Pennine PeatLIFE

After-LIFE plan

Peninne PeatLIFE delivery partners

Peninne PeatLIFE is funded by

Contents

Abbreviations

BB- Blanket Bog
ES- Ecosystem Services
PC -Peatland Code
AS- Agri-environment schemes
PPL - Pennine PeatLIFE
DCC – Durham County Council
YWT – Yorkshire Wildlife Trust
FOB – Forest of Bowland
LCC – Lancashire County Council
PES – Payment for ecosystem services
UAV –Unoccupied Aerial Vehicles
AONB – Area of Outstanding Natural Beauty
IUCN UK PP- International Union *for the Conservation of Nature UK Peatland Programme*
SSSI - Site of Special Scientific Interest
NGO – Non-Governmental Organisation
EA – Environment Agency
YW – Yorkshire Water
NWL – Northumbrian Water Limited
UU – United Utilities

1. Introduction

Pennine PeatLIFE was a partnership project that began in 2017, investing €6.5 million into the restoration of 1,353 hectares of blanket bog in the protected landscapes of the North Pennines, Yorkshire Dales, Forest of Bowland and Nidderdale. Pennine PeatLIFE was led by the North Pennines AONB Partnership in collaboration with Yorkshire Wildlife Trust and the Forest of Bowland AONB Partnership. The project received €3.8 million from the European Union LIFE programme, and was co-financed by the Environment Agency, Northumbrian Water, United Utilities and Yorkshire Water. Restoration work was carried out across various sites with SPA, SAC and SSSI designations for the conservation of nature.

2. Aims and objectives

The aim of the Pennine PeatLIFE (PPL) project was to demonstrate and evaluate geographically appropriate blanket bog restoration techniques suited to the harsher climatic environment of northern England, and to contribute to the development and showcase a financial payment system for ecosystem services (PES) mechanism - the UK Peatland Code. The project directly targeted the restoration of 1,353ha of badly eroded blanket bog within Natura 2000 Sites and in undesignated upland sites. Through PPL, partners sought to demonstrate and evaluate Sphagnum based methods to determine which provide the most cost-effective and widely applicable solution to blanket bog restoration that can be used as the basis for a viable payment for ecosystem services instrument.

The aims of PPL were to:

- Demonstrate financially viable region-specific and sustainable *Sphagnum* based restoration techniques for re-activating peat forming blanket bog in the wetter, colder, and higher altitude eroding bog systems of northern England
- Demonstrate through 'Concept to Contract' trials, the UK Peatland Code, as a viable payment for ecosystem services for upland peatlands
- Demonstrate new approaches using Unoccupied Aerial Vehicles (UAV) to assess vegetation changes as a proxy measure for monitoring the trajectory of change in ecosystem services benefits of blanket bog undergoing restoration and as a validation tool for the UK Peatland Code financial instrument
- Disseminate the demonstration activities to policy makers, landowners and managers, government agencies, NGOs and other key stakeholders in the UK and across the EU

3. The situation at the end of Pennine PeatLIFE

Throughout PPL, milestones were met, evaluated and adjusted based on the progress and challenges faced over the delivery of the project.

By the end of the project, partners had:

- Restored 1,780ha of upland blanket bog
- Reduced the erosion in 175km of eroding gullies with sediment traps and dams
- Reprofiled 98km of hagg edges and gullies
- Revegetated 154ha of bare peat

- Re-established vegetation on bare peat areas with 696,784 plug plants, made up of *Sphagnum* moss, cotton grass and dwarf shrub plug plants
- Avoided the release of an estimated 21,700 tonnes of CO^2 and other greenhouse gases through restoration activities
- Demonstrated and reported on suitable bare peat stabilisation and hydrological restoration techniques
- Investigated and reported on *Sphagnum* reintroduction techniques
- Trialled the UK Peatland Code monitoring protocol and fed back findings to the IUCN UK Peatland Code
- Trialled UAVs as alternatives to ground-based monitoring methods to assess changes in bare peat and vegetation cover over large areas, and reported on findings
- Monitored and reported on the ecosystem service impacts of peatland restoration works
- Communicated the main findings from investigating *Sphagnum* reintroduction techniques with other peatland practitioners

4. Challenges

Throughout the project a number of barriers arose making some aspects of project delivery harder than others, these were mainly landowner permissions, contractor capacity, changes to the UK Peatland Code, weather conditions, and the Covid-19 pandemic.

Contractor capacity has been a limitation to some of the work throughout the project. With partners using the same contractors to deliver work, delays at some sites had knock on effects to other sites that were being restored through PPL. The biggest challenge this led to was in monitoring sites following restoration, and having enough data to carry out associated monitoring deliverables. Part of this after-LIFE plan addresses these challenges by continuing monitoring where necessary.

Ongoing changes, amendments and clarification of the UK Peatland Code have meant that the milestones initially set out at the start of the project became redundant and milestones were changed to better align with feeding back to the most up to date protocol. PPL staff have a good working relationship with staff administering the UK Peatland Code, and the work and knowledge sharing through PPL has contributed to the improvement of the code and in the ability of PPL staff to work with landowners to carry out the code on restoration sites.

The harsh climatic conditions of northern England's blanket bogs over winter lead to difficulties in the delivery of restoration on some sites, with a particularly harsh winter in 2017/2018 meaning 30/100 of the possible days for restoration work were lost to sites being inaccessible. In this instance, restoration may have to be extended into following winters. As some sites were complete later than anticipated this led to some sites having fewer years of post-restoration monitoring data.

The Covid-19 pandemic caused lots of uncertainty and adaptive approaches were taken to deliver project objectives. From March 2020 until summer 2021 there were varying levels of safety precautions taken in the UK that meant some deliverables were more effected than others. The halting of non-essential work at the start of the pandemic meant that the restoration window was cut short, and many plug plants were either not planted or not delivered. Several meetings and workshops were also cancelled over this time before there was a shift towards online gatherings.

5. After-LIFE objectives and methodology

One of the primary purposes of this document is to identify key actions required following the end of PPL, focused on the conservation and climate needs in the project area. Table 1 outlines the after-LIFE requirements of PPL sites and partner organisations, assigns an importance to the action, identifies who is responsible for the action, and suggests possible funding options to enable the action to be carried out.

Table 1 – Summary of PPL after-LIFE actions

Action required	Importance (Critical/necessary /important)	Responsibility	Funding options
Maintain core staff to deliver future work and continue to build on knowledge and experience gained over PPL	Critical	All partner organisations	Core funding and through developing funding mechanisms
Continue to assess existing PPL sites and identify works that may be required to continue to move them to a favourable condition category	Critical	Natural England as the competent authority under the Nature Directives Landowners All partner organisations	Environmental Stewardship funding and ELMS National grant schemes Private finance
Maintain links with contractors and stakeholders to be able to continue to deliver large-scale restoration projects	Critical	All partner organisations Stakeholders Contractors	Core funding and through developing funding mechanisms
Identify new restoration sites within and nearby the PPL project area	Necessary	All partner organisations	Environmental Stewardship funding and ELMS National grant schemes
Complete all site monitoring required for each site that was outlined in the technical summary (Annex 1)	Critical	All partner organisations	Core funding and through developing funding mechanisms
Continue to work with landowners in and out with PPL to increase peatland restoration delivery	Critical	All partner organisations	Core funding and through developing funding mechanisms
Inform landowners on possible mechanisms for payments for ecosystem services possible through peatland restoration	Necessary	All partner organisations	Core funding and through developing funding mechanisms Environmental Stewardship funding and ELMS National grant schemes

Continuation of PPL website	Important	North Pennines AONB Partnership	Core funding and through developing funding mechanisms
Upkeep and removal of information boards at project sites	Critical	All partner organisations	Core funding and through developing funding mechanisms
Provide continual feedback to the IUCN UK Peatland Code core team to contribute to the improvement of the code	Necessary	All partner organisations	Core funding and through developing funding mechanisms
Disseminate knowledge, experience and findings gained through PPL with other peatland practitioners beyond the end of the project	Necessary	All partner organisations	Core funding and through developing funding mechanisms

6. The Great North Bog

PPL partners are working together as part of the Great North Bog (GNB) coalition, an ambitious peatland restoration enterprise being developed by the North Pennines AONB Partnership, Yorkshire Peat Partnership, Moors for the Future Partnership, Cumbria Peat Partnership, Northumberland Peat Partnership and the Lancashire Peatlands Partnership. With a landscape-scale approach to upland peatland restoration and conservation across nearly 7,000 square kilometres of peatland soils in and around the Protected Landscapes of northern England, the Great North Bog represents the largest collaborative peatland conservation effort in the UK. The collaborative working partnership aims to deliver a 20-year funding, restoration, and conservation plan to make a significant contribution to the UK's climate and carbon sequestration targets.

This increased profile of the GNB and the excitement in creating and promoting of the GNB led to early successes with Pennine PeatLIFE partners have securing £15 million from Natural England's Nature for Climate fund, and £2 million of private investment to date to ensure peatland restoration works can continue in the northern Pennines.

Over the past year staff from the PPL team have been working with all the partners across the GNB to develop a region wide collaborative approach to financing with the private sector. Through additional non- LIFE funds secured by the Director of NPAP we were able to bring a financial expert (Dan Hird) on the GNB team to help assess and advise on the best way to approach the private sector to support peatland restoration through the peatland carbon credit market. This effort led to the development of the GNB Financing document which asked interested corporates to bid on the GNB peatland offer. First round interviews were held in August 2023 with the second round of interviews planned to happen in October 2023 with the objective of having up to 3 finance partners signed up to be the GNB blended finance partner by Christmas 2023. This is perhaps the ultimate success and legacy of the Pennine PeatLIFE project as it has unified the 6 biggest peat partnerships in the UK under the GNB banner, united them in a vision on green financing and ultimately will lead to the estimated £200 million required to restore all the peatlands in the Great North Bog.

7. Summary

The partnership working developed through PPL has been integral to the success of the project in meeting and exceeding targets outline in the bid and has contributed to the formation of the Great North Bog coalition. Through future partnership working, the after-LIFE actions identified in section 5 will aim to be complete by responsible parties, funded through a combination of core funding, national grant schemes, Environmental Stewardship funds, private finance and other developing funding mechanisms.

Annex 1: Outstanding Pennine PeatLIFE monitoring.

Area	Site	Monitoring to complete
Forest of Bowland AONB	Hareden Fell	D1 – Year 3 post-restoration D2 – Year 3 post-restoration D3 – Year 4 post brash harvesting
	Websters Meadow	D1 – Year 3 post-restoration D2 – Year 3 post-restoration D3 – Year 3 and year 4 post sphagnum harvesting
	Langden Head	D1 – Year 3 post-restoration D2 – Year 3 post-restoration
Yorkshire Peat Partnership	Fleet Moss	D1 – Year 2 and year 3 post-restoration D2 – Year 2 and year 3 post-restoration
	Oughtershaw	D1 – Year 2 and year 3 post-restoration D2 – Year 2 and year 3 post-restoration
	New House	D1 – Year 3 post-restoration D2 – Year 3 post-restoration D3 – Year 4 post sphagnum harvesting
	Stake Moss	D3 – Year 4 post sphagnum harvesting
	West Arkengarthdale	D1 – Year 3 post-restoration D2 – Year 3 post-restoration D3 – Year 4 post brash harvesting D3 – Year 3 and year 4 post sphagnum harvesting
North Pennines AONB	Dufton	D1 – Year 3 post-restoration D2 – Year 3 post-restoration D3 – Year 3 post sphagnum harvesting