Detailed Vegetation Survey

Brooks Ecological
Grounded advice

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Horn Crag Silsden

ER-5064-09

Report Name:	Detailed Vegetation Survey Horn Crag Quarry, Silsden
Report Reference:	ER-5064-09
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Introduction

This survey was requested via the consultation response from CBMDC which showed concern that the Preliminary Ecological Appraisal might have been carried out too early in the season to make a valid assessment of the vegetation on site. This was not the view of the original surveyor due to the nature of habitats on site and experience of the surveyor. This work was however carried out to satisfy these concerns.

Detailed botanical survey

"The habitat survey detailed in the Preliminary Ecological Appraisal (Brooks, 2021) provide a summary of the habitats found on the application site with a species list which is useful and illustrative. As the habitat survey was conducted in March, outside of the growing season, the species list provided may not include species of note and therefore may not have correctly identified the quality or condition of the grassland.

A detailed NVC botanical survey prior to determination would be required of the application site in order to assess its significance. The botanical survey should also refer to West Yorkshire Ecology's Local Wildlife Site Selection Criteria when assessing the quality of the habitats present in order to identify if the site meets LWS criteria."

Method

Stands of homogenous vegetation were identified and sampled according to Rodwell et al. Volume 2 and 3 (1992). Results were keyed out manually. Five quadrats per stand of homogenous vegetation were sampled.

Results

The vegetation on site is composed of dry heath merging into and in mosaic with acid grassland which in turn is in mosaic and merging with agriculturally improved neutral grassland. Species poor scrub and bracken habitats make up the remainder of the vegetation.

Evaluation

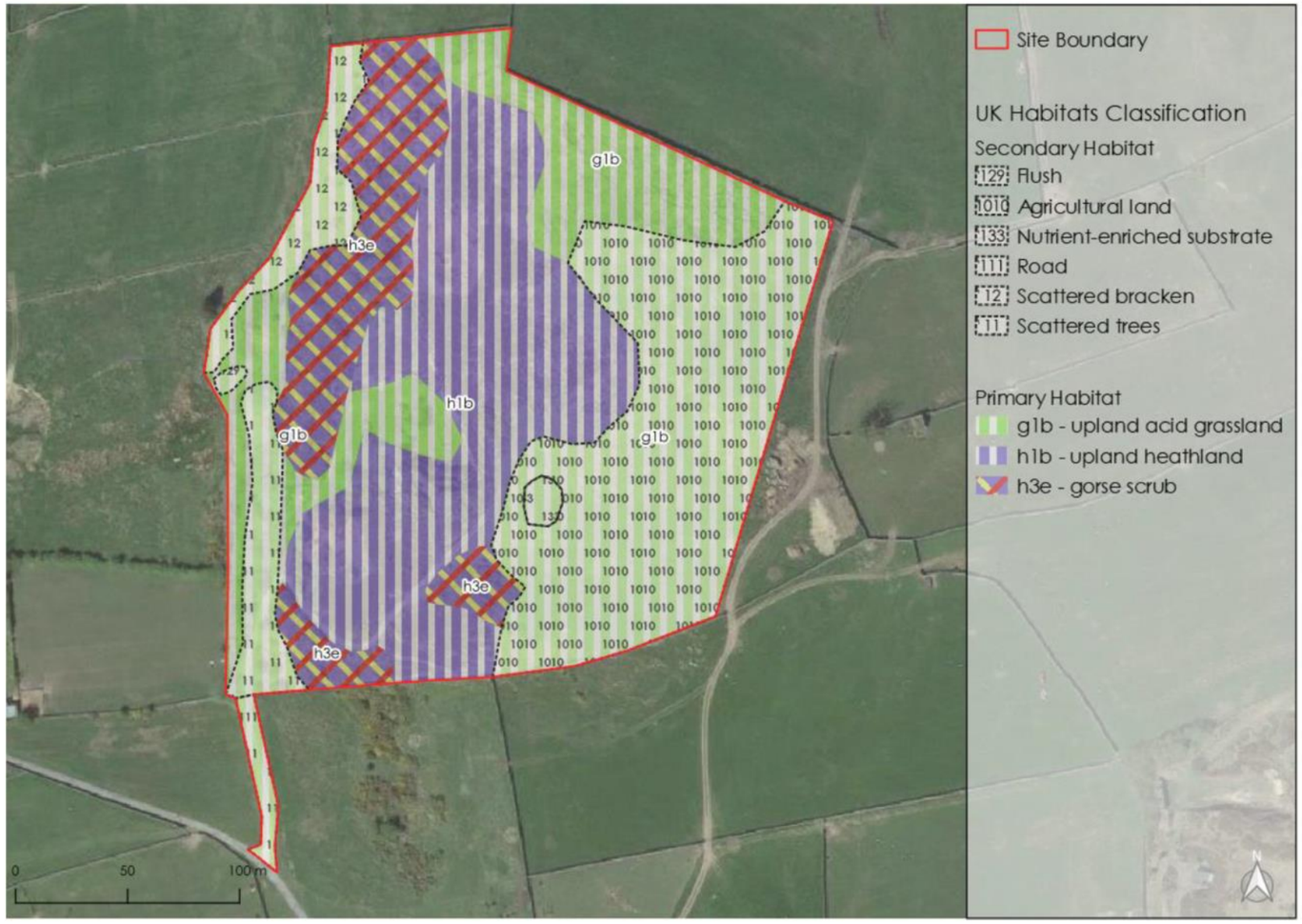
No scarce or locally important species have been found and the habitats do not qualify for LWS selection.

Mapping Caveat

The mapping produced for the NVC Habitats types in the following pages

Figure 1 The Site and habitats mapped to UK Habitats Classification in the Brooks Ecological PEA

Appendix 1 Habitats and Ecological Features



NVC Survey

U4 *Festuca ovina-Agrostis capillaris-Galium saxatile grassland*

Vaccinium myrtillus-Deschamsia flexuosa. subcommunity

The habitat mapped as g1b upland acid grassland to UK Habitats Classification falls within this NVC subcommunity. It is far from a perfect fit into this NVC classification supporting lower cover of *Agrostis* than would be typical and having constant *Molinia*. However it is very typical for this vegetation which is by its nature transitional, often wanting to revert to heath and kept as grassland by grazing and management of marginal land. *Molinia* here shows subsurface flows of water but the soil is clearly not wet enough to create true mire vegetation which *Molinia* would otherwise be characteristic of.

Pockets of acid grassland will fall into U5 *Nardus stricta* grassland where *Nardus* become the dominant species but not occurring at a scale that can be readily mapped.

A species poor habitat with no locally scarce or otherwise important species present.

Horn Crag	June 2022	Acid grassland					
Scientific	English	Frequency	Q1	Q2	Q3	Q4	Q5
Molinia caerulea	Purple moor-grass	V	4	5	6	6	5
Vaccinium myrtilis	Bilberry	V	5	4	4	4	5
Galium saxatile	Heath bedstraw	V	4	4	4	4	4
Calluna vulgaris	Ling	V	4	4	4	4	4
Festuca ovina	Sheep fescue	V	5	5	4	4	4
Deschamsia flexuosa	Wavy hair grass	IV	5	4	5	0	5
Carex nigra	Common sedge	IV	2	2	0	2	1
Rhytidiadelphus squarossus	Moss	IV	0	5	4	4	4
Festuca rubra	Red fescue	III	4	4	4	0	0
Juncus squarossus	Heath rush	II	0	0	4	0	4
Agrostis capillaris	common bent	II	0	0	0	4	4
Nardus stricta	Matt grass	II	0	0	0	4	4
Holcus lanatus	Yorkshire fog	II	0	0	0	2	4
Rumex acestosella	sheep sorrel	I	0	2	0	0	0
Hypnum cupressiforme	Moss	I	4	0	0	0	0
Carex binervis	Green-ribbed sedge	I	0	0	0	1	0

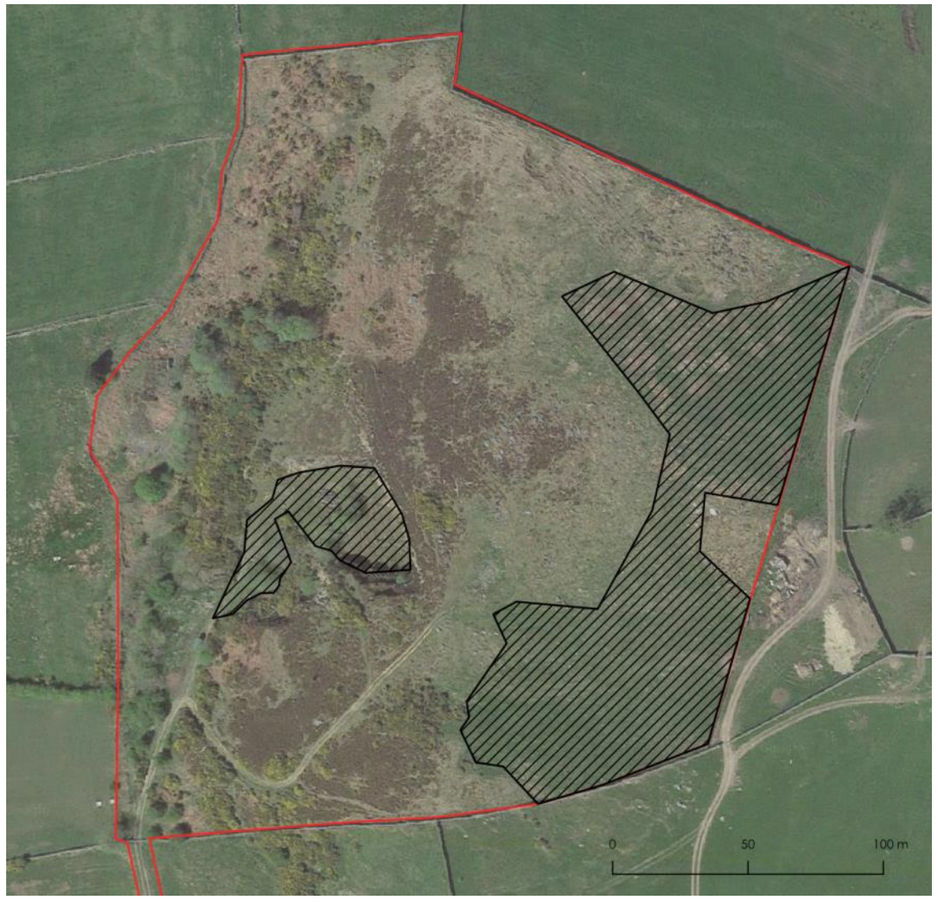
NVC Survey

U4b-MG6B *Transitional grassland*

Classic marginal land which undergoes attempts to steep the habitat away from its natural acidic status through the application of fertiliser and lime.

The absence of *Lolium* from the quadrats makes MG6b an imperfect fit likewise the absence of *Galium saxatile* makes U4b imperfect. Mapped as Acid grassland in the UK Habitats but equally pockets could be mapped as other neutral or modified grassland.

No locally scarce or otherwise important plant species were found in this locally ubiquitous upland fringe habitat.



Horn Crag Scientific	June 2022 English	Frequency	Q1	Q2	Q3	Q4	Q5
Holcus lanatus	Yorkshire fog	V	6	6	6	4	6
Anthoxanthum ororatum	Sweet vernal grass	V	4	4	4	4	4
Agrostis capillaris	Common bent	V	5	5	6	5	5
Festuca rubra	Red fescue	V	4	4	4	4	4
Trifolium repens	White clover	V	4	4	4	4	4
Alopecuris pratensis	Meadow foxtail	IV	4	4	4	4	0
Rumex acetosa	Common sorrel	IV	4	4	0	4	4
Cirsium arvense	Creeping thistle	IV	4	1	0	5	2
Poa pratensis	Smooth meadow grass	IV	0	2	4	4	4
Deschampsia cespitosa	Tufted hair grass	III	4	4	5	0	0
Rumex obtusifolius	Broad leaved dock	II	0	0	1	4	0
Dactylus glomeratus	Cocksfoot	I	0	0	0	4	0

NVC Survey

H9 *Calluna vulgaris–Deschampsia flexuosa* heath

Vaccinium myrtillus-Cladonia spp. subcommunity

The habitat mapped as h1b upland heathland to UK Habitats Classification falls within this NVC subcommunity. It is typical of dry heaths in the local area, dominated by *Calluna vulgaris* in varying states of maturity with a subordinate but constant cover of *Vaccinium myrtillus* and *Dechampsia flexuosa*. It supports high cover values of calcifuge mosses like Hypnum, Pleurozium and Dicranum. Associated calcifuge grasses are *Nardus stricta*, *Festuca ovina* and *Molinia caerulea*, responding according to level of soil moisture. The heath vegetation is under threat from invading bracken which is present in high cover around the gorse dominated vegetation.

Bare ground is occasional, around exposed rock and thin skeletal soils or in association with rabbits.

Galium saxatile is the only commonly encountered forb. No locally scarce or otherwise important species present.

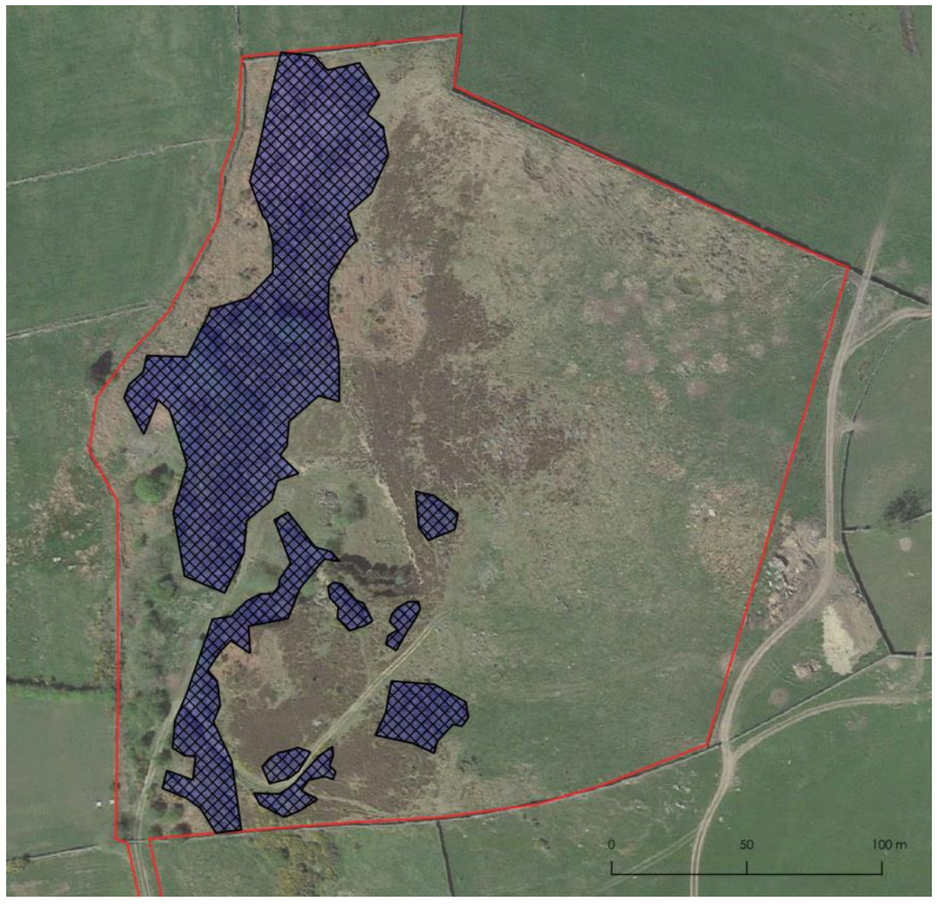
Horn Crag	June 2022	Heath					
Scientific	English	Frequency	Q1	Q2	Q3	Q4	Q5
Calluna vulgaris	Ling	V	7	7	7	6	7
Vaccinium myrtilis	Bilberry	V	6	6	4	6	4
Deschamsia flexuosa	Wavy hair grass	V	4	4	4	4	4
Festuca ovina	Sheep fescue	V	4	4	4	4	2
Hypnum cupressiforme	Moss	V	4	4	4	4	4
Pleurozium schreberii	Moss	III	4	2	2	0	0
Pseudoscleropodium purum	Moss	III	4	3	3	0	0
Bare/rock	Bare/rock	III	2	0	4	4	0
Molinia caerulea	Purple moor-grass	III	4	2	4	0	0
Nardus stricta	Matt grass	II	0	2	2	0	0
Dicranum scoparium	Moss	II	4	0	2	0	0
Galium saxatile	Heath bedstraw	II	0	4	4	0	0
Pteridium aquilinum	Bracken	II	0	0	0	2	4
Dicrenella sp.	Moss	I	0	0	0	0	2

NVC Survey

W23 *Ulex europaeus-Rubus fruticosus agg.* scrub

Typical. subcommunity

The habitat mapped as h3e gorse scrub to UK Habitats Classification. A species poor habitat with no locally scarce or otherwise important species present. This habitat is invading to more valuable dry heath habitats.



Horn Crag Scientific	June 2022 English	Frequency	Q1	Q2	Q3	Q4	Q5
Ulex europaes	Gorse	V	7	9	8	9	7
Pteriduim aquilinum	Bracken	V	6	4	6	4	6
Bare	Bare	V	5	4	4	4	4
Rubus fruticosus agg.	Bramble	III	4	0	4	0	4
Holcus lanatus	Yorkshire fog	III	4	4	0	1	0
Digitalis purpureus	Fox glove	II	0	0	0	1	2
Calluna vulgaris	Ling	I	4	0	0	0	0
Galium saxatile	Heath bedstraw	II	2	0	0	0	2

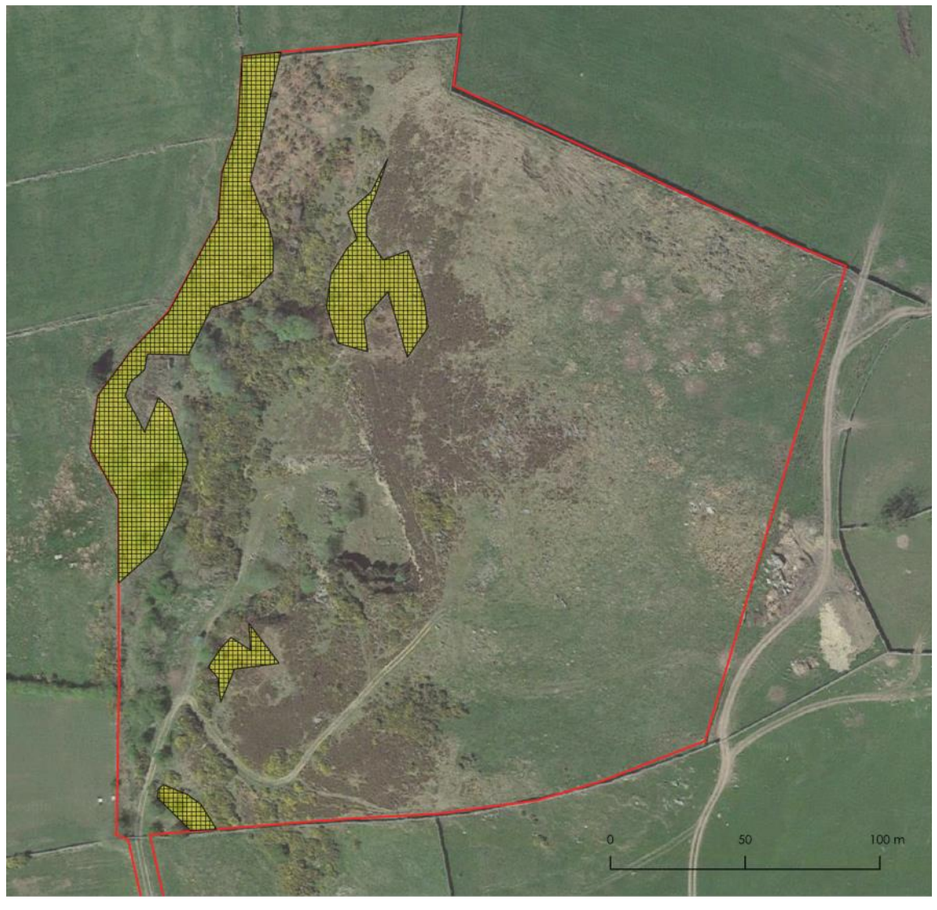
NVC Survey

U20 *Pteridium aquilinum-Galium saxatile*

***Species poor* subcommunity.**

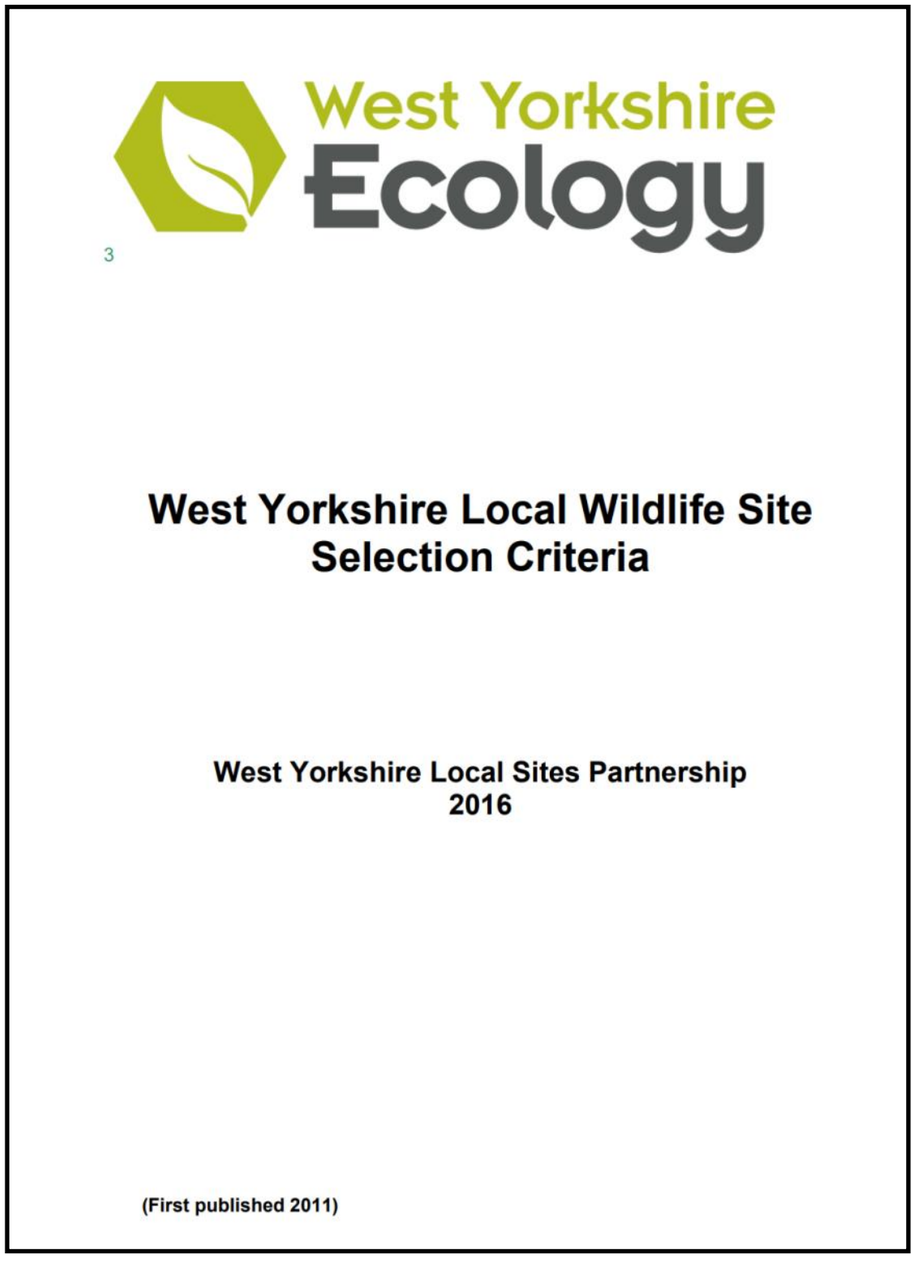
Stands of near pure bracken with a hand full of associates, merging with the heath and gorse scrub habitats.

Quadrats were not taken from this habitat.



Local Wildlife Selection Criteria

The habitats on site are assessed according to West Yorkshire Local Wildlife Sites Selection Criteria (WYLWSSC).



West Yorkshire Ecology

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West Yorkshire Local Wildlife Site Selection Criteria

West Yorkshire Local Sites Partnership
2016

(First published 2011)

He 1 Lowland Heath: this site does not fit with the LWS criteria being over 250m and typical South Pennines Character Area.

2.12.2 Lowland Heath Selection Guidelines

Guideline[61]	
He1	**The site covers an area of at least 0.5ha in which the vegetation is dominated by assemblages of at least 25% dwarf shrub cover, with at least 2 of these species widely distributed across the site.**

Application
These guidelines should be applied to heathland sites normally below 250m in West Yorkshire outside of the Southern Pennines and Dark Peak Character Areas

Rationale
The occurrence of these vegetation types is generally very low outside of the Southern Pennines and even small examples are likely to be of interest. They often occur as part of a habitat mosaic with acid grassland and woodland communities.

Gr4 Acid grassland

The grassland on site falls in GR4b being enclosed upland grassland below the moorland line and over 0.5ha in size. It does not however score the required 12 points.

Guideline	
Gr4	**a) Areas of lowland acid to [13]neutral grassland typically below 250m of at least 0.25ha in size, or a road verge at least 50m in length, that score 8 or more from the combined acid and neutral grassland plant species lists in Table 1 and Table 3.**

or

b) Areas of enclosed upland acid grassland typically above 250m, but below the moorland line, of at least 0.5ha in size, which score 12 or more from the combined acid and neutral grassland plant species lists in Table 1 and Table 3 and have less than 25% heath cover.

Horn Crag	June 2022	Enclosed upland Acid grassland
Scientific	English	GR 4 Score
Molinia caerulea	Purple moor-grass	1
Vaccinium myrtilis	Bilberry	1
Galium saxatile	Heath bedstraw	1
Calluna vulgaris	Ling	1
Festuca ovina	Sheep fescue	1
Deschamsia flexuosa	Wavy hair grass	1
Carex nigra	Common sedge	1
Rhytidiadelphus squarossus	Moss	0
Festuca rubra	Red fescue	0
Juncus squarossus	Heath rush	1
Agrostis capillaris	common bent	0
Nardus stricta	Matt grass	1
Holcus lanatus	Yorkshire fog	0
Rumex acestosella	sheep sorrel	1
Hypnum cupressiforme	Moss	0
Carex binervis	Green-ribbed sedge	1
		11

Scrub and bracken habitats

None of these fall within the vegetation types encompassed by the WYLWSSC.

References

Rodwell (1991*) British Plant Communities vol. 1 Woodlands and Scrub*

Rodwell (1991*) British Plant Communities vol. 2 Mires and Heaths*

Rodwell (1992*) British Plant Communities vol. 3 Grasslands and Montane Communities*

UK Habitats (2018) *The UK Habitat Classification Habitat Definitions Version 1.0* UK Habitat Classification Working Group

West Yorkshire Ecology (2011) *West Yorkshire Local Wildlife Site Selection Criteria,* West Yorkshire Local Sites Partnership 2016