bowland ecology

Project Reference:	Date of Survey:	Ecologist:
BOW17.1504 Higher Fence Wood Meadows	26/07/2023	▮▮▮▮▮▮▮▮▮▮

Weather Conditions:

16°C, dry, cloud: 8/8 and wind: F1.

Introduction

Bowland Ecology Ltd were commissioned by Forwoods Forestry & Woodland Consultancy Ltd to undertake an in-depth botanical survey of Higher Fence Wood Meadows, to inform proposed track creation to allow machinery access for tree felling and afforestation works. The site comprises two fields associated with Higher Fence Wood Farm (central OS NGR: SD 639 472). The proposed track follows an existing unsurfaced vehicular route through one of the fields, used by the farmer to access a field to the north.

This document provides an overview of the methodology, results and outline assessment / recommendations. It is not intended as a comprehensive report, and recommendations will be dependent on the proposals and consultation with any relevant stakeholders.

Methodology:

A brief desk-study was undertaken to gather existing information for the site. This included a review of the Multi-Agency Geographic Information for the Countryside (MAGIC) website (http://magic.gov.uk) and Lancashire County Councils Biological Heritage Site (BHS) description for the site.

The survey followed the *National Vegetation Classification* (NVC) methodology (Rodwell, 2006). Analysis of the data on completion of the survey assisted in assigning sub-communities where it was required and not easily identifiable in the field. The field data were collated within MAVIS, and analysed using the MAVIS plot analyser V1.04 (CEH, 2016) software. The MAVIS coefficients for quadrats were used to assist with interpretation of the field data, in conjunction with examination of the published vegetation accounts (Rodwell, 1992).

Quadrat sampling was undertaken within the dominant habitat type, that has the potential to be impacted by the proposals. The presence of all higher plant and bryophyte species within the quadrat was recorded using Domin[1] scores. Vascular plant names follow Stace (2010), bryophyte names follow Smith (2004). Smaller areas comprising additional vegetation communities within the survey area (not likely to be impacted by the works) were assigned an NVC community based on the surveyors judgement in the field.

Results:

The western field within the survey area is recorded on MAGIC as 'good quality semi-improved grassland (non-priority)' and the entire farm is currently within a higher tier countryside stewardship scheme. Both fields surveyed (shown in Appendix A) are designated as a BHS for their importance as traditionally managed species-rich hay meadows.

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[1] Domin scale (*sensu* Dahl & Hadac 1941; see Rodwell 1991, p6):

1: <4% cover, with few individuals. **2:** <4% cover, with several individuals. **3:** <4% cover, with many individuals. **4:** 4-10% cover. **5:** 11-25% cover. **6:** 26-33% cover. **7:** 34-50% cover. **8:** 51-75% cover. **9:** 76-90% cover. **10:** 91-100% cover.

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LRQA CERTIFIED ISO 9001 — UKAS MANAGEMENT SYSTEMS 0001   LRQA CERTIFIED ISO 14001 — UKAS MANAGEMENT SYSTEMS 0001   CHAS Accredited Contractor CHAS.co.uk   CIEEM REGISTERED PRACTICE 2022 2023

The survey area comprises two fields on the moorland fringe which are managed for hay. The vegetation composition suggests that the fields are damp for much of the year and the localised abundance of *Juncus effusus* suggests potential livestock poaching during wet periods. *Holcus lanatus* is the most frequent grass and is constant throughout both fields and could be indicative of litter/nutrient accumulation. The most frequent herbs are *Plantago lanceolata* and *Ranunculus* spp., which are constant throughout. No particularly notable species were recorded, however the frequent presence of *Euphrasia officinalis* agg. and *Rhinanthus minor* indicate the low intensity management of the fields. The average number of species is 16 per $2m^2$.

NVC communities and target notes are shown on the plan in Appendix A and full quadrat data is included in Appendix B.

<u>Western field</u>

MAVIS analysis (Q1-7) indicates that the dominant habitat has an almost equal affinity to both MG8d (*Caltha palustris-Bellis perennis* sub-community of *Cynosurus cristatus - Caltha palustris* grassland; 72.84% fit) and MG6d (*Filipendula ulmaria* sub-community of *Lolium perenne-Cynosurus cristatus* grassland; 72.64% fit). In this instance, following review of floristic tables and community descriptions, it is considered that the habitat most closely resembles **MG6d *Lolium perenne-Cynosurus cristatus* grassland.** MG6 grassland is usually semi-improved and often regarded as being of little conservation value. However, a species-rich sub-community has been identified (MG6d) and is probably derived from MG8 on damp soils often following some agricultural improvement.

Where *Juncus effusus* becomes abundant and generally co-dominant with *Holcus lanatus*, the habitat most closely resembles **MG10 *Holcus lanatus - Juncus effusus* rush pasture**.

A shallow depression within the western field runs from north to south and comprises damp ground and a small hollow containing a habitat resembling ***M23 Juncus effusus/acutiflorus - Galium palustre rush-pasture*** (TN3). Species include *Juncus effusus, J. acutiflorus, Urtica dioica, Filipendula ulmaria, Equisetum palustre, Caltha palustris, Lotus pedunculatus* and *Rumex obtusifolius*.

<u>Eastern field</u>

Fewer quadrats were completed as no impacts are anticipated to this field. The vegetation composition was similar to the western field, however a walkover assessment suggests *Euphrasia officinalis* agg. and *Rhinanthus minor* are at a lower frequency. MAVIS analysis (Q8-11) indicates that the dominant habitat has a similar affinity to both MG6d (*Filipendula ulmaria* sub-community of *Lolium perenne-Cynosurus cristatus* grassland; 68.14% fit) and MG8d (*Caltha palustris-Bellis perennis* sub-community of *Cynosurus cristatus - Caltha palustris* grassland; 64.76% fit). As with the western field, it is considered that the habitat most closely resembles **MG6d *Lolium perenne-Cynosurus cristatus* grassland.**

NVC community / Target notes	Photograph
Western field: MG6d *Lolium perenne-Cynosurus cristatu*s grassland (unsurfaced vehicular route visible).	
Western field: MG6d *Lolium perenne-Cynosurus cristatus* grassland. Example quadrat (Q6).	
Western field: MG10 *Holcus lanatus - Juncus effusus* rush pasture.	

TN1: A stone based track leads from the farm, over a ford and a short distance up-slope. As it enters the field, it no longer has a stone base, however is evidently used as the vehicular route by the farmer to access a field to the north.

Relevant mitigation in relation to the watercourse crossing and any overhanging trees that may be impacted will need to be considered.

TN2: The unsurfaced vehicular route has evidently recently been used to access a field to the north for cutting.
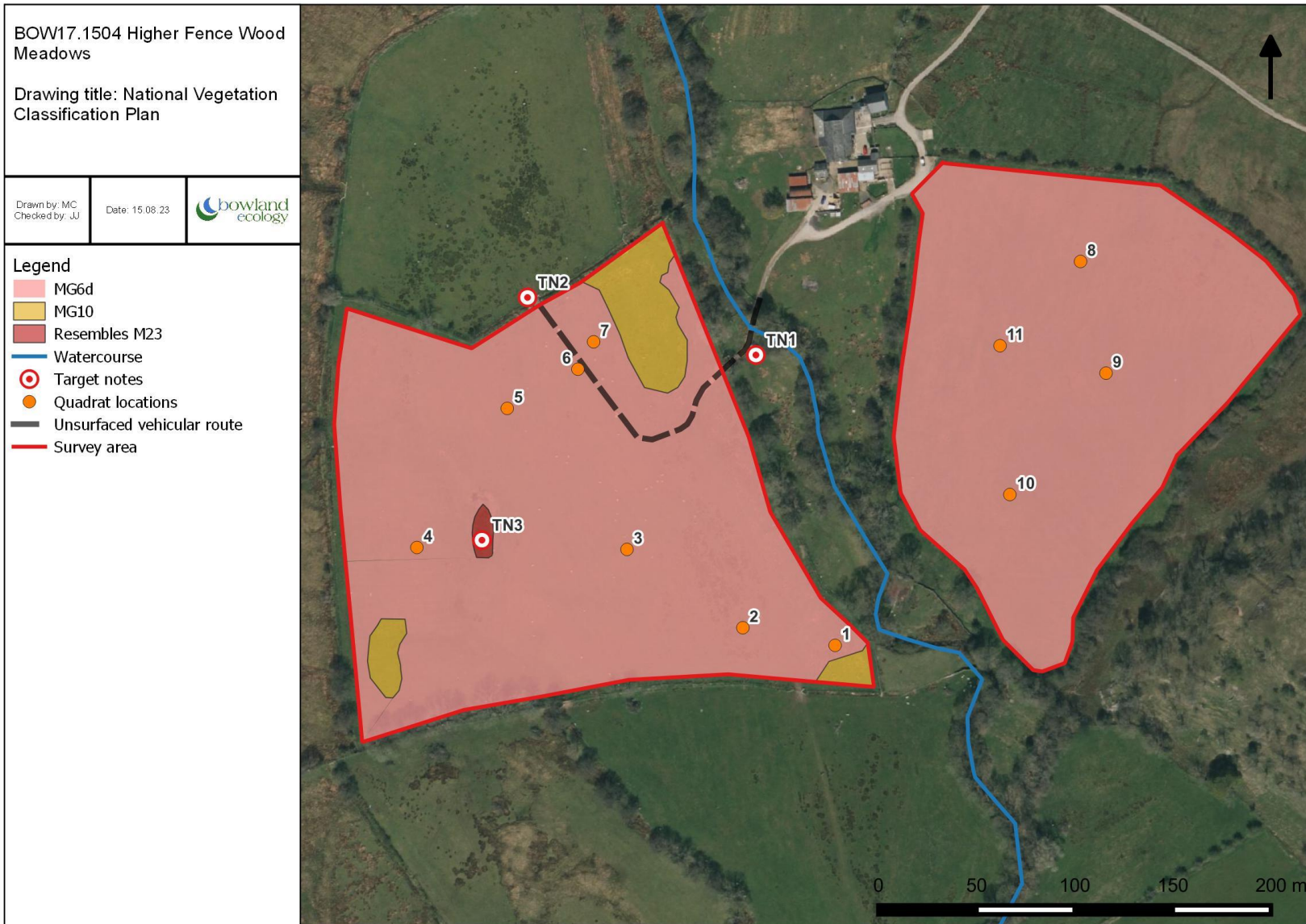
Access design and track installation methods should ensure that impacts to grassland are minimised and avoided where possible. Consideration of sensitive track installation and grassland reinstatement will be required. This will need to be undertaken in consultation with any relevant stakeholders (e.g. in relation to countryside stewardship and BHS requirements).

TN3: A small hollow comprising M23 *Juncus effusus/acutiflorus - Galium palustre* rush-pasture. Evidently remains damp and the presence of frequent *Urtica dioica* suggests receives some nutrient run-off and/or livestock shelter at the location. A small *Crataegus monogyna* tree is located on the northern edge. This area is unlikely to be impacted by the proposals.	
Eastern field: MG6d *Lolium perenne-Cynosurus cristatus* grassland. This area is unlikely to be impacted by the proposals.	

BOW17.1504 Higher Fence Wood
Meadows

Drawing title: National Vegetation
Classification Plan

Drawn by: MC
Checked by: JJ   Date: 15.08.23

Legend
- MG6d
- MG10
- Resembles M23
- Watercourse
- Target notes
- Quadrat locations
- Unsurfaced vehicular route
- Survey area

Appendix B – Quadrat Data

Quadrat size	2x2	2x2	2x2	2x2	2x2	2x2	2x2	2x2	2x2	2x2	2x2
Quadrat ref	1	2	3	4	5	6	7	8 (East Q1)	9 (East Q2)	10 (East Q3)	11 (East Q4)
Grid ref	sd 64008 47178	sd 63961 47187	sd 63902 47227	sd 63795 47228	sd 63841 47299	sd 63877 47319	sd 63885 47333	sd 64133 47374	sd 64146 47317	sd 64097 47255	sd 64092 47331
Aspect / slope	South / gentle	South / gentle	South / gentle	South / gentle	South / gentle	South / gentle	South / gentle	South / gentle	South / gentle	South / gentle	South / gentle
Species:	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**	**Domin**
Achillea ptarmica				2	1						
Agrostis capillaris	4		1	3	1					4	
Agrostis stolonifera							2				
Alopecurus geniculatus				2			2				
Alopecurus pratensis			2		3	3		3			2
Anthoxanthum odoratum	3	3		3	3		3	2	4	3	2
Caltha palustris		2		2							
Cardamine pratensis	2										
Carex ovalis				3							
Centaurea nigra								2		2	
Cerastium fontanum	2		2	2	3	3	2	3	3	2	2
Cynosurus cristatus	2	3	2	2	4	3	2	4	4	3	3
Euphrasia officinalis agg.		6	3		2	3					
Festuca rubra agg.			2	3	3	3				2	
Filipendula ulmaria				1							
Holcus lanatus	8	7	6	6	7	6	6	6	8	6	8
Hypochaeris radicata			1								
Juncus acutiflorus				3							2
Juncus effusus	2						3				2
Lathyrus pratensis	2			2							2
Leontodon autumnalis		2	1		3	3	3	3		3	
Leontodon hispidus										1	
Lolium perenne	1	1	1	2	3	2	2	3	2	1	5
Lotus pedunculatus				3							
Phleum pratense sens.lat.	4										2
Plantago lanceolata	5	7	4	5	6	6	5	8	7	8	7
Poa trivialis	1										
Ranunculus acris	5	5	4	4	4	4	3	3	3	3	3
Ranunculus repens	3	4	8	8	6	7	8	3	5	4	4
Rhinanthus minor	1	4	3		1	3	3		1	1	1
Rumex acetosa	4		1	3	2	3	1	3	3	3	3
Taraxacum agg.	2				2						
Trifolium pratense		3	1	2		2	1	3	2	4	2
Trifolium repens		3	4	3		2	3	3	3	3	2
Vicia cracca									3	4	3
Vicia sepium									4		