Wemmergill Moor Limited Management Agreement 2017-2042

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Version 2.2, May 2017

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Deed of Agreement under Sections 7 and 13 of the Natural Environment and Rural Communities Act 2006

THIS DEED OF AGREEMENT is made on the day of 2017

PARTIES

(1) **Natural England** of 4th Floor, Foss House, Kings Pool, 1-2 Peasholme Green, York YO1 7PX ('**Natural England**'); and

(2) **Wemmergill Moor Limited**, a company incorporated in England and Wales with registered number 4749924 whose registered office is at O'Reilly Chartered Accountants, Kiln Hill, Market Place, Hawes, North Yorkshire, DL8 3RA ("the Land Owner").

Introduction

Wemmergill is one of Britain's most historic and prolific grouse moors, with shooting records that date back to 1843. In the late 19th Century members of the Royal Families of Europe, and MPs were regular visitors during the shooting season, staying at Wemmergill Hall (demolished in the 1980's). Sir Fredrick Milbank MP leased the shooting in the late 1860's when the landowner John Bowes, founder of the Bowes Museum, was living in Paris.

From 1952 until 1989 Sir Joseph Nickerson leased the shooting of Wemmergill and Holwick. John Grave was his Head Keeper from 1963 to 1980 followed by Peter Fawcett until 1989. In 1990 Sir Tom Cowie took the lease for 14 years and then it was leased by Michael Cannon who proceeded to buy the estate including the farms in 2006, the first time Wemmergill had had a new owner for almost 450 years. [redacted]

Natural England are the government's adviser for the natural environment in England, helping to protect England's nature and landscapes for people to enjoy and for the services they provide.

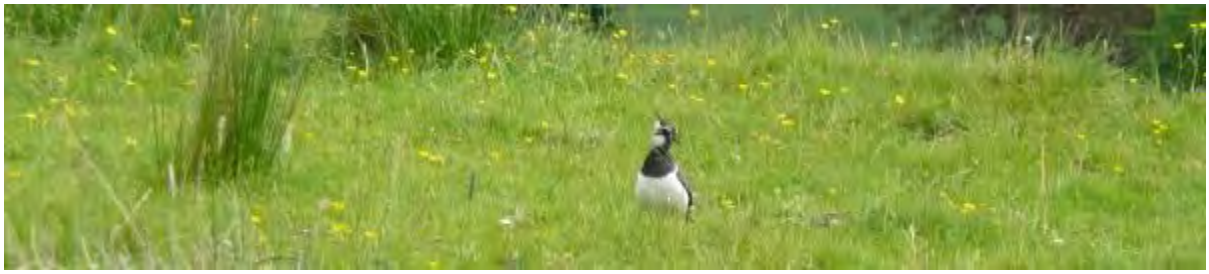
Lune Forest was designated as a site of special scientific interest in October 1998 and fulfils the criteria as part of the North Pennine Moors Special Protection Area and Special Area for Conservation. The area also falls within the North Pennines Area of Outstanding Natural Beauty.

The upland block encompassing Lune Forest, together with moorland surrounding the headwaters of the River Lune, has been identified as one of the most extensive areas of relatively unmodified blanket mire in the north of England. The presence of dry and wet heath, acid grassland, limestone grassland and flushes increases the habitat diversity of this moorland. The area supports an important assemblage of moorland breeding birds. These include merlin and golden plover, contributing to the internationally important North Pennine populations of these species.

The predominant vegetation on the moorland plateau is blanket mire co-dominated by heather and hare's-tail cottongrass, typically with cross-leaved heath and an abundance of mosses. On the highest ground to the west, other dwarf shrubs, including cloudberry and crowberry, become more frequent.

Throughout the northern part of the site the presence of underlying limestone is obvious, with the blanket mire communities being dissected by bands of grassland, typically along the lines of outcrops or of the incised gills. At a few localities in the vicinity of Lune Head and Close House, thin soils overlying limestone support more species-rich limestone grassland with herbs such as wild thyme and selfheal. There are large populations of the nationally rare spring gentian on some of these areas.

There is a rich assemblage of upland breeding birds, nesting both on the moorland and on the surrounding in-bye pastures. The merlin and golden plover populations of the open moorland contribute to the internationally important numbers of these species which nest within the North Pennine Moors. Merlin and short-eared owl nest in taller heather, whilst species such as red grouse and golden plover take advantage of the varied structure provided by burning and grazing management of the moorland. Dunlin are generally found on the higher blanket bog, where there are bog pools. Snipe, redshank and curlew breed along the grassy and rushy edges of the moor and, together with lapwing, also on the inbye pastures. The site also has an important concentration of black grouse. A variety of other breeding species are recorded, including ring ouzel, yellow wagtail, twite and teal.



This Agreement sets out the shared vision agreed between Wemmergill Moor Limited, and Natural England; it includes a programme of agreed infrastructure and moorland restoration works as well as a set of agreed principles for key land management practices.

As the Agreement covers a 25 year period there is acknowledgement from both parties that it needs to remain a living document which can respond to changing environmental and socio-economic needs.

This Agreement is entered into under section 7 and section 13 of the Natural Environment and Rural Communities Act 2006.

The Agreement covers the land included in Higher Level Stewardship Agreements AG00387850 and AG00687777 (which expire on 31st January 2018) and is split into 7 main sections:

1) **The Vision** sets out what we aim to achieve through shared outcomes.

2) **Sensitive Features and Sustainable Infrastructure Principles** uses a predominantly pictorial approach to highlight the sensitive features across the site. This section also provides advice on how to approach the siting of new infrastructure where sensitive features are present.

3) **Sustainable Infrastructure Specifications** provides upfront detailed specifications for a number of operations which may be carried out in accordance with the terms of this Agreement. Those operations are detailed on the agreed Infrastructure map and table. Water scrapes, temporary free standing butts, and grit stations are not included on maps in this document and do not require consent.

4) **Vegetation management principles** sets out the management on dry heath and blanket bog areas across the site, including the use of burning and cutting, as well as defining areas where active management is not needed at present.

5) **The Bare Peat & Grip Blocking Specifications have** been prepared by the North Pennines AONB team and is funded via the Countryside Stewardship PA2 Feasibility Study Code. It provides an overview of bare peat sites and grip blocking across the site and includes a specification for restoration works. This acts as consent for the specifications included within it but is subject to agreement with Wemmergill Estate Limited and the availability of funding.

6) **Monitoring** sets out how progress will be recorded for the duration of the Agreement.

7) **Terms & Conditions**

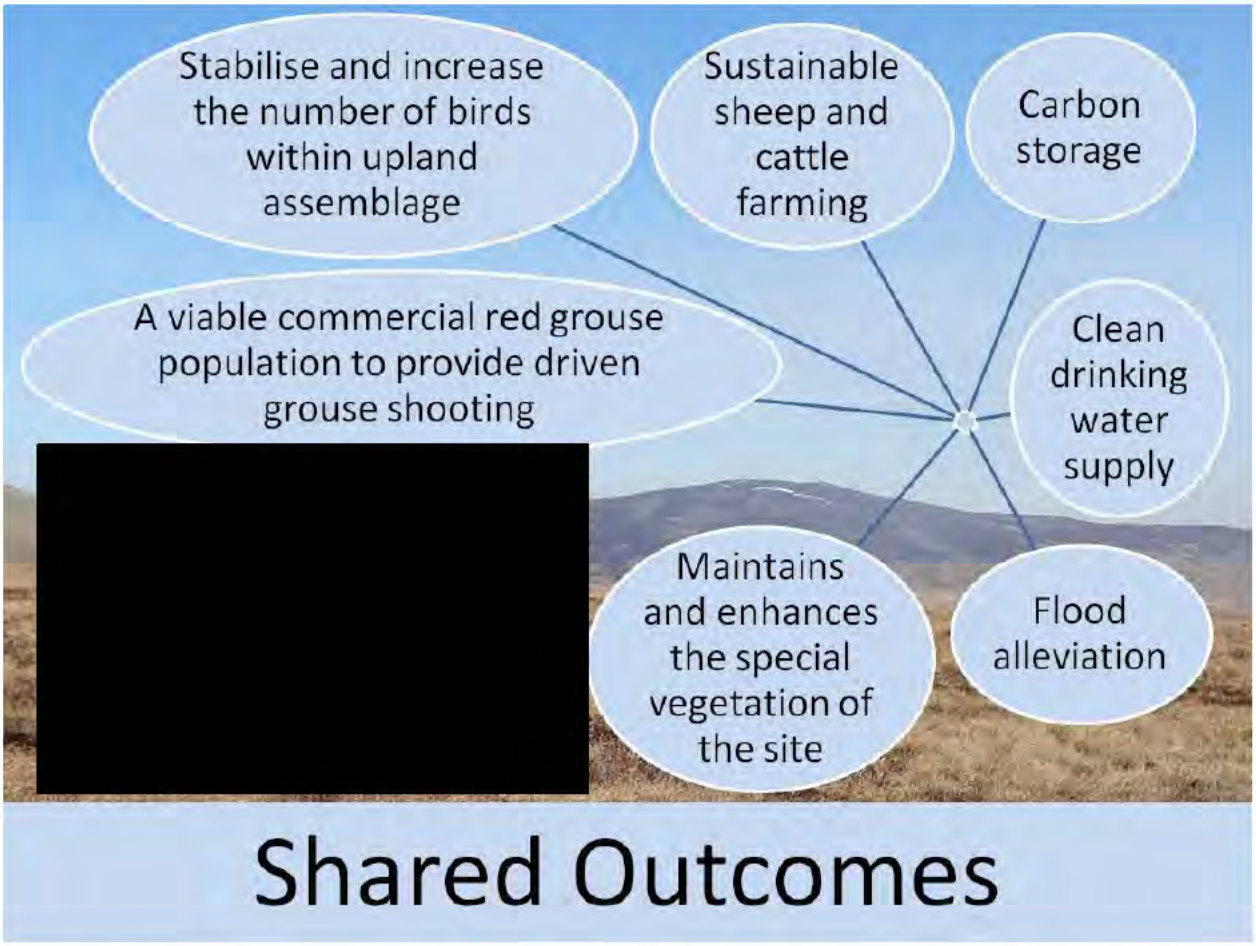
1. The vision

Our shared vision for Wemmergill Moor is...

"Wemmergill Moor Limited and Natural England agree to work together to build upon existing positive management, whereby the continued success of a thriving shooting business and the special environmental features are mutually dependant. Further integration of the needs of both the grouse moor operation, farming and the environment, will result in increased species diversity within the habitats that together comprise resilient, functioning ecosystems, and shooting and farming businesses that are flexible and can adapt to differing needs/conditions of each season."

The shared outcomes are:

Work in partnership to manage upland habitats including blanket bog and upland heath so that they are functioning in a way which positively supports, provides and enables the following:



Throughout this Agreement, management for restoration purposes is referred to; this is defined as:

'Management which facilitates a functioning blanket bog system, whilst also maintaining structural and vegetative diversity suitable for red grouse (including healthy heather shoots, cotton grasses, sphagnum and other dwarf shrub species).'

The delivery of these shared\multiple outcomes on blanket bog and upland heath involve a mutual understanding of and joint working on a number of key positive management principles. Natural England and Wemmergill Moor Limited have designed these principles in partnership to guide and facilitate management across the site; their application on the ground will require professional judgement by the land managers, who know and understand the site, on a case by case basis.

This management agreement has been designed bearing in mind the special qualities of the moorland areas at this estate and should not be taken as a template for other moorland areas or upland estates elsewhere.

2. Sensitive Features and Sustainable Infrastructure Principles

<u>Key Principle:</u>

Sensitive features and special circumstances will require infrastructure works to be:

- **avoided wherever possible**

  Or

- **re-located \ re-routed \ re-timed**

  Or

- **re-designed so that alternative solutions can be implemented**

The sensitive features \ special circumstances and appropriate infrastructure specifications are as follows:

Small mossy seepage springs and flushes where infrastructure would sink or would affect natural seepage of water

Feather mosses are often orange – brown in colour

Upright mosses are often bright green

Re-route or re-locate infrastructure to avoid these small, sensitive features (some of which support the protected plant species Yellow Marsh Saxifrage)

OR

Install raised wooden vehicle boardwalks (see specification) over these small features if re-routing is not practical

Extensive areas of blanket bog

All blanket bog habitat, including areas of drier peat with extensive heather cover, is sensitive and therefore infrastructure works should be avoided wherever possible.

If infrastructure is essential for grouse moor management and\or habitat conservation or restoration purposes then it must be very carefully sited to avoid adverse impacts on blanket bog vegetation, peat or natural processes such as the movement of water.

Patches of very wet bog with slushy peat and abundant red, brown or green Sphagnum mosses (often with bog pools or blocked grips) where infrastructure would sink or affect the peat and movement of water

Bog Pool

Red, brown and green Sphagnum mosses

Blocked grip

Re-route of re-locate infrastructure on to drier bog or other habitats to avoid these sensitive features OR

Install standard or raised wooden vehicle boardwalks (see specifications) through these features if re-routing is not practical. Raised boardwalks will be installed in areas of particularly wet peat and\or mosaics of vegetation or where the bog is situated on a slope and other forms of infrastructure could affect the natural movement of water.

Small patches of blue-green leaved sedge flushes (often with Butterwort) where infrastructure would sink or would affect natural seepage of water

Re-route or re-locate infrastructure to avoid these small, sensitive features

OR

Install raised wooden vehicle boardwalks (see specification) over these small features if re-routing is not practical.

Patches of very wet, tall sedge mires or rush gutters, basins or flatts (often with Sphagnum mosses) with open water, slushy mud or peat where infrastructure would sink

Re-route or re-locate infrastructure on to drier areas within these habitats or other drier habitats nearby to avoid these special circumstances (not usually sensitive habitats but important for wading birds).

OR

Install standard or raised wooden vehicle boardwalks (see specifications) through these features if re-routing is not practical.

Upland dry heath on rocky terrain and\or steep slopes where standard infrastructure is not feasible and translocation of small areas of habitat is considered to be the only practical option

If re-routing or re-location on to less sensitive habitats or installation of mesh \ boardwalks is not possible, follow procedures for lifting and storage of vegetation, creation of receptor areas and aftercare maintenance (see specification).

Upland species-rich calcareous grassland (often with Wild Thyme) on rocky terrain and\or steep slopes where standard infrastructure is not feasible please contact Natural England to discuss alternative solutions.

Wild Thyme

Breeding locations for important raptors

If re-routing to less sensitive locations is not possible the infrastructure installation should be timed and planned to take place outside of the sensitive breeding period and a sufficient buffer area agreed between the route and the nesting location (see specification).

3. Sustainable Infrastructure Specifications

Only the infrastructure proposals shown on the maps may be carried out in accordance with the principles and specifications in this Agreement. Operations that require consent but not shown on those maps will be subject to separate consultation between Wemmergill Moor Limited and Natural England.

Specifications adapted from notices submitted to Natural England for consent (2013 – 2016) by Valerie Hack Restoration Ecology on behalf of Wemmergill Moor Limited.

Standard plastic mesh for Argocats, Quad Bikes and Pedestrians

- The plastic mesh has a wavy non-geometric profile and will be 2.5m wide.
- The mesh will be laid flat on the ground.
- It will be held in place either using fence posts that are hammered into the ground and attached to the mesh using plastic ties or using metal pins that are driven into the ground.
- Where required, the vegetation will be previously flailed close to ground level.
- Flailed material will either be left lying on the ground or raked up and scattered on the nearest area of any bare peat as might exist (such as in a grip) or may be gathered up and used to pack under the mesh where the mesh passes through a hollow.
- All machinery to be used during construction on deep peat will be low ground pressure vehicles and no exact same area of land will be passed over by any construction traffic.
- All construction works will be conducted between 1 July to 1 April and providing that there are no nesting birds in the locations of the works.
- Mesh tracks will be subject to review 5 years after their initial instalment.
- Areas of wetter bogs likely to be affected by vehicle movements across the site or pedestrian activities in the vicinity of lines of butts and grouse picking up areas will be considered for additional plastic mesh solutions during the plan and added to the plan at appropriate times. This could include new mesh tracks and\or footways to butts to alleviate localised impacts in wetter areas of concern.

Supported plastic mesh for Argocats, Quad Bikes and Pedestrians

- Where the mesh passes over small hollows or very wet areas of peat and the standard mesh is likely to sink, wooden rails may be laid with gaps between to support the mesh.
- The rails are 0.15m and the gaps will be 0.08m wide.
- In all other respects the mesh will follow the specification for standard plastic mesh installation.
- Mesh tracks will be subject to review 5 years after their initial instalment.

Standard boardwalks for Argocats, Quad Bikes and Pedestrians

- Standard boardwalks will be of tanalised timber.
- They will be 2.13m (2.2m) wide.
- They will be constructed with two horizontal and parallel 0.23m diameter telegraph poles laid on the ground with horizontal slats fitted on top.
- Each slat is 0.15m wide and each gap between the slats is 0.08m wide.
- In some wet places the boardwalk will be slightly elevated by placing a sleeper beneath the pole bearers.
- Where routes need to cross streams or deep gutters, telegraph poles will be laid horizontally on the ground down the sloping sides, but bridging the flat base and elevated by 0.5m or so with vertical supporting struts as required. As above, the slats will be laid on the poles.
- All machinery to be used during construction on deep peat will be low ground pressure vehicles and no exact same area of land will be passed over by any construction traffic.
- All construction works will be conducted between 1 July to 1 April and providing that there are no nesting birds in the locations of the works.

Raised boardwalks for Argocats, Quad Bikes and Pedestrians

- Elevated boardwalks will be 2.13m wide.
- They will be built up upon two horizontal and parallel 0.23m diameter 16 foot long (4.88m) telegraph poles.
- The poles will be supported by vertical stilts that are 24.5cm x 12.5cm diameter and at 8 foot spacing (2.44m) to enable natural hydrological conditions to persist.
- These stilts will be 8 foot (2.44m) long and will be driven down into the peat to the clay layer and then sawn off so that they protrude at the appropriate height above ground level.
- Each slat is 0.15m wide and each gap between the slats is 0.08m wide to enable light to reach the ground and vegetation beneath.
- All machinery to be used during construction on deep peat will be low ground pressure vehicles and no exact same area of land will be passed over by any construction traffic.
- All construction works will be conducted between 1 July to 1 April and providing that there are no nesting birds in the locations of the works.

Stone tracks on acid grassland (but not on sensitive features)

- Vegetation within the track footprint will be stripped and set aside for reuse prior to any construction.
- A cut and fill method will be used in most situations and will involve the cutting of materials from locally high points and placement to low points.
- A build up method will be used where the topography requires safe gradients and to prevent waterlogging of the track surface.
- The width of the track surface will be 2.2m where use is by argocats and quad bikes only and 3m where use is by other vehicles.
- Track edges will be finished to a stable angle of 45degrees and the surface will be finished with a slightly cambered surface without a cross fall and compacted.
- Crushed limestone aggregate of an average depth of 300mm will be applied to the foundation of the track.
- Cross-track culverts will be installed where the track crosses any watercourses, rush gullies or wet grassland or where the track is likely to flood.
- Plastic pipes of suitable diameter will be installed under the track to suit the natural drainage conditions with an adequate cross fall to allow water to move through the pipe and underneath the track.
- Where required, stones will be placed beneath the discharge point to prevent erosion of the soil and vegetation.
- Track sides will be landscaped by placing salvaged vegetation \turves on them.
- The track running surface apart from the wheel routes will be landscaped with a soil - vegetation mulch collected from salvaged excavated materials to encourage the surface to vegetate.
- All construction works will be conducted between 1 July to 1 April and providing that there are no nesting birds in the locations of the works.

Stone infill in small areas of wet acid grassland or rush gutters likely to be impacted by vehicles (but not applicable to sensitive features)

- Where small areas of non-sensitive features along routes or tracks (such as wet acid grassland or rush gutters in waterlogged depressions) are likely to result in ground disturbance by vehicles they may be infilled with small amounts of stone aggregate of suitable composition and size.
- Where necessary, a small plastic pipe will be installed within the aggregate to ensure that the natural flow of water is maintained.
- Works will be conducted between 1 July to 1 April and providing that there are no nesting birds in the locations of the works.

Sunken and semi-sunken butts

- Sunken and semi-sunken butts will be placed in locations away from sensitive features wherever possible.
- Butt dimensions will be 6 foot x 6 foot (1.8 m x 1.8 m) x 3 foot 6 inches (1.05 m) if fully sunk or 2 foot 6 inches (0.75m) if partially sunk and will be of timber construction.
- Butts on deep peat will be drained with a buried pipe (up to 25 m long for each butt but usually shorter than this) fitted with a plastic collar to promote seepage of water into the local peat rather than promote water flow. The pipes will be discharged only into a natural hollow or grip (not a water course) to avoid net export of water from the bog.
- All butts on deep peat will be wrapped in a waterproof membrane (see photo above) to reduce hydraulic potential around the butt.
- Peat and Turfs from the excavated butts will be placed within grips or gullies on bare peat nearby to encourage re-vegetation of peat and ensure no net loss of peat.
- All machinery to be used in the butt construction on deep peat will be low ground pressure vehicles and no exact same area of land will be passed over by any construction traffic.
- If access to the butts creates any stretches of bare peat (more than 5 square metres in a continuous stretch) then use of vehicles on that route for shooting party purposes will be suspended to allow the area to recover and an alternative route will be used or mesh\boardwalk infrastructure installed.
- If required, cotton grass and Sphagnum species will be planted on areas of bare peat to speed recovery.
- All construction works will be conducted between 1 July to 1 April and providing that there are no nesting birds in the locations of the works.

Hurdle butts

- Hurdle butts will be placed in locations away from sensitive features wherever possible.
- Butt dimensions will be 6 foot x 6 foot (1.8 m x 1.8 m) x 3 foot 6 inches (1.05 m) across the base and will be of timber construction.
- Wherever possible, the basal slats will be 0.15m wide and each gap between the slats is 0.08m wide to enable light to reach the ground and vegetation beneath and enable water to percolate into the substrate.
- All machinery to be used in the butt construction on deep peat will be low ground pressure vehicles and no exact same area of land will be passed over by any construction traffic.
- If access to the butts creates any stretches of bare peat (more than 5 square metres in a continuous stretch) then use of vehicles on that route for shooting party purposes will be suspended to allow the area to recover and an alternative route will be used or mesh\boardwalk infrastructure installed.
- If required, cotton grass and Sphagnum species will be planted on areas of bare peat to speed recovery.
- All construction works will be conducted between 1 July to 1 April and providing that there are no nesting birds in the locations of the works.

Temporary free standing butts

- Temporary free standing butts will be placed in locations away from sensitive features wherever possible.
- The butts will be collapsible before and after use and will be laid carefully on the ground or taken away after use.
- If access to the butts creates any stretches of bare peat (more than 5 square metres in a continuous stretch) then use of the area will be suspended to allow the area to recover and an alternative location will be used will be used.

Water scrapes

- The number of scrapes will be kept to a minimum to meet the aims of the Agreement.
- Scrapes will be located on acid grassland or dry heath areas.
- Scrapes will be as shallow as possible, have gently sloping sides and kept to a minimum size.
- Natural hollows or depressions will be used where possible to avoid excavations.
- The perimeter of the scrape will be irregular to maximise the edge effect.
- Bare soil \ peat will be allowed to re-vegetate naturally or by using translocated turves within 6 months of construction of the scrape.
- Scrapes should be sited to fill up by natural rainfall and overland flow rather than diverting watercourses or using a water bowser.
- Scrapes will not be placed on or near to historic sites.
- All machinery to be used in the construction of scrapes will be low ground pressure vehicles to reduce any impacts to the ground and vegetation.
- All construction works will be conducted between 1 July to 1 April and providing that there are no nesting birds in the locations of the works.

Grit stations

- Grit is laid on the ground, in a box or tray. Trays can be supported on a couple of turned over turfs dug by hand and\or raised on small piles of stones.
- The footprint of each station will not be more than 50% bigger than the size of the tray.
- Grit stations will be set out according to GWCT guidelines of 1kg of grit every 100m within a grid format.
- Grit stations will be sited to avoid the discharge of materials into the wider environment, particularly watercourses, water bodies and ground water.
- Grit stations will not be sited on sensitive habitat features identified on the Estate, wherever possible.
- Grit stations will not be placed on or near to historic sites.
- All machinery to be used in the topping up of grit stations will be low ground pressure vehicles to reduce any impacts to the ground and vegetation.
- All placing of grit trays (but excluding topping up with grit) will be conducted between1 July to 1 April and providing that there are no nesting birds in the locations of the works.

Translocation of small areas of heathland or acid grassland vegetation

- Vegetation to be translocated will be carefully set aside for later reuse.
- Vegetation will be taken with at least 20cm of soil (or all of the soil if it is less than 20cm depth) to minimise impacts on the root system.
- Vegetation \ turves will be stripped using an excavator bucket of 2ft or more in width to decrease fragmentation effects and the taking of smaller pieces of vegetation will be avoided wherever possible.
- Wherever possible, vegetation \ turves will be handled only once and placed in their receptor position immediately after stripping rather than stockpiled.
- If turves do require temporary storage they will be stacked to a maximum of three layers of turf deep with the vegetation side uppermost.
- The turves may be placed on a sheet of mesh or geotextile (for ease of lifting), for the minimum length of time.
- The substrate in the receptor site will be prepared with the excavator bucket.
- Vegetation \ turves will be placed into their receptor sites with the excavator bucket which will then be used to gently compact the turves into position.
- Turves that are stored or have been reset will not be driven over or otherwise disturbed until established.
- All machinery to be used in the works will be low ground pressure vehicles to reduce any impacts to the ground and vegetation.
- All construction works will be conducted between 1 July to 1 April and providing that there are no nesting birds in the locations of the works.

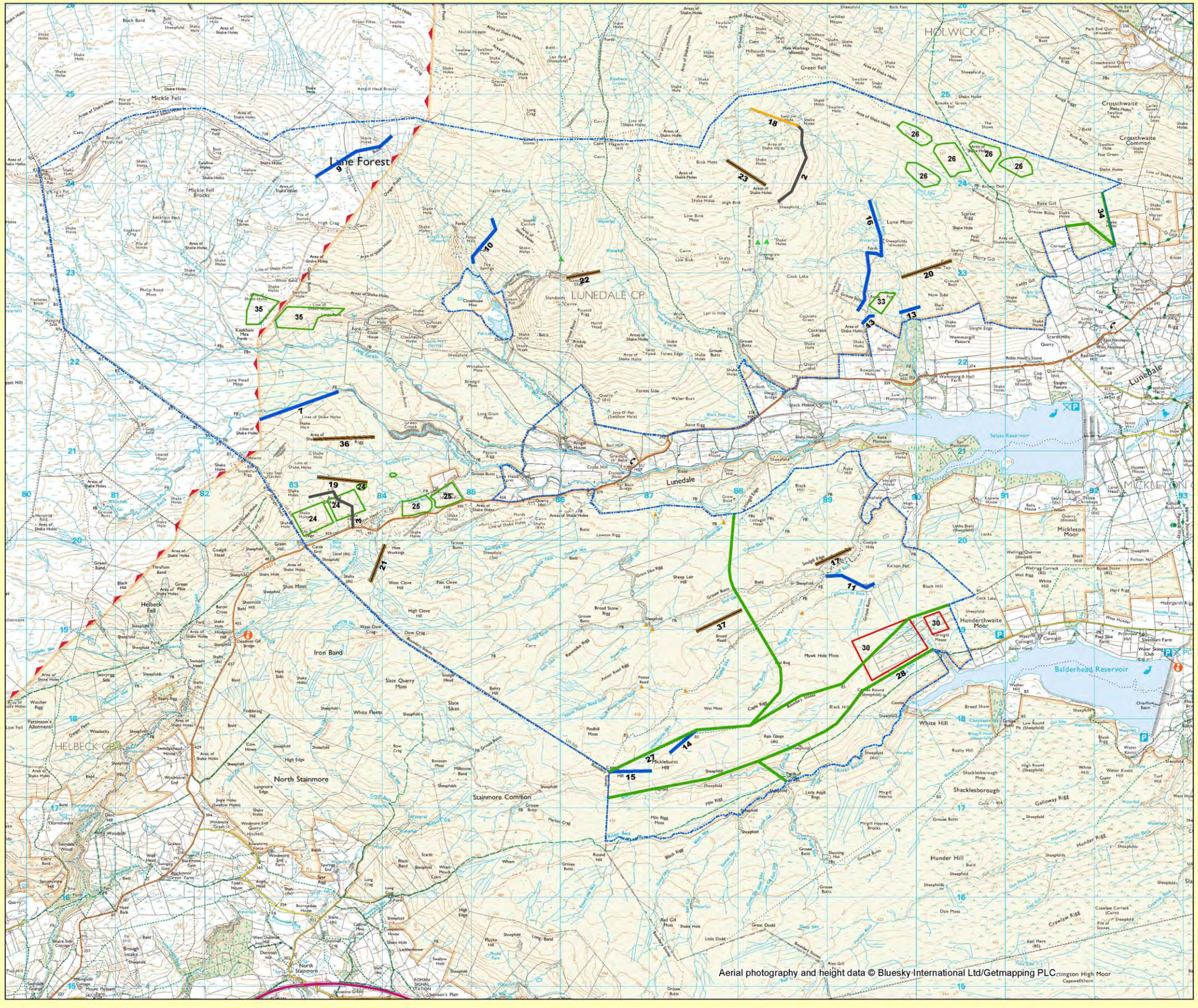
Infrastructure works within 200m of breeding location of raptors

- All construction works will be conducted between 1 July to 1 April and providing that there are no nesting birds in the locations of the works.
- If works are planned within the above period but nesting birds are still present then works should not take place within 200m of the nest until the young have successfully fledged and left the nest.

Post and Wire fencing and fenced grazing exclosures

- Post and wire fences will consist of timber intermediate posts, straining posts and struts treated with preservative and plain wire or pig netting.
- Straining posts will be placed at the ends and corners of fences and struts will be fitted to all straining posts.
- Intermediate posts should be fitted at intervals of not more than 3.5m for mild steel wire fences or 10m for high tensile wire fences with droppers.
- Where necessary, over uneven ground fences may be heightened and any hollows blocked with plain strands of wires or timber rails.
- Where appropriate, fences will be fitted with bird markers.
- Where necessary, 15 foot or 9 foot timber gates or wooden stiles may be installed.
- Where required, unsurfaced ground in gateways will be protected by two rolls of plastic mesh per gateway, either pinned to the ground with metal or plastic pegs or attached to wooden posts hammered into the ground.
- All machinery to be used during construction on deep peat will be low ground pressure vehicles and no exact same area of land will be passed over by any construction traffic.
- All construction works will be conducted between 1 July to 1 April and providing that there are no nesting birds in the locations of the works.
- Further fenced grazing exclosures will be identified to enable the recovery of heather moorland vegetation. These areas will be added to the Management Agreement and infrastructure map at appropriate times.

Agreed Infrastructure map



Wemmergill Estate Infrastructure Consent Map

Legend

- Wemmergill Estate Boundary

Infrastructure

- Fence
- Butts
- Butts - Hurdles
- Mesh Track
- Stone Track
- Fence
- Fence Removal

Crossings

- Stone Crossings
- Wooden Bridges

NATURAL ENGLAND

APGB Aerial Photography for Great Britain

Scale (at A1): 1:20,000

Map produced by Patrick Oulton, Northumbria Area Team
Date: 05/05/2017. Map Reference:

Agreed Infrastructure list

Agreed Infrastructure (please see Agreed Infrastructure Map)		
Number on Map	Name	Type
2	Green Grain NE Link (Wemmergill Head)	Stone Track
3	Ley Seat	Stone Track
7	To JN Shakeholes/MRC butts	Mesh Track
9	Paradise	Mesh Track
10	Up Arngill Waterfall Butts	Mesh Track
11	To Mawk Hole	Mesh Track
13	To Wemmergill woodpinchpoints x 2	Mesh Track
14	To east of Mickleburnt Hill	Mesh Track
15	To west of Mickleburnt Hill	Mesh Track
16	To Howside	Mesh Track
17	Shipka Road	Butts
18	Wemmergill Beck Head Hurdles	Butts
19	Crow Cage	Butts
20	Howside	Butts
21	Dirty Pool	Butts
22	Standards Hush	Butts
23	The Bink	Butts
24	4x Ley Seat	Fencing
26	5x Green Fell	Fencing
28	Iceton fence	Fencing
30	Iceton exclosures	Fence removal
31	Installation of 8x wooden bridges	Wooden bridges
32	Installation of 2x stone crossings	Stone crossings
33	1x Wemmergill Head	Fencing
34	1x Rake Gill	Fencing
35	2x Close House	Fencing
36	Rayback Sike	Butts
37	Middle Row	Butts
Not shown on map due to very small scale of areas involved	Various locations in wetter areas of blanket bog adjacent to sunken butts. (Subject to review clauses in Section 6 of Management Agreement, remedial measures can include very short sections of standard or raised wooden boardwalks for pedestrian use. These can be installed in locations where plastic mesh is considered impractical)	Very short sections of standard or raised wooden boardwalks

4. Vegetation Management Principles

This section sets out a number of agreed principles for the management of vegetation across the site for restoration purposes; this is defined as:

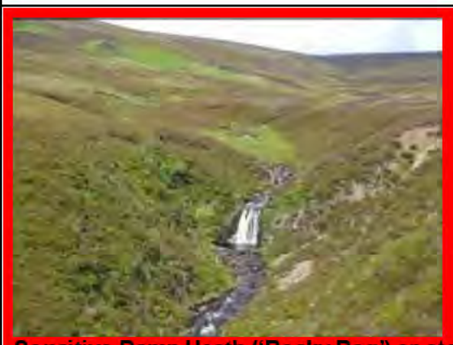
'Management which facilitates a functioning blanket bog system, whilst also maintaining structural and vegetative diversity suitable for red grouse (including healthy heather shoots, cotton grasses, sphagnum and other dwarf shrub species).'

Natural England and Wemmergill Moor Limited have designed these principles in partnership to guide and facilitate management across the site; their application on the ground will require professional judgement by the land managers, who know and understand the site, on a case by case basis.

Vegetation management on blanket bog (on areas of peat greater than 40cm deep)

Sphagnum mosses	Feather mosses	Presence of Cotton-grasses	Heather	Other dwarf shrub species	How active is the bog?	Direction of change as shown by monitoring?	Is management required?
					**very active** **less active** **inactive (modified)**	**No change (sphagnum and heather cover stable)** **Becoming less active (heather increasing, Sphagnum decreasing)** **Becoming more active (heather decreasing, Sphagnum increasing)**	**Not Required (see heather beetle management page)** **Cutting** **Burning**
Often 50% or more cover and often seen as carpets or hummocks	Often absent or of very low cover	Yes, often abundant	Less than 20% cover	May be present	 **very active**	**No change**	**Not required** Regeneration of heather in beetle affected areas may be managed, subject to agreement with Natural England (see heather beetle management page)
Less than 50% cover and few carpets or hummocks	Present, and can often equal cover of Sphagnum	Yes, often abundant	More than 20% cover, heather canopy usually open	May be present	 **less active**	**Becoming more active** Are hydrological measures in place to support a more active bog?	**May be required** **Cutting** or **burning** for restoration purposes and **Sphagnum \ Cotton-grass inoculation \ seeding**.
As Above	As Above	As Above	As Above	As Above	As Above	**No change or Becoming less active** Are hydrological measures in place to support a more active bog?	**Likely to be required** **Cutting** or **burning** for restoration purposes and **Sphagnum \ Cotton-grass inoculation \ seeding**.
Less than 10% cover, and usually absent	Often extensive cover, usually more than Sphagnum mosses	Usually present, but sometimes just a few strands	75% cover or more, usually with a dense, closed heather canopy	May be present	 **inactive (modified)**	**Inactive** Are hydrological measures in place to support a more active bog?	**Required** **Cutting** or **burning** for restoration purposes and **Sphagnum \ Cotton-grass inoculation \ seeding**

Vegetation management on heath (growing on shallow peat less than 40cm deep or other soils and rocky areas)

Sphagnum mosses (red, brown or green)	Feather mosses	Presence of Cotton-grasses	Heather	Other dwarf shrub species	Habitat	**Management**
					**Sensitive Damp Heath ('Rocky Bog)** **Sensitive Dry Heath** **Dry Heath**	**Not Required** **Not Required** **Rotational Burning**
Usually present as carpets	Usually present	No	Present, often dominant	Often present	  **Sensitive Damp Heath ('Rocky Bog')** on steep slopes in ravines and above watercourses on shady slopes	**Not Required**
Usually absent	Usually present	No	Present, often dominant	Often present	  **Sensitive Dry Heath** on steep slopes, exposed rock and scree	**Not Required**
Usually absent	Usually present	No	50% cover or more and 30cm height or more	May be present	 **Dry Heath** areas in mature or degenerate growth phase of heather	**Burning** on 10 year rotation

***Sensitive areas of very active blanket bogs where management of vegetation is not required* (*See Heather Beetle principles)**








Sensitive areas of damp heath ('rocky bog') and dry heath where vegetation management is not required

Damp heath ('rocky bog') on steep slopes & ravines	Sensitive areas of dry heath on rock scree
	
	
	

Mechanical cutting for restoration purposes on less active and modified blanket bog dominated by cotton grass, grasses or heather

Generally cutting is the preferred restoration technique, but will not be possible in a large number of locations at Wemmergill. It is acknowledged that cutting is not possible where;

- it is too wet to cut the plot with machinery and rutting or disturbance to the peat is likely in the plot, or access to the site would cause rutting elsewhere
- structural diversity of the vegetation (e.g. Sphagnum hummocks, cotton grass tussocks) would be reduced

If any one or more of these circumstances exist then burning (and not cutting) will be appropriate. It is the responsibility of the land manager to use the vegetation management principles as a guide and to make a professional judgement whether to use cutting or burning on a case by case basis.

- Cutting of heather should take place between 1 July and 1 April, providing that there are no nesting birds in the location of the works.
- All cutting will be carried out by low ground pressure vehicles, preferably during the autumn months when ground conditions are likely to be firmer.
- Where required, follow up treatments (e.g. the spreading or inoculation of each cut area of blanket bog with Sphagnum mosses and cotton-grass seed or pellets) will occur within one year of the initial cut.
- There should be patches of degenerate heather left uncut in traditional merlin nest zones and across the site to achieve a mosaic of heather structure.
- Use of cutting machinery must not result in rutting or exposure of the peat.
- Seven areas totalling approximately 50Ha were consented in 2016. Further such areas will be agreed during the plan and added to the plan as they are identified.

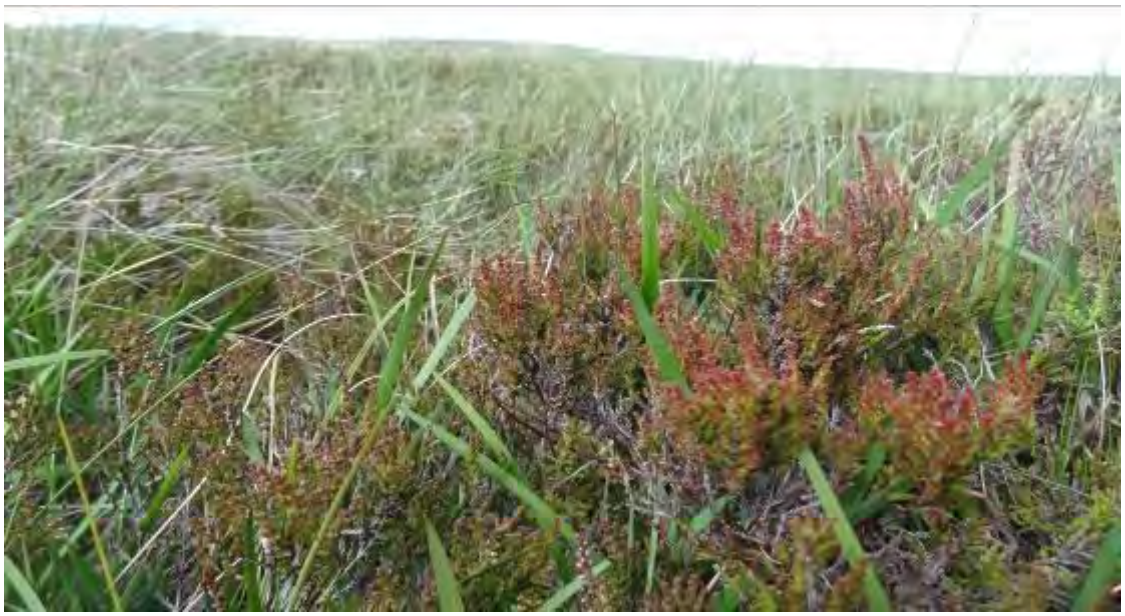
Burning for restoration purposes on less active and modified blanket bog

- The following principles shall apply from the 1st February 2018. Until that date burning may be carried out in accordance with the Burning Management Plan dated 1st October 2006.
- If cutting has been ruled out then burning for restoration purposes can be carried out on less active and modified blanket bog.
- Following the burn the moss layer will remain intact.
- Where required, follow up treatments (e.g. the spreading or inoculation on each burnt area of blanket bog with Sphagnum mosses and cotton-grass seed or pellets) will occur within one year of the initial burn.
- There should be patches of degenerate heather left unburnt in traditional merlin nest sites and also to achieve a mosaic of heather structure across the site.

Burning on a rotation for the maintenance of dry heath

- Burning heathland can take place to maintain the quality, diversity and structural variety of habitat.
- There should be patches of degenerate heather left unburnt in traditional merlin nest sites and also to achieve a mosaic of heather structure across the site.
- Burning can take place on a 10 year rotation and should be conducted when the heather is 30cm or more in height.

Heather Beetle management on blanket bog



- Patches of heather on modified and active blanket bog showing no signs of recovery and which have been affected by heather beetle may be managed by cutting or burning. **On areas of very active blanket bog this will be subject to agreement with Natural England before works commence.**
- Burning for regeneration of beetle damaged areas to enable the development of a diverse blanket bog, including heather, can take place between 1 October and 15 April.
- Cutting for regeneration of beetle damaged areas can take place between 1 July and 1 April, providing that there are no nesting birds in the location of the works.
- All machinery to be used in the cutting or burning on deep peat will be low ground pressure vehicles, preferably during the autumn months when the ground conditions are likely to be firmer.
- Heather seeding may be considered to assist with the development of a diverse blanket bog.

Moorland restoration works on acid grassland

- Areas of acid grassland ('white moor') will be sprayed off with glyphosate ('round up') and seeded with an appropriate moorland seed mix, including heather, to regenerate or create upland heathland habitat for grouse moor \ nature conservation purposes.
- These areas will be agreed during the plan and added to the plan as they are identified.
- These works should take place between 1 July and 1 April, providing that there are no nesting birds in the location of the works.

5. Bare Peat & Grip Blocking Specifications

For detail please see the following:

Annex 1a Wemmergill Estate Moorland Survey

Annex 1b Wemmergill Estate Grip Blocking Specification

Annex 1c Wemmergill Estate Bare Peat Specification

Exception: unblocking of erroneously blocked natural water courses (see areas 11 and 12 marked on map at end of Chapter 6)

The specifications for grip blocking works in Annex 1b describe in detail the methodology to be used for blocking artificially created grips at key locations across the Wemmergill estate. However, during the site visits of 2016 and 2017 in the vicinity of the Sally Ann Butts, it was noted that natural water courses has been erroneously blocked in a number of rush-dominated flushes and this has resulted in excessive waterlogging and disturbance to the immediate surrounding area of peat and blanket bog vegetation, including localised dieback and suppression of heather plants

Example of erroneously blocked watercourse in rush gutter near Sally Ann Butts which causes waterlogging and disturbance to adjacent areas of blanket bog and heather vegetation

Example of suppressed heather vegetation on blanket bog near Sally Ann Butts caused by overflowing water from erroneously blocked watercourse in adjacent rush gutter

Location of areas where erroneously blocked watercourses will be cleared

Number on Map at end of Chapter 6	GPS Location
11	NY 89181 24099 to NY 890041 24331
12	NY 89569 24127 to NY 89774 24256

As part of this management agreement, these erroneous grips will be removed to reinstate the natural hydrology of the area and alleviate the negative impacts on the surrounding peat and vegetation (see locations 11 and 12 on agreed map at end of Chapter 6).

6. Monitoring

Surveys

Vegetation surveys were carried out in 2014/15 on Lune Forest SSSI units: 5, 6, 7, 18, 20, 23, 24, 25 (a total of 1241.50ha). The remaining Lune Forest SSSI units will be site checked in 2016/17: 8, 9, 10, 21, 33, 34 (a total of 2758.8ha). This information will help to provide a baseline for both parties to monitor progress towards achieving our joint outcomes.

Annual Review

An annual liaison meeting will act as a point of formal review.

The infrastructure map will also be updated annually to reflect which infrastructure works have been completed and to make any necessary changes.

Review of issues in wetter areas of bogs

Review meetings will take place to look into any impacts and issues in the vicinity of lines of butts in wetter areas of blanket bog. These areas will be subject to careful assessment and review at 3 yearly periods and appropriate remedial measures agreed where required.

Fixed point photographic monitoring

Locations have been identified across the estate (see map of agreed fixed point monitoring sites and heather protection trial plot areas) where annual site visits and photographic monitoring will take place to enable both parties to see what effects the Agreement is having towards achieving our joint outcomes.

Fixed Point Photography is a tool which enables us to record and monitor visual change within the landscape. It involves taking photographs, from the same point, at intervals over a period of time. The photographs are then compared to identify if changes occur (e.g. before and after restoration cutting \ burning or before and after the creation of heather protection ridges) and if such changes have a positive or negative impact upon the character and condition of the landscape or habitats over a period of time with reference to our joint outcomes.

In March of each year fixed point photography will be carried out at two different levels at agreed locations:

(i) landscape - scale photographs will be taken to investigate potential large –scale changes in the landscape across the estate.

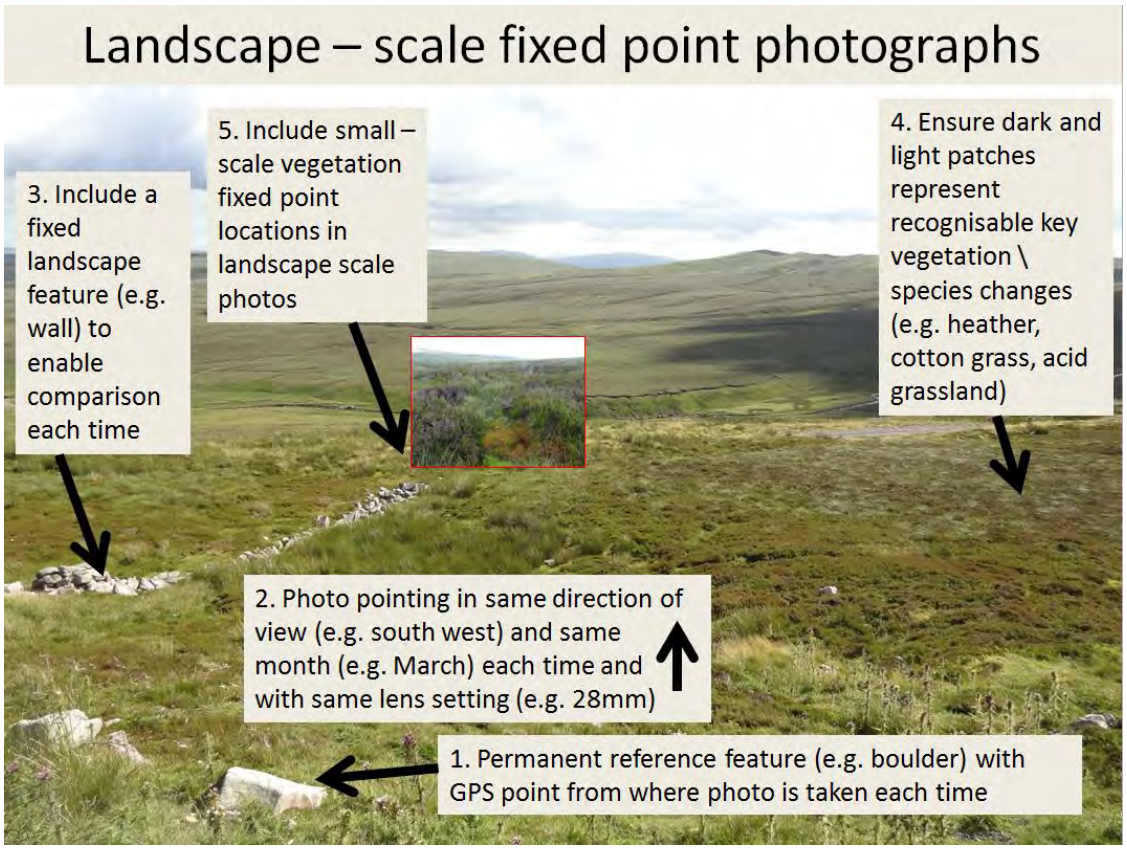
(ii) smaller - scale photographs will be taken to investigate more subtle potential changes in plant species composition and cover over time. These will be particularly useful in assessing the impacts of restoration management techniques such as vegetation cutting or burning. The photographs will cover an area of 20 x 20m approximately.

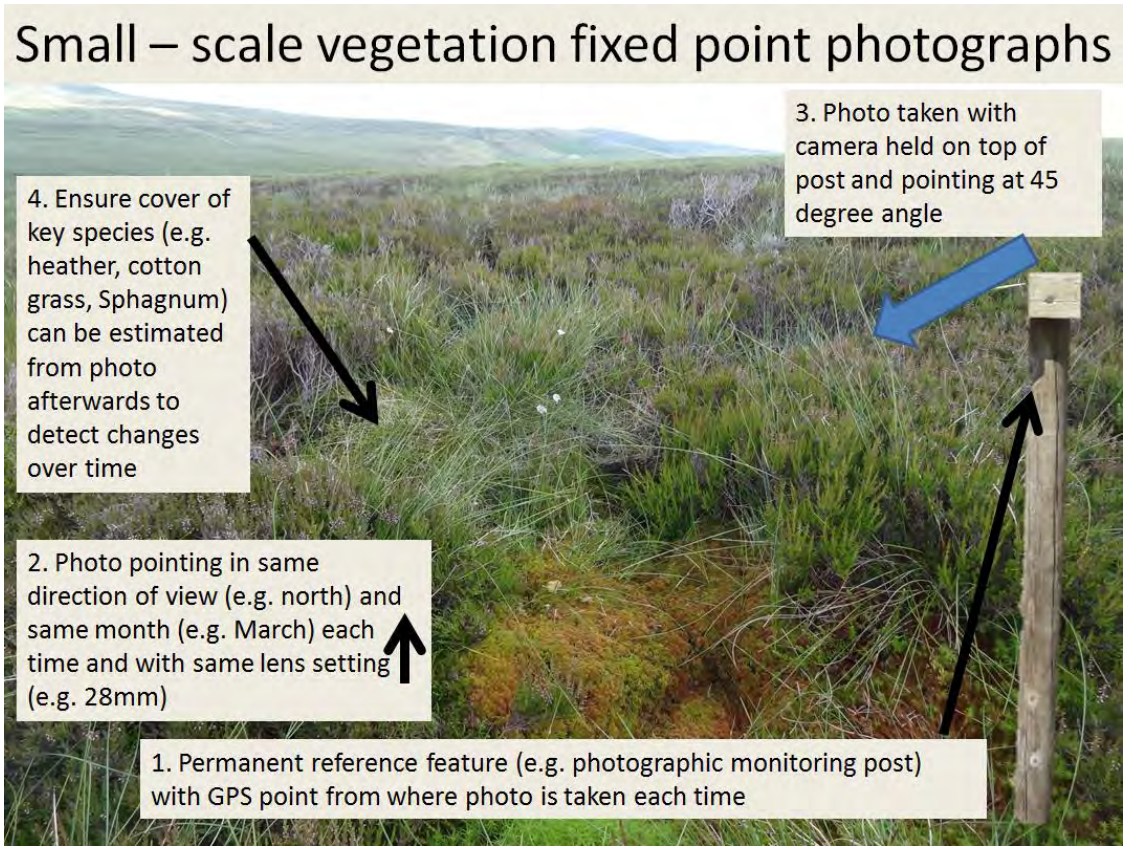
The methodology for each of these is summarised in the annotated pictures overleaf.

The results of these fixed point photographs will be considered at each annual review meeting and be used to inform future management on the estate.

Remote satellite sensing

To complement the above on-site photographic monitoring, the potential longer-term use of new remote sensing techniques to study vegetation changes in response to land management practices will be explored during years 1 – 3 of this management plan. If successful, such techniques will be used alongside the photographic monitoring to inform future discussions regarding the delivery of the agreed joint outcomes.

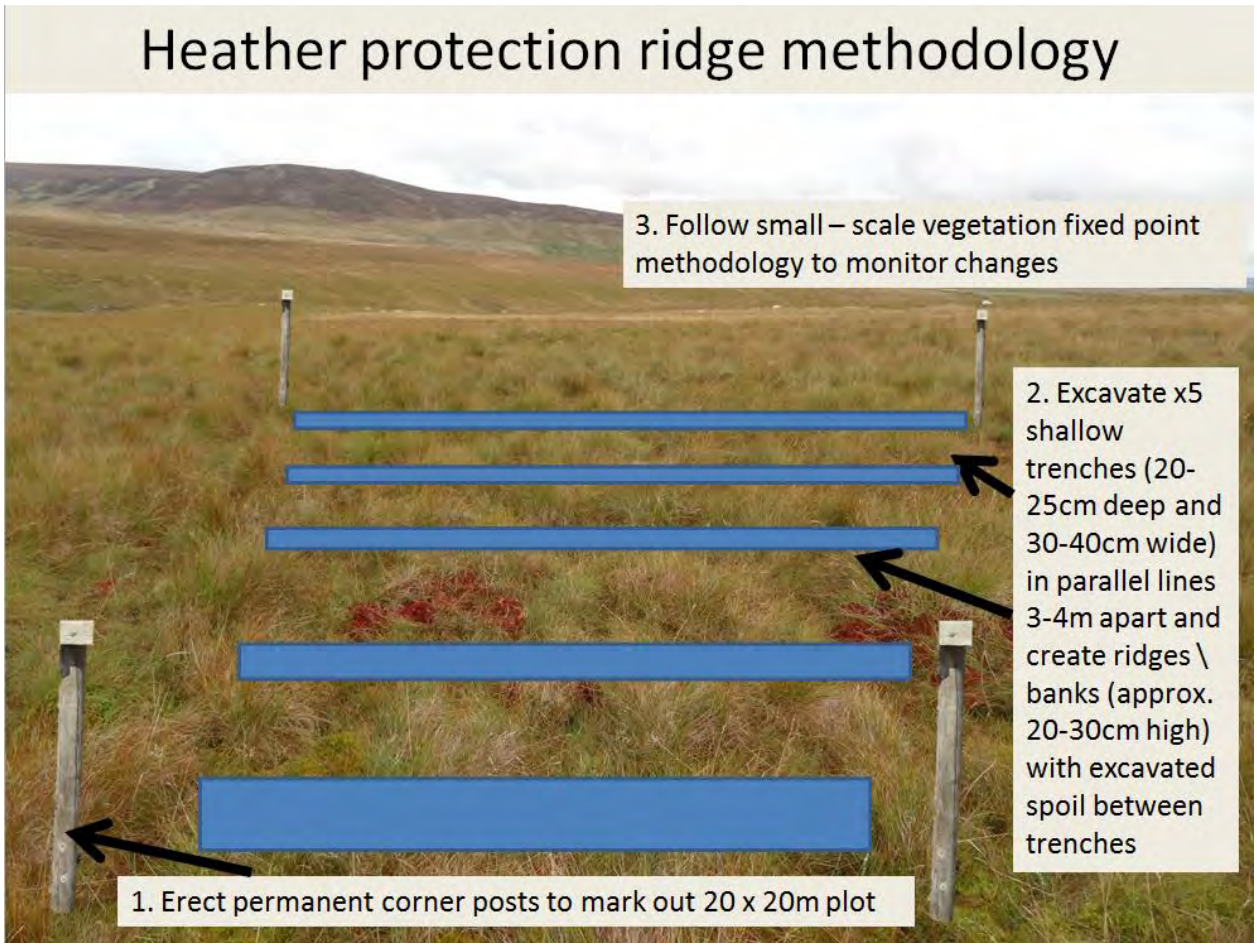




Heather protection ridges trial plots

A series of heather protection ridge trial plots will be established at agreed locations across the estate to investigate the potential of this management technique in meeting our joint objectives in a range of different situations as listed in the table at the end of this chapter (e.g. wet blanket bog, dry acid grassland, etc.).

Each heather protection plot will measure 20m x 20m with each corner marked with clearly visible permanent marker posts so that each plot can be easily relocated in following years. Each ridge will be created by excavating shallow and narrow trenches measuring 20-25cm deep by 30-40cm wide in a sequence of parallel lines spaced at 3-4m intervals with the excavated peat \ soil placed between them to form the ridges of approximately 20-30cm height. The works will be conducted by a low ground pressure tractor \ mini – excavator when ground conditions are as dry as possible between 1 July to 1 April and providing there are no nesting birds in the location of the works.



In blanket bog situations, sites will be selected such that the creation of the ridges will not result in connectivity to or impacts on existing blocked grips. If any of these blanket bog plots are located on sloping terrain then the ridges will be created to run across the slope (not downhill) to prevent any artificial drainage impacts.

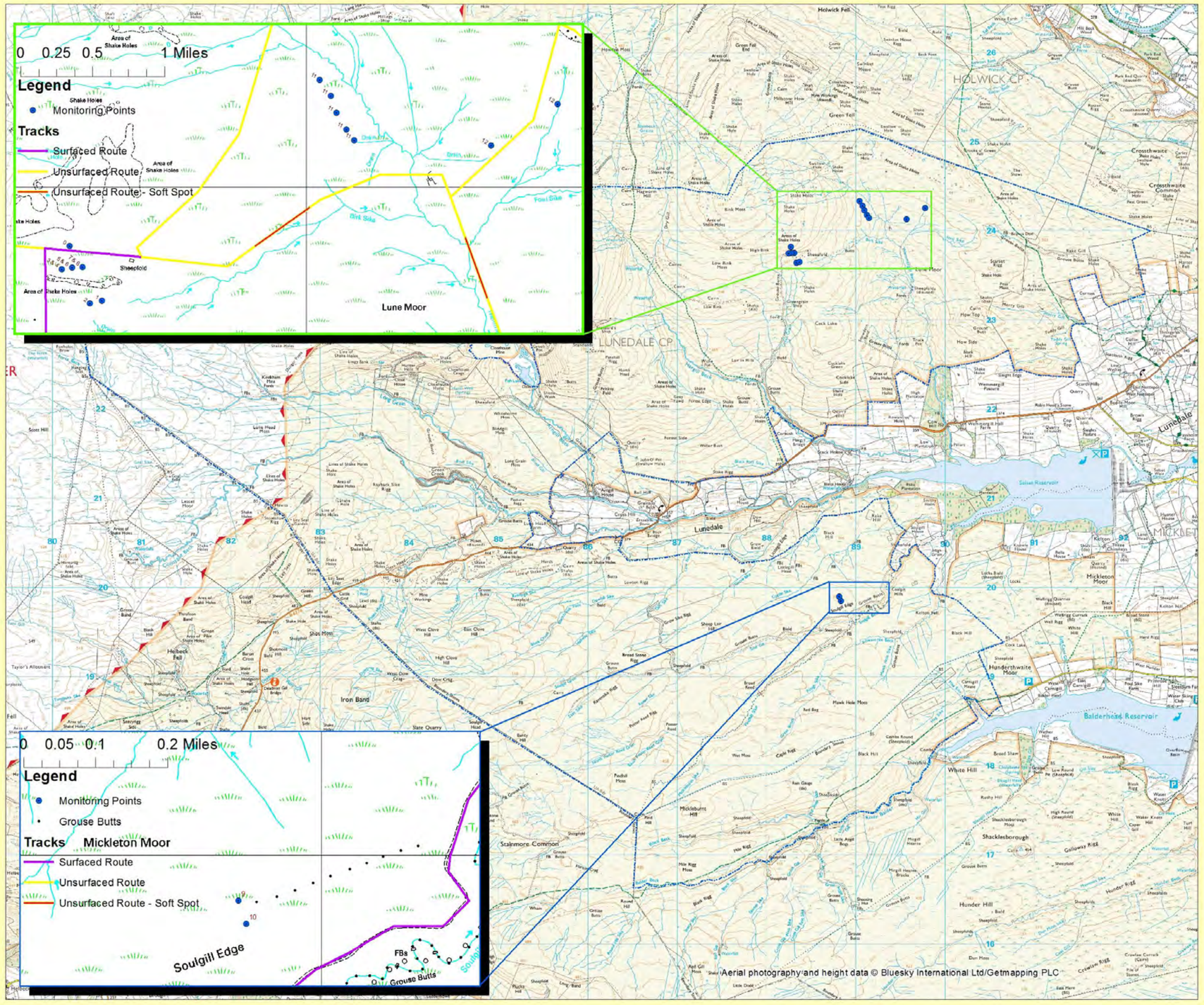
Photo: Representatives of Wemmergill Moor Ltd. and Natural England discussing potential heather protection monitoring plots, March 2017.

The heather protection trial plots will be seeded with a moorland mix (including heather, cotton grasses, etc.) and will be monitored using the small – scale fixed point methodology described earlier and will be considered at each annual review meeting and be used to inform future management on the estate.

To inform these trials at Wemmergill Estate, Representatives of Natural England and Wemmergill Moor Limited visited High Abbotside near Cotterdale in North Yorkshire during May 2017 to inspect the heather protection ridges on blanket bog habitat that have been created over the last 15 years.

Photo: Heather protection ridges on blanket bog at High Abbotside, near Cotterdale in North Yorkshire (May 2017)

Agreed fixed point photography monitoring areas, heather protection trial plots and locations of natural water courses to be unblocked



Agreed fixed point photography monitoring areas, heather protection trial plots, and locations of natural water courses to be unblocked

Legend

- Monitoring Points
- Wemmergill Estate Boundary

NATURAL ENGLAND

APGB Aerial Photography for Great Britain

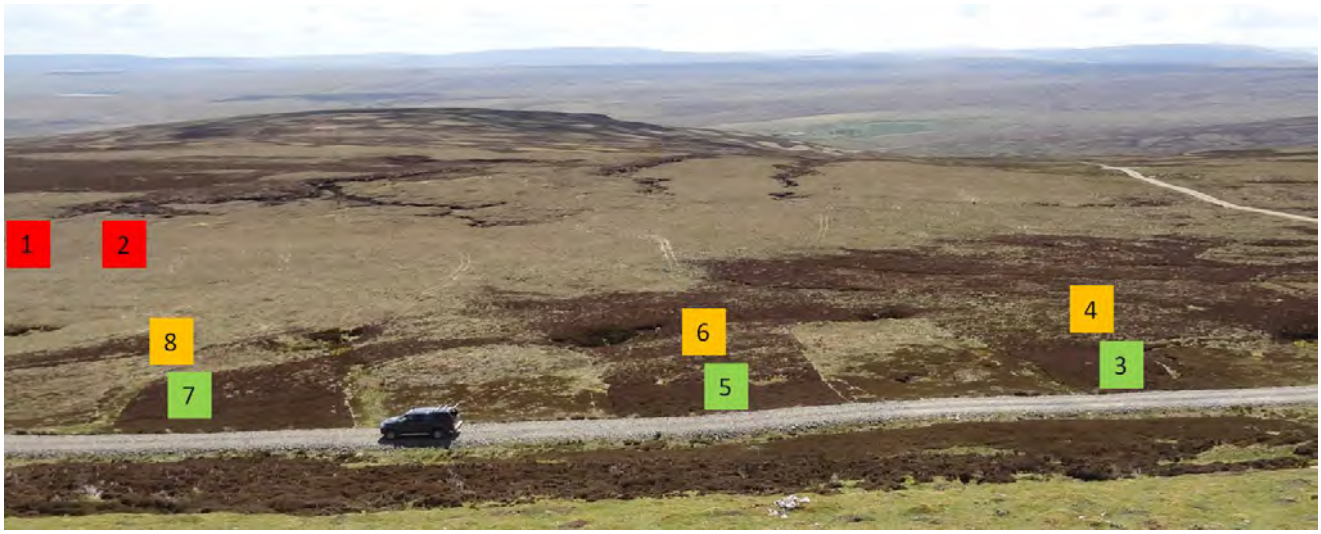
Scale (at A1): 1:20,000

Map produced by Patrick Oulton, Northumbria Area Team
Date: 06/06/2017. Map Reference:

Agreed fixed point photography monitoring areas to investigate impacts of restoration cutting \ burning and heather protection ridges

Landscape – scale fixed point photography location at top of hillside immediately north of stone road to Sally Ann Butts and overlooking small scale trial plots

Number on Map	GPS Location	Reference number of photo taken on 18 May 2017	Notes
0	NY 88269 23819	DSC08218	Landscape view showing location of small scale blanket bog plots 1 - 8



Landscape scale photo taken from location '0' on map showing location of small-scale fixed point monitoring plots 1 – 8 (see table overleaf)

Small – scale vegetation plots on blanket bog immediately south of stone road to Sally Ann Butts

Number on Map	GPS Location	Reference number of photo taken on 18 May 2017	Notes
1	NY 88370 23649	DSC08217	Blanket bog in 'red' zone where no restoration management is undertaken
2	NY 88333 23641	DSC08215	Blanket bog in 'red' zone where heather protection ridges are to take place. Photos of 'before' and 'after' to be taken over a period of time.
3	NY 88247 23748	DSC08213	Blanket bog in 'green' zone where no restoration management is undertaken
4	As above – plot lies immediately downslope and south of green plot	As above	Blanket bog in 'amber' zone where no restoration management is undertaken
5	NY 88278 23753	DSC08212	Blanket bog in 'green' zone where restoration management (cutting) is to take place. Photos of 'before' and 'after' to be taken over a period of time.
6	As above - plot lies immediately downslope and south of green plot	As above	Blanket bog in 'amber' zone where restoration management (cutting) is to take place. Photos of 'before' and 'after' to be taken over a period of time.
7	NY 88310 23753	DSC08211	Blanket bog in 'green' zone where restoration management (burning) is to take place. Photos of 'before' and 'after' to be taken over a period of time.
8	As above - plot lies immediately downslope and south of green plot	As above	Blanket bog in 'amber' zone where restoration management (burning) is to take place. Photos of 'before' and 'after' to be taken over a period of time.

Plot 1 Blanket bog monitoring plot (20 x 20m) in 'red' zone immediately south of stone track to Sally Ann Butts where no restoration management will take place

Plot 2 Blanket bog monitoring plot (20 x 20m) in 'red' zone (immediately south of stone track to Sally Ann Butts) where heather protection ridges are to take place

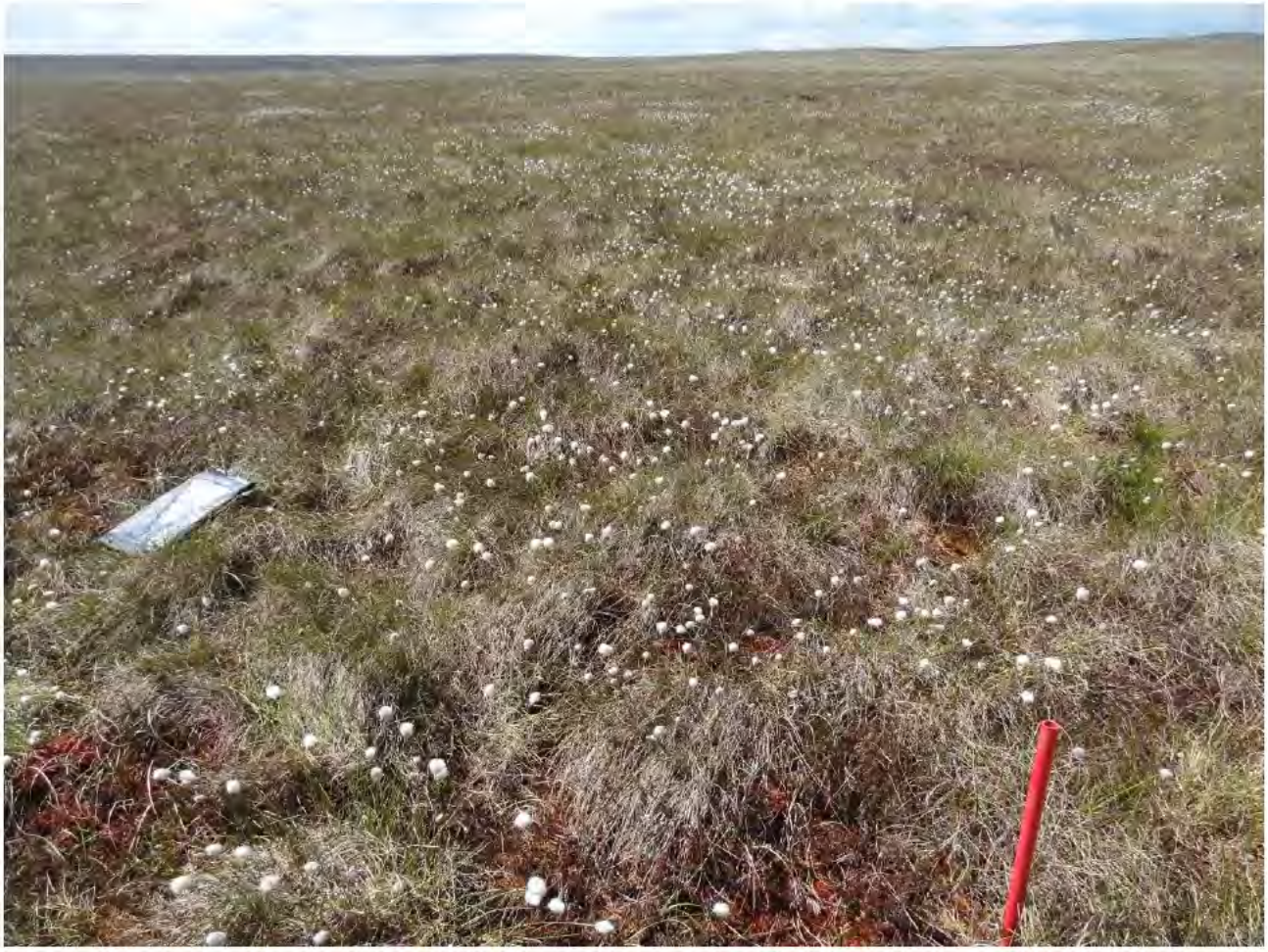
Plot 3 & 4 Blanket bog monitoring plot (20 x 20m approx) in 'green' zone (plot 3 in foreground) and 'amber' zone (plot 4 in background) immediately south of stone track to Sally Ann Butts where no restoration management will take place

Plot 5 & 6 Blanket bog monitoring plot (20 x 20m approx) in 'green' zone (plot 5 in foreground) and 'amber' zone (plot 6 in background) immediately south of stone track to Sally Ann Butts where restoration cutting management will take place

Plot 7 & 8 Blanket bog monitoring plot (20 x 20m approx) in 'green' zone (plot 7 in foreground) and 'amber' zone (plot 8 in background) immediately south of stone track to Sally Ann Butts where restoration burning management will take place

Small – scale vegetation plots on blanket bog at Shipka Back Butts

Number on Map	GPS Location	Reference number of photo taken on 18 May 2017	Notes
9	NY 88813 19899	DSC08210	Blanket bog in 'red' zone where no restoration management is undertaken
10	NY 88830 19845	DSC08209	Blanket bog in 'red' zone where heather protection ridges are to take place. Photos of 'before' and 'after' to be taken over a period of time.



Plot 9 Blanket bog monitoring plot (20 x 20m) in 'red' zone at Shipka Butts where no restoration management will take place

Plot 10 Blanket bog monitoring plot (20 x 20m) in 'red' zone at Shipka Butts where heather protection ridges are to take place

7. Terms and Conditions

1. Management of the Land

1.1 The Land Owner must obtain any necessary consents and/or permissions needed in order for its obligations to be carried out under the Agreement, and ensure that such consents and/or permissions are maintained and complied with as necessary; and

1.2 Natural England and the Land Owner agree to collaborate with each other for the benefit of the Land, and provide each other with regular information and communication on all aspects of the management of the Land.

1.3 For the avoidance of doubt, no funding is being provided under the terms of this Agreement, for any of the works described in it.

1.4 If you wish to change the proposed operations or their location or to carry out additional operations for which consent has not yet been given, or if a time period set out above has expired, you must give further written notice to Natural England. Before doing so, you can seek advice from Natural England.

1.5 You may face enforcement action if you carry out or permit unauthorised operations which destroy, damage or disturb the notified features of special scientific interest.

1.6 Before undertaking or permitting the operations specified in this consent, you may also need to get additional permissions from other authorities. For example, the consented operations might also require planning permission from the Local Planning Authority, a permit from the Environment Agency or a licence from the Forestry Commission. It is your responsibility, as the grantee of this consent, to ensure that no other permissions or consents, whether of a public or a private nature, are needed and, if any are needed, to acquire them before you exercise this consent.

1.7 This is Natural England's consent only, and it does not allow you to undertake or permit the specified operations without first having obtained all of the necessary permissions needed to undertake the operation lawfully. If you do not obtain all of the permissions you require, and carry out the work anyway, you may face enforcement action from other authorities or parties.

1.8 As the grantee of this Consent, you are responsible for carrying out the consented operation(s) safely and in all ways according to the law.

2. Disposals

If you want to make a Disposal of all or part of the land you must notify Natural England in writing within 14 days of exchange of contracts giving full details of the proposed Disposal.

3. Management Reviews

3.1 The Land Owner and Natural England must consult each other regularly about the management of the Land and will have an annual review meeting.

3.2 At any meeting, the Land Owner and Natural England must:

3.2.1 review this Agreement and its operation;

3.2.2 consider the future management of the Land;

3.2.3 consider whether, in the light of the proposed future management of the Land, the Shared Outcomes could more appropriately and/or effectively be achieved, without them being compromised in any way, by the continuation of this Agreement and or any modification of it

3.3 If either the Land Owner or Natural England considers it is no longer possible or desirable to achieve the Shared Outcomes, and subject to clause 5.3.2, both parties will use their best endeavors to agree modifications of the Agreement, as appropriate.

4. Duration of Agreement

This agreement shall remain in existence until the expiry of 25 years from its date or until terminated in accordance with the provisions of clause 5

5. Events of Default and Termination of the Agreement

5.1 The Agreement shall terminate immediately on disposal of the land or any part of it by the Land Owner

5.2 If there is an event of default as described in clause 5.3, either party may end the Agreement early by giving written notice. Such notice shall state the date that the Agreement will end, which may be immediate.

5.3 An 'event of default' occurs for the purposes of clause 5.2 in any of the following circumstances:

5.3.1 if either party is in breach of any of its obligations under the Agreement. If the breach can be put right, each party will allow the other a reasonable time to do so before ending the Agreement, but if it cannot be put right either party may end the Agreement immediately;

5.3.2 if, in either party's opinion, it proves impossible, impractical or undesirable to achieve the Shared Outcomes;

6 Land Owner's Confirmations

6.1 By signing this Agreement, the Land Owner confirms to Natural England that it has full power to enter into the Agreement on the terms set out in it and without needing to obtain anyone else's consent.

6.2 The Land Owner further confirms that it has taken and will continue to take all necessary steps to ensure that all persons who have any right of management control in relation to the Land and/or any rights (including rights of access) to the Land and/or any interest in the Land will not breach the provisions of the Agreement over the entire period of the Agreement.

7. Information

7.1 The Land Owner consents to the disclosure by Natural England to the public of any information about the Agreement to the extent necessary to enable Natural England to comply with its statutory obligations under the Freedom of Information Act 2000 and/or the Environmental Information Regulations 2004. Details disclosed on request or proactively on the internet or in publications may include, but are not limited to, applications, agreements, the Land Owner's name and address, the name and address of the farm or business, grid references, the location of parcels, details of the environmental features and details of inspections and/or monitoring.

8. Disputes

8.1 The Land Owner and Natural England commit to resolving any disputes or differences between them in relation to the Agreement or the ending of the Agreement by amicable means.

8.2 Any dispute that cannot be resolved in the manner described in paragraph 8.1 shall be referred to and determined by an independent solicitor or barrister of at least ten years standing acting as an expert and who is experienced in drafting, negotiating and advising upon agreements similar to this agreement, such independent person to be agreed between the Parties or failing such agreement to be nominated by the President or Vice-President or other duly qualified officer of the Law Society on the application of either party.

9. Meaning of certain words

9.1 'the **Land**' means the whole or any part of the land included in Higher Level Stewardship Agreements AG00387850 and AG00687777 (which expire on 31st January 2018) and shown edged in blue on the Annex 2 Wemmergill Estate Map (including all buildings, fixtures and fittings on the Land and all water on or covering the Land, whether now or at any time after the date of the Agreement);

9.2 '**Disposal**' means the disposal of the Land or any part of it by way of sale, exchange or lease, or by way of the creation of any easement, right or privilege, or by giving someone other than the Land Owner the right to use the Land, or in any other way, except by way of mortgage or charge; However, 'Disposal' excludes any arrangement by which the Land Owner retains the possession and/or control of the Land or by which the Land remains at its disposal: for example, most contract farming agreements and seasonal grazing and mowing licences will not amount to a 'Disposal';

9.3 '**Map**' means the map or maps attached to the Agreement

10. Interpretation

10.1 In the Agreement:

10.1.1 the headings are used for guidance only;

10.1.2 words suggesting the singular include the plural and vice versa;

10.1.3 words suggesting any gender include both other genders;

10.1.4 save where stated to the contrary, any reference to the Agreement or to any other document includes any permitted variation, amendment or supplement to such document;

10.1.5 words preceding 'include', 'includes', 'including' and 'included' shall be construed without limitation by the words which follow those words;

10.1.6 any reference to any enactment, order, regulation or other similar instrument shall be construed as a reference to the enactment, order, regulation or instrument as amended, replaced, consolidated or re-enacted; and

10.1.7 a reference to a person includes firms, partnerships and corporations and their successors and permitted assignees or transferees.

10.2 It is not intended that any third party should have the right to enforce a provision of the Agreement by virtue of the Contracts (Rights of Third Parties) Act 1999.

10.3 The Agreement shall be governed by and construed in all respects in accordance with the laws of England and Wales. Subject to clause 8 (Disputes), the English courts have exclusive jurisdiction to settle any disputes which may arise out of or in connection with the Agreement.

10.4 Except where expressly provided in the Agreement, the Agreement constitutes the entire agreement between the parties in connection with its subject matter and supersedes all prior representations, communications, negotiations and understandings concerning the subject matter of the Agreement.

IN WITNESS of which this agreement is executed as a Deed.

THE COMMON SEAL of
Wemmergill Moor Limited was
hereunto affixed in the
presence of:)

)

Director/Secretary) ----------

EXECUTED as a Deed by)

affixing the Common Seal of)

Natural England

in the presence of) ----------

Date) ---

References

Lunedale Heritage Project Website http://www.lunedaleheritage.org.uk/wemmergill.htm

Lune Forest Citation

Specifications adapted from notices submitted to Natural England for consent (2013 – 2016) by Valerie Hack Restoration Ecology on behalf of Wemmergill Moor Limited.