APP/M9496/C/18/3215789 ENF/15/0057

Enforcement Notice Appeal relating to Land at Mickleden Edge, Midhope Moor, Bradfield, South Yorkshire, S36 4GX

Regarding the alleged unauthorised 'engineering operations consisting of the laying of geotextile matting and wooden log 'rafts' on the Land to form a track'.

Proof of Evidence - **Appendix 1** on behalf of the Appellant Dunlin Ltd for Ecology and Habitats Regulations Assessment

By

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Midhope Moor Access Track Condition Assessment October 2020



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Report Contents

1	Introduction	1
2	Methods	3
3	Results	5
4	Assessment	9
5	Conclusions	11
Ap	pendix 1: Field Survey Results	12

1 Introduction

- 1.1.1 This report provides an assessment of the ecological condition of a moorland track and neighbouring habitats through which the track is routed. The track has been covered by plastic ground matting anchored with steel pins between approximate Ordnance Survey Grid References (OSGR) SK19509762 and SK18949787. Short sections of the track have been covered by treated softwood fence posts, laid flat and wired together to form a trackway where the underlying substrate is waterlogged or flushed.
- 1.1.2 In order to provide an assessment that could be readily interpreted, a form of common standard monitoring CSM1 was used to record relevant ecological and physical attributes to enable an assessment of the condition of the habitat or feature. The relevant habitat types for this study included acid grassland, sub-alpine dwarf shrub heath, rush pasture and flush.
- 1.1.3 This report will describe the methods used to assess the condition of habitats, the results of the field survey including classification and description of the attributes, an assessment as to the condition of each feature, and what impact, if any, has occurred because of the installation of the plastic ground mats and pole trackway. It will also provide an assessment as to the potential impact on the ecological condition of habitats on and within the vicinity of the track if the poles and plastic mats are removed.

1.2 Site Description

- 1.2.1 The track is routed across Midhope Moors (see Figure 1), which is part of the Dark Peak Site of Special Scientific Interest (SSSI), South Pennine Moors Special Area of Conservation (SAC) and Peak District Moors Special Protection Area (SPA) and the section that was assessed is located either side of Bull Clough on west and east facing slopes.
- 1.2.2 The track itself is, for the most part, covered by grassland vegetation, but habitats on either side are typical of upland moorlands and include a mosaic of dwarf-shrub heathland, acid grassland, continuous bracken, rush pasture and flushes intersected by small streams. Habitats are managed by burning and low intensity sheep grazing.

1.3 Study Scope

- 1.3.1 For this report, Baker Consultants was commissioned by the client to undertake the following works:
 - Survey and assess the condition of the vegetation on and either side of the track;
 - Assess the impact of installing plastic matting and wooden pole tracks on the condition of the track and neighbouring habitats, and
 - Assess the potential impacts arising from removal of plastic mats and wooden pole

¹ JNCC (2009). Common Standards Monitoring for Upland Habitats. JNCC, Peterborough.

tracks.

1.3.2 This report takes into account standard guidance from a variety of sources including the Chartered Institute of Ecology and Environmental Management 2 3 and British Standards Institution4.

Figure 1. Site Location



² CIEEM (2018). Guidelines for Ecological Impact Assessment In The UK And Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

³ CIEEM (2015). Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.

⁴ BSI (2013). BS42020:2013 Biodiversity – Code of Practice for Planning and Development

2 Methods

2.1 Surveyor Qualifications and Experience

2.1.1 Mark Woods *CEcol, MCIEEM* who has more than 30 years of professional experience carried out the fieldwork and reporting. Mark is the joint Vice County Botanical Recorder for Nottinghamshire and has carried out habitat condition assessments for Natural England, Local Authorities and private landowners throughout England.

2.2 Common Standards Monitoring

- 2.2.1 Common Standards Monitoring (CSM) was developed to provide an agreed approach to the assessment of ecological condition on statutory sites designated through UK legislation and international agreements.⁵ It is a relatively simple and quick assessment of the features for which a site is designated. For this study the features are upland habitat types.
- 2.2.2 CSM assigns a feature to a standard condition, which is the state of the feature at a given time. Conditions are:
 - *Favourable*: the objectives for that feature are being met, or;
 - Unfavourable: the objectives are not being met and the condition is unsatisfactory, or;
 - *Destroyed (partially or completely)*: the feature is no longer present and there is no prospect of being able to restore it.
- 2.2.3 Where the feature is favourable a decision is made to determine if it is:
 - *Maintained*: it has remained favourable since the previous assessment.
 - *Recovered*: it has changed from unfavourable since the last assessment.
- 2.2.4 Where the feature is *Unfavourable* a further assessment is made as to whether the state of the feature is:
 - *Recovering*: moving towards the desired state.
 - *Declining*: moving away from the desired state.
 - *No-change*: neither improving nor declining.
- 2.2.5 For each feature a set of attributes are chosen to describe the condition, and targets are set for each attribute, to demonstrate compliance with the target. Attributes:
 - Are quantifiable and measurable;
 - Include extent, floristic composition, vegetation structure, and physical characteristics;
 - Are common for each interest feature across the UK, but can be varied locally to reflect geographical variation and local distinctiveness, and
 - Have pre-set targets for the features on a site that will describe the desired state

⁵ https://jncc.gov.uk/our-work/common-standards-monitoring/

(favourable condition).

- 2.2.6 For whole site CSM a suitably qualified ecologist will do a walkover and sample sufficient plots of a standard size to provide a robust assessment of the overall condition. When considering the overall condition, all of the sample plots will be assessed in order to be representative. At a sample plot information will be obtained for each attribute to enable a decision as to whether that attribute is compliant with the desired state. For example, if the vegetation height is found to be within a specified range to achieve favourable condition in 19 of the 20 sample plots, it is likely that the attribute will be considered as favourable. If, however, more than 3-4 plots are significantly out of range then it may be appropriate to consider the condition as unfavourable.
- 2.2.7 CSM guidance for upland habitats6 has streamlined the number of habitat types into 28 generic feature types. Those of relevance to this study are:
 - Acid Grassland (Upland);
 - Alpine Dwarf-shrub Heath
 - Springhead, rill and flush (Upland)
- 2.2.8 For the purposes of this study 4m² sample plots were selected to be representative of the condition of the track and neighbouring habitats.
- 2.2.9 A total of 15 plots were sampled with seven on the track itself and eight on the side of the track. The number of plots was sufficient to sample the variety of each habitat type in close proximity to the track and the track itself.
- 2.2.10 A CSM survey was carried out by Mark Woods on the 9 September 2020. Weather conditions were sunny with a moderate breeze and all relevant areas of the site were accessible.
- 2.2.11 Plant names used in this document use standard nomenclature from Stace (2010)7. An updated version of Stace (2019)8 is available, but the new nomenclature is yet to be widely adopted.

⁶ Joint Nature Conservation Committee (2009). Common Standards Guidance for Upland Habitats. JNCC, Peterborough.

⁷ Stace, C. 2010. New Flora of the British Isles (Third Ed.). Cambridge University press.

⁸ Stace, C. 2010. New Flora of the British Isles (Fourth Edition). C&M Floristics.

3 Results

- 3.1.1 Three generic upland feature types were present on, or next to the track:
 - Acid Grassland (Upland);
 - Alpine Dwarf-shrub Heath
 - Springhead, rill and flush (Upland)
- 3.1.2 The seven track samples were all dominated by grassland, but also contained patches of dwarf-shrub heath and flush.
- 3.1.3 Of the nine off-track plots one was a flush; two were sections of former track that were a mix of grassland and heathland; one was a bank of bracken and grassland, and the remaining five plots were heathland.

3.2 Track Plots

- 3.2.1 Appendix 1 provides a summary of the attributes that were sampled in each of the plots. Of the seven track plots (see photographs 1 to 7), two consisted entirely of grassland; four were combinations of grassland and heathland and one was a combination of grassland and stands of soft rush *Juncus effusus*.
- 3.2.2 It is understood that the tracks are regularly used by pedestrians, visitors or staff who are working on the site. Staff also make use of the track when riding quad bikes and evidence of use by horses (hoof-prints) was also observed on the day of the survey.
- 3.2.3 The two plots that were entirely grassland (without any heather) were located on steep slopes of 30° and 45°. Unsurprisingly the steeper of the two slopes also had scattered patches of bare ground, which appeared as small gaps in the sward rather than larger discrete patches. On the less steep slope, bare ground was 5% and confined to small gaps in the sward.
- 3.2.4 All of the grassland sward that was sampled was relatively short, fairly species-poor and consisted of typical upland grassland species including common bent-grass *Agrostis capillaris*, sheep's fescue *Festuca ovina*, mat grass *Nardus stricta* and wavy hair-grass *Deschampsia flexuosa*. The presence of localised sheep droppings indicated that grazing as well as trampling contributes to the short grassland sward.
- 3.2.5 On four of the sample plots, which ranged in gradient from 10° to 20°, heather *Calluna vulgaris* and bilberry *Vaccinium myrtillus* was present with an estimated cover of 10-20%. On the four plots the heather and bilberry were growing in the central part of the track where trampling pressure was significantly lower and in all cases the heather was at the building stage and in healthy condition.
- 3.2.6 In a few scattered locations the tracks crossed flushes. The wettest flushes were spanned by wooden poles wired together and pegged in place to form a flexible 'mattress' over the flush. Plot 14 (to the west of Bull Clough) was located on a patch of ground that was fairly wet on the day of the survey visit, but no standing water was visible. The plot was,

however, distinctive from other grassland plots because of the abundance of soft rush either side of the track and along the central strip of the track.

Photograph 1. Plot 2



Photograph 4. Plot 10





Photograph 5. Plot 11

Photograph 3. Plot 8



Photograph 6. Plot 14



Photograph 7. Plot 15







3.3 Trackside Plots

- 3.3.1 A total of six plots were sampled (see photographs 8 to 13) by the side of the track to provide an indication as to the condition of the dwarf-shrub heath in close proximity to the track. Two other plots that were previously part of a track were sampled to provide a comparison with the extant track and the remaining plot was a typical flush alongside a section of track covered by a mattress of wooden poles.
- 3.3.2 For the purposes of this study it is assumed that there has been no loss of heathland habitat in recent years. With the exception of plot 12, which was located on a steep slope and was dominated by a mix of grasses and bracken *Pteridium aquilinum*, the remaining heathland plots had a cover of ericoid shrubs that ranged between 75% and 100%. The sub-shrubs were all in healthy condition with minimal evidence of grazing. No non-native species were encountered; grass cover was less than 10%, and bare ground was less than 10% cover. Plot 16 was in the pioneer stage of development having been burned a few years previous to the visit. All other stands were in the building stage of development.
- 3.3.3 A flush that was not entirely covered by rushes was selected as being representative of a typical moorland flush in the local area. The assemblage within the flush was strongly indicative of the M6 *Carex echinata Sphagnum recurvum/auriculatum* mire9. Many of the flushes in close proximity to the track were dominated by soft rush, but still retained characteristic species of an M6 mire in between dense tussocks of soft rush.
- 3.3.4 The flush that was sampled had less than 25% bare ground, was not heavily grazed and had no non-native species. It did not, however, contain 90% cover of indicator species; the cover of soft rush and grasses was more than 10% in each case, and running water was visible.
- 3.3.5 Two plots were selected because they were obviously tracks that were no longer in use. Plot 3 was separated from the extant track by a strip of heather. The plot was part of a former track on a 30 slope. Plot 6 was located next to the extant track on flatter ground. Plot 3 was characterised by extensive bare ground and exposed rock (40% cover) most likely to have been caused by trampling and erosion. The vegetation was a mix of small patches of grasses, heather and bilberry in amongst the rocks and bare peat.
- 3.3.6 Plot 6 had a similar grassland composition to the neighbouring track (plot 5) but 20% of the plot was bare ground, probably caused by trampling and erosion. Plot 6, was, however, showing signs of recovery with a healthy stand of heather in the building stage covering approximately 12% of the plot. The heather was at the same height and age as the heather growing on the extant track in plot 5.

⁹ Rodwell, J. (ed.), 1992. British Plant Communities Volume 2: Mires and Heaths. Cambridge University Press.

Photograph 8. Plot 1



Photograph 11. Plot 6



Photograph 14. Plot 12



Photograph 9. Plot 3



Photograph 12. Plot 7



Photograph 15. Plot 13



Photograph 10. Plot 4



Photograph 13. Plot 9



Photograph 16. Plot 16



4 Assessment

4.1 Track Plots

- 4.1.1 Obviously, the dominance of grassland and limited cover of heather is indicative of unfavourable condition if the track is assessed against the attributes for 'Alpine dwarf-shrub heath'. However, it is not representative to subject tracks and pathways to a condition assessment of the feature for which the site is designated.
- 4.1.2 With the exception of the slopes immediately adjacent to Bull Clough, where the artificial matting was not present and on the 45° slope of plot 11, bare ground was no more than 10% cover. The visibility of the matting on sampled plots was 5 to 15% cover rising to 25% on the steep slope of plot 11.
- 4.1.3 The grassland on the track lacked many of the characteristic forbs of upland acid grassland, but the grasses were typical and the sward was in relatively good condition with a closed, intact structure and light grazing pressure. In addition, the central strip of the tracks, where trampling pressure is relaxed supported strips of heather or rushes.
- 4.1.4 Where the mattresses of wooden poles had been installed, rushes and herbs were growing through the gaps between the poles and the vegetation either side of the poles was largely intact. As such, exposed running water (active drainage) was minimal.
- 4.1.5 In upland acid grassland habitat, a lack of characteristic forbs and a short trampled sward would be indicative of unfavourable condition, but larger expanses of acid grassland would not be subject to routine trampling. As such, an unfavourable condition does not indicate that the track condition is poor. On the contrary the closed sward and near continuous cover will be sufficient to keep the underlying peat intact. Other tracks without any substrate do not have a continuous cover of vegetation and patches of bare peat and rocks are frequent, particularly on slopes and in hollows where standing water is present.
- 4.1.6 Given the general condition of grassland vegetation and the regeneration of heathland and flush vegetation on less trampled parts of the path it is considered that the vegetation on the track is in good condition and there is very little active erosion of the underlying peat substrate.
- 4.1.7 Removal of the matting would have an adverse, localised impact because the vegetation would be ripped out at the rooting zone, exposing the underlying peat substrate. Exposed peat will be vulnerable to erosion because of track is located on sloping ground, which will receive surface water drainage. Drainage will mobilise the peat substrate and carry suspended and dissolved materials to the nearest watercourses. Exposed peat will also be vulnerable to the impacts of frost which can further accelerate erosion.

4.2 Trackside Plots

- 4.2.1 Plots 3 and 6 are both considered to be in unfavourable condition, because of the extent of bare ground and fragmented vegetation. There is, however, evidence of a recovery on plot 6, because a healthy stand of heather has established and seedlings are appearing in the neighbouring grassland. It is anticipated that both plots have the potential to re-develop into heather dominated vegetation if trampling is avoided.
- 4.2.2 The only heathland plot that was not in favourable condition was located on a steep rocky slope and past management and abiotic factors including slope and surface water run-off may have favoured the abundance of bracken and grassland. The patch of bracken and grassland habitat was, however, localised and unrepresentative of the surrounding heathland vegetation, which was otherwise considered to be in favourable condition.
- 4.2.3 The plot 13 flush was in unfavourable condition because of active drainage (visibility of running water), extent of indicator species and presence of unfavourable grasses and soft rush. There was, however, no signs of trampling by livestock or people and the vegetation on the other side of the track was intact without signs of active drainage. Without any further trampling it is anticipated that the cover of bryophytes, forbs and small sedges will expand to occupy the areas of open water and therefore, the flush is considered to be in unfavourable, but recovering condition.

5 Conclusions

- 5.1.1 The track vegetation is in a favourable condition and is only actively eroding in the immediate vicinity of Bull Clough where there is a lack of matting. Much of the matting is barely visible, because of the overgrowth of vegetation, particularly grassland but also rushes on wetter ground and heather on drier ground. Only where the track is at its steepest on Plot 11 is the underlying matting clearly visible from a short distance.
- 5.1.2 The installation of the wooden poles over the wetter parts of the track appears to be having a favourable impact on neighbouring wetland vegetation. Downslope, the vegetation is intact with no signs of active drainage, whilst upslope, signs of obvious disturbance by people and livestock are absent.
- 5.1.3 Given the favourable condition of the heathland plots adjacent to the track it is obvious that trampling and disturbance by people, vehicles and livestock is not occurring. The two plots adjacent to the track that were once part of an uncovered track are indicative of the consequences of erosion without any form of protection for the vegetation.
- 5.1.4 The probably consequences of removing the matting are described in paragraph 4.1.7 and the overall impact would be adverse. To restore the moorland vegetation following removal of the matting would require isolation of the track from livestock, vehicles and people for several years to allow the vegetation to recover naturally. The process could be accelerated by re-seeding with heather and / or grasses, but this would still take several years for the vegetation to fully re-establish and if further vehicle or pedestrian movement is required there is no guarantee that the track will recover a surface layer of any type of vegetation, be it grassland or dwarf-shrub heath.
- 5.1.5 During a recovery period there may be a need to create an alternative track for routine management and access in this part of the moor. A new track would potentially create more erosion of the peat substrate.

Appendix 1: Field Survey Results

Table 1. Results of Track Plot Sampling

Parameter	Plot Number	Plot Number									
	2	5	8	10	11	14	15				
Grid Reference (SK)	1947897632	1944897647	194229691	1938897707	1934197706	1908797779	1896297873				
Habitat type	Grass	Grass/Heath	Grass/Heath	Grass/Heath	Grass	Rush	Grass/Heath				
Bare ground (peat/rock) %	5	0	10	0	15	10	10				
Exposure of matting (%)	10	5	5	5	25	15	15				
Gradient (degrees)	30	10	10	20	45	10	15				
Av. height of vegetation (cm)	3	15	15	3	3	25	10				
Extent of browsing / grazing	NA	Negligible	Negligible	Negligible	NA	NA	Negligible				
Heather beetle damage	NA	None	None	None	NA	NA	None				
Heather phase (if present)	NA	Building	Building	Building	NA	Building	Building				

Table 2.Species Recorded in Track Plots

Species			Plot Number and Species Percentage Cover							
Common	Latin	2	5	8	10	11	14	15		
Common bent-grass	Agrostis capillaris	34	20	35	25	20	15	23		
Mosses	Bryophyte cover	12	20	5	0	0	10	0		
Heather	Calluna vulgaris	1	5	15	15	1	5	20		
Wavy hair-grass	Deschampsia flexuosa	10	5	3	5	0	0	1		
Sheep's fescue	Festuca ovina	22	20	20	25	32	20	25		
Heath bedstraw	Galium saxatile	0	0	0	25	1	0	0		
Soft rush	Juncus effusus	0	0	0	0	1	20	1		
Mat grass	Nardus sticta	5	0	5	5	5	5	5		
Bilberry	Vaccinium myrtillus	1	5	1	0	0	0	0		

Midhope Moor Inquiry

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Parameter	Plot Number										
	1	3	4	6	7	9	12	13	16		
Grid Reference (SK)	1946497629	1947597626	1945097646	1944697656	19409770	1938997710	19389771	1928997767	1899397865		
Habitat type	Heath	Grass (old	Heath	Grass (old	Heath	Grass/Heath	Grass/	Flush/Rush	Heath		
		track)		track)			Bracken				
Bare ground (peat/rock)	2	40	0	20	0	0	0	5	10		
%											
Exposure of matting (%)	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Gradient (degrees)	30	30	10	10	10	30	45	10	5		
Av. height of Vegetation	20	5	35	15	30	25	35	25	10		
(cm)											
Extent of browsing /	Negligible	NA	Negligible	Negligible	Negligible	Negligible	Low	Negligible	Negligible		
grazing											
Heather beetle damage	None	NA	None	None	None	None	None	NA	None		
Heather phase	Building	NA	Building	Building	Building	Building	Mature	NA	Pioneer		

Table 3. Results of Off-track Plot Sampling

Table 4.Species Recorded in Off-track Plots

Species		Plot Num	lot Number and Species Percentage Cover							
Common Name	Latin Name	1	3	4	6	7	9	12	13	16
Brown bent-grass	Agrostis canina	0	0	0	0	0	0	0	1	0
Common bent-grass	Agrostis capillaris	0	15	0	28	0	3	0	0	1
Creeping bent-grass	Agrostis stolonifera	0	0	0	2	0	0	0	0	0
Moss	Bryophyte cover	5	15	1	5	15	15	15	0	10
Heather	Calluna vulgaris	63	10	100	12	70	60	10	0	77
Star sedge	Carex echinata	0	0	0	0	0	0	0	1	0
Carnation sedge	Carex panicea	0	0	0	0	0	0	0	1	0
Marsh thistle	Cirsium palustre	0	0	0	0	0	0	0	5	0
Wavy hair-grass	Deschampsia flexuosa	10	0	0	5	5	5	0	0	0
Sheep's fescue	Festuca ovina	0	11	0	10	0	0	10	0	1

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Species		Plot Nu	mber and	Species Per	centage Cov	ver				
Common Name	Latin Name	1	3	4	6	7	9	12	13	16
Heath bedstraw	Galium saxatile	0	0	0	0	0	1	5	0	0
Toad rush	Juncus bufonius	0	0	0	0	0	0	0	1	0
Soft rush	Juncus effusus	0	2	0	0	1	1	0	18	0
Jointed rush	Junuc articulatus	0	0	0	0	0	0	0	1	0
Mat grass	Nardus sticta	0	5	0	0	0	0	15	2	1
Open water		0	0	0	0	0	0	0	12	0
Annual meadow-grass	Poa annua	0	1	0	0	0	0	0	0	0
Tormentil	Potentilla erecta	0	0	0	0	0	0	0	2	0
Bracken	Pteridium aquilinum	0	0	0	0	0	0	60	0	0
Sphagnum	S. fallax / S. denticulatum	0	0	0	0	0	0	0	50	0
Bilberry	Vaccinium myrtillus	20	1	0	0	10	15	0	0	0
Marsh violet	Viola palustre	0	0	0	0	0	0	0	1	0



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