

PEATLAND CODE

PROJECT DESIGN DOCUMENT (PDD) *Compilation of Evidence for Validation*

Version 1.1, March 2017

Project Name:	Hareden Fell
Registry ID:	104000000027811
Location:	Bleasdale, Lancashire, England
Grid Reference:	SD 60395 47486
Gross Area (ha):	64.14 ha
Project Developer:	Yorkshire Peat Partnership
PDD Completed by:	Christopher Miller, Project Officer
Email contact:	christopher.miller@yppartnership.org.uk

All statements made in this document are correct to the best of my knowledge at the time of completion. **I agree**

NOTE:

1. When completing each section of this document please refer to the requirements set out in the relevant section of the Peatland Code. Boxes for text can be expanded if not large enough.
2. Your Project Design Document will be made available on the publically available Peatland Code Registry upon achievement of validation.
3. Additional evidence to support the statements made within this document will be required by the certification body.

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1. Eligibility and Governance

1.1 Eligible Activities

1) Please provide a short summary of the project including as a minimum reference to peatland type, peatland condition and restoration and management activities which shall be implemented.

The site comprises actively eroding gullies and hags with flat bare peat, and dendritically eroded areas. It will be restored using a combination of techniques including reprofiling and revegetating of gullies and hags; blocking eroding gullies using peat dams, timber and stone sediment traps, and peat bunds; using coir logs to slow the flow in shallower gullies and on bare peat; revegetating all bare peat areas (including reprofiled gully and hag sides) using heather brash, a moorland seed mix, lime, phosphate based fertiliser, cotton grass plugs, crowberry plugs and sphagnum. There will be a comprehensive management and maintenance plan to ensure the restoration is effective.

2) Is a minimum peat depth of 50cm present within the project area? Yes

2) Please provide details of any current land management agreements, including any statutory designations, in existence within the project area .

The project area forms part of the Bowland Fells SPA, Bowland Fells SSSI, and sits within the Forest of Bowland AONB.
Hareden Fell is in Countryside Stewardship (Higher Tier) agreement reference 463626.
; Agreement Holder: EW & JR Parkinson.
The agreement does not include capital peatland restoration works.

3) Please state any identified conflicts between planned restoration and management activities and existing land management agreements and how these shall be mitigated.

Currently there are no identified conflicts. However the existing land management agreements (Countryside Stewardship) are for a maximum of 10 years which is shorter than the project duration. The landowner will be advised to check for conflicts with the Peatland Code if they or their tenants decide to enter into any future land management agreement.

1.2 Project Duration

1) Please state the project duration (years).

35

2) If the project duration exceeds 55 years please state the peat depth within the project area.

1.3 Eligible Land

1a) Please state the owner(s) and if applicable, the tenant(s), of the land within the project area

Land Owner: United Utilities PLC

Tenant: EW & JR Parkinson

NB: Although the land is tenanted, the project is being developed by the landowner, and therefore will continue with the landowner if the tenancy were to come to an end.

1b) Please state the land registry number, if known

LAN 32245 and a small section to the west of the site is covered by LAN 32252

2) Has any new activity to drain and/or remove vegetation taken place on the peatland within the project area since November 2015? No

1.4 Consultation

1) Please state all identified stakeholders (or their representatives), the consultation method and the consultation period.

Stakeholder	Consultation Method	Consultation Period
EW & JR Parkinson (Tennants)	Verbal	5 th Oct – 20 th Dec 2019
Forest of Bowland Area of Natural Beauty	Written and Verbal	11 th Feb 2020 – 31 st March 2020
Environment Agency	Written and Verbal	11 th Feb 2020 – 14 th Sep 2020
Natural England	Written and Verbal	11 th Feb 2020 – 31 st March 2020
Jeremy Duckworth (Bleasdale Estate)	Verbal	5 th Oct – 20 th Dec 2019
Len Morris (Wolfen Hall Estate)	Verbal	6 th July – 28 th August 2020

Neighbouring Estate owners were consulted because the restoration site was accessed through both Estates as there was no easy access route across the landowner's land.

3) Please state all negative impacts of the project identified by stakeholder(s) and the action taken to mitigate, where feasible and/or relevant

Negative Impact Identified	Action taken to mitigate? (Yes/No - If No, provide details)
Impact on Schedule 1 birds & species identified in site designation	Yes – no work between 15 th March and 15 th July and communication maintained with RSPB/Natural England & United Utilities to avoid disturbance during nesting period
Impact on nearby shooting syndicates	Yes – timing of works, and use of particular access points at particular times limited/restricted
Damage to access tracks	Yes – program of access track maintenance/improvement scheduled as part of restoration works

1.5 Additionality

1) Is there a legal requirement specifying that peatland within the project area must be restored? No

2) Please state the proportion of the project restoration and management costs that Carbon Finance will be required to fund.

20.27	%
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3) Please describe the economic alternatives for the peatland within the project area and describe the influence of Carbon Finance on the project's economic viability over its duration (Internal Rate of Return (IRR) or Net Present Value (NPV) should be used to demonstrate comparison).

As the majority of the site is actively draining and/or eroding, there are no possible economic alternatives for the land other than the small benefits currently obtained from sheep grazing & grouse shooting. However, post restoration a range of ecosystem services are expected to improve including carbon storage, biodiversity, & water quality over the 30 year duration of the project. In addition to the carbon saved from the current intense erosion, restoration will reduce the amount of sediment and help slow the flow of water into the area's catchments. Biodiversity will also benefit as will the protection of the site's archaeological records. Following NPV analysis the project in the absence of carbon finance is not an economically viable investment. Taking into account carbon finance, the NPV becomes a positive figure, and improves by 90%.

4) If applicable, please describe how barriers that prevent the implementation of the project (legal, practical, social, economic or environmental) have been overcome.

Both land drainage consent and SSSI consent for this project have been secured. In particular a lot of planning has gone into minimizing the impact on Schedule 1 birds & species identified in the SPA/SSSI site designation primarily through avoidance of the breeding season and good communication. The economic and social impact on nearby shooting syndicates will be mitigated where possible by avoidance of shoot days. Damage to access tracks caused by the restoration works will be rectified by track maintenance being included in the restoration works contract.

1.6 Avoidance of Double Counting

1) Please state all parties with a legal right to make statements about the emissions reduction benefits of the project (the 'owner(s)') and the amount/proportion of units (tCO₂e) for which they have a right.

Owner	Contact Email	Units (tCO ₂ e or %)
United Utilities	Alison.statham@uuplc.co.uk	100%

1.7 GHG Statements

1) If applicable, please state where any statements about the predicted emission reduction benefits of the project have been made to date.

Signage onsite	No
Websites	No
Publicity leaflets etc.	No
Other media (<i>provide details</i>)	No

2) Please state how buyers were/will be informed of Peatland Code requirements regarding GHG statements

Buyers will be made aware of Peatland Code requirement 1.7 (V1.1) at the time of sale with a clause within the sales contract committing the buyer to compliance.

2. Project Design

2.1 Management Plan

1) Does the project have a restoration management plan for the duration of the project? **Yes**

2) Please provide a short overview of the project objectives and activities to be implemented.

For detailed breakdown of restoration work, please see the restoration plan. In summary, the restoration objectives for Forest of Bowland are:

1. To improve the **1.365 ha** of *Actively Eroding Flat Bare peat* (AU1) to a *Drained Revegetated* status by:-
 - Brashing, reseeding, planting of cotton grass, crowberry plugs, and Sphagnum plugs on all flat bare peat areas.
2. To improve the **1.06 ha** of *Actively Eroding Hagg/Gully* (AU2) to a *Drained Revegetated* status by:-
 - Reprofilling & revegetating the eroding sides of **17,887m** of gully and eroding peat hags. To revegetate the bare peat will be brashed, reseeded, and planted with of cotton grass, crowberry, and Sphagnum plugs.
3. To improve the **47.462 ha** of *Drained Hagg/Gully* (AU3) to *Modified* by:-
 - Reprofilling and blocking **1447m** of eroding gully ($\leq 2\text{m}$ wide) with peat dams
 - Reprofilling and Blocking **1327m** of eroding gully ($>2\text{m} \leq 3\text{m}$ wide) with peat bunds
 - Blocking **778m** of vegetated gully with timber sediment traps
 - Blocking **5936m** of eroded gully with stone sediment traps
 - Using coir logs to dam **9.4ha** of dendritic gullied areas
4. To ensure the elevated status in each category is achieved, and potential for the whole site to realise a *Modified/Near natural* is maximised, a follow-up management programme will supplement seed, cotton grass, crowberry plugs, and sphagnum to areas still vulnerable to erosion; and continue work on the site's hydrology to optimise water retention and sediment capture enabling eroded gullies to refill to the level of the surrounding landscape.

3) Were legal compliance and best practice guidance considered in the preparation of the restoration management plan? **Yes**

4) Please provide a short overview of the expected environmental and social impact of the project.

Environmental:

1. Aside of the carbon benefits of the project the condition of 64 ha of degraded blanket bog habitat will be significantly improved which also supports populations of the red listed Hen Harrier & Merlin as well as populations of Peregrine Falcon.
2. Langden Brook is a key spawning ground for Atlantic Salmon which will benefit from the reduced quantity of sediment and organic material entering the water course. Further downstream both Trout & Grayling may also benefit from the reduced sediment load and quantity of organic material entering the river.
3. The planned restoration work will help slow the flow of water coming from the catchment reducing erosion and the amount of particulate organic carbon entering the Langden Brook.
4. Rewetting the site and raising the water table will also help to make the site more resilient to climate change, helping to preserve the wide range of species which rely on this habitat.
5. The planned rewetting works will also reduce the risk of wildfire across the site helping protect the biodiversity of the area and its carbon store.

Social:

1. Restoration works will bring in excess of £900,000 worth of work to the local area, supporting local contractors, timber and coir merchants, retailers of seed, moorland grasses and shrubs, and regional helicopter companies.
2. A reduction in the area of bare peat will benefit the grazier by adding at least 1.36ha to the area that can be sustainably grazed.
3. A number of well used walking tracks cross part of the site which will allow visitors to the area to benefit from the enhanced biodiversity and aesthetics of the area.
4. The project will also contribute towards preserving the distinctive character and natural beauty of the Forest of Bowland AONB, and may be of financial benefit to the wider community through tourism.
5. The project will also help lower the amount of DOC and POC entering the Langden Brook which will benefit United Utilities who abstract water from the catchment.
6. The improved water quality in the Langden Brook will benefit local fishermen.
7. The higher water table and lower fuel load will also increase the site's ability to resist wildfire avoiding the social costs that fire across the site could bring.

2.2 Monitoring Plan

- 1) Does the project have a monitoring plan for the duration of the project? Yes**

2.3 Management of risks and permanence

1) Has a Risk Assessment been undertaken to identify potential risks to the maintenance of improved condition category and appropriate mitigation strategies?
Yes

3. GHG emission reduction

3.1 Establishment of Baseline Emissions

1) Please insert a completed *Table 2* from the *Peatland Code Emissions Calculator*.

Assessment Unit	Area (ha)	Pre-Restoration (Baseline) Condition Category	Post-Restoration Condition Category
AU1	1.365	Actively Eroding Flat Bare Peat	Drained: Re-Vegetated AE
AU2	1.06	Actively Eroding Sloping Bare Peat	Drained: Re-Vegetated AE
AU3	47.462	Drained: Hagg/Gully	Modified
Total	49.888		

3.2 Leakage

1a) Please state the current land use or management and describe how it will be affected by the project.

The land is currently managed for livestock grazing (sheep), and grouse moor shooting. The livestock numbers are restricted/controlled by a Countryside Stewardship agreement – stocking density is 0.5 ewes/hectare (or 0.04 LU/ha) in winter, and the grouse moor shooting is carried out at a low level of intensity with no evidence of deliberate burning having taken place in the past 10 years.

1b) Will the project lead to change of land use or management elsewhere within the same agricultural/land holding (e.g. peatland degradation or intensification of land use in another area)? No

1c) If Yes, Is the change in land use or management significant (i.e. will GHG emissions $\geq$ 5% of project emissions reductions over the duration)? Yes/No [Delete as applicable]

2) If significant, please state the emissions (tCO₂e) of the displaced activity for the duration of the project. (If no leakage or not significant, leakage =0).

leakage = 0

3.3 Net Project GHG emission reduction

2) Please insert a completed *Table 5* from the *Peatland Code Emissions Calculator*.

Period (Year)	Total Emissions Reduction (tCO ₂ e)	Total Emissions Reduction less 10% model precision (tCO ₂ e)	Total Emissions Reduction adjusted for Leakage (tCO ₂ e)	Cumulative Risk Buffer Contribution (tCO ₂ e)	Cumulative Total Claimable Emissions Reduction (tCO ₂ e)
0-5	709	638	638	96	542
5-10	1417	1276	1276	191	1085
10-15	2126	1914	1914	287	1627
15-20	2835	2551	2551	383	2168
20-25	3544	3189	3189	478	2711
25-30	4252	3827	3827	574	3253
30-35	4961	4465	4465	670	3795
35-40	5670	5103	5103	765	4338
40-45	6379	5741	5741	861	4880
45-50	7087	6379	6379	957	5422
50-55	7796	7016	7016	1052	5964
55-60	8505	7654	7654	1148	6506
60-65	9213	8292	8292	1244	7048
65-70	9922	8930	8930	1340	7590
70-75	10631	9568	9568	1435	8133
75-80	11340	10206	10206	1531	8675
80-85	12048	10844	10844	1627	9217
85-90	12757	11481	11481	1722	9759
90-95	13466	12119	12119	1818	10301
95-100	14175	12757	12757	1914	10843

3) If necessary, use this space to clarify any details of your calculation