opportunity to further this work.



Figure 52: Community members in the Rhondda valley offer their local tales for the mobile app. Image LPSW

In a multidisciplinary project with staff covering a range of topics and themes, specific skill sets and experience relating to heritage and storytelling were limited. With greater staff resource dedicated to this important element of the project, an improved, more detailed and better co-ordinated approach to such raising awareness and information collection could be achieved.

Lessons were learned during the collection of historic information, in that much of the existing narrative on local history – whether it be first-hand coal mining tales or entertaining tales of local heroes – may well be lost if efforts are not made to record them. It was also evident that knowledge on ancient history in the area is lacking. Whilst we have evidence of humans inhabiting the area since at least the Neolithic period, one local history professor has described the area as being somewhat of a 'black spot' in the literature for ancient history.

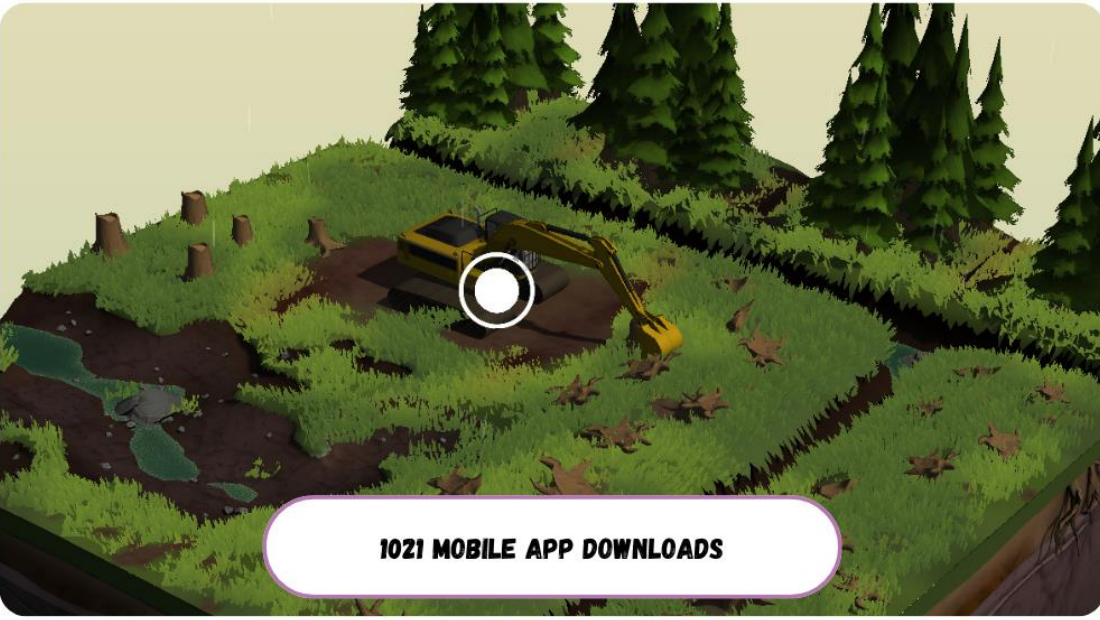
Local history groups, public bodies and other organisations do a fantastic job of gathering information and stories, but further support to allow all knowledge to be made available to the wider public is needed. Through the arts, digital media, events (in person and online) and formal record keeping this is possible, but in a fast-moving world of developing communication tools, ample resources and imagination is needed to safeguard our cultural heritage for future generations.

P.5 Engagement & Promotion

Snapshot

Heritage Fund Outcomes

- HF1 - A wide audience have been engaged
- HF3 - Heritage has been identified & is better explained
- HF5 - People have learned about local heritage & engaged with it
- HF6 - People have greater health & wellbeing from awareness raising activities
- HF7 - The area is a better place to live, work or visit



1021 MOBILE APP DOWNLOADS



28 VIDEOS & 10 PRESS RELEASES

Lost Peatlands - ITV Wales News Report

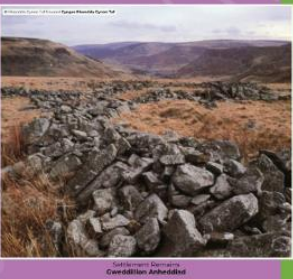
A Project Community Wild Space
Prosiect Mannau Gwylt Cymunedol

HENDRE'R MYNYDD



HERITAGE TREFTADAETH
Hendre'r Mynydd, translated to 'Old Mountain Village', is the remains of an unenclosed Iron Age settlement. The site was excavated in 1921 and the small amounts of iron and evidence of leather found suggest a seasonal nature to the site's occupation. Commercial forestry and wind farms are now evident in the landscape but, even under changing land uses, peat remains holding water, carbon and stories of the past.

Gweddillion anheddiad heb ei amgáu o Oes yr Haearn yw Hendre'r Mynydd. Pan gloddwyd y safle yn 1921 darganfuwyd rhai gweddillion haearn a lleidr a awgrymai fod y safle yn anheddiad tymhorol. Coedwigiaeth fasnachol a ffermydd gwyrn sy'n ffermllaw yn y tirlun erbyn hyn ond hyd yn oed pan fydd allan, of gwlwg o ddn ddefnyddiau tir newidol, mae'r mawr yn dal yno, ac yn storio nid carbon a dŵr yn unig, ond hefyd hanesion o'r gorffennol.



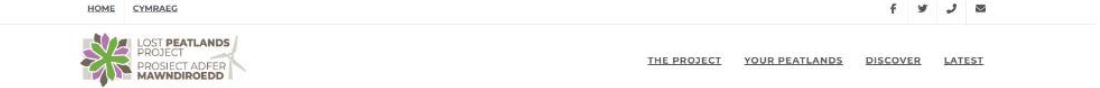
BIODIVERSITY BIOAMRYWIAETH
The ring of cwms that encircle the landscape are the birthing places of the glaciers that carved out the Rhondda Valley. A cooler and wetter climate 7000 years ago saw the arrival of Sphagnum mosses and sedges, causing peat bogs to establish. Formed here from the slow breakdown of bog mosses, blanket bogs in the uplands of the valleys provide wetland habitat for Water Vole and amphibians. Other upland habitats such as heathland are home to reptiles, including Adders.

Y cych o gymoedd sy'n amgáu'r tirlun yw'r mannau lle ganwyd y rhewlffoedd a gerffodd Gwm Rhondda. Arweiniodd hinsawdd oerach a gwlybach, 7000 o flynyddoedd yn ôl, at ddyfodoliaid y mwgwyn a'r hiesig, a sefydlu mawngorydd. Mae'r gorffwrdd a ymfurfiodd yma, ar ucheldir y cymoedd, wrth i ffwglaun' gors ymddatod yn araf, yn darparu cynefnoedd gwlyptri ar gyfer Llygoden Brengron y Dŵr ac amffibïaid. Mae cynefnoedd eraill yr ucheldir, megis rhostir, yn gartref i ymlusgiaid, can gynnywsia y Wilber.



FIND OUT MORE DARGANFOD MWY
The site sits adjacent to the Pen y Cymoedd windfarm.

6 INTERPRETATION PANELS



22,500 WEBSITE VISITS & 2808 SOCIAL MEDIA FOLLOWERS

13. Engagement & Promotion (5A)

13.1. Summary

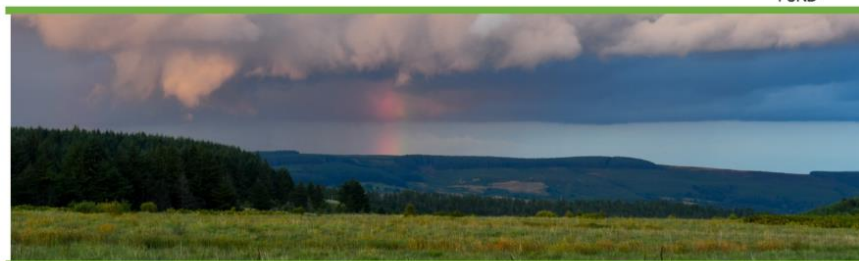
The project amplified its activity through a variety of online and in-person methods. A varied range of news and updates was continually promoted throughout the delivery phase and awareness of local efforts to conserve nature, and heritage was without doubt raised.

13.2. Newsletters & Leaflets

With a mailing list of 668 at project end, followers of the project were informed of activity via newsletters and email updates. Newsletters were themed by season and summarised project work carried out and any significant developments or upcoming dates. A total of 8 newsletters were shared quarterly in year 1 and 3, with preference of contributing to partner and stakeholder newsletters in year 2 (totalling 4).



Autumn Newsletter October 2024



AS SUMMER COMES TO A CLOSE AND NATURE MOVES INTO SLOW MODE, WE WITNESS THE BURST OF BEAUTY THAT AUTUMN BRINGS

And it's not only nature that's winding down - the Lost Peatlands Project is also - as we enter the last five months of work delivery.

In this newsletter we'll reflect on a summer of conservation, community outreach and artistic creation that has enabled the Partnership to bring real change to the South Wales landscape.

We'll also detail what's lined up for the remainder of the project as we celebrate this significant funding investment for the region, provided with support, by the National Lottery Heritage Fund.

Hundreds of leaflets were shared at locations within the community such as libraries & leisure centres and were also used at CWS sites to promote project activity. Physical promotion materials were also shared to the wider public at multiple conferences and events.

13.3. Press Release

A total of 10 press release articles were produced during the delivery phase ranging from peat restoration updates to the creation of the 'Bog Song' by school pupils. The project also featured in an ITV Wales news report in 2023, and the project's knowledge and access facilitation contributed to a nature programme presented by Iolo Williams ('Iolo's Valleys') which was based in and around the project area. Examples can be found below:

<https://www.insidermedia.com/news/wales/major-peatland-site-restored-with-funding>

<https://www.rctcbc.gov.uk/EN/Newsroom/PressReleases/2024/October/ThePowerofthePeatBogsHowpupilsturnedtheirenvironmentaleducationintoasong.aspx>

<https://www.youtube.com/watch?v=D8jff2l6isw>

13.4. Social Media

Facebook, X and Instagram were the main platforms for social media utilised by the project. Collectively, 2808 followers across all profiles (target 2100) have been updated regularly with project work. This method of marketing is by far the most effective as the vast majority of people are active users on at least one social media site. A series of strategies to enable all project information to be shared was devised by the team, resulting in an average of 2 posts per week being produced.

<https://www.facebook.com/LostPeatlands>

<https://x.com/LostPeatlands>

<https://www.instagram.com/lostpeatlands/>

could be delivered by allocating dedicated staff resource or external consultant contracts for communications.

A marketing strategy was devised in the development phase which suggested an approach for effective outreach, and where possible the project team carried out its recommendations. However, the team found it challenging to follow the strategy fully with other project activities being the main focus of their work., It was therefore necessary to select and implement the basic methods provided that were achievable for project staff. A large part of the strategy focussed on target audiences, and with such a wide range to attract given the extensive variety of project outputs, it was at times difficult to ensure the suitable strategy for specific events was being followed. However, through the collection of demographic data, it is possible to assess successes and lessons learned in reaching our target audiences.



Figure 2: Bubble diagram of key demographic information for Lost Peatlands community engagement

Figure 54: Demographic data helps identify target audience participation for the health and wellbeing programme/ Source: Coed Lleol Final Evaluation Report

Appendix C & G provides further detailed analysis on survey data collected from project participants.

The typical demographic profile for a Lost Peatland’s participant is a white, middle-aged female, who is in employment. It is also evident that the majority of those people engaged were from within or nearby the project area, confirming the communities that were intended to be reached have been. The health and wellbeing programme was particularly successful and engaged people in need from deprived areas in local communities, as shown in the below analysis:

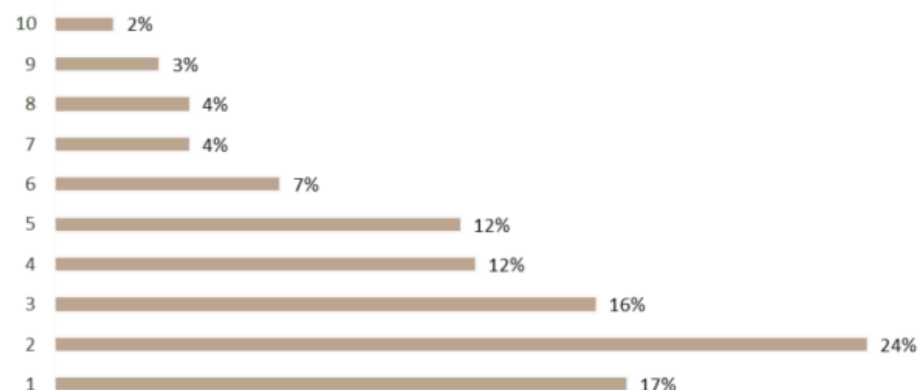


Figure 3: Distribution of participants by post code, according to the Welsh Index of Multiple Deprivation, with 81% living in the most deprived areas of Wales (categories 1 to 5) (n=230)

Figure 55: Demographic data shows local people have been engaged by the project

Engaging large numbers of people from BAME backgrounds proved difficult, simply due to the lack of presence of these communities in the area. This is confirmed by Welsh Governments 2021 census data, with both NPT & RCT being in the lowest category ethnic communities, which are only further reduced in the Valley towns within the project area. Therefore, efforts to engage and invite groups from nearby larger towns or cities to the project area would allow for a wider range of participation.

With regards to skills building and improving job prospects, the data collected shows that most participants were employed, suggesting the

project could have done more to reach unemployed residents. However, with the national average of unemployment at 3.8%, concerted efforts are needed to engage those people looking for work. Working with organisations, groups and charities to offer voluntary roles would bring focus to this element should it be a priority in future.

Finally, with regards to demographic data, despite the project having worked with schools and colleges, possibly more could have been done to increase outreach to younger generations by both working with groups (e.g. the Youth Service) and considering the nature of messaging and digital communications methods.

It must be noted that during the project life cycle, technology itself changed significantly. Social media platforms which were once suitable for specific reasons may not be fully suitable now, and ever-changing trends of how users engage with technology (i.e. reels and stories now being favoured over posts) calls for an adaptive approach to content creation and message sharing.

It would therefore be recommended that for high-level-activity projects like this, communications must be a key consideration during the planning process. It is felt that with ample resource and support, engagement levels could be improved, meaning educational messages could be easier to communicate and awareness of project themes could be raised.

14. Digital Outputs (5C)

14.1. Summary

To further efforts in attracting people to the project area and sharing knowledge on project deliverables, the use of digital assets proved extremely useful. Arrangements for post-project maintenance of these assets has been made, with developer support and a Content Management System in place for the App., and NPT Council IT department responsible for the website's longevity.

14.2. Mobile App.

The Lost Peatlands Explorer app. can be found on any app store and is free to download. Co-designed with an experienced creative developer over the space of 1.5 years, this well-received digital asset brings together the projects waking routes, peatland and community sites, and the wealth of heritage the area has to offer.

With its main function as a guided walking app., users can select 9 different walks to follow heritage trails at project sites. As walkers move through the landscape, 'Bog Dog' will alert users to points of interest (POI's), where information on local history, wildlife or anecdotes is provided.

Most POI's are text based and summarise interesting facts with the option to find out more through links to partnership and other websites. There's also voice recordings on each trail, where volunteers have provided their own stories and knowledge to bring a personal touch to the experience. In addition, there are Augmented Reality POI's where people can virtually use an excavator to carry out peat restoration. For the intrepid explorer, the further the distance covered and more trails that are complete, the 'My Peatland' game will be unlocked in stages and badges awarded thus offering a gameplay element to the app.

This interactive educational app can be used by a wide range of ages and seeks to build confidence for people to access this landscape and improve their own health and wellbeing. Whilst the aim is to get people out walking and learning, for those who can't easily access the area, a function to unlock all features was installed to allow full use at any location.

At project end, the total number of downloads was 1021 surpassing the target of 1000.

14.3. Website

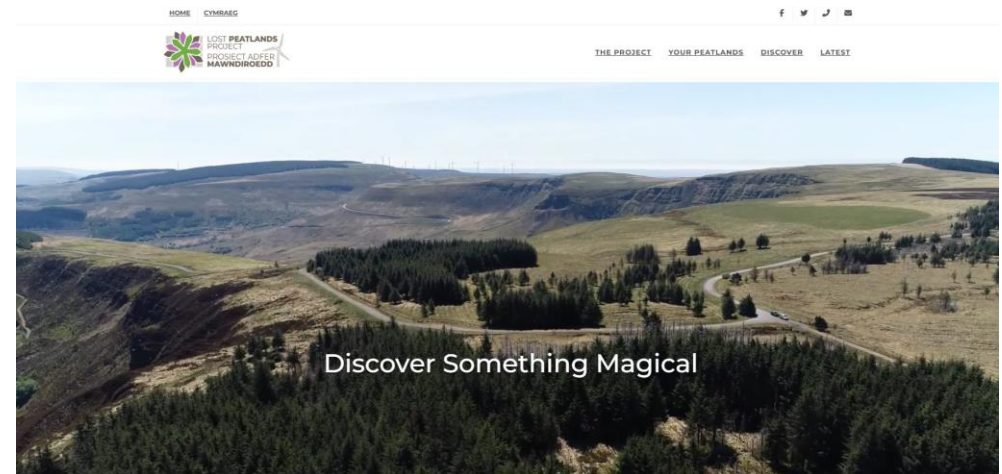


Figure 57: The Lost Peatlands website: <https://www.npt.gov.uk/lostpeatlands>

The project website has proved an invaluable tool for signposting newcomers to find out more about the project and to allow participants to check what was available in terms of events.

Hosted by NPT Council, the site has been visited 22,500 times (target 25,000) during the delivery phase and was a priority to set up immediately.

There are multiple pages to navigate that offer detail on the partnership background, its aims and objectives, all work carried out and any current news. It also has a map and dedicated pages for each project site, along with a Bog Blog and gallery of images.

14.4. Discussion: Successes, Challenges, Lessons Learned & Recommendations

The development of the mobile app and website have been vital in achieving various project goals, but especially in terms of people engagement and awareness raising.

The Lost Peatlands Explorer App

The App encourages communities and visitors to explore the uplands of Neath Port Talbot and Rhondda Cynon Taff, reconnecting them with the stories and heritage of their landscape and helping them to understand its importance for wildlife conservation and carbon sequestration.

'Bog Dog' will guide visitors along different trails in the area, allowing them to unlock information about their heritage and natural history as they explore.

With Augmented Reality, visitors will be able to see restoration in progress and control their own virtual excavator.

They'll also be able to restore their own virtual peatland by collecting tools and processes to gain an understanding of how and why peatland restoration is carried out.

Not able to visit the Project Area?
You can still access all content by following these steps:

1. Go to settings menu and toggle 'Offsite mode'
2. To unlock 'My Peatland' stages, when on 'Map' go to Settings and press 'Unlock Next Stage' (x20 stages)
3. Download all trails to view Bog Spots and AR zones

www.npt.gov.uk/lostpeatlands
lostpeatlands@npt.gov.uk

Figure 56: The Lost Peatlands Explorer App. is available to download on all app stores for free. Discover something magical!

The innovative and modern mobile app. has received very positive verbal feedback from users ranging from peatland experts to families exploring their local outdoor space. As a learning tool, we expect important messages have also been communicated in a fun way which can be accessed both with or without connection to the internet (i.e. offline mode).

The collection of information and recordings required a large effort from project staff and captured tales that may well have been lost through the decline of older generations.

Despite the target of downloads being achieved, there could have been many more with a focussed marketing campaign to advertise the app. Efforts were made through video creation, social media posts, and way marker post roundels with QR codes, however, given the emergence and popularity of this technology, there may have been other opportunities to publicise further. Further challenges revolve around post-project maintenance, and it is highly recommended that this arrangement is built into costings during the procurement phase. One lesson that the project did act upon following advice from another NLHF funded project, is that whilst developing a mobile app., the end user/target audience should always be considered throughout the process. This was particularly important to consider for a landscape scale project like this, where mobile signal and access were pertinent factors.

The website creation was eased by assistance from NPT IT staff, although ongoing maintenance and updates were required to be undertaken by project staff. Whilst the functioning and aesthetics of the website are ample, more flexibility with what could be included on the website (e.g. downloadable documents or more interactive mapping) could have been achieved by using a website outside the control of a local authority.

It would therefore be recommended that for digital outputs like these, the end user of the product must be considered from the outset and all limitations be identified as soon as possible during planning. A proper marketing campaign must also be factored in to planning to allow additional users to access these products.



Figure 58: hikers navigate the mid section of the peatland way at Pen y Cymoedd windfarm. Image LPSW

P.6 Project Management

Snapshot

Heritage Fund Outcomes

- HF1 - Many people have engaged with project
- HF2 - Heritage condition has been improved
- HF3 - Local heritage is better explained & understood
- HF4 - Skills have been developed & used
- HF5 - Information has been disseminated
- HF6 - People have greater wellbeing from project activity
- HF7 - The area is a better place to visit & explore



15. Partnership (6A)

15.1. Summary

All organisations played an important role throughout the delivery phase. To ensure all project outcomes were realised, the skill set, knowledge and resource of each partner was critical in implementing quality outcomes and facilitating all project activity.

15.2. Steering Board

Each partner nominated lead contacts who helped to monitor and inform the project team throughout the delivery phase. Meetings were held every quarter, allowing regular project manager updates on all work streams and any matters arising. Issues and solutions were dealt with in a timely manner, and collaboration between partner organisations allowed the full delivery of work programmes.

Helpfully, most Steering Board members remained in place for the duration of the project, allowing familiarity and experience to be built. Added benefit would have been realised had the Steering Board members remained in place from the Development Phase leading through to the Delivery phase, however this was not able to be the case for all organisations. There was an addition to the Steering Board after year 1, when two individuals from the Stakeholder Group joined to ensure input from the community and external organisations formed part of decision making.

Table 5: Steering Board members

Name	Organisation	Job Title
Rebecca Sharp	NPT Council	Countryside & Wildlife Team Leader
Rhys Jones	NRW	Conservation Land Management Team Leader – South West

Professor Cindy Froyd	Swansea University	Professor of Biosciences
Simon James (formerly Ian Baker, retired)	Coed Lleol	CEO
Richard Wistow	RCT Council	Senior Ecologist
Robin Cox	Vattenfall	Environmental Specialist
Charles Hipkin	NPT Local Nature Partnership	Chairman

15.3. Stakeholders

A wide range of stakeholders were engaged throughout project delivery, and collaborations played a big part in project delivery (Appendix E). A stakeholder group was set up and soon decided to meet more than once per year as originally planned, and as such 5 stakeholder meetings were held online, and 1 on site. On average, around 15 people contributed to these meetings with some good collaborative outcomes, however the bulk of stakeholder engagement took place on a one-to-one basis with the project.

15.4. Working Groups

Various working groups were set up to enable outreach and inclusion for those outside of the partnership or stakeholder list. The various groups included communications, community group, education and health and wellbeing. Most met on an annual basis, but some were only required to plan particular work packages e.g. Lost Peatlands Story & teacher training

15.5. Discussion: Successes, Challenges, Lessons Learned & Recommendations

There is little doubt that more was achieved as a partnership than would have been possible for each organisation on their own. Moreover, a variety of informed points of view and input led to a more holistic approach to delivering a multi-disciplinary landscape scale project.

The Steering Board functioned as expected, and met enough to stay informed and effective, but also allowed the project team autonomy to deliver work in an efficient way. Time pressures on all members in their day-to-day roles was experienced, however good effort was made to stay connected and helpful when needed most. The only recommendation would be that for groups like this, more in person meetings and knowledge sharing workshops would likely enable further collaboration and learning between organisations.

The working groups were also critical in arranging everything needed to enable a wide scope of deliverables. Challenges were met with the Communications group, who met quarterly in year 1 to collaborate and share details for ongoing campaigns but met infrequently thereafter. This was mainly due to staff changes and time pressures within each organisation (including the project team) which made group sustainability difficult. However, collaboration in communications was carried out, but more so on a one-to-one basis. The community and education groups proved successful to inform the relevant work programmes, as did the health and wellbeing stakeholder events. These types of groups could have been re-framed as awareness raising and information gathering events, which may have attracted more people who may not want to commit to being part of a formal group.

Working with stakeholders was another critical element for success, and despite some key organisations not being able to get involved as expected, new stakeholders continuously came to light, and the region is covered by some fantastic initiatives. More time and resource to synthesise these organisations could well prove beneficial in improving the region as a whole. The partnership, having a landscape-scale environmental conservation, heritage and outreach scope, would be well placed to contribute or even orchestrate this type of regional collaboration.

16. Budget (6B)

16.1. Summary

The project has been delivered on budget without the need for extra funding, although additional income for both in-kind and cash match was realised and contributed to outcomes.

The original and forecasted project total was £2,804,847

The actual and realised project total was £2,920,462

The larger 'actual total' relates to additional cash and non-cash contributions realised during the delivery phase and is detailed below.

16.2. Income

Income was received in a variety of means:

1. Grant cash contribution – NLHF
2. Partner cash contributions – all partners & Vattenfall
3. Non-cash contributions – partner time
4. Non-cash contributions – volunteer time

Table 6: All 'cash' income streams for the project

Cash Contributions	Expected (£)	Received (£)
NLHF Grant	1,563,000	1,563,000
Vattenfall (PYC HMP)	763,500	770,565
NPT Council	8,000	15,659
RCT Council	2,000	2,000
NRW (Cash)	20,000	20,000
NRW (Monitoring)	8,640	8,640
Swansea University	3,300	3,300
Pro. Training Income	6,425	4,866
Total	2,374,865	2,388,030

Table 7: All non-cash / in-kind contributions for the project

Non-Cash Contributions	Expected (£)	Received (£)
NPT Council in kind	58,312	65,446
RCT Council in kind	6,363	6,530
NRW in kind	109,264	206,650
Swansea University in kind	177,293	196,719
Unskilled volunteers	12,750	9,110
Skilled volunteers	58,500	15,480
Professional volunteers	7,500	32,500
Total	429,982	532,434

16.3. Expenditure

NPT council administered all purchases and claims from partners, and to NLHF. The total amount of spend exceeded the amount forecasted to ensure project outcomes were achieved and was paid for using extra cash match income received.

The agreed costs headings relating to capital spend, salaries, overheads and project activity fluctuated in under/overspend, and the contingency and inflation amounts attributed to certain costs headings were utilised in full.

The following table summarises total spend for each cost heading, with a short narrative on significant over or underspend for each budget line:

Table 8: Breakdown of expenditure for the project

Cost Heading	Budgeted Amount (£)	Actual Spent (£)	Under / - Over Spend	Detail
Preliminary Works	2,868	4,036	- 1,168	Extra access counters for Peatland Way

Repair & Conservation Works	1,039,324	1,148,904	- 109,580	Restoration costs higher than expected
Other Capital Works	13,214	21,407	- 8,193	Way marker posts for routes higher than expected
Digital Outputs	107,480	103,450	4,030	Savings for website – NPT Council provided service for free
Professional Fees	1,320	600	720	Lower costs than expected
Staff Costs	641,541	666,393	- 24,852	Salary increases due to cost of living
Training for Staff	6,000	5,533	467	Lower than expected
Trainee Costs	25,754	34,291	- 8,537	Decision to retain trainee for 6 extra months to enable outreach
Training for Volunteers	19,438	11,014	8,424	Lower than expected volunteer uptake
Travel Expenses for Staff	43,400	47,441	- 4,042	Cost of living and Bog Bus hire
Travel Expenses for Volunteers	13,400	2,487	10,913	Lower than expected volunteer uptake
Event Costs	74,640	90,499	- 15,859	Surplus funds put towards conference and project celebration
Equipment and Materials	24,944	13,425	11,519	Lower than expected costs for Coed Lleol
Other activity costs	18,422	12,501	5,921	Lower than expected costs
Pro. Training Tutors	6,060	5,991	69	Extra cost for final trainer

Publicity and Promotion	1,500	1,154	346	NPT Council provided some printing for free
Evaluation	189,002	196,356	- 7,355	Extension of Swansea University monitoring
Welsh Translation	3,000	4,382	- 1,382	More translation needs than anticipated
Full Cost Recovery	20,684	18,105	2,579	Lower than expected costs
Contingency	110,771	55	110,716	Figure used to balance overspend in other cost headings
Inflation	12,103	6	12,097	Figure used to balance overspend in other cost headings
Total	2,374,865	2,388,030	- 13,166	This amount of 'overspend' relates to higher-than-expected cash match from PYC, with other slight overspend covered by extra cash match

16.4. Procurement

All tender processes were carried out in accordance with NPT Council / NRW policy and NLHF guidelines. No major obstructions to procurement were encountered, with bids being awarded on each occasion, however for knowledge sharing, the following large contracts were awarded:

1. Peatland Restoration: 3 contracts totalling £301,623 were awarded to Cwm Agricultural Ltd (sole bidder)
2. Sphagnum inoculation of sites: 1 contract worth £47,430 awarded to Beadamoss Ltd (2 bids received)
3. Mobile App: 1 contract awarded to Jam Creative Ltd worth £103,450 (12 bids received)

4. Project Evaluation: 1 contract worth £48,668 awarded to ERS Ltd (sole bidder)

The above excludes contracts for works at PyC windfarm which were procured and managed by NRW. All other purchases and contracts did not require a formal tender process.

16.5. Discussion: Successes, Challenges, Lessons Learned & Recommendations

Overall, the project has had great success in delivering outcomes by both utilising the funds available, as well as attracting more cash match income to cover the slight overspend needed.

Considering the many economic pressures experienced since 2021 (Brexit; Covid-19; war in Ukraine; Cost of Living crisis), it is notable that the nature of long-term funding provided by NLHF, with the ability to access contingency amounts and utilise underspent cost headings, has proven critical for successful project delivery. In addition, the adaptability of the core project team – who were in turn supported by project partner organisations – has allowed the proper reallocation of funds when they became available as the project moved through its phases.

The dedication from all partners (especially PYC windfarm with the highest amount of cash-match) is evident and has resulted in more cash and non-cash contributions than was expected, which was critical for the ability to claim all grant funding. As can be seen, all partner organisations committed extra time and resources towards the project, which in turn made up for a lower-than-expected non-cash element for skilled volunteers.

Lessons were learned in relation to costs for specific works – especially peatland restoration – however this does not come as a big surprise considering raised costs across the board. As can be seen, there are limited peatland contractors available in South Wales. This, however, has been reported to be the case throughout the UK and is not unusual for an emerging sector. Although this was considered a risk to project delivery and having more available contractors would ensure pricing is competitive, the

relationship between the project and the chosen contractor worked very well and the standard and efficiency of work increased rapidly.

Costs elsewhere fluctuated with savings made in some areas, and other cost headings not being utilised as expected, which allowed overspent cost headings to be covered. Careful and continuous budgetary monitoring can forecast these situations, however the risk to unexpected higher costs or non-availability of contracts or equipment remains permanent.

A cost related element not covered elsewhere was the arrangement for 2 trainee positions to join the core project team. The first trainee was recruited and part-funded through UK government's 'Kickstart' scheme. This allowed a young trainee to get involved with project activity over the space of one year and ultimately led to a budding career in education. The second trainee was core funded by the project as budgeted for, although it was decided to extend this contract to one year (part-time) by utilising surplus funds within the budget. This arrangement proved crucial in supporting the delivery team with its community outreach and ecological surveying, and with great experience gained, full time employment within the conservation sector followed for this individual. This type of staff role exemplifies the benefits it can bring to both project and trainee but also highlights the need for introductory opportunities to gain experience in the conservation sector.

It is highly recommended for grant awarding bodies to consider the many benefits long term funding can have for initiatives like this. Organisational sustainability relies on future planning and thus benefits from grants schemes like those offered by NLHF. It would also be recommended for projects to seek further funding to enhance core budgets. A blended approach to finance should be investigated from the outset of any project and would alleviate the pressures and risks of closing projects with trained and experienced staff.

17. Legacy & Sustainability

The arrangements for post project sustainability are detailed in the Legacy and Sustainability report.

In terms of site management for all HRA and CWS sites, the project partners – being the landowners – are taking full responsibility for these habitats and will manage them in accordance with the relevant management plans. For peatland sites on Welsh Government Woodland Estate, NRW will be managing these through the relevant Forest Resource Plans and will be classed as open land management for conservation purposes. The same applies for the other habitat types on CWSs, that are designated Sites of Importance for Nature Conservation and under control of NRW. Where CWS sites are owned by Local Authorities they will take on ongoing management of the habitats to ensure these areas are protected and enhanced where necessary.

To continually assess the impact of changes implemented by the project, monitoring through further data collection and analysis at sites will be carried out by the partnership. Swansea University will continue to incorporate the project sites in its teaching and research programmes throughout the ten-year post-project period, providing long-term ecological monitoring and evidence. This will be accomplished through student projects (following the protocols and strategy developed during the delivery phase) and through applications for follow-on grants, which if successful would significantly expand the evidence base and address key priorities identified. The University is committed to synthesising and robustly evidencing work in the project area to continue to contribute to best practice and the ongoing Lost Peatlands legacy.

The original project description had proposed that detailed vegetation monitoring would be completed by volunteers on an annual basis. The University's commitment following on from this would have been to conduct the data analysis on the information collected (through a student project). Unfortunately, the Citizen Science volunteer programme proved challenging to develop during the project. In reality, vegetation monitoring is not necessary on an annual basis, it was only suggested as such in order to maintain long-term continuity of project volunteers. Vegetation recovery is

unlikely to change significantly on an annual basis, therefore, to measure progress of recovery, a longer-time frame is necessary. With no need to support volunteer effort through regularity, it is appropriate to reduce the time between monitoring assessments to that most appropriate ecologically. The University intends to fill the volunteer surveyor gap by advertising a student project in year 5 to conduct in-depth vegetation monitoring. This will be dependent on student uptake and botanical expertise as well as health and safety issues (e.g. no lone working at remote sites) for such a field intensive project. Swansea University will work with project partners (NPT; Vattenfall; NRW) to match up with others working in the project area to enable student fieldwork.

In terms of asset ownership and maintenance, with the notable items consisting of the mobile app, website and welfare unit, NPT Council will ensure they are maintained and available for public use for at least 10 years post-project.

Legacy arrangements have also been built into the outreach work carried out, with school resource packs, tools and equipment being provided to the community. Ongoing support of local groups and stakeholders will be offered by each partner organisation through their duties of public care, as well as via the Local Nature Partnerships.

Lines of communication have been set up for public groups to engage with the partnership organisations, and it is envisioned that a co-operative approach to managing this landscape can be enacted. As an example, the regular maintenance and reporting of walking routes by the 'On Track' group will assist NRW in ensuring these permissive routes remain open to the public.

Where the overall aims, objectives and brand of the Lost Peatlands of South Wales is concerned, applications for further funding have been made and accepted, with the strong likelihood that the outcomes of this project will be expanded upon by working in a wider area, with more habitats and communities, and an added focus on heritage storytelling and communication tools. This gathered momentum is critical in delivering long

term change in a sustainable and inclusive way and can be capitalised on by continuing and expanding organisation collaboration. A one-year development phase to pilot and devise a new project in a far wider landscape will begin shortly after this project ends. Building upon the successes of the Lost Peatlands of South Wales Project - alongside addressing the lessons learned through evaluation - can be expected to deliver further beneficial outcomes for the region. With additional partners and a focus on attracting more blended funding options, the legacy of the project is well placed to deliver big change over a long-term period in South Wales.

18. External Evaluation

ERS was commissioned by NPT Council in October 2021 to undertake an independent evaluation of the Lost Peatlands of South Wales project and has proven useful in delivering a successful project. The evaluation began in September 2021, finishing in February 2025. Importantly, it has allowed for project activity validation and demonstrated value of investment for the grant funders, NLHF.

18.1. Preliminary & Mid Term Report

The preliminary report served as an opportunity to familiarise the project with evaluators and to devise ways in which to assess success and areas needing improvement. Being a multidisciplinary project with many outcomes expected careful consideration was needed to ensure the framework of project and participant feedback was in place before activity reached 'full speed'. Pleasingly, efficient methods and clear communication protocols were the result of early discussions which allowed the project team to proceed in the knowledge that impact was being assessed.

The mid-term report served as a checkpoint for both evaluators, the steering board, the project team and funders to ensure the plans in place were being followed and expected outcomes were being achieved. Areas of success were identified clearly, and suggestions for improvements recommended. This allowed approaches to be adapted where needed and provided assurance that things were moving in the right direction. The following statement summarises the conclusion of the mid-term report:

"Overall, the programme has had a successful first phase"

18.2. Final Report Summary

The final report provides a great overview of project activity, opening with a rationale to bring the project into context, and ending with successes, lessons learned and key recommendations for improvement. Its findings compliment those detailed in this report, but also covers topics and outcomes that were only achievable through the various evaluation methods and tools utilised in its own research. These tools included surveys, interviews, site visits/observations and focus groups. As such, a wider breadth of information has been captured than was possible for the core project team, and it is highly recommended to be read alongside this report. To summarise its findings, below are a few excerpts from the report's conclusion:

"The Lost Peatlands Project performed well across all areas, exceeding a number of targets and achieving most others..."

"Volunteers were engaged and supported across a range of areas, and whilst some challenges meant that certain outputs were below target, proactive work and diversion of resources helped to combat the shortfall..."

"The most vulnerable and hard to reach communities were targeted and supported by the project..."

"Partnership working was a key success factor for the project..."

"Challenges identified most notably a disconnect in communication between the design and delivery teams..."

"A range of positive outcomes were achieved across the breadth of the Lost Peatlands project..."

"The project has contributed towards best practice in the field of peatland restoration"

"The project indicates positive outcomes including increased connection to the landscape, with hope of an intergenerational shift as young people become more engaged"

The full report is available upon request to any of the project partners and will be made available on the project website.

19. Conclusion

The Lost Peatlands of South Wales Project has had a profound and lasting impact - not only on the landscape - but also on the people of South Wales. By prioritizing collaboration, flexibility, high environmental standards and community engagement, the project has achieved significant success in restoring valuable peatland habitats, while also fostering a deeper connection between local communities and their heritage. Along the way, the project's aims, as well as expected Heritage Fund outcomes, have been achieved successfully.

Through targeted conservation efforts, including habitat restoration, hydrological improvements, and monitoring, the project has made a measurable impact on both the local and wider environment. The restoration of peatlands significantly improves carbon sequestration, reduces greenhouse gas emissions, enhances water retention and increases the resilience of these vital ecosystems. These improvements contribute to local biodiversity conservation and have played a crucial role in revitalizing key wildlife habitats, leading to the return of both indicator and endangered species and a more balanced, self-sustaining ecosystem.

Despite facing challenges such as logistical constraints, economic pressures, and balancing conservation with land-use demands, the project has provided valuable insights and a replicable model for future peatland restoration initiatives. The well informed and adaptive approaches to carrying out physical repair works has resulted in significant improvements to bog functionality, whilst facilitating skills development for local contractors.

Beyond the immediate benefits for the local area, the Lost Peatlands Project has left a lasting legacy in the wider field of environmental conservation. By contributing to the development of best practices in peatland restoration, the project has not only influenced other schemes but has also helped shape discussions at academic and governmental levels, particularly at Swansea University and within the Welsh Government funded National Peatland Action Programme. The evidence and insights gathered through the project have proven invaluable, driving further interest in peatland restoration as a key strategy for addressing climate change. As a result, the project has provided a significant contribution to the growing body of research on environmental conservation and climate change mitigation. Ongoing monitoring and long-term management will be essential to sustaining the progress achieved and addressing any emerging environmental concerns.



Figure 59: Valley view at Blaencwm. Image - Lee Williams

In addition to its ecological impact, the project has been instrumental in targeting and supporting the most vulnerable and hard-to-reach communities. By engaging these groups in a range of activities, the project raised awareness of peatland restoration's crucial role in tackling climate

change and biodiversity decline, while also enhancing participants' physical and mental wellbeing. The initiative offered more than just environmental education; it served as a platform for individuals to reconnect with nature, renew their sense of community, access their landscape with confidence and rediscover cultural ties to the land that could be forgotten if not celebrated. The pride in local heritage and the renewed understanding of its intrinsic value were significant outcomes that will likely have a lasting effect on the communities involved.

Despite initial challenges, such as delays and occasional time/resource shortages, the project's ability to remain responsive to partner and community needs ensured that the majority of objectives were not only met but often exceeded. Volunteers and participants played a crucial role throughout, and while certain targets were underachieved, the overall experience for those who engaged with the project remained positive. Key lessons were identified relating to site accessibility, the regularity and marketing of events, and the need for community inclusive outreach. This reflects the importance of cultivating an environment where individuals feel supported and motivated to get involved and stay involved.

Perhaps one of the most meaningful outcomes of the project is its potential to foster an intergenerational shift in how future generation's view and engage with their natural environment. The project's focus on youth engagement and skill-building has created pathways for people to become stewards of the land, ensuring that the values of conservation, sustainability, and community are passed down for generations to come. The renewed focus on traditional skills, which may have previously been forgotten, has helped to revitalize local knowledge and practices, making them relevant for the modern-day context of environmental restoration and heritage appreciation.

One of the standout aspects of the project was successful partnership working, where each organisation contributed their unique expertise and resources to support the programme. In addition to the main partners, Vattenfall as a key stakeholder and match funding contributor has also been critical in supporting the project, through delivery of landscape-scale restoration as well as aiding in engagement/educational activity. These collaborations enabled a high quality of work and greatly expanded the

project's reach, ensuring that a diverse range of audiences were engaged and benefitted. However, the project also highlighted the need for improved communication within organisations, between the delivery teams and contractors, and with community stakeholders. This lesson emphasized the importance of early-stage collaboration and realistic project management strategies, ensuring smoother execution for future initiatives. Fortunately, the team's willingness to adapt and collaborate—both with the local communities and within their own ranks—proved to be an essential element in overcoming such challenges.



Figure 60: Forest and bog. Image LPSW

Ultimately, the project has not only contributed to ecological restoration but has also strengthened the social fabric of the local communities. It has created a model for future environmental projects, demonstrating the power of community-driven initiatives that can address both environmental and social challenges. The lessons learned here will undoubtedly shape future projects, inspiring similar efforts to engage local communities, restore damaged ecosystems, and build long-lasting, positive relationships between people and their natural surroundings.

Strong foundations have been laid for the future, demonstrating that through strategic conservation, community involvement, and sustained investment, it is possible to deliver multidisciplinary projects with various but connected outcomes. The knowledge gained through this initiative will serve as a blueprint for similar efforts across the UK and beyond. Looking ahead, securing additional resources, strengthening and expanding partnerships and acting upon lessons learned will be essential in continuing to build upon these successes.

The impact of this project will be felt for years to come, not just in the peatlands and towns of the South Wales valleys, but as a beacon of what can be achieved when communities, organisations and stakeholders come together to protect and nurture their natural heritage, for the benefit of both people and planet.



Appendix A

School Grounds Improvements Delivered

	Treorchy Comp	Penyreglyn Primary	YGG Ynyswen	Pen Afan Primary	Cymer Afan Primary	Croeserw Primary	Glyncorrwg Primary
Sphagnum Garden	X	X	X	X	X	X	X
Bug Hotels	X	X	X	X	X	X	X
Bird Boxes	X	X	X	X	X	X	X
Meadow Management				X	X	X	
Tree Maintenance		X		X		X	
Pond Restoration	X				X		
Wildflower Planters					X	X	X
Bird/Bee Bath				X	X	X	X
Bee Block							X
Frog Hotel					X		X
Willow Structures						X	
Bird Feeding Station							X
Hibernaculum							X

X Planned

X Additional



Appendix B

Table 2. Summary of projects and topics covered in studies undertaken by students from Swansea University

Theme / topic	Methods	2019	2019	2019	2021	2021	2022	2022	2022	2022	2022	2022	2022	2022	2023	2023	2023	2023	2023	2024	2024	2024	
		BSc	BSc	BSc	MSc	MSc	BSc	MSc	MSc	MSc	MSc	MSc	MSc	PhD	PhD	BSc	MSc	MSc	MSc	MRes	BSc	MSc	MRes
		Traynor	O'Leary	Williamson	Maddocks	Dodson	Sheehy	Guilford	Bennion	Jones	Pratt	Fulford-Roberts	Lamtali	Pickard	Hughes-Dowdle	Higgs	Chukwebuka	Brown	Roberts	Morgan	Millar	Rees	Cockwell
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Hydrological Condition	Peat water levels				Green					Green				Green									
	Water quality (carbon)				Green																		
	Peat & water chemistry													Green									
	Catchment modelling				Green				Green					Green									
Habitat Condition	Vegetation / land cover		Green			Green			Green					Green									
	Photography													Green									
	Conifer regeneration											Green	Green										
Peat Condition	Peat structure						Green							Green			Green						
	Soil CO ₂ emissions													Green									
	Heavy metal loadings	Green														Green							
	Carbon / Nitrogen ratio **	Green							Green					Green									
Species Monitoring	Invertebrates			Green																			Green
	Breeding birds																						
	Bats																						
	Microbial communities																						
National-level peatland condition	Peatland Condition Assessment														Green								
Additional Topics	Flood risk mitigation								Green														
	Water voles																	Green		Green			
	Lichens on trees																		Green				
	Forestry Productivity																			Green			
	Soil methane emissions													Green									Green

Blue = completed project; Pink = ongoing study.
 Green = research focus of the project against proposed topics.
 Grey** = topics not addressed by Swansea University. Re-prioritised monitoring objectives, expanding more relevant monitoring - see yellow topics.
 Orange = monitoring conducted by SU but not through a student project.
 Yellow = 'additional topics' identified and addressed by student projects that were not part of the project proposal.

Appendix C

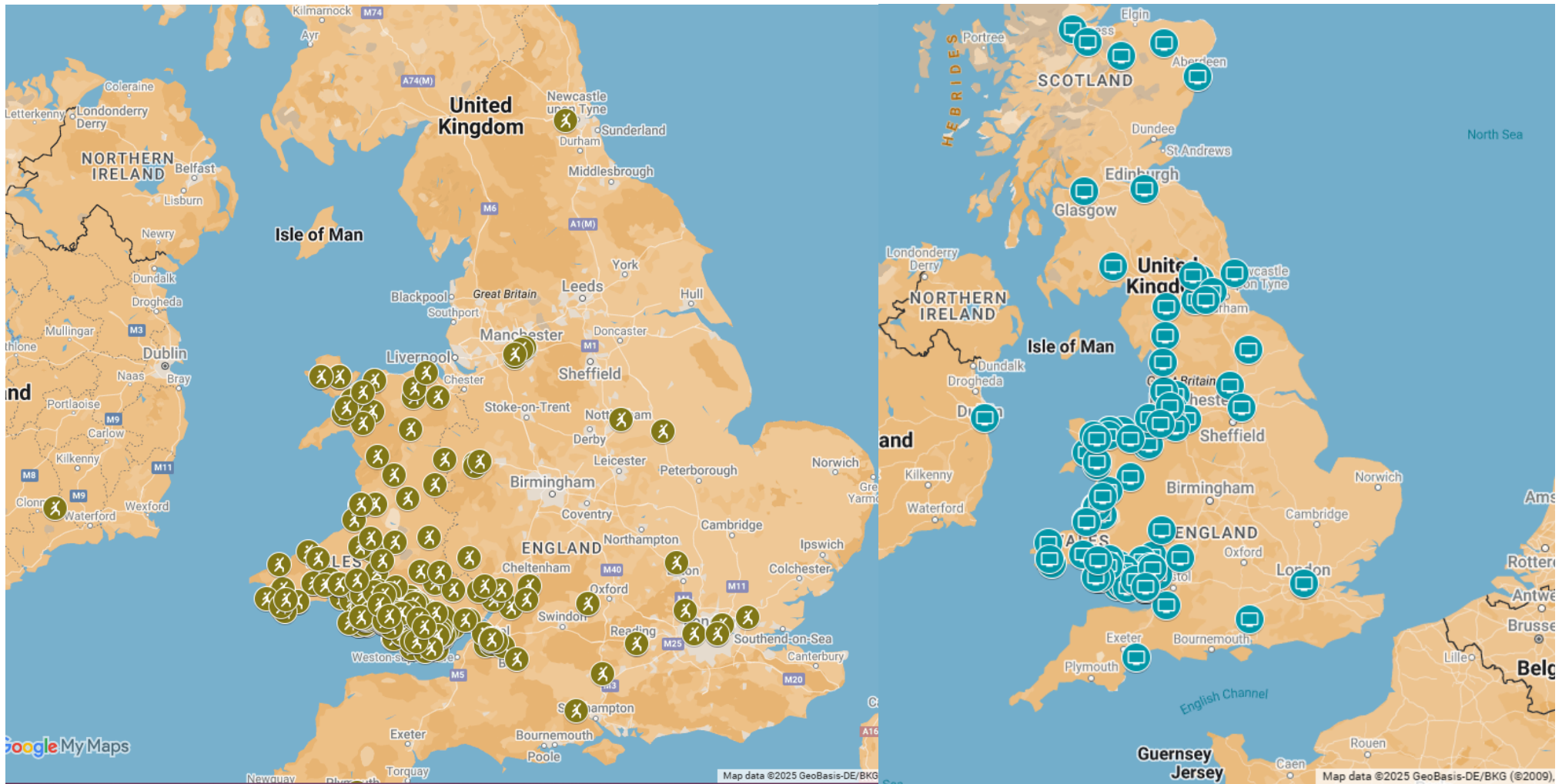


Figure 61: Location of project participants. Green for in person attendees; blue for online

Appendix D



Starred ***Events*** are space limited and will require separate Sign Up / Ticket



Starred ***Events*** are space limited and will require separate Sign Up / Ticket



Starred ***Events*** are space limited and will require separate Sign Up / Ticket

£ FREE £ Spring/Summer 2023 –Monday Evening Events Sign up once for full details or turn up on the day
Sign up here: <https://www.eventbrite.co.uk/e/565037792247>

Date & Time	Location	Event Type	Theme
03/04/23—18:00-21:00	Cwm-Parc CWS	Guided Walk, Talk & Survey	Spring Wildflowers
10/04/23—18:00-21:00	Cwm-Parc CWS	Guided Walk, Talk & Survey	Landscape & Geology
17/04/23—18:00-21:00	Cwm-Parc CWS	Guided Walk, Talk & Survey	Tree Identification
24/04/23—18:00-21:00	Castell Nos HRA	Guided Walk, Talk & Survey	Amphibians
01/05/23—18:00-21:00	Castell Nos HRA	Guided Walk, Talk & Survey	Water Vole
08/05/23—18:00-21:00	Gwynfi CWS	Guided Walk, Talk & Survey	Landscape & Geology
15/05/23—18:00-21:00	Gwynfi CWS	Guided Walk, Talk & Survey	Meadows & Pollinators
22/05/23—18:00-21:00	Gwynfi CWS	Guided Walk, Talk & Survey	Biodiversity in Forestry
29/05/23—20:00-22:00	Cwm Saerbren HRA	Guided Walk, Talk & Survey	Bats & Birds
05/06/23—18:00-21:00	Cwm Saerbren HRA	Guided Walk, Talk & Survey	Peatland Plants
12/06/23—18:00-21:00	Hendre Mynydd CWS	Guided Walk, Talk & Survey	Heathlands
19/06/23—18:00-21:00	Hendre Mynydd CWS	Guided Walk, Talk & Survey	Reptiles
26/06/23—18:00-21:00	Blaenrhondda CWS	Guided Walk	***Walking Week***
03/07/23—18:00-21:00	Blaenrhondda CWS	Practical Management Tasks	Non-Native Species
10/07/23—18:00-21:00	Blaenrhondda CWS	Guided Walk, Talk & Survey	Temperate Rainforests
17/07/23—18:00-21:00	Blaenrhondda CWS	Guided Walk, Talk & Survey	Otters
24/07/23—20:00-22:00	Castell Nos HRA	Guided Walk, Talk & Survey	Nightjar & Bats
31/07/23—18:00-21:00	Cymmer CWS	Guided Walk, Talk & Survey	Coil Spoil Habitat
07/08/23—18:00-21:00	Cymmer CWS	Guided Walk, Talk & Survey	Summer Wildflowers
14/08/23—18:00-21:00	Cymmer CWS	Practical Management Tasks	Non-Native Species
21/08/23—18:00-21:00	Glyncorrwg CWS	Guided Walk, Talk & Survey	Conservation Grazing
28/08/23—18:00-21:00	Glyncorrwg CWS	Guided Walk, Talk & Survey	Invertebrates
04/09/23—20:00-22:00	Glyncorrwg CWS	Guided Walk, Talk & Survey	Bats & Birds
11/09/23—18:00-21:00	Cregan HRA	Guided Walk, Talk & Survey	Peatland Restoration
18/09/23—18:00-21:00	Cregan HRA	Guided Walk, Talk & Survey	Peatland Plants
25/09/23—18:00-21:00	Cregan HRA	Guided Walk, Talk & Survey	Bats & Birds

£ FREE £ Spring/Summer 2023 –Tuesday Day Events Sign up once for full details or turn up on the day
Sign up here: <https://www.eventbrite.co.uk/e/565037792247>

Date & Time	Location	Event Type	Theme
04/04/23 - 10:00-15:00	Cwm-Parc CWS	Practical Management Tasks	Path Maintenance
11/04/23 - 10:00-14:00	Cwm-Parc CWS	Health & Wellbeing Workshop	***Green Wood Working***
18/04/23 - 10:00-15:00	Cwm-Parc CWS	Practical Management Tasks	Path Maintenance
25/04/23 - 10:00-15:00	Castell Nos HRA	Practical Management Tasks	Sphagnum Planting
02/05/23 - 10:00-15:00	Castell Nos HRA	Guided Walk, Talk & Survey	Water Vole Survey
09/05/23 - 10:00-15:00	Gwynfi CWS	Traditional Countryside Skills	***Outdoor Carpentry***
16/05/23 - 10:00-15:00	Gwynfi CWS	Guided Walk, Talk & Survey	Vegetation Survey
23/05/23 - 10:00-14:00	Gwynfi CWS	Health & Wellbeing Workshop	***Green Wood Working***
30/05/23 - 10:00-15:00	Cwm Saerbren HRA	Guided Walk, Talk & Survey	Breeding Birds
06/06/23 - 10:00-15:00	Cwm Saerbren HRA	Practical Management Tasks	Path Maintenance
13/06/23 - 10:00-13:00	PYC Windfarm	Guided Walk, Talk & Survey	Renewable Energy
20/06/23 - 10:00-15:00	Hendre Mynydd CWS	Practical Management Tasks	Path Maintenance
27/06/23 - 10:00-15:00	Glyncorrwg CWS	Traditional Countryside Skills	***Outdoor Carpentry***
04/07/23 - 10:00-15:00	Blaenrhondda CWS	Practical Management Tasks	***Balsam Paper Making***
11/07/23 - 10:00-15:00	Blaenrhondda CWS	Traditional Countryside Skills	***Outdoor Carpentry***
18/07/23 - 10:00-15:00	Blaenrhondda CWS	Guided Walk, Talk & Survey	Butterflies & Moths
25/07/23 - 09:00-16:00	Blaenrhondda CWS	Traditional Countryside Skills	***Dry Stone Walling***
01/08/23 - 10:00-15:00	Cymmer CWS	Practical Management Tasks	Non-Native Species
08/08/23 - 10:00-14:00	Cymmer CWS	Health & Wellbeing Workshop	***Outdoor Yoga***
15/08/23 - 10:00-15:00	Cymmer CWS	Guided Walk, Talk & Survey	Otter Survey
22/08/23 - 10:00-15:00	Glyncorrwg CWS	Practical Management Tasks	Non-Native Species
29/08/23 - 10:00-15:00	Glyncorrwg CWS	Health & Wellbeing Workshop	***Green Wood Working***
05/09/23 - 10:00-15:00	Glyncorrwg CWS	Practical Management Tasks	Path Maintenance
12/09/23 - 10:00-15:00	Cregan HRA	Guided Walk, Talk & Survey	Peatland Plants
19/09/23 - 10:00-15:00	Cregan HRA	Practical Management Tasks	Path Maintenance
26/09/23 - 10:00-15:00	Cregan HRA	Guided Walk, Talk & Survey	Peat Restoration

£ FREE £ Spring/Summer 2023 –Weekend Events Sign up once for full details or turn up on the day
Sign up here: <https://www.eventbrite.co.uk/e/565037792247>

Date & Time	Location	Event Type	Theme
29/04/23 - 10:00-15:00	Castell Nos HRA	Guided Walk & Talk	Bog Day
28/05/23 - 10:00-15:00	Cwm Saerbren HRA	Guided Walk & Talk	Bog Day
01/07/23 - 08:00-17:00	Dare Valley CP	Guided Walk & Talk	***Peatland Way Opening***
23/07/23 - 10:00-15:00	Castell Nos HRA	Guided Walk & Talk	Bog Day
29/07/23 - 10:00-15:00	Blaenrhondda CWS	Wildblitz & Family Fun Day	Local Wildlife, Arts & Crafts
12/08/23 - 10:00-15:00	Glyncorrwg	Wildblitz & Family Fun Day	Local Wildlife, Arts & Crafts
30/09/23 - 10:00-15:00	Cregan HRA	Guided Walk & Talk	Bog Day

For more information here's how to contact us;
 @LostPeatlands Email - lostpeatlands@npt.gov.uk Call - 07791638201 www.npt.gov.uk/lostpeatlands

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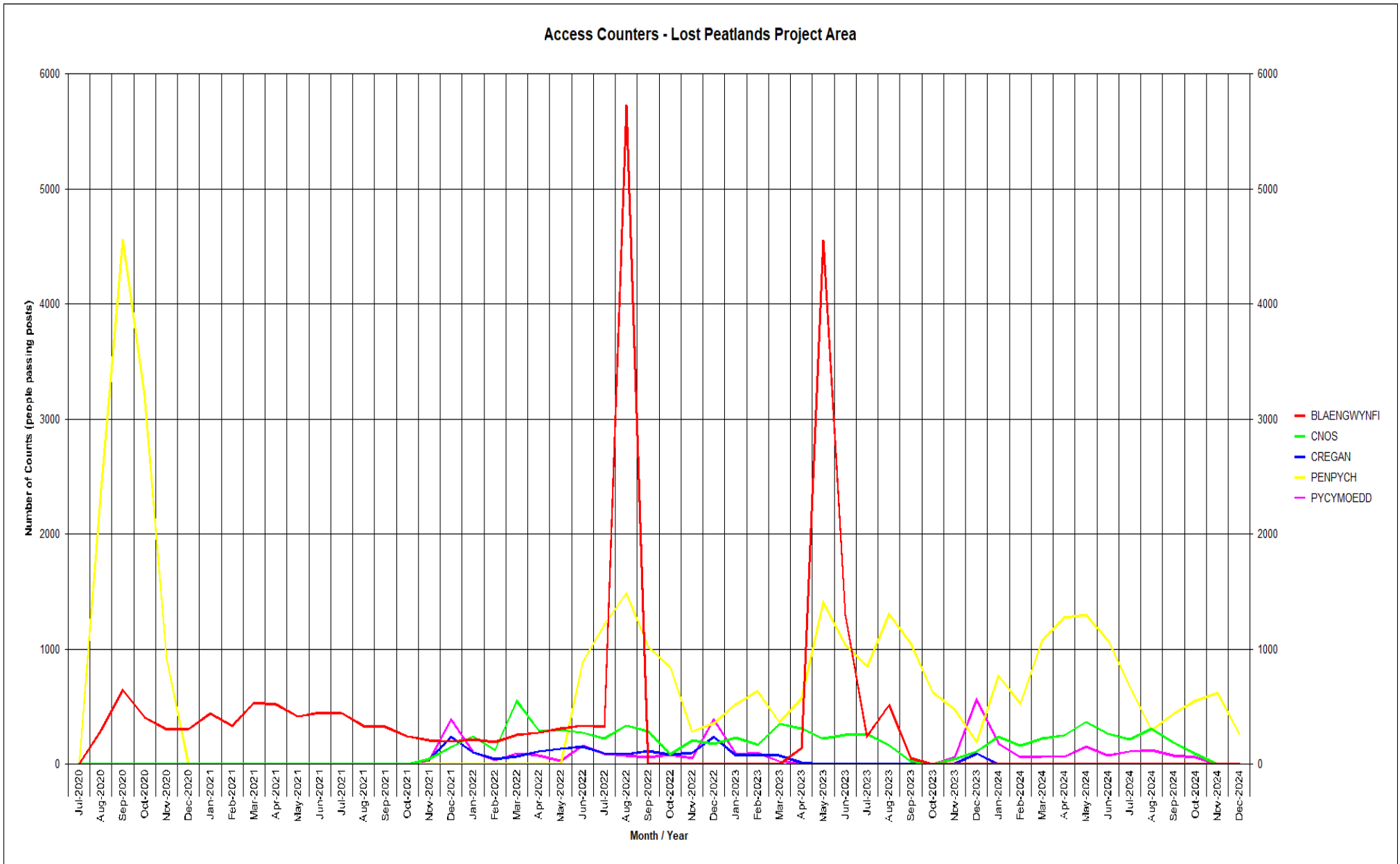
Appendix E

Partners & Stakeholders



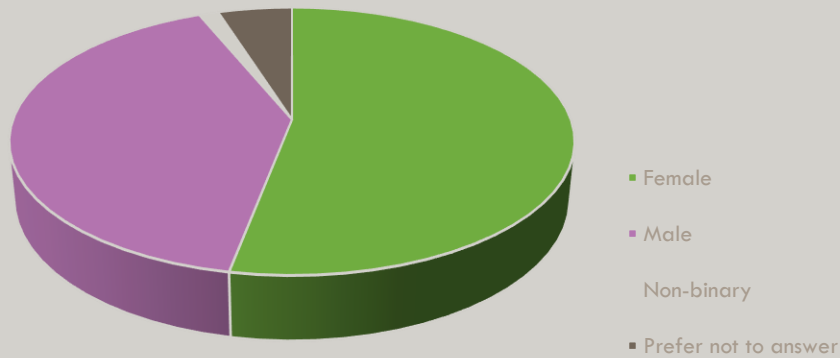
Appendix F

Access Counters - Lost Peatlands Project Area

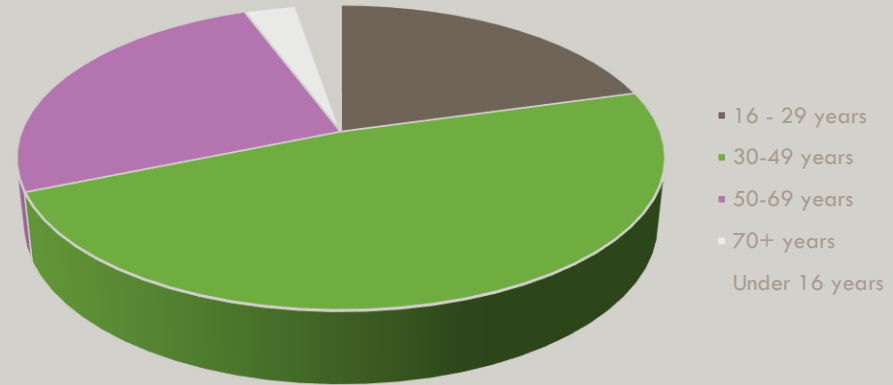


Appendix G

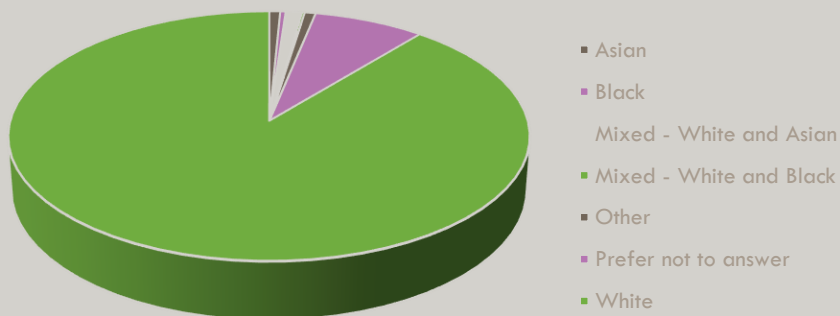
Sample: Gender of Public Event Participants (excluding Health & Wellbeing Programme): sample size 528



Age of Participants (excluding Health & Wellbeing Programme). Sample size: 528



Ethnicity of Participants (excluding Health & Wellbeing Programme). Sample size: 528



Employment Status (excluding Health & Wellbeing Programme). Sample size: 528

