	2) Increased likelihood of eutrophication through animal droppings 3) Increased likelihood of selective grazing of dwarf shrub species and flowering forbs.			
SAC Upland or subalpine dry dwarf shrub heath	Grazing 1) Increases likelihood of compaction and hydrological effects by trampling, poaching and regular walkways 2) Increased likelihood of eutrophication through animal droppings 3) Increased likelihood of selective grazing of dwarf shrub species and flowering forbs.	0.1 LU/ha		No
SPA Aggregations of breeding Annex I birds; Assemblage of breeding upland moorland birds: Golden Plover, Merlin Short-eared Owl, Peregrine, Dunlin	Grazing 1) Increases likelihood disturbance by trampling, poaching and regular walkways 2) Increased likelihood of damage to nest sites through trampling, poaching and regular walkways	0.1 LU/ha		No

SAC & SPA	Other proposals, e.g. Grip blocking	reduce erosion and maintain water table	use appropriate techniques to protect habitat	No

C2.2 In-combination with other plans and projects (only where applicable): N/A

From the table above those elements not deemed to have an impact alone must now be considered for in-combination impacts. Effects not considered to be significant alone in section C2.1 have been considered with the details of other live plans and projects and their effects to make an assessment of likely significant effect 'in-combination'. The results of this assessment are as follows:

Conclusions: Natural England has considered the project under Regulation 21 (1)(a) of The Conservation of Habitats and Species Regulations 2010 and has decided that it **is** likely to have a significant effect, either alone or in combination with other plans or projects, for the following reasons:

C3. Screening Decision

On the basis of the details submitted, Natural England has concluded that as the project **is** likely to have significant effects either alone or in combination with other plans or projects, or such effects cannot be ruled out, on some or all of the Qualifying Features, consent may not be given and further appropriate assessment is required.

PART D: Appropriate assessment and Site Integrity test

D1. Appropriate Assessment

Having considered that the project is not directly connected with or necessary to the management of the South Pennine Moors Special Area of Conservation (SAC) and The Peak District Moors Dark Peak (South Pennine Moors Phase 1) Special Protection Area (SPA) and is likely to have a significant effect on some or all of the features of the SAC (either alone or in combination with other plans or projects), this section contains the appropriate assessment of the implications of the project in view of the conservation objectives for the European Site (as required by Regulation 21 of the Habitats Regulations).

The Qualifying Features, on which significant effects are likely or cannot be ruled out, and which are integral to this appropriate assessment are;

- *Blanket bogs* (*priority habitat type).*
- *Upland dry dwarf shrub heath*
- *Golden plover*
- *Dunlin*
- *Merlin*
- *Short-eared owl*

D1.1 European Site Conservation Objectives

The South Pennine Moors Special Area of Conservation (SAC)
http://www.naturalengland.org.uk/Images/UK0030280-South-Pennine-Moors-SAC_tcm6-31771.pdf

D1.2 Contextual statement on the current status, influences, management and condition of the site and those Qualifying features affected by the project

Currently the blanket bog habitat present on this moor does not meet favourable condition standards for vegetation composition reasons. The deficiency in number and diversity of species of these habitats will not be restored by continuing to burn them.

The burning plan prescribes various burning rotations on the habitats within the permitted burn area. This permitted burn area has been drawn up by excluding areas of less than 50% Calluna vulgaris, steep slopes, gullies, flush and areas that have not seen historical rotational burning or areas that CSM finds a particularly diverse or developing suite of species.

Generally this follows the guidance within the H&GBC with the exception that areas of peat bog or wet heathland are permitted to be burned in line with this plan. This is to limit burning to existing areas that have experienced historical burning and to prevent its expansion. Whilst this approach will secure a limitation to burning management, it does allow an Operation that was Likely to Damage to proceed with the justification that there will be a conservation gain by lengthening the burning rotations from those that were previously consented.

The HRA must reach a conclusion that;

- the management is necessary for the management of the European site.
- that the management will not have a significant adverse effect.
- it can be ascertained that the management will not have an adverse impact upon the integrity of the European site.

Current scientific understanding **is insufficient** to demonstrate that burning of peatlands on **any rotation** will;

- lead to favourable condition.
- not hinder recovery (alone or in combination with other restoration projects).
- not lead to biodiversity decline.

The current scientific evidence base suggests burning of peatlands is damaging and has other negative effects for ecosystem services and it should be considered that with respect to burning on blanket bogs and wet heaths that;

The Heather and Grass Burning Code says;

> ***There should be a strong presumption against burning sensitive areas.* (Of which peat bog and wet heathland are types)**

The Natural England Summary of burning and other moorland management guidance says about blanket bog;

> ***Presumption of no burning (unless 'special circumstances', e.g. initial restoration treatment)***

and The Upland Management Handbook says;

> ***The question often raised in relation to blanket mire and wet heath is whether or not it should be burnt. Fire cycles on mires are not fully understood (Lindsay 1995), but burning these habitats in the same manner as dry heaths is thought to reduce their conservation value (Usher & Thompson 1993). Burning***

on blanket mire and wet heath is not required to maintain their nature conservation interest (Mowforth & Sydes 1989; Rawes & Hobbs 1979) and for this reason it should be minimised and where possible eliminated.

The current scientific evidence base suggests burning of peatlands is damaging and has other negative effects for ecosystem services and is not necessary to achieve conservation objectives.

There is no conservation need to burn dry heath habitats for their enhancement as they have no ecological successional pressure that requires intervention on this site.

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D1.3 Assessment of likely effects without mitigation measures (project as proposed)

Project element	Likely impact	Extent	Likelihood of adverse effect and	Uncertainty
Burning **on blanket bog** on The maximum area of vegetation to be burnt in the 5 year consent period will be **47.5** hectares. This equates to an average annual total of **9.5 hectares** (based on an average rotation of 23 years).	1) Promotion of fire-tolerant species, including *Calluna vulgaris,* or graminoids such as purple moor grass, hare's tail cotton grass or deergrass 2) Increase of bare ground vulnerable to erosion 3) Decreased species diversity, especially wetland species 4) Changes in vegetation structure, floristic composition and micro-topography 5) Damage and reduction in cover, variety and the function of *Sphagnum* species to contribute to peat formation. 6) Drying out of peat surface and increases the likelihood of peat pipe formation 7) Hinders the recovery of vegetation damaged	220 ha	Continued rotational burning of bog may create conditions that will favour species such as *Calluna vulgaris* cool burning will avoid conditions that allow *Campylopus pyriformis* to exist at unfavourable frequencies. The area of blanket bog under a rotational burning management has been reduced by 10% and the rotation period has been extended from 18 year average to 23 year average. Continued burning will hinder the recovery of this habitat including more typical, fire sensitive species, such as *Sphagnum* mosses, and can lead to drying out of the peat surface.	**Uncertain** that this will have an adverse effect

	by historic activities and practices 8) Encouragement of dense heather canopies may increase the risk of wildfire			
Burning on **dry heath** on a rotation of Burn appropriate vegetation in a rotation of 9-15 years (or longer) to create a mosaic of vegetation structure across the site, including heather in the mature and degenerate phases of growth. The maximum area of vegetation to be burnt in the 5 year consent period will be **130** hectares (which equates to	1) Promote the dominance of a few species or switch dominance from Ericoids to graminoids 2) Increase the quantity of bare ground 3) Decreased abundance of key species 4) Changes in floristic composition *5) Encouragement of dense Calluna canopies may increase the risk of wildfire*	312ha		**Uncertain** that this will have an adverse effect

8% of the total area per year). This equates to an average annual total of **26 hectares.**				

D1.4 Assessment of likely effects taking account of mitigation measures

This table examines potential avoidance/mitigation measures that might be applied to relevant elements of the proposal in order to avoid adverse effects on the integrity of the site.

Project element	Likely impact	Avoidance and reduction measures (Mitigation) to be applied as Conditions and modifications	Justification	Who will implement	Checks/ Controls	Will conditions allow Natural England to conclude no impact on site integrity
Burning	See table 1.3 above	Amend the terms of the Plan to stipulate *reduction of the area of blanket bog habitat where there is burning management, increase in the rotation period.*	So that it can be ascertained that that there will be no adverse impact on the integrity of the site or its notified features.	Land manager	NE ISA visits RPA compliance HLS mapping	Yes

D1.5 Assessment of likely effects taking into account Restrictions and Conditions

See comments above

D1.6 Assessment of residual effects

None

D2. Conclusions on site Integrity

Because the project is not wholly directly connected with or necessary to the management of the South Pennine Moors Special Area of Conservation (SAC) and the Peak District Moors (South Pennine Moors Phase 1) Special Protection Area (SPA) and is likely to have a significant effect on the SAC (either alone or in combination with other plans or projects), Natural England carried out an Appropriate Assessment as required under Regulation 21 of the Conservation of Habitats and Species Regulations 2010 to ascertain whether or not there would be an adverse effect on the integrity of the South Pennine Moors Special Area of Conservation (SAC) and the Peak District Moors (South Pennine Moors Phase 1) Special Protection Area (SPA).

Natural England has concluded that:

With respect to the SAC;

It cannot be ascertained that the project will not have an adverse effect on the integrity of the South Pennine Moors Special Area of Conservation SAC.

PART E: Consent/Permission decision with respect to the European Site(s)

As the relevant competent authority, Natural England has carried out a Habitats Regulations assessment of the project as required by Regulation 21 of the Conservation of Habitats and Species Regulations 2010 and has decided that, with regard to the European Sites and its qualifying features;

Permission for the operations contained in the project can be given

The reasons for this decision are as follows:

It can be ascertained that the proposed HLS agreement will result in a reduced impact compared to previously consented/agreed management and this will have a less adverse impact on site integrity. These measures are likely to reduce the impact of management and assist in recovery of habitat condition on the SAC and to encourage habitat to support SPA bird species. In addition the positive restoration work will assist recovery of blanket bog and wet grassland.

The Habitats Regulations assessment of the implications of this project on the European Site has been completed. Following a Habitats Regulations Assessment of the plan/project regarding the European Site features, further separate consideration is required of the compatibility of the project with the notified features of special interest of the SSSI before any final written consent or permission can be given.

Appendices

None.

References

- The South Pennine Moors Special Area of Conservation (SAC) and the Peak District Moors (South Pennine Moors Phase 1) Special Protection Area (SPA)Conservation Objectives.
- Common Standards Monitoring Guidance for Upland habitats 2009.
- Ward, S.E., Bardgett, R.D., McNamara, N.P., Adamson, J.K. and Ostle, N. (2007) Long-Term Consequences of Grazing and Burning on Northern Peatland Carbon Dynamics. Ecosystems, **10**, 1069-1083
- J.H.Tallis, R. Meade and P.D. Hulme (eds.) Blanket Mire Degradation – Causes, Consequences and Challenges, Proceedings, University of Manchester, 9-11 April 1997. pp.7-15. Aberdeen : Macaulay Land Use Research Institute
- IUCN UK Peatland Programme (2011) Commission of Inquiry on Peatlands: Summary of Findings. (http://www.iucn-uk-peatlandprogramme.org/commission/findings)
- The upland management handbook 2001 (http://naturalengland.etraderstores.com/NaturalEnglandShop/SC26)
- British Plant Communities. Volume 2: Mires and Heaths Rodwell, J.S. 1991
- Heather and Grass Burning Code (http://www.naturalengland.org.uk/Images/heathergrassburningcode_tcm6-7795.pdf)
- Proofs of Evidence submitted for Walshaw Moor Public Inquiry into Appeal against Consent Modification (all proofs in support of Natural England's case as well as those proofs in support of Walshaw Moor Estate ltd. case), January 2012.

Document control

HRA prepared for Land management	Richard Pollitt	Lead Adviser	V1	22nd August 2013
HRA comments from Regulation				[Date]
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HRA approved for Land management				[Date]
Agreement/ Consent approved	[Name]	[Role]	Agreement Number / Document Reference	[Date]

Appendix 1

[Insert proposal of Agreement/ Consent]