

Technical Note

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Project: Proposed Industrial Unit Extension,
Benner Road Industrial Estate, Pinchbeck,
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To: Chris Bell of Hayward Architects

Date: 28 May 2025

Subject: Biodiversity Net Gain Quadrat Survey **Prepared by:** Anna Scott-Swift MCIEEM
and Katy Clark-Goddard

Introduction and methodology

Croft Ecology was commissioned by Chris Bell of Hayward Architects to provide supporting information regarding the condition assessment of an area of other neutral grassland in relation to a Biodiversity Net Gain (BNG) assessment carried out at Glen Farrow Ltd, Benner Road Industrial Estate, Pinchbeck, Spalding PE11 3DQ (central grid reference: TF 25825 25363) (the 'Site') for the proposed extension to an existing industrial unit.

A baseline habitat survey at the Site was undertaken in June 2024 by Elton Ecology Ltd. and included the following:

- An assessment of the baseline habitats within the red line boundary (including a baseline map to UK Hab)
- A condition assessment of all on-Site habitats

The data was then used to complete the on-Site baseline information of the Statutory Biodiversity Metric and the associated condition assessment sheets. Post-development calculations for on-Site habitats were also undertaken and are summarised in the Biodiversity Net Gain (BNG) calculations and report produced by Elton Ecology (2024), which were then submitted. The consultation response from South & East Lincolnshire Councils Partnership raised concerns over the condition assessment of the parcel of other neutral grassland located in the northern half of the site.

Prior to the June 2024 survey being conducted, Site degradation had occurred, with portions of the grassland being used as storage resulting in 40% bare ground. As such, for this habitat, the baseline was backdated to 18th September 2020 in line with aerial imagery showing the Site prior to any degradation. In the initial BNG report (dated July 2024) it was stated that a precautionary approach was taken and the habitat condition assumed to be moderate at baseline. However, in subsequent updated reports dated September and November 2024, the condition had been changed to poor, without justification for the downgrade presented. Subsequently, the council requested a quadrat survey to be carried out to establish whether the poor condition could be justified.

Croft Ecology has since carried out a desk survey to review the existing BNG data and reports and gather evidence on the history of the Site and conducted a quadrat survey of the grassland. The purpose of this Technical Note is to present this data and which condition assessment it supports. The

full report along with habitat map and condition assessments produced by Elton Ecology (2024) should be read in conjunction with this technical note.

Personnel

The initial survey, BNG calculations and reports were undertaken by Elton Ecology Ltd. This additional supporting assessment was undertaken by Katy Clark-Goddard, Senior Ecologist at Croft Ecology. Katy has over five years' experience working in ecological consultancy, including undertaking PRA, PEA, EcIA and BNG assessments, on small to medium scale private, MOD and railway sites.

The assessment was reviewed by Anna Scott-Swift MCIEEM, Director of Ecology at Croft Ecology. Anna has over 20 years of experience working in the field of ecology, has undertaken and reviewed dozens of walkover surveys/baseline habitat surveys, and has been using UK Hab survey methodology for the last three years. Anna has been undertaking BNG calculations, baseline surveys and condition assessments for over ten years (BNG has been in place as a local planning consideration in Lichfield and Warwickshire for at least this long).

Survey Date and Conditions

The Site was visited on 8 May 2025 and included only the other neutral grassland parcel (see Figure 1).

Weather conditions at the time of the survey were overcast with 100% cloud cover and a light breeze. The air temperature was 12°C.



Figure 1. Site boundary (shown in red), with other neutral grassland in the northern half

Surveys

The historical evidence was gathered using the previous reports, Google Earth imagery and discussions with the landowner. The quadrat survey was conducted using a 1mx1m quadrat placed at 18 random locations across the habitat parcel. While a minimum of 10 quadrats is generally required for a quadrat survey, additional quadrats were added to provide a robust data set to help establish the condition of the habitat. Within each quadrat, all species present were identified, along with the extent of bare ground and the sward height recorded to aid the condition assessment. During the field survey, a DAFOR abundance (D = dominant, A = abundant, F = frequent, O = occasional, R = rare) was assigned to each botanical species identified in the habitat and nomenclature followed Stace (Stace, 2019).

Results

Desk survey

The review of aerial imagery identified six views of the grassland between 31 July 2020 and 19 December 2024. Four images from 2020 and 2021 highlight the grassland to be homogenous, suggesting it was subject to the same use and management practice across the parcel. The 8 September 2021 image (Figure 2) shows what could be either a cleared site or mown grassland during a dry spell, however given that a second image is available from 22 September 2021 (Figure 3) where the parcel appears greener, it is considered more likely this image taken was during a dry spell. The next image was from 5 October 2024 (Figure 4) and shows the temporary warehouse structures and bare ground areas used for storage. On discussion with the landowner during the survey, it was stated that the area of storage had been cleared approximately two years ago, with the grassland subject to annual mowing or strimming during the previous 15 years of ownership. Therefore, the degradation of the Site is considered likely to have taken place between 2023 and October 2024, with the extent of bare ground prior to this greatly reduced.



Figures 2, 3 & 4. Aerial imagery of the site from 8 September 2021 (left), 22 September 2021 (centre) and 5 October 2024 (right). (Google Earth, accessed 2025).

Field survey

The results of the 18 quadrats are displayed in Table 1 below:

Table 1: DAFOR abundance of each species recorded within each quadrat

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Black medick <i>Medicago lupulina</i>											R		R	R		R		
Bramble <i>Rubus fruticosus</i> agg.		R																
Bristly oxtongue <i>Helminthotheca echioides</i>	O	F	A	O	O				O	O	O	R	O	O	O	A	F	F
Broad-leaved dock <i>Rumex obtusifolius</i>												R				O	R	R
Charlock <i>Sinapis arvensis</i>																		R
Cock's-foot <i>Dactylis glomerata</i>	O					D		F	F	F	F	F						
Common fleabane <i>Pulicaria dysenterica</i>	R																	
Common mouse-ear <i>Cerastium fontanum</i>										R								
Common ragwort <i>Jacobaea vulgaris</i>						R		R			R							
Common vetch <i>Vicia sativa</i>	R	R	R		O	O	O	R	O				R	R	R		F	O
Cow parsley <i>Anthriscus sylvestris</i>											R							
Creeping buttercup <i>Ranunculus repens</i>		R	R		R				O	O		O		O	O			O
Creeping thistle <i>Cirsium arvense</i>			O		R		R			O		R	O	O		R		
Cut-leaved crane's-bill <i>Geranium dissectum</i>								R					R					O
Daisy <i>Bellis perennis</i>			R		R													
Dandelions <i>Taraxacum</i> spp.										R			O					
Dogwood <i>Cornus sanguinea</i>								O										
False oat-grass <i>Arrhenatherum elatius</i>											O							
Hawksbeard <i>Crepis</i> spp.					R			R										
Hogweed <i>Heracleum sphondylium</i>		R		R					R	R	O	R						
Mugwort <i>Artemisia vulgaris</i>	R	R															R	
Oxeye daisy <i>Leucanthemum vulgare</i>									O									
Perennial rye-grass <i>Lolium perenne</i>	F		F	F	O	R	A	F	O	F		R	F	O	F		O	O
Ribwort plantain <i>Plantago lanceolata</i>	F	F		A	F	O	R	O	O	O	F	O	F	F	F	A	A	F
Rose <i>Rosa</i> spp.								O										
Smooth sow-thistle <i>Sonchus oleraceus</i>																		R
Spear thistle <i>Cirsium vulgare</i>						F	R			R		R						

Thistle <i>Cirsium spp.</i>	R																	
White clover <i>Trifolium repens</i>	F				A		O	R	O		O			O	F			
Wild teasel <i>Dipsacus fullonum</i>												R						
Yarrow <i>Achillea millefolium</i>																		R
Yorkshire-fog <i>Holcus lanatus</i>		O	R	O	R		A	O	O		O	O	O	O		O	O	
Species count:	9	9	7	5	10	6	7	11	10	10	10	11	9	9	6	6	7	10
Sward height varied?	x	✓	x	x	x	x	x	✓	✓	x	x	x	✓	x	x	x	x	x
Bare ground cover between 1% and 5%?	✓	✓	x	x	x	✓	✓	✓	x	✓	x	✓	x	x	✓	x	x	x

During the survey a total of 31 vascular plant species were recorded. However, when assessing it per m², the average diversity is only 8.4 species. Therefore, while more species were recorded, their presence is localised, with the diversity not consistent across the parcel, reducing its value.

Limitations

All areas of the remaining grassland were accessible with no limitations.

Summary

Based on the recent site visit, the other neutral grassland is currently in poor condition, passing only 1 out of 6 of the condition criteria (see accompanying Condition Assessment Sheet). The only condition passed was Criteria D – having a bracken cover of less than 20% and scrub cover of less than 5%.

When backdating the assessment to match the backdated baseline, the desk study can be used to assess the structural elements (Criteria C and E) of the assessment. The findings suggest that no degradation would have been present as the temporary structures and storage were not yet implemented. Therefore, the extent of bare ground would have been much less, and physical damage would have been likely absent, allowing Criteria C and E to have passed.

For the species dependent elements and sward height (Criteria A, B, D and F), given that during the client's 15-year ownership, including prior to the degradation, the remaining portion of the grassland has been managed and used in the same way, it is reasonable to assume that the species and sward variety present would likely be consistent with those currently present, allowing the current data to be representative of the backdated assessment also. Therefore, for the backdated baseline, it is also considered likely that Criteria A, B and F would not have passed and Criteria D would have passed.

On this basis, the backdated baseline other neutral grassland parcel would pass 3 out of 6 criteria. However, while to meet moderate condition 3 out of 6 criteria are required to be met, these must include the essential Criteria A. Therefore, as it would still not pass the essential Criteria A, it can be concluded that a poor condition is appropriate, both for the backdated baseline and current state of the grassland.

APPENDIX A – Survey photos



Photo 1. Stored items in the southern part of the site, looking northwest



Photo 2. Temporary warehouse structures along the western edge of the site, looking west



Photo 3. General view of the grassland, looking east



Photo 4. Western edge of the grassland, looking south



Photo 5. Quadrat 7



Photo 6. Quadrat 15