Derwent and Howden Moor (north heft) 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 Derwent and Howden 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

Derwent and Howden 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.

Derwent and Howden Moor, part of the National Trust's Dark Peak estate, was acquired by the National Trust in 1952. It is currently grazed by sheep and also managed as a grouse moor. The whole moor covers a 23 km2 / 2,319 ha area above the Upper Derwent Valley, flanking the east and north of the Derwent and Howden reservoirs. The moors are comprised of a range of typical upland moorland habitats. Areas of blanket bog are found on the flatter ground to the east where the land rises to Howden and Derwent edges. Stretches of dry heath and acid grassland lie on shallower peat soils across the slopes and cloughs running down to the river Derwent and reservoirs. Bracken stands and acid flushes also feature.

This management plan is concerned with the northern heft of Derwent and Howden moor, comprising 793 ha running from the fence line that divides it from the middle heft in the south (running between Cranberry clough and Margery Hill) to Swains Head in the north. The western boundary of this moor follows the river Derwent, while it is bordered to the east by the watershed to adjacent, non NT owned moorlands.

The middle and southern hefts of Derwent and Howden Moor are dealt with under separate plans.

1.2 Site management

Derwent and Howden 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 AG00399583) ongoing to 30/04/2023. Re-wetting work began on Derwent and Howden's north heft under the 2008-10 ESA Capital Works plan, with peat dams dams installed at Stainery clough, work which continued with further gully blocks of stone, overlap fencing and piling in this area funded by the HLS Capital Works plan. Coldwell clough was also targeted for gully blocking and associated revegetation work, including plug planting in 2013-14. 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)

1.2.1 Grouse moor

Extensive areas of Derwent and Howden moor have been managed as grouse moors through the rotational burning of heather. Frequent burning has been used for many years as a method of vegetation control on the middle heft, to manage biomass and fuel load to reduce the risk of wildfire, to produce an 'early bite' of grass growth 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 current shooting tenant Geoff Eyre has been instrumental in carrying out large scale restoration trials involving herbicide treatment, burning and heather seeding to reduce purple moor grass (*Molinia)* and reinstate dwarf shrub moorland on the middle heft. He continues to inform current restoration practice, developing seed and *Sphagnum* pellets for diversification work.

1.2.2 Grazing

Historically, the whole moor has suffered from overgrazing, and together with annual burning of the sward. Sheep numbers were reduced in the 1980's and trespass issues from the neighbouring land to the east were addressed to ensure levels were suitable for habitat recovery. The northern heft is divided from the rest of Derwent and Howden by a fence line, unfenced to the east and receives occasional trespass sheep from moorland neighbours, managed by effective shepherding. The farming tenant for the whole of the Derwent and Howden moors retired in 2012. The North and South hefts have since been let out through Farm Business Tenancies until 2023.

1.3 Management Units

Figure 1.1 shows the site and infrastructure (a) and aerial image (2009) (b). The site is divided into 2 management units which represent the broad differences in habitat character and physical barriers such as fences and walls.

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 the north heft 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)
Derwent & Howden North Heft	North Heft	DHN01	742	UELS/HLS (EL6, UX3, UD13, UL17, A13, HL10, HL12, HL13, HC17, HL16, HR5, HR7)	Blanket Bog (M06)	438
					State 3	178
					State 4	103
					State 5	154
					Dry Heath (M04)	247
					Acid Grassland (M01)	12
					Acid Flush (M08)	3
					Fragmented Heath (M02)	1
					Rocks, Cliff & Scree (M07)	1
					Broadleaf semi-natural woodland (T08)	0.2
					Bracken	3
	Oaken Bank, Stainery & Lands	DHN02	51	HLS (UX3, HC17)	Broadleaf semi-natural woodland (T08)	12
					Dry Heath (M04)	31
					Acid Grassland (M01)	3
					Bracken	3

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 themes.

2.1 LON Theme: Rich in Wildlife

2.1.1 Blanket bog

Blanket bog areas to the north of Derwent and Howden moor generally have a good mix of dwarf shrubs (2011 and 2012 condition assessments), with some degenerate heather in patches on Featherbed Moss as a result of burning restrictions. Here on the high plateau of Featherbed moss there are some extensive and deep gullies. Gully blocking has been carried out to rewet the blanket bog above Stainery clough and Coldwell cloughs to halt erosion of the bare peat and raise the water table. The 2012 condition assessment noted that Stainery clough's restoration was working well, though the unit (126) failed on lack of *Sphagnum* species despite these rewetting interventions. Fencing and restoration work at Coldwell clough under the current HLS agreement is improving the issue of bare peat erosion in this area.

2.1.1.1 The Blanket bog states

State 3: largely inactive, Dwarf shrub dominated bog is found in a large swathe across the high moor from Margery Hill to Swains Greave and also between Lands clough and Stainery clough on the lower ground. Potentially active **state 4** – cotton grass dominated bog, is found on the flat ground to the north west of Stainery clough and along the watershed. **State 5**: Modified but more diverse, non-heather dominated dry bog can be found in small areas. *Sphagnum* frequency is generally low, present in pools and gully edges.

2.1.2 Dry heath

Dwarf shrub heath areas to the north (unit 127) which cover the slopes running down to the river Derwent fail on heather dominance (2013 assessment) and heather is generally dominant across dry heath habitats. While previously overgrazed acid grassland / heath mosaic areas are showing signs of recovery, the condition assessment failed on positive indicator species and bryophytes when assessed in 2013. A recent wildfire on the heath below rocking stones, to the east of Stainery clough (2016) has required more intensive shepherding of sheep from the damaged area to allow regeneration – monitoring is ongoing and further restoration interventions such as re-wetting and removal of redundant fencing will be necessary here.

2.1.3 Acid flushes

Flushes on the northern heft of Derwent & Howden moor were generally assessed in the FEP as being of low quality, with low species diversity, infrequent mosses and too much rush cover. Planned species surveys will add to the knowledge base of the floristic interest of these features.

2.1.4 Upland Oak and Birch woodland

Patches of upland Oak and Birch woodland and scrub can be found within the bottom reaches of Stainery clough and across the bank to the east. These habitats are being extended by our Clough Woodlands Project (Cranberry clough) supported by eWGS funding. The long narrow SSSI unit (129) that runs along the north bank of the River Derwent has been fenced for approx. 20 years, which has encouraged woodland regeneration. Stainery clough and Oaken bank have also been subject to woodland planting under the old Woodland Grants Scheme (WGS) and now have some well-established clough woodland. Elsewhere, further up cloughs towards the heath and moorland habitats, there are few scattered trees.

2.1.5 Species poor acid grassland

There is no species poor acid grassland mapped on the northern heft.

2.1.6 Invasive species

Bracken coverage is problematic across the dry heath areas of the northern heft (SSSI units 127 and 128). Bracken control by aerial spraying has taken place under ESA and HLS agreements to reduce its spread onto dwarf shrub and blanket bog habitats, with ongoing follow-up required to keep spread in check.

2.1.7 Important species

A search of local biological records centres found records for 14 BAP species or other species of conservation concern within the boundary of Derwent and Howden. The northern heft has species records that include mountain hare, water vole, common lizard, small heath, violet oil beetle, bearberry, sundew and bog rosemary.

2.2 LON theme: Healthy

2.2.1 Soils & Geology

Acidic, poorly draining moorland peat soils typical of the Dark Peak Moors underlay the north heft. There is a need to investigate peat depth in two main locations; the Lands area (between Coldwell Clough and Stainery Clough) and lower Stainery clough below Rocking Stones, where the habitat has been mapped as dry dwarf shrub heath, but peat depth may reveal the potential for more extensive blanket bog habitats here.

The Bleaklow GCR site (site 2859) lies partially on this moor, spanning the watershed between the Derwent and the Little Don rivers. Designated for its fluvial geomorphology, Bleaklow (or Bull clough head) is considered a classic example of stream erosion in peat. With the headwaters of two river systems meeting here, it is a site of interest in the study of river landforms. Several Regionally Important Geological Site (RIGS) lie within the boundary of Derwent and Howden moor's northern heft Local RIGS fall into 2 broad groups, that of exposed rock features - present as sculpted sandstone outcrops and tors at Dean Head Stones, Shepherds meeting stones, Bull Stones and at Outer Edge, or stream sections of interest, found here along a stretch of the northern bank of the river Derwent where sandstone outcrops are visible.

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, from ancient trackways (Cut Gate pack horse route forms the boundary between the northern and middle hefts), quarry sites, peat workings, sheepfolds and shooting butts. However, in general the archaeological features are limited across the northern heft particularly on the open moor, with the majority of Derwent and Howden's archaeological interest focussed on the southern heft and the western slopes to the reservoir. 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, where much of the 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 the northern heft is synonymous with the Dark Peak; open access land with stunning views across the Derwent Valley. This spirit of place instils the wildness and foreboding of the moors. 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, the moorlands of Derwent and Howden are of great value to visitors for the freedom offered by the open tracts of countryside and stunning views.

The High Peak Moors receives large numbers of organised groups every year from mountain bike events to fell runs and large walking parties. The tracks and wider moors above the Derwent and Howden reservoirs are popular destinations, with visitors accessing the area via the busy Fairholmes Visitor Centre to make use of the many footpaths and bridleways around the reservoirs and leading onto the surrounding open access land. Routes fringing the northern heft of Derwent and Howden include the footpath up the Derwent Valley alongside the river, to the ancient packhorse route of Cut Gate track, now a bridleway leading up to the higher moors and Derwent edge - an iconic Peak District route giving excellent views across the high moors and taking in impressive gritstone rock formations.

2.5 LON theme: Productive

Grasslands, heath and bog are grazed by sheep and cattle herds, 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	See tables and numbered list below	*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).

Grazing unit 1 (Northern heft)	HLS Grazed Area (ha)	Maximum Sheep numbers and timing
SK16972264	661.83ha	300 ewes (based on 0.08 LU per ewe) plus 100 hoggs (0.06 LU per hogg) during summer, 300 ewes over winter.

Month	Maximum	Minimum
January - March	300 ewes	0
April	0 ewes 100 hoggs	0
May 1st – June 15th	150 ewes plus 100 hoggs	75 ewes plus 50 hoggs
June 16th – August 31st	300 ewes plus 100 hoggs	150 ewes plus 50 hoggs
September 1st – 15th	300 ewes plus 100 hoggs	0
September 16th – Nov 10th	300 ewes	0
November 11th – Dec 23rd	0	0
December 24th – 31st	300 ewes	0

1. Remove redundant fence lines to facilitate even grazing, particularly in cloughs
2. Monthly patrol monitoring visits recording location and number of stock seen.
3. Tenants' stocking records to be made available on a quarterly basis, including gathering numbers.
4. Stocking records to be made available to Natural England as per HLS agreement*.
5. Maintain Coldwell clough exclusion fence to ensure stock exclusion from bare peat restoration areas*.
6. Limit grazing numbers on Stainery clough fire site to aid recovery. Monitor annually to inform further management as necessary.

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* HLS

3.1.2 Factor: Grazing – Shepherding	7. 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 8. Tenants to keep all records of shepherding activities and make these available on a quarterly basis. 9. Shepherding records to be made available to Natural England as per HLS agreement*. 10. NT vegetation condition survey protocol will be used to assess grazing impacts eg, levels of flowering bilberry and heather consumption.	*Attribute:* Shepherding records Lower limit: At least one shepherding visit per week to each grazing unit. *Attribute:* Under/over grazing Lower limit: Sheep evenly grazing the unit. No poaching or erosion from livestock.
3.1.3 Factor: Disturbance by vehicles	11. Low ground pressure vehicles & 4x4's may use consented access routes providing routes are maintained in a sustainable manner (Fig 1.1a). 12. Tracks shown on Fig 1.1a will be maintained as per the Guiding Principles. 13. Low ground pressure vehicles may operate away from consented routes providing no damage occurs to the SSSI or archaeological features. 14. New track consents and significant repairs will require separate planning permission.	*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
3.1.4 Factor: Access and Recreation – managing open access	15. 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. 16. 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. 17. 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 habitat) the Trust will continue to manage these activities with help from the LAF and with the Police.	*Attribute:* Monitor visitor numbers *Attribute:* Record all illegal open access use
3.1.5 Factor: Access and Recreation – managing events & organised groups	18. The Trust will maintain its part in the Events Notification Procedure as part of the LAF with the PDNPA. 19. The Trust will vet all applications for events. 20. 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. 21. No damage to archaeology.	*Attribute:* Record all organised group applications *Attribute:* Monthly monitoring of footpath and boundary condition
3.1.6 Factor: Managing	22. Follow up all leading edges sprayed under HLS agreement, following Guiding Principles, to ensure bracken spread is kept in check at Hoar clough, Stainery clough, Crow Stones Edge, Bull clough, Little Moor (fig. 3.2) – 45.3 ha*.	*Attribute:* Bracken cover Upper Limit:

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invasive species – bracken	23. Annual walkover of treated areas to determine frequency and cover of vegetation and guide follow up control. 24. Ground truth bracken density maps (developed based on aerial imagery and FEP information), to prioritise further treatment of bracken according to Guiding Principles.	<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	25. Continue to monitor non-native invasive species through NT vegetation condition monitoring 26. Continue to remove seedlings on ad hoc basis across all habitats. 27. ML2020 project to fund at least 1 day of organised pulling in 2017-18	*Attribute:* Cover of Conifer & Rhododendron Upper Limit: <1% cover of vegetation
3.1.8 Factor: Managing encroachment outside cloughs by native trees and scrub	28. Monitor frequency and abundance of broadleaf tree regeneration through ongoing NT vegetation condition monitoring. 29. Heath, blanket bog and flushes: keep broadleaf tree regeneration within upper limits through the proposed grazing regime and cutting operations. 30. Individual tree removal if required should include spot treatment with Glyphosate to prevent coppicing. 31. 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

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.	*Attribute:* Variation in vegetation height across the moor

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	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 3 ha annually OR 9 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	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 3 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 maybe used 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 bare ground	8. Monitor bare peat cover in 10% of treated areas annually and re-survey every 3 years. 9. Plan additional follow up revegetation treatments as necessary on treated bare ground within Coldwell clough fenced area (M2020 work plan to be confirmed). See fig. 3.4b.	*Attribute: Cover of bare peat in treated areas* Lower limit: <10% bare ground in treated areas, refer to milestones and trajectories for timescale.
3.2.4 Factor: Re-wetting	10. ML2020: install gully blocks on Coldwell Clough; plastic piling (416), timber dams (96) and stone dams (50). Fig 3.4a 11. ML2020: Install gully blocks on Stainery clough; plastic piling (200), timber dams (96) and stone dams (100). See detailed plan of operations (ML2020, appendix & fig. 3.4a) 12. Review recovery of borrow pits and discharge channels created during previous installation of peat dams by machine at Stainery clough. Carry out restoration interventions (diversification, restore hydrology) as required. 13. Assess gully block function in 10% of HLS gully blocks annually (rolling programme). 14. 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	15. Fire risk will be managed through the cutting done under the HLS agreement. 16. Maintain public awareness of wildfire risk during high risk periods through use of signage and media campaigns with our partner organisations	*Attribute:* Wildfire risk *Attribute:* Incidence of wildfire

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	17. Maintain close involvement with the Fire Operations Group (FOG) and local partners	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. 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.	*Attribute:* Area of cut or burn *Attribute:* variation in vegetation height Upper limit: Retain 20% heather uncut or burnt 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	7. Fire risk will be managed through burning/cutting to be done under HLS.	*Attribute: Wildfire risk*

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Wildfire	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: 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

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.

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* HLS

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	Monitoring methods and 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.

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. HLS HC17 sites* a. Establish scattered trees and/or scrub in HC17 compartments (fig 3.5)	*HLS HC17 sites** *Attribute: Area of woodland establishment* 21 ha 5% cover
3.6.2 Factor: Structure	2. HLS HC17 sites* a. Tree and/or scrub planting sufficient to establish 5% cover in 15-20 years 3. Protect trees against herbivores 4. Encourage establishment of self-set native trees using guards	*HLS HC17 sites** *Attribute: Tree density* Lower limit - 5% cover Upper limit – 20% cover

Project obligations

* HLS

3.6.3 Factor: Species diversity	5. 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 6. Maintain low intensity grazing and good shepherding practises (Whole Moor Factors). 7. Monitor cover and frequency of ground flora indicator species and re-survey every 3 years.	HLS* 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 the Lands and Lower Stainery Clough following NT peat depth survey protocol to determine the correct habitat type (heath or blanket bog) and update habitat map and plan accordingly.	*Attribute:* The extent of blanket bog (>40cm deep)
3.7.2 Factor: Disturbance to GCR's	2. No removal of soils (including specimen collection for research) from within the GCR without prior consent. 3. Maintain visibility of geological features – control encroaching scrub or trees as required (fig 3.6). 4. Ensure recreational activities do not damage geological features: promote their sensitive use. 5. Continued monitoring by SAGT and PDNPA.	*Attribute:* condition of CGR Upper limit: Changes to CGR not impacted on by restoration work Lower limit: Maintained visibility and no damage to GCR by human activity.
3.7.3 Factor: Disturbance to	6. Maintain visibility of geological features – control encroaching scrub or trees as required (fig 3.6).	*Attribute:* condition of RIGS

Project obligations

* HLS

RIGS	7. At RIGS stream sections, leave any landslip material in-situ. 8. Ensure recreational activities do not damage geological features: promote their sensitive use by climbers and walkers. 9. Ongoing monitoring of RIGS by SAGT and PDNPA.	Upper limit: Changes to RIGS due to natural processes only Lower limit: Maintained visibility and no damage to RIGS by human activity.
3.7.4 Factor: Access and Recreation – managing footpath erosion	10. 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. 11. Encourage the use of surfaced routes. 12. Maintain footpaths and routes with appropriate materials to minimise impact of footfall and water drainage to prevent erosion of soil (following Guiding Principles). 13. Prioritise footpaths and routes requiring repairs and maintenance - fig. 3.7.	*Attribute:* Condition of footpaths, bridleways and other routes
3.7.5 Soil hydrology	14. 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. Prioritise Cut Gate path for repairs and maintenance, according to specifications developed with Regional Archaeologist – see fig. 3.7 footpaths and tracks requiring maintenance/surfacing. 6. 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	7. Maintain visibility of archaeological features as set out in option UD13* (fig 3.8). 8. Bi-annual monitoring of all archaeological features by HART team.	*Attribute: Maintain visibility of listed features**

Project obligations
* HLS