Ashop 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 Ashop 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

Ashop 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.

Ashop Moor, part of the National Trust's Dark Peak estate, was acquired by the National Trust in 1959. It covers an area of 1,639 ha of land between the A57 to the north, Kinder Scout to the south and bordered by the Pennine Way to the west. Blanket bog predominates over the Moor, from Featherbed moss – a relatively intact peat dome and Geological Conservation Review (GCR) site, to Ashop clough, and across the slopes below Kinder Scout. The 'Edge', the northern escarpment of Kinder rises dramatically to the flat plateau, with characteristic weathered gritstone rock formations running along the edge. Beyond this, on the Kinder plateau, the bog has been historically severely degraded to exposed bare peat, now being successfully restored. The moorland drains through a series of gullies and cloughs to the River Ashop. Blackden Brook borders the moor to the east, and contains another GCR site – a series of sandstone outcrops visible along sections of the river Ashop. Bracken stands and flushes also feature, typically within cloughs and slopes.

1.2 Site management

Ashop 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 AG00369144) ongoing to 30/04/2023. Capital works carried out under these plans have included gully blocking, carried out over successive years around the Featherbed Moss peat dome as a priority to curb gullying and raise the water table. The Kinder Scout plateau, historically subject to severe erosion, has undergone intensive gully blocking and revegetation restoration works from 2010 to the present: The Edge was the location of the Making Space for Water Project study site, and remains an important site for monitoring hydrological improvements due to restoration works and (more recently) *Sphagnum* reintroduction techniques. There is a large rectangular area of bare peat remaining on the Kinder plateau which is maintained as an unrestored experimental "control" site. This is an important part of ongoing academic research into the effects of moorland restoration techniques and will be maintained until further notice. Several leading edges of bracken, spreading onto dwarf shrub heath have been managed over successive years under the HLS. 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 Ashop moor have been managed for grouse 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 and to encourage the germination and regeneration of heather. Burning is evident across the heather dominated slopes to the north of the river Ashop, and to the south of the Ashop, across Seal Flats and Black Ashop Moor where historical grips can also be found. 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.

1.2.2 Grazing

Since 2012 grazing has been excluded completely from the Kinder plateau by a stock exclusion fence running across Ashop Moor along the length of Kinder's northern edge below the escarpment, to allow the successful re-vegetation and hydrological restoration of the blanket bog. Outside the fence the moor is grazed with sheep in accordance with HLS prescriptions.

1.3 Management Units

Figure 1.1 shows the site and infrastructure (a) and aerial image (2009) (b). The site is divided into 8 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 Ashop 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)
Ashop Moor	Ashop Moor	ASH01	1170	UELS/HLS (EL6, UX3, UD13, A13, HC17, HL10, HL12, HL13, HL15, HL16, HR5, HR7)	Blanket Bog (M06) State 3 State 4 State 5	794 492 299 2
					Dry Heath (M04)	269
					Acid Grassland (M01)	92
					Acid Flush (M08)	12
					Fragmented Heath (M02)	2
					Broadleaf semi-natural woodland (T08)	0.3
	Ashop Moor - Kinder exclusion	ASH02	366	UELS/HLS (EL6, UX3, UD13, A13, HL10, HL13, HL15)	Blanket Bog (M06) State 2 State 3	293 56 237
					Dry Heath (M04)	62
					Rocks, Cliff & Scree (M07)	11
	Gateside Clough	ASH03	4	UELS (EL6, UX3, UD13, A13)	Dry Heath (M04)	4
					Acid Grassland (M01)	0.1
	Blackden Clough	ASH04	18	UELS (UX3, UD13) eWGS	Dry Heath (M04)	3
					Acid Grassland (M01)	3
					Acid Flush (M08)	0.05
	Ashop Clough Woodland	ASH05	18	UELS (UX3, UD13) eWGS	Dry Heath (M04)	9
					Acid Grassland (M01)	7
	Fairbrook	ASH06	44	UELS / HLS (EL6, UX3, UD13, A13, HC17)	Dry Heath (M04)	22
					Acid Grassland (M01)	19
					Acid Flush (M08)	0.4
					Broadleaf semi-natural woodland (T08)	0.3
	Upper Ashop Clough	ASH07	12	UELS (UX3, UD13) eWGS	Dry Heath (M04)	5
					Acid Grassland (M01)	4

					Acid Flush (M08)	0.4
					Fragmented Heath (M02)	1
					Open Water (W07)	0.04
	Lady Clough (Ashop)	ASH08	9	UELS (UX3, UD13) eWGS	Blanket Bog (M06) State 3 State 4	0.5 0.1 0.4
					Acid Grassland (M01)	9

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

Although Ashop moor is recovering, with a range of dwarf shrub species starting to be seen, the moor fails on the frequency of positive indicator species across the blanket bog. Cottongrass dominates on much of the deeper peat due to past overgrazing. Featherbed moss is a cottongrass dominated peat dome with *Sphagnum* present only in isolated patches, grading to heather-dominated blanket bog further south, the result of rotational burning across these lower slopes. Conifer seedlings can be seen in places, encroaching from adjacent plantations. Below the northern edge of Kinder, on the heather dominated slopes of Seal Flats and Wood Moor, the blanket bog is fragmented and cut through by gullies, a situation exacerbated by the drainage caused by historical grips. *Sphagnum* occurrence is generally low, although there are wetter patches supporting *Sphagnum* on the flatter ground below Fairbrook Naze. The blanket bog of the Kinder plateau is recovering under intensive restoration works (ongoing), with bare peat reduced considerably as a result of revegetation treatments, and establishing dwarf shrubs now present. Water tables and *Sphagnum* cover are still relatively low here but gully blocking across the plateau and recent *Sphagnum* reintroduction is having a positive impact (Making Space for Water 2012, Catchment Restoration Fund 2015 project reports.)

2.1.1.1 The Blanket bog states

State 2: Bare and eroding peat is present on the Kinder Plateau although much of this has been subject to successful restoration. **State 3**: largely inactive, heather dominated dry bog is found in large areas below Featherbed Moss in to Ashop clough and also across the valley on Black Ashop Moor and Seal Flats. Potentially active **state 4 –** cotton grass dominated bog, is found across Featherbed Moss on the moor top and in areas around Thomasson's hollow this is fragmented by bare and eroding peat (State 2, not shown on the habitat map). **State 5**: Modified but more diverse, non-heather dominated dry bog is not well represented on this moor but exists between cotton grass moor (State 4) and heather dominant bog (state 3) around the fringes of Featherbed Moss.

2.1.2 Dry heath

Similar to the blanket bog, the dry heath on Ashop moor is low on frequency of key indicator species, being largely heather dominant and lacking the full range of age classes within the sward, as a result of managing for grouse moor. Non heather dominated dry heath is largely confined to the steeper slopes of Black Ashop Moor, below The Edge of Kinder.

2.1.3 Acid flushes

Some relatively large lushes are found across the slopes below the Kinder escarpment, a feature of the underlying geology causing springs to surface. These are of mixed diversity, but further specialist species surveys will add to the knowledge base of these features.

2.1.4 Upland Oak and Birch woodland

There are isolated patches of scattered trees developing at the bottom of Middle Seal clough and at the top end of Fairbrook. These habitats are being extended by our Clough Woodlands Project, supported by eWGS funding which include Lady clough and Blackden Brook. Elsewhere, further up the cloughs on HLS areas on heath and moorland habitats, there are very few scattered trees. Some thin planting (HLS option HC17) has been carried out within Fairbrook to support the spread of native species here.

2.1.5 Species poor acid grassland

Mat grass dominated grassland is largely restricted to cloughs – a product of historical overgrazing within these sheltered areas. This habitat is of value for grazing, but of little 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. Ashop clough in particular is of low dwarf shrub diversity with mat grass, rushes and spreading bracken stands prevalent.

2.1.6 Invasive species

Bracken is not considered a problem on the blanket bog, but forms dense beds in several cloughs, spreading from here onto heath areas. The densest stands include the northern slopes of Ashop and Fairbrook cloughs and the western bank of Blackden Brook. In these areas bracken beds have been aerially sprayed between 2013 and 2015 under eWGS agreements as part of the clough woodland project, with associated leading edges sprayed under the HLS agreement to prevent encroachment onto the blanket bog, although bracken control in other areas has been limited due to the risk of erosion on slopes. Adjacent conifer plantations of the Woodlands Valley to the east of Ashop moor (owned by Severn Trent Water) represent a seed source and an ongoing need to control to prevent establishment on other habitats.

2.1.7 Important species

A search of local biological records centres found 12 species for BAP species or other species of conservation concern within the Ashop boundary, including mountain hare, water vole, common lizard, bog rosemary, *Sphagnum* mosses, royal fern, lesser twayblade, marsh arrowgrass, oil beetle and the small heath butterfly.

2.2 LON theme: Healthy

2.2.1 Soils & Geology

Acidic, poorly draining moorland peat soils underlay Ashop Moor, varying in depth from the deepest most waterlogged blanket peat which has built up on the flattest ground, to thinner peat and loam over sandstones - found on the steeper slopes below Kinder edge. There are two GCR sites on Ashop. GCR (site 1911) Featherbed Moss is notified as a site of interest for its features that shed light on the Quaternary history of the Pennines. It is designated specifically for its upland peat geomorphology, in particular its natural erosion features and importance for evidencing late glacial and Holocene vegetation change. GCR (site 328) Blackden Brook lies partially on Ashop moor, forming the moor's south easterly boundary with Nether moor. 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 Ashop moor including ancient trackways, sheepfolds, marker cairns, peat cuttings, shooting butts and huts. The reputed line of a Roman Road, is still visible as a track running along Ashop clough and cutting north onto the moor. An aircraft wreckage site (the remains of 2 RAF jets which collided in 1954) also occurs on this holding. 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 archaeological interest features may be 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 Ashop Moor is synonymous with the Dark Peak; open access land with stunning views from Kinder Edge. 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). The High Peak Moors receives large numbers of organised groups every year from mountain bike events to fell runs and large walking parties. Several footpaths cross the Ashop moor, not least the Pennine Way, a popular national bridleway route running to Kinder's edge paths: an iconic Peak District route giving excellent views across the high moors and taking in impressive gritstone rock formations. As such, Ashop moor is of great value to visitors for the freedom offered by the open tracts of countryside and stunning views.

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

<table>
<tr><th>What are the factors that we need to manage?</th><th>Action</th><th>Attributes</th></tr>
<tr><td>3.1.1 Factor: Grazing – Stocking</td><td>
<table>
<tr><th>Grazing unit</th><th>HLS Grazed Area (ha)</th><th>Maximum Sheep numbers and timing</th></tr>
<tr><td>SK 0990 0852</td><td>1536.35ha</td><td>625 ewes (0.08 LUs per ewe) plus 110 hoggs (0.06 LU per hogg) over summer.
556 ewes over winter.</td></tr>
</table>
<table>
<tr><th>Month</th><th>Maximum</th><th>Minimum</th></tr>
<tr><td>January - March</td><td>556 ewes</td><td>0</td></tr>
<tr><td>April 1st – 19th</td><td>556 ewes plus 110 hoggs</td><td>0</td></tr>
<tr><td>April 20th – May 15th</td><td>100 ewes plus 110 hoggs</td><td>0</td></tr>
<tr><td>May 16th – 31st (stock increase in increments)</td><td>312 ewes plus 110 hoggs</td><td>0</td></tr>
<tr><td>June 1st – 15th (stock increase in increments)</td><td>625 ewes plus 110 hoggs</td><td>312 ewes plus 55 hoggs</td></tr>
<tr><td>June 16th – Aug 31st</td><td>625 ewes plus 110 hoggs</td><td>312 ewes plus 55 hoggs</td></tr>
<tr><td>September – Nov 19th</td><td>625 ewes plus 110 hoggs</td><td>0</td></tr>
<tr><td>November 20th – Dec 31st</td><td>0</td><td>0</td></tr>
</table>
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 Kinder fence to ensure stock exclusion from bare peat restoration areas (Kinder plateau)*
</td><td>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).</td></tr>
<tr><td>3.1.2 Factor: Grazing –</td><td>6. Tenant to make regular weekly (minimum) shepherding visits to heft sheep to the moor top and away from cloughs to avoid overgrazing of clough vegetation - Fig 3.1</td><td>Attribute: Shepherding records
Lower limit: At least one shepherding visit per</td></tr>
</table>

Project obligations
* HLS

Shepherding	7. Tenants to keep all records of shepherding activities and make these available on a quarterly basis 8. Shepherding records to be made available to NE as per HLS agreement*. 9. NT vegetation condition survey protocol will be used to assess grazing impacts eg, levels of flowering bilberry and heather consumption.	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	10. Low ground pressure vehicles & 4x4's may use consented access routes providing routes are maintained in a sustainable manner (Fig 1.1a) 11. Tracks shown on Fig 1.1a will be maintained as per the Guiding Principles 12. Low ground pressure vehicles may operate away from consented routes providing no damage occurs to the SSSI or archaeological features 13. 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	14. 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. 15. 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. 16. 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	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 leading edges sprayed under HLS agreement in Fairbrook and Ashop clough, following Guiding Principles, to ensure bracken spread is kept in check (fig. 3.2) – 17.4 ha* 22. Control bracken within eWGS tree planting areas to aid tree establishment and prevent spread: Ashop clough's east end, following Guiding Principles (fig. 3.2) – 2.5ha 23. Annual walkover of treated areas to determine frequency and cover of vegetation and guide follow up control.	*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)

Project obligations
* HLS

	24. Ground truth bracken density maps (developed based on aerial imagery and FEP information), to prioritise further treatment of bracken according to Guiding Principles.	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 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 2.6 ha annually OR 7.8 ha in a 3 year period to a height of approx. 10cm (fig. 3.3a)* ASH01: 2.6 ha annual cut 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 2.6 ha of heather dominated bog per year to manage fire risk (fig 3.3a)*

Project obligations
* HLS

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 may be 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 Kinder enclosure (M2020 work plan to be confirmed). See fig 3.4b. 10. Maintain bare peat control site on Kinder plateau for research purposes. Review this in 2022.	*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	11. Review GCR report (Nottingham Trent University) and plan gully blocking within Salvin Flats and Thomasson's Hollow for 2018-19. 12. Additional ML2020 Project gully blocking to be confirmed by Moors for the Future. 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. 17. 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).

Project obligations
* HLS

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 annually.	*Attribute:* Area of cut or burn *Attribute:* variation in vegetation height Upper limit: Retain 20% heather uncut/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 Wildfire	7. Fire risk will be managed through burning or 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	1. Survey flushes for vegetation condition, rare and notable species – NT rare plant survey protocol and vegetation condition assessments.	*Attribute:* Maintain extent of good quality flushes *Attribute:* Cover & Frequency of indicator species

Project obligations

* HLS

composition	2. Determine high priority flushes in need of restoration 3. Maintain low intensity grazing and good shepherding	*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.

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.

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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. 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* 30.3ha *HLS HC17 sites** *Attribute: Area of woodland establishment* 14 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 d. 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
3.6.3 Factor: Species	9. eWGS a. Monitor and beat up where necessary to maintain established species mix	HLS* and Candidate sites *Attribute: Presence of scattered trees and scrub*

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diversity	10. HLS HC17 sites* b. Follow recommended species mix (Clough Woodlands Guiding Principles) for planted sites c. Monitor self-set trees and maintain and avoid single species dominance by thinning and planting where necessary 11. Candidate sites d. Follow recommended species mix (Clough Woodlands Guiding Principles) for planted sites e. 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.	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 Black Ashop Moor, Seal Flats and Wood moor 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's	2. Further gully blocking within GCR area (Thomasson's Hollow) is dependent on the results of Nottingham Trent University monitoring report (due 2017) to inform approach. 3. No removal of material (including specimen collection for research) from within the GCR without prior consent 4. Leave all landslip material in-situ 5. Maintain visibility of geological features – control encroaching scrub or trees as required (fig 3.6) 6. Ensure recreational activities do not damage geological features: promote their	*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.

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	sensitive use. 7. Continued monitoring by SAGT and PDNPA.	
3.7.3 Factor: Access and Recreation – managing footpath erosion	8. 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. 9. Encourage the use of surfaced routes. 10. Maintain footpaths and routes with appropriate materials to minimise impact of footfall and water drainage to prevent erosion of soil (following Guiding Principles) 11. Prioritise footpaths and routes requiring repairs and maintenance Fig. 3.7	*Attribute:* Condition of footpaths, bridleways and other routes
3.7.4 Soil hydrology	12. Work with partners (MFF & Universities) to maintain hydrological monitoring equipment (dipwells, vegetation quadrats and catchment discharge weirs) and the Kinder plateau control site (fig 3.6).	*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
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 access routes which are archaeological features for repairs and	*Attribute:* condition of grouse butts *Attribute:* Condition of archaeological features

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	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.	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*

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