Nether Moor Management Plan

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1 Introduction

The National Trust's High Peak Moors Vision, 2013 (HPMV) laid out an aspirational and overarching vision for the Dark Peak estate's SSSI moorlands. This management plan is designed to implement the vision on Nether moor, and is to be used in conjunction with the 'High Peak Estate Guiding Principles'. The plan adopts an Outcomes Approach (NE, 2015) as described in the Guiding Principles. This includes a review process to assess progress towards agreed outcomes. This review will then inform agreed updates to this plan.

1.1 Site description

Nether moor lies within the Dark Peak SSSI. This area has two international designations. It is included in the South Pennine Moors Special Area of Conservation (SAC) that is notified for the upland habitats it supports; particularly blanket bog, wet heath, dry heath, transition mires and woodland. It is also included in the Peak District Moors (South Pennine Moors Phase 1) Special Protection Area (SPA) that is notified for upland breeding bird populations. The Dark Peak SSSI qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European Importance of Golden Plover, Merlin and Short-eared owl.

Nether moor covers an area of 653 ha, comprising the eastern end of the Kinder Scout plateau, a relatively narrow flat area dropping off to the slopes which run to the Edale valley (river Noe) in the south and the Woodlands valley (river Ashop) to the north and east. Blanket bog is restricted to the plateau and slopes of Ashop Moor to the east of Blackden Brook. Otherwise this moor is largely dwarf shrub heath, often fragmented in a mosaic with unimproved acid grassland and flush features, a mix of habitats with the potential to benefit a range of moorland bird species. The blanket bog on the higher ground of Nether lies outside the Kinder exclusion fence (installed in 2012 to support the restoration of the blanket peat across Kinder Scout) which cuts across from Blackden Brook to Grindsbrook clough. The blanket bog has recieved restoration treatments employed elsewhere across the wider plateau (brashing, lime and fertiliser and seed applications), and has benefitted from some rewetting works at Madwoman's Stones. Bracken is widespread across the south eastern slopes above the Edale valley, particularly within cloughs. Blackden Brook, Nether moor's boundary to the north west with adjacent Ashop moor, contains a Geological Conservation Review site (GCR): a series of sandstone outcrops visible along sections of the river Ashop, of importance for their stratigraphy giving a picture of the geological history of the carboniferous period in this region.

1.2 Site management

Nether Moor has been managed under an Environmentally Sensitive Areas Scheme (ESA) agreement since the establishment of the North Peak ESA in 1988, and under a subsequent Higher Level Stewardship (HLS) agreement from 2013 (agreement AG00400087) ongoing to 30/04/2023. Re-wetting work began on Nether Moor under the ESA capital works plan, with gully blocking starting around Madwomans Stones in 2012 and continuing under HLS. Further dams were installed close by on the adjacent catchment at Blackden Brook in 2013-14, with associated Cottongrass plug planting and *Sphagnum* spreading carried out behind gully blocks in this area under the Catchment Restoration Fund project (2012-15). The "trig" point was restored to reduce the surrounding erosion, some further treatment of bare peat areas may be required on this moor. Scattered tree planting has been carried out in Blackden clough, and bracken control in various areas where problematic and spreading – both HLS funded. Since 2013, in addition to the HLS agreement, the Clough Woodlands Project has been funded through the English Woodlands Grant Scheme (eWGS) to establish clough woodland in selected areas around the edges of the moor (table 1.2)

1.3 Grouse moor

Extensive areas of Nether moor have been managed as grouse moor through the rotational burning of heather. Frequent burning has been used for many years as a method of vegetation control to manage biomass and fuel load to reduce the risk of wildfire, and to encourage the germination and regeneration of heather. The HPMV set out an aspiration to stop regular burning on blanket bog, to reduce the impact on the hydrology and reduce heather dominance. The preferred means of management will be through cutting, with burning only employed on heath, and only permitted on blanket bog when consented separately as a special measure. See Guiding Principles for more information.

The moor is grazed by sheep under HLS prescriptions, with separate grazing agreements for tenants on the north and south sides of the moor.

1.4 Management Units

Figure 1.1 shows the site and infrastructure (a) and aerial image (2009) (b). The site is divided into 7 management units which represent the broad differences in habitat character and physical barriers such as fences and walls. The management units are further subdivided by two separate grazing tenancies, the spilt running west to east between the main management units of Nether Moor North (NETH01) and Nether Moor South (NETH02) demarks the boundary between the two.

Figure 1.2a shows the predominant habitats present on the moor. Habitats were originally defined during the ESA, 1998. During 2012-13 the ESA habitat map was updated using recent (2009) aerial photography, ground truthing surveys and the most recent SSSI condition assessments. This information was used to inform the Farm Environment Plan (FEP) as part of the moorland HLS application, which broadly defines habitat categories and now forms the 2013 baseline to the HPMV and HLS.

Blanket bog can be further defined by Natural England's Blanket Bog Restoration Strategy (2015) under 6 separate states, see the Guiding Principles for more information. The blanket bog states typically found on the High Peak Moors are also summarised in table 1.1, and those specific to Nether Moor in figure 1.2b and table 1.2.

Table 1.1 Relationship between different habitat codes

FEP code	Blanket bog states	ESA code
MO6 – Blanket bog	State 2 – Bare peat	Bare Peat & Eroding Moorland
	State 3 – Dwarf shrub dominated bog	Dry bog heather dominated. Dry bog, non-heather dominated
	State 4 – Grass/sedge dominated	Cotton grass moorland
	State 5 – Modified bog	

Table 1.2 Site compartments and habitat types summarised together with their management schemes.

Site name	Management unit	Unit Code	Unit area (ha)	Scheme (options)	Main habitat types (FEP code) and Blanket Bog State	Area (Ha)
Nether Moor	Nether Moor North	NETH01	273	UELS/HLS (EL6, UX3, UD13, A13, HL10, HL12, HL16, HR5, HR7)	Blanket Bog (M06)	33
					State 3	15
					State 4	18
					Dry Heath (M04)	115
					Acid Grassland (M01)	3
					Acid Flush (M08)	1
					Fragmented Heath (M02)	114
					Rocks, Cliff & Scree (M07)	0.04
					Bracken	6
	Nether Moor South	NETH02	295	UELS/HLS (EL3, UX2, EL5, EL6, UX3, UD13, A13, HL10, HL12, HL13, HL16, HR5, HR7, HC17)	Blanket Bog (M06)	94
					State 2	3
					State 3	50
					State 4	15
					State 5	26
					Dry Heath (M04)	141
					Acid Grassland (M01)	33
					Acid Flush (M08)	2
					Fragmented Heath (M02)	15
					Rocks, Cliff & Scree (M07)	0.1
					Scrub	0.06
					Broadleaf semi-natural woodland (T08)	0.2
					Bracken	9
	Jagger's Clough	NETH03	23	UELS (UX3) eWGS	Dry Heath (M04)	15
					Acid Grassland (M01)	3
					Rocks, Cliff & Scree (M07)	0.02

					Acid Flush (M08)	0.3
					Scrub	0.8
					Bracken	3
	Blackden Clough	NETH04	24	eWGS UELS/HLS (EL6, UX3, HC17)	Dry Heath (M04)	19
					Acid Grassland (M01)	0.3
					Rocks, Cliff & Scree (M07)	0.1
					Acid Flush (M08)	0.07
					Fragmented Heath (M02)	2
					Bracken	2
	Blackley Hey	NETH05	25	eWGS UELS (UX2, UX3, A13)	Dry Heath (M04)	8
					Acid Grassland (M01)	3
					Fragmented Heath (M02)	7
					Acid Flush (M08)	0.1
					Scrub	0.07
					Broadleaf semi-natural woodland (T08)	0.3
					Bracken	5
	Clough Farm	NETH06	9	eWGS UELS (UX2, UX3, A13)	Dry Heath (M04)	0.6
					Acid Grassland (M01)	0.4
					Acid Flush (M08)	0.04
					Scrub	0.3
					Broadleaf semi-natural woodland (T08)	1
					Bracken	7
	Rowland Cote	NETH07	4	UELS/HLS (EL5, UX2, UX3, HC17) eWGS	Dry Heath (M04)	0.8
					Acid Grassland (M01)	0.5
					Acid Flush (M08)	0.08
					Broadleaf semi-natural woodland (T08)	0.1
					Bracken	0.5

2 Current status of main features

All habitats are in 'unfavourable recovering' condition according to Natural England's current assessment methods (JNCC, 2009). Features are described below under National Trust Land Outdoors and Nature (LON) themes.

2.1 LON Theme: Rich in Wildlife

2.1.1 Blanket bog

Despite extensive gully blocking on the areas of blanket bog on the flatter plateau to the south west of this moor (around Madwoman's Stones and Blackden Edge) there is still work to be done to raise the water table and increase species diversity, particularly at the eastern end of the plateau area which is drier with fewer pools, less *Sphagnum* and increased heather dominance.

2.1.1.1 The Blanket bog states

State 2: bare peat, has been subject to successive restoration treatments and is now largely stabilised, with the exception of bare eroding gully sides. There is an ongoing need to monitor and re-treat these areas depending on how restoration progresses. **State 3**: largely inactive, dwarf shrub dominated dry bog is found in an area to the west of Madwoman's stones. Potentially active **state 4** – cotton grass dominated bog, is found in small areas to the south of the plateau. **State 5**: Modified but more diverse, non-heather dominated dry bog can be found to a large extent on the plateau running from the trig point toward Kinder and the Kinder exclusion fence. *Sphagnum* frequency is generally low, present in pools and gully edges.

2.1.2 Dry heath

The majority of Nether moor on the lower ground is made up of dwarf shrub heath in a mosaic with dry bog and acid grasslands, on the slopes below Blackden edge running to the river Ashop, and east across Nether moor and down Jaggers clough to the Noe. The heath is a mixture of heather and non-heather dominated, with larger swathes of heather dominance found across the southern slopes (Nether Moor South management unit).

2.1.3 Acid flushes

Flushes of mixed condition feature across Nether moor; several of the small flushes between Blackden Edge and Blackden Brook are in good condition, but larger flushes generally have extensive soft rush cover and low moss and sedge diversity. Towards the eastern edge of the moor flush features are found along a line from Crookstone Knoll to Rowland Cote, across Upper, Nether and Crookstone Out moors –these are locally diverse floristically, and of good potential habitat for snipe, but again others fail FEP condition due to rush cover and lack of diversity.

2.1.4 Upland Oak and Birch woodland

Upland Oak and Birch woodland and scrub can be found in the bottoms of cloughs and slopes, naturally occurring in small areas generally close to farmsteads. These habitats are being extended by our Clough Woodlands Project, supported by eWGS funding, within Jaggers clough, Lady Booth Brook, above Clough Farm and north of Blackley Hey. On the higher ground, further up cloughs and slopes towards the wider heath and moorland habitats, there are some scattered trees establishing across the northern slopes of the moor. In Blackden clough 200 scattered trees were planted under HLS.

2.1.5 Species poor acid grassland

Species poor, largely mat grass (*Nardus)* dominated grassland areas are widely found across Nether moor, often in mosaic with dry heath. This grassland habitat is of value for grazing, but of low wildlife value due to its low species diversity and structure. The aspiration is to manage acid grassland by grazing and shepherding actions in order to restore where possible to heath mosaic or species rich grassland swards. While the moor has historically been overgrazed, with low dwarf shrub diversity and structure and acid grassland and bracken patches indicative of this, the areas concerned appear to be recovering well under current grazing levels (2014 and 2015 assessments).

2.1.6 Invasive species

Bracken cover to the south of Nether moor is particularly problematic, with dense stands underlain with litter on the slopes and cloughs around Lady booth Brook and Clough farms, largely growing over species poor acid grassland, a symptom of historical overgrazing in these areas. Bracken failed as a feature in the 2015 condition assessment, since cover is more than 10% in areas. Bracken control by aerial spraying of patches has been carried out under HLS capital works (2013-15) where conditions of the understorey have allowed. In Jaggers clough and across slopes to the east of Clough Farm, the leading edges have been sprayed and on higher ground at Crookstone out moor and Upper moor. Follow up control of these areas is ongoing. Dense stands elsewhere have proved difficult to treat safely according to Guiding Principles, due to the risk of erosion on steep slopes (Clough Farm and Lady Booth Brook) or due to the terrain and proximity to watercourses (in cloughs across Blackley Hey). Encroachment from these areas onto other habitats will need to be monitored and management planned accordingly.

2.1.7 Important species

A search of local biological records centres found records for 7 BAP species or other species of conservation concern within the Nether Moor boundary, including Mountain hare, Water vole, Common lizard, Cloudberry and Bog asphodel.

2.2 LON theme: Healthy

2.2.1 Soils & Geology

Acidic, poorly draining moorland peat soils typical of the Dark Peak underlay Nether Moor. The GCR site of Blackden Brook (GCR 328) forms the boundary between Nether Moor and Ashop moor to the west. It is a river valley of interest for the excellent continuous record of Namurian sandstones visible within its rocky outcrops. A clear sequence of the range of local shales and sandstones can be seen, laid down in sequence through the changing delta conditions of the Carboniferous period.

2.3 LON theme: Rich in culture

2.3.1 Archaeology and historical interest:

Features of archaeological interest typical of the Dark Peak moors can be found across the middle heft, from ancient trackways, quarry sites, peat cuttings, sheepfolds and shooting butts. Archaeology of particular interest includes the remains of charcoal burning platforms on the slopes of Blackley Hey, a WW2 aircraft crash site above Blackden edge, and a large ancient barrow feature. Archaeological features on the open moorland are generally at low risk of damage by scrub, tree or bracken encroachment due to the open nature of these habitats. Risks may arise within cloughs when archaeological interest is found alongside woodland and bracken stands. All archaeological features have been mapped and catalogued on the NT HBSMR database and an established system of monitoring and reporting will continue to inform management.

2.4 LON theme: Beautiful and Enjoyed

The landscape character of Nether moor is synonymous with the Dark Peak. The Peak District National Park was the first designated National Park, culturally significant as being at the heart of the open access and conservation movements (Kinder Scout mass trespass). As such, Nether moor is of great value to visitors for the freedom offered by the open tracts of countryside and stunning views across the Edale and Woodlands valleys. The open access land of Nether moor is easily accessible from footpaths from Edale – a popular starting point for walkers to reach the iconic Kinder plateau. The High Peak Moors receives large numbers of organised groups every year from mountain bike events to fell runs and large walking parties.

2.5 LON theme: Productive

Grasslands, heath and bog are grazed by sheep, delivering High Nature Value Farming. Grouse Moor is managed to help deliver HPMV objectives. Ecosystem services including biodiversity, clean water, flood management, carbon management and recreational access are delivered by the range of conservation objectives outlined in this plan.

3 Management objectives

Land Outdoors and Nature theme – Rich in wildlife

3.1 Feature: Whole Moor

What are the factors that we need to manage?	Action	Attributes

3.1.1 Factor: Grazing – Stocking

Grazing units	HLS Grazed	Maximum Sheep numbers and timing
SK 1388 4270 SK 1388 4699 SK 1486 1559 SK 1487 3860	559.03ha	389 ewes (based on 0.08 LU per ewe) plus 46 hoggs (based on 0.06 LU per hogg) over summer. 270 ewes over winter

Prescribed stocking rates for W Shirt (SK 1388 4270 & SK 1388 4699) Nether Moor north: management units NETH01, NETH04, NETH05

Month	Maximum	Minimum
January - April	134 ewes	0
May 1st – May 12th	0	0
May 13th – 31st	189 ewes plus 15 hoggs	80 ewes plus 7 hoggs
June - August	189 ewes plus 29 hoggs	80 ewes plus 15 hoggs
September – November 15th	189 ewes plus 29 hoggs	0
November 16th – December 31st	0	0

Prescribed stocking rates for J Shirt (SK 1486 1559 & SK 1487 3860) Nether Moor south: management units NETH02, NETH03

Month	Maximum	Minimum
January 1st – 7th	0	0
January 8th – April 15th	136 ewes	0
April 16th – May 15th	0	0

Attribute: Compliance with grazing calendar*

Lower limit: Stocking rates, livestock type and grazing periods should maintain the habitat mosaic in good condition in balance with natural grazers (birds and mountain hare).

Project obligations

* HLS

<table>
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<tr><td>May 16th – August 31st</td><td>200 ewes plus 27 hoggs</td><td>100 ewes plus 14 hoggs</td></tr>
<tr><td>September – Oct 15th</td><td>200 ewes plus 27 hoggs</td><td>0</td></tr>
<tr><td>Oct 16th – November 22nd</td><td>155 ewes plus 27 hoggs</td><td>0</td></tr>
<tr><td>Nov 23rd – December 31st</td><td>0</td><td>0</td></tr>
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Remove redundant fence lines to facilitate even grazing, particularly in cloughs
Monthly patrol monitoring visits recording location and number of stock seen.
Tenants' stocking records to be made available on a quarterly basis, including gathering numbers.
Stocking records to be made available to Natural England as per HLS agreement*.
Maintain exclusion fences*

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<td>3.1.2 Factor: Grazing – Shepherding</td>
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Tenant to make regular weekly (minimum) shepherding visits to heft sheep to the moor top and away from cloughs to avoid over grazing of clough vegetation - Fig 3.1
Tenants to keep all records of shepherding activities and make these available on a quarterly basis.
Shepherding records to be made available to Natural England as per HLS agreement*
NT vegetation condition survey protocol will be used to assess grazing impacts eg, levels of flowering bilberry and heather consumption.

</td>
<td>Attribute: Shepherding records
Lower limit: At least one shepherding visit per week to each grazing unit.

Attribute: Under/over grazing
Lower limit: Sheep & cattle evenly grazing the unit. No poaching or erosion from livestock.</td>
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<td>3.1.3 Factor: Disturbance by vehicles</td>
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Low ground pressure vehicles & 4x4's may use consented access routes providing routes are maintained in a sustainable manner (Fig 1.1a).
Tracks shown on Fig 1.1a will be maintained as per the Guiding Principles.
Low ground pressure vehicles may operate away from consented routes providing no damage occurs to the SSSI or archaeological features.
New track consents and significant repairs will require separate planning permission.

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<td>Attribute: Impacts from vehicle use
Upper Limit: Any negative impacts to SSSI must recover within 12 months.
Lower Limit: no damage to the SSSI or archaeological features</td>
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<td>3.1.4 Factor: Access and Recreation – managing open</td>
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There is an aspiration to monitor visitor numbers to see which part of the estate receives the highest visitor pressure. This information will help us to plan infrastructure maintenance accordingly.
The Trust is an active member of the Local Access Forum (LAF) and will continue to be represented to work with partner Access and Interest groups.
There are various activities that are not compatible with open access land (eg, illegal off-roading, mountain bike and horse access away from bridleways and on sensitive

</td>
<td>Attribute: Monitor visitor numbers
Attribute: Record all illegal open access use</td>
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Project obligations

* HLS

access	habitat) the Trust will continue to manage these activities with help from the LAF and with the Police.	
3.1.5 Factor: Access and Recreation – managing events & organised groups	17. The Trust will maintain its part in the Events Notification Procedure as part of the LAF with the PDNPA. 18. The Trust will vet all applications for events. 19. The Trust will consult with NE and PDNPA to prevent damage to the SSSI and encourage events to use public rights of way and avoid the bird breeding season. 20. No damage to archaeology.	*Attribute:* Record all organised group applications *Attribute:* Monthly monitoring of footpath and boundary condition
3.1.6 Factor: Managing invasive species – bracken	21. Follow up all areas sprayed under HLS agreement, following Guiding Principles, to ensure bracken spread is kept in check, at Clough Farm (E slopes), Jaggers clough, Blackley Hey, Crookhill Out Moor (fig. 3.2) – 28 ha*. 22. Annual walkover of treated areas to determine frequency and cover of vegetation and guide follow up control. 23. Ground truth bracken density maps (developed based on aerial imagery and FEP information), to prioritise further treatment of bracken according to Guiding Principles.	*Attribute:* Bracken cover Upper Limit: <1% encroachment onto blanket bog in a SSSI unit. <10% cover on dry heath in a SSSI unit. *Attribute*: Bare ground (over grazing) Upper Limit: <10% disturbed bare ground in a SSSI unit
3.1.7 Factor: Managing invasive species – conifer and rhododendron	24. Continue to monitor non-native invasive species through NT vegetation condition monitoring 25. Continue to remove seedlings on ad hoc basis across all habitats.	*Attribute:* Cover of Conifer & Rhododendron Upper Limit: <1% cover of vegetation
3.1.8 Factor: Managing encroachment outside cloughs by native trees and scrub	26. Monitor frequency and abundance of broadleaf tree regeneration through ongoing NT vegetation condition monitoring. 27. Heath, blanket bog and flushes: keep broadleaf tree regeneration within upper limits through the proposed grazing regime and cutting operations. 28. Individual tree removal if required should include spot treatment with Glyphosate to prevent coppicing. 29. No tree planting within 20m of flushes (ref. Clough Woodland guiding principles)	*Attribute:* Cover of Native Trees and Scrub Upper Limit: <10% on blanket bog and flushes, <20% on heath

Project obligations

* HLS

3.2 Blanket Bog

What do we want?

On the blanket bog, diverse areas of blanket bog vegetation with abundant *Sphagnum* mosses and sedges and high water table for most of the year. Small pools attract invertebrates like dragonflies and damselflies in the summer months and abundant crane flies provide food for birds in the autumn. Over time blanket bog vegetation will stabilise, eventually forming an uneven-aged and unevenly structured community. The competitive advantage of heather will be reduced by ending regular rotational burning on blanket bog. Vegetation stands will provide a habitat favourable to lower plants and invertebrates that need high humidity and shelter. Many of these species are uncommon and/or have poor powers of dispersal.
The vision above describes blanket bog State 6 – active bog. See Guiding Principles, section 1: 'what good looks like' for blanket bog & reference milestones and trajectories table

What are the factors to manage?	Action	Attributes
3.2.1 Factor: Cutting	1. Break the cycle of heather dominance by stopping the regular rotational burning of heather on blanket bog and replace with cutting. 2. Maintain varied vegetation structure and species diversity through heather management following Guiding Principles to cut and diversify the structure of heather dominant blanket bog. 3. Under the HLS agreement cut a minimum of 1 ha annually OR 3 ha in a 3 year period to a height of approx. 10cm (fig. 3.3a)* 4. Record all cuts with GPS and maintain log of cutting operations	*Attribute:* Variation in vegetation height across the moor Upper limit: Retain 20% heather uncut to allow heather layering and provide sufficient tall vegetation for ground nesting birds *Attribute:* Area and location of cuts Lower limit: Cutting 1 ha heather dominated bog per year to manage fire risk (fig 3.3a)*.
3.2.2 Factor: Diversifying species composition	5. Introduce *Sphagnum* propagules to cuts in high wetness potential areas (fig. 3.4a). Other blanket bog indicator species to achieve the desired outcomes. 6. Record area and location of all applications of seed and *Sphagnum*. 7. Monitor cover and frequency of indicator species in 10% of annual cuts and re-survey every 3 years. Use NT vegetation condition protocol – see Guiding Principles.	*Attribute: Sphagnum* cover *Attribute*: Species composition Lower limit: Compliant with the milestones and trajectories for the different blanket bog states.
3.2.3 Factor: Revegetation of	8. Monitor bare peat cover in 10% of treated areas annually and re-survey every 3 years. 9. Plan revegetation treatments as necessary on areas of bare ground - along	*Attribute: Cover of bare peat in treated areas* Lower limit: <10% bare ground in treated areas, refer to milestones and trajectories for timescale.

Project obligations
* HLS

bare ground	watershed across plateau east and west of trig point, also west of Madwoman's stones. (M2020 work plan to be confirmed). See fig 3.4b.	
3.2.4 Factor: Re-wetting	1. ML2020 Project gully blocking to be confirmed by Moors for the Future. 2. Assess gully block function in 10% of HLS gully blocks annually (rolling programme). 3. Maintain dams as required to achieve 90% success rate*	*Attribute: Gully block function* Lower Limit: Established gully blocks are functional and 90% hold water and/or silt behind them by year 10 of the agreement*.
3.2.5 Factor: Managing Wildfire	4. Fire risk will be managed through the cutting done under the HLS agreement. 5. Maintain public awareness of wildfire risk during high risk periods through use of signage and media campaigns with our partner organisations 6. Maintain close involvement with the Fire Operations Group (FOG) and local partners	*Attribute:* Wildfire risk *Attribute:* Incidence of wildfire Upper Limit: No catastrophic wildfire Lower limit: N/A

3.3 Feature: Dry Heath

What do we want?

On heath, diverse areas of dwarf shrubs are present, in wet heath *Sphagnum* mosses and sedges form as layering stands. The amount of heather present may undergo pronounced cycles due to the stand passing through successive degenerate phases, while wetter conditions conducive to further layering slowly become established. Similar uneven aged stands of bilberry and heather develop in the cloughs with rowan, birch, holly and oak becoming scattered. Cattle and sheep graze here throughout the year, keeping some of these favoured grazing areas relatively open and rich in plant life. Grazing is closely managed to encourage efficient foraging and species diversity in the vegetation.

There is an aspiration to increase the diversity of dwarf shrub species through the addition of species where appropriate. *Sphagnum* could also be introduced in suitable areas of high wetness potential to encourage a shift from dry to wet heath where opportunities exist although this is subject to financial limitations and to a large extent the results of current experimental *Sphagnum* introduction trials (MoorLIFE 2020).

See Guiding Principles, section 1: 'what good looks like' for heath & reference milestones and trajectories table.

What are the factors that we need to manage?	Action	Attributes
3.3.1 Factor: Cutting & Burning	1. Maintain varied vegetation structure and species diversity through heather management following Guiding Principles to cut or burn and diversify the structure of heather dominant dry heath. 2. Cutting is permitted as per cutting map fig. 3.3a.	*Attribute:* Area of cut or burn *Attribute:* variation in vegetation height Upper limit: Retain 20% heather uncut or unburnt

Project obligations
* HLS

	3. Under the HLS agreement burning is permitted on a 12 year rotation. Burning is restricted to areas shown in fig 3.3b and must be agreed in writing with the Trust annually, prior to any burning taking place. 4. Record all cuts or burns with GPS and maintain log of cutting/burning operations.	to allow heather layering and provide sufficient tall vegetation for ground nesting birds.
3.3.2 Factor: Diversifying species composition	5. Species diversification will be implemented though grazing, and cutting or burning of heather dominant vegetation. 6. Monitor cover and frequency of indicator species in 10% of annual cuts (or burns) and re-survey every 3 years. Use NT vegetation condition protocol – see Guiding Principles.	*Attribute: Species composition* Upper limit: 75% heather cover Lower limit: 2 dwarf shrub (+2 other) indicator species present
3.3.3 Factor: Managing Wildfire	7. Fire risk will be managed through burning/cutting to be done under HLS 8. Maintain public awareness of wildfire risk during high risk periods through use of signage and media campaigns with our partner organisations 9. Maintain close involvement with the Fire Operations Group (FOG) and local partners	*Attribute: Wildfire risk* *Attribute: Incidence of wildfire* Upper Limit: No catastrophic wildfire

3.4 Feature: Acid flush

What do we want?

Acid flushes are at least seasonally waterlogged and will be dominated by sedges, cottongrasses, and diverse rushes. They will contain occasional wetland specialist plants like round leaved sundew, bogbean and butterwort and support abundant *Sphagnum* and other mosses. Acid flushes are diverse in specialist plants and are at risk of becoming dominated by rushes if damaged by over grazing and trampling.

See Guiding Principles, section 1: 'what good looks like' for acid flushes & reference milestones and trajectories table.

What are the factors that we need to manage?	Action	Attributes
3.4.1 Factor: Diversify species composition	1. Survey flushes for vegetation condition, rare and notable species – NT rare plant survey protocol and vegetation condition assessments. 2. Determine high priority flushes in need of restoration. 3. Maintain low intensity grazing and good shepherding.	*Attribute:* Maintain extent of good quality flushes *Attribute:* Cover & Frequency of indicator species *Attribute:* Frequency of bog mosses, 'brown mosses' and sedges *Attribute:* Cover & Frequency of rank species Upper limit: <10% Lower limit: N/A

Project obligations

* HLS

3.5 Feature: Acid grassland (and Heath mosaics)

What do we want?

Acid grasslands are typically species poor and tend to be dominated by fine leaved grasses and purple moor grass. Some of these (especially mat grass) are not palatable to sheep, have relatively low nutrient value and these tend to dominate as a result of past over grazing. Acid grassland is often the most important upland habitat for hill grazing and also supports important bird species such as hen harrier, short eared owl, meadow pipit and curlew. In some cases acid grasslands are former degraded heaths and have a heath component that can be restored (mosaics). They often have a mossy layer of acrocarpous and pleurocarpous mosses as well as forbs like heath bedstraw and tormentil.

The acid grassland should be diverse and support a range of fine leaved grasses (e.g. wavy hair grass, sheep's fescue, bents and sweet vernal grass). Single species dominance should be avoided and specifically mat grass and purple moor grass dominance. Vegetation structure should be varied and a range of mosses should be present as well as forbs being frequent, these will provide better nutrition for livestock. Livestock management will need to be flexible to accommodate restoration. On areas of heath mosaic dwarf shrub diversity should be encouraged and restoration as for dwarf shrub heath should be employed.

See Guiding Principles, section 1: 'what good looks like' for acid grassland / mosaics & reference milestones and trajectories table.

What are the factors that we need to manage?	Action	Attributes
3.5.1 Diversify species composition	1. Species diversification will be achieved primarily through grazing and bracken treatment follow up – see the Whole Moor Factors for more details	There are currently no attributes assigned to this category

3.6 Feature: Clough woodland

What do we want?

To re-establish characteristic valley cloughs rich in dwarf shrubs, native trees and scattered scrub. The typically steep sided cloughs and slopes running to the higher moors have suffered from historical overgrazing, with livestock preferentially sheltering in these areas, resulting in a species poor sward of mat grass or dominant bracken stands with few shrub species present. With the correct stocking regime and shepherding practises, some parts of cloughs will recover with dwarf shrubs and native rowan, birch, holly and oak becoming scattered. Clough woodlands offer a transition between moor and valley woodland and provide shelter for breeding and feeding habitats for key bird species such as ring ouzel, forming a key part of the upland mosaic.

In the lower cloughs, and in particular in areas of dense bracken and mat grass dominance, the establishment of clough woodland through tree planting is preferential. This will be achieved through a mix of planting inside and outside of livestock exclusion areas as part of the English Woodlands Grants Scheme (eWGS) funded Clough Woodlands Project.

The actions below relate to moorland management units representing the upper reaches of cloughs and slopes fringing the moor, where the aim is for very scattered trees, maintained by the grazing and cutting regime on heath and blanket bog. Trees are not desirable on the blanket bog as they will dry out the peat and change this habitat. Rewetting actions will limit the spread of trees to these areas.

Project obligations

* HLS

See Guiding Principles, section 1: 'what good looks like' for clough woodlands.

What are the factors that we need to manage?	Action	Attributes
3.6.1 Factor: Habitat extent	1. eWGS a. Following the Clough woodland project guiding principles and eWGS 2013-23 grant, establish woodland in eWGS plots (Fig 3.5). b. Either by planting or through natural colonisation, on average there will be 18% at 1.5m spacing, 12% at 3m spacing, 30% at 10m spacing and 40% of the area retained as open ground. 2. HLS HC17 sites* a. Establish scattered trees and/or scrub in HC17 compartments (fig 3.5) 3. Candidate sites a. Determine the suitability of remaining candidate sites for woodland development (fig 3.5)	*eWGS* *Attribute: Area of woodland establishment* 28.8ha *HLS HC17 sites** *Attribute: Area of woodland establishment* 17.1 ha 5% cover *Candidate sites* *Attribute: Area of woodland establishment* To be confirmed in 2018
3.6.2 Factor: Structure	4. eWGS a. Sites will be managed to ensure a stocking density of 1600 trees per hectare (960/ha including the 40% open ground requirement) including the maintenance of open ground. b. All trees will be suitably protected against herbivores for the duration of the grant period. c. Thinning of trees to be determined after 15-20 years by the site manager. 5. HLS HC17 sites* a. Tree and/or scrub planting sufficient to establish 5% cover in 15-20 years 6. Candidate sites a. On suitable sites establish average 5% cover scattered trees and scrub by 15-20 years after planting 7. Protect trees against herbivores 8. Encourage establishment of self-set native trees using guards	eWGS *Attribute: Open ground* Lower limit 40% *Attribute: Tree density* Lower limit 1600 trees/ha (960/ha accounting for 40% open ground) *HLS HC17 sites** *Attribute: Tree density* Lower limit - 5% cover Upper limit – 20% cover *Candidate sites* *Attribute: Sparse trees* Upper limit: 20% scattered trees Lower limit: average 5% cover

Project obligations

* HLS

3.6.3 Factor: Species diversity	9. eWGS a. Monitor and beat up where necessary to maintain established species mix 10. HLS HC17 sites* a. Follow recommended species mix (Clough Woodlands Guiding Principles) for planted sites b. Monitor self-set trees and maintain and avoid single species dominance by thinning and planting where necessary 11. Candidate sites a. Follow recommended species mix (Clough Woodlands Guiding Principles) for planted sites b. Monitor self-set trees and maintain and avoid single species dominance by thinning and planting where necessary 12. Maintain low intensity grazing and good shepherding practises (Whole Moor Factors). 13. Monitor cover and frequency of ground flora indicator species and re-survey every 3 years.	HLS* and Candidate sites *Attribute: Presence of scattered trees and scrub* Upper limit: 20% scattered trees *Attribute: Frequency and structure of dwarf shrub species* Upper limit: 75% heather cover Lower limit: 2 dwarf shrub (+2 other) indicator species present

3.7 Feature: Soils and Geology

What do we want?

To protect peat soils and minimise or halt peat (carbon) loss where practical, and to promote conditions where peat is actively forming. Soils should be healthy, stable and free from excessive erosion. Carbon should be stored in the variety of soil types under a diversity of species-rich, robust habitats. Regionally important geological features, including gritstone tors and sections of exposed geology along streams, should be preserved as visible and free from human induced disturbance and damage. We need to better understand the extent of blanket bog (peat over 40cm deep) to ensure appropriate management.

What are the factors that we need to manage?	Action	Attributes
3.7.1 Factor: Extent of blanket bog	1. Undertake a peat depth survey of Nether Moor (adjacent to Jaggers Clough) following NT peat depth survey protocol to determine the correct habitat type (heath or blanket bog) and update habitat map and plan accordingly (fig 3.6).	*Attribute:* The extent of blanket bog (>40cm deep)
3.7.2 Factor: Disturbance to GCR	2. No removal of material (including specimen collection for research) from within the GCR without prior consent. 3. Leave all landslip material in-situ. 4. Maintain visibility of geological features – control encroaching scrub or trees as	*Attribute:* condition of CGR Upper limit: Changes to CGR not impacted on by restoration work

Project obligations

* HLS

	required (fig 3.6). 5. Ensure recreational activities do not damage geological features: promote their sensitive use. 6. Continued monitoring by SAGT and PDNPA.	Lower limit: Maintained visibility and no damage to GCR by human activity.
3.7.3 Factor: Access and Recreation – managing footpath erosion	7. Visitor pressure is very high in some unprotected (unsurfaced) routes through the SSSI, the Trust will continue to monitor (informed by NT patrol monitoring) the condition of these routes and seek consent to repair/surface where necessary. 8. Encourage the use of surfaced routes. 9. Maintain footpaths and routes with appropriate materials to minimise impact of footfall and water drainage to prevent erosion of soil 10. Prioritise footpaths and routes requiring repairs and maintenance. Fig. 3.7	*Attribute:* Condition of footpaths, bridleways and other routes
3.7.4 Soil hydrology	11. Work with partners (MFF & Universities) to maintain hydrological monitoring equipment (dipwells, vegetation quadrats and catchment discharge weirs).	*Attribute:* Soil water table *Attribute*: vegetation condition *Attribute*: catchment discharge

3.8 Feature: Archaeology

What do we want?

The National Trust owns and manages thousands of archaeological sites, historic buildings and cultural landscapes throughout England, Wales and Northern Ireland. We will:

- sustain the maximum archaeological, historical and cultural significance of Moorland Archaeological sites;
- inform conservation and manage change in the historic environment through identifying, recording, understanding and communicating its significance
- share the archaeological and historical significance of our properties with members, visitors and stakeholders for all to appreciate and enjoy.

The archaeological heritage of the High Peak moors will be maintained as distinctive and visible features within the landscape, protected from damage or disturbance. A well-established monitoring scheme will continue to inform management actions on these features, with specific restoration works carried out as necessary under the specialist advice of an archaeologist. All features are catalogued within a database and accessible to all via a web portal, which continues to be updated to best inform the public / stakeholders of the archaeological interest and significance of the area.

What are the factors that we need to manage?	Action	Attributes
3.8.1 Factor: Disturbance	1. No disturbance of archaeology by vehicles – see whole moor factors (Factor 3.1.3). 2. All machinery used for capital works, such as heather cutting, to avoid damaging archaeological features. Contractors to be made aware of sensitive archaeology when working.	*Attributes:* Disturbance by vehicle / machinery use, recreational or vehicle access

Project obligations

* HLS

3.8.2 Factor: Access and recreation	3. No disturbance of archaeology by access and recreation – see whole moor factors (Factor 3.1.4). 4. Grouse butts to be maintained according to Guiding Principles. 5. Continued bi-annual HART monitoring of archaeology.	*Attribute:* condition of grouse butts *Attribute:* Condition of archaeological features along access routes
3.8.3 Factor: Encroachment of trees, scrub or bracken	6. Maintain visibility of archaeological features as set out in option UD13* (fig 3.8). 7. Bi-annual monitoring of all archaeological features by HART team.	*Attribute: Maintain visibility of listed features**

Project obligations

* HLS