



BIODIVERSITY METRIC SUMMARY REPORT

Land at Doncaster Road, Goldthorpe

June 2022

BIODIVERSITY METRIC SUMMARY REPORT

- Land at Doncaster Road, Goldthorpe –

A report for

Graham Wrightson
Wrightson Associates Ltd
31 Greenwood Avenue
Hunsworth
Cleckheaton
BD19 4DY

Report authors



PENNINE Ecological
1a Turnlee Road
Glossop
Derbyshire
Tel. 07883438666

Email: stuart@pennineecological.co.uk

Website Address: www.pennineecological.co.uk

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CONTENTS

1.	Introduction	1
1.1	Background	2
1.2	Purpose of this Report	2
2.	Biodiversity Metric Methodology	3
2.1	UK Habitat Classification Survey and Condition Assessment	3
2.1.1	Background	3
2.2	Calculator Tool	4
2.3	Limitations	4
3.	Biodiversity Metric Results	4
3.1	Site Habitat Baseline Results	5
3.2	On-site Habitat Mitigation	6
3.3	Biodiversity Net Gain Summary	8
4.	Discussion	9
4.1	Summary of Calculation Findings	9
	References	10
	Appendix A - Figures	11

EXECUTIVE SUMMARY

PENNINE Ecological were commissioned by Mr. Graham Wrightson, to undertake a biodiversity net gain (BNG) assessment for the proposed development on land at Doncaster Road, Goldthorpe.

The assessment includes the use of the Natural England Biodiversity Metric (version 3.1) tool to assess habitat gains/loss on site. The assessment was completed using standard methodologies and there was no deviation from the recognised guidance.

The habitats encountered on site were of Very Low to Medium distinctiveness according to the metric. In total, the surveyed habitats had a calculated size of 0.9831ha and has a total habitat value of 2.96 habitat units.

The habitat creation proposals for the development would result in 2.71 habitat units being delivered. This equates to a **-8.33% net gain for the development**. The habitat trading rules have not been satisfied. The BNG metric results are summarised in Table 1 below.

Table 1: Total Unit On-site Net Change

BNG Assessment Results		
	Units	%
Habitats	-0.25	-8.33%
Hedgerows	0.94	2159.96%
Trading rules satisfied.	No	

1. INTRODUCTION

1.1 BACKGROUND

PENNINE Ecological have been commissioned by Mr. Graham Wrightson, to undertake a biodiversity net gain assessment using Natural England's Biodiversity Metric Version 3.1 on land at Doncaster Road, Goldthorpe. A Lidl supermarket is proposed for the plot of land which was formerly Goldthorpe Primary School.

This report can be read in conjunction with the Preliminary Ecological Appraisal (PEA) report written and submitted to the client by PENNINE Ecological in December 2021 (PENNINE Ecological, 2021).

Accompanying figures to this report are included within Appendix A.

1.2 PURPOSE OF THIS REPORT

This document provides the relevant information to address the responses from the Senior Planning Officer (Hannah Andrew) and Katie Lawrence – Planning Ecologist at Barnsley Metropolitan Council.

The report will support the planning application and it presents the results of a biodiversity metrics impact assessment. The assessment has been undertaken to determine whether or not the development demonstrates a no net loss of biodiversity, in line with the current National Planning Policy Framework, 2019.

2. BIODIVERSITY METRIC METHODOLOGY

2.1 UK HABITAT CLASSIFICATION SURVEY AND CONDITION ASSESSMENT

2.1.1 Background

The site is located at National Grid Reference SE 46237 04335 and is adjacent to Doncaster Road and High Street, Goldthorpe. An Extended Phase 1 Habitat Survey was undertaken in December 2021 by PENNINE Ecological. The site measures approximately 0.9831ha and comprises the following habitats and features (the Extended Phase 1 habitat codes preceding the habitat types):

- A2.1 Dense scrub
- A3.1 Parkland/Scattered trees – broad-leaved
- A3.2 Coniferous
- B4 Improved grassland
- C3.1 Tall ruderal
- J2.2 Species-poor hedgerow
- J2.4 Fence
- J2.3.5 Wall
- J3 Ephemeral
- J5 Hard standing

Following a request for a Biodiversity Net Gain (BNG) to be calculated for the proposed development, the Extended Phase 1 Habitat Survey habitats recorded during the PEA survey conducted in December 2021 had to align with the new habitat classification system which is used in conjunction with Defra's BNG Biodiversity Metric 3.1 Calculation Tool (refer to section 2.2 below); the UK Habitat Classification System (referred to as 'UKHab') (<https://ukhab.org/>). The habitats were remapped to UKHab Level 3 and each habitat condition assessed in accordance with the Defra's Biodiversity Metric 3.1 - Technical Supplement (Panks, *et al.*, 2022). The mapping was undertaken by Stuart Macpherson who is an Associate member of the Chartered Institute of Ecology and Environmental Management (ACIEEM); Stuart is a competent botanist and is experienced in UK Habitat Classification.

The following documents have been used to undertake the biodiversity metric calculation:

- Land at Doncaster Road, Goldthorpe, Preliminary Ecological Appraisal (PEA) (PENNINE Ecological, 2021).
- High Street / Doncaster Road, Goldthorpe Detailed Landscape Proposals (Drawing No. 3509/2: Revision C; Dated 19/03/22 (Rosetta Landscapes Design, 2022).

The mitigation for the development will be implemented within the site's red line boundary.

2.2 CALCULATOR TOOL

All habitats recorded within the footprint of the site during the December 2021 PEA field survey were included in the Defra Biodiversity Metric 3.1 Metric Calculation Tool. This enabled an assessment of the baseline condition, expected habitat losses arising from the development and proposed on-site habitat mitigation following construction.

Each area of habitat was drawn as a polygon and the area calculated in m² and reported in hectares. For linear habitat features such as hedgerows, the length was calculated and reported in kilometres. The relative area/length of retained and enhanced habitats (i.e., within the footprint of the development but not subject to loss) were recorded separately and not factored into the overall baseline net loss.

To calculate the individual unit worth of each habitat feature, it was allocated a distinctiveness level and assessed against two criteria:

- Condition and
- Strategic significance.

The distinctiveness allocation and method of assessment was undertaken in accordance with the Defra Biodiversity Metric 3.1 - Technical Supplement.

2.3 LIMITATIONS

The surveys and subsequent assessments have been undertaken with no constraints and there are considered to be no limitations to the overall BNG assessment.

3. BIODIVERSITY METRIC RESULTS

3.1 SITE HABITAT BASELINE RESULTS

The habitats encountered on site varied between Very Low and Medium distinctiveness according to the metric. The habitats included those synonymous with brownfield sites (refer to section 2).

The summary of the baseline results is provided in Table 2 below. In total, the surveyed habitats had a calculated size of **0.9831ha** and has a total habitat value of **2.96 habitat units** (Table 1).

Table 2 Site Habitat Baseline

Broad Habitat Type	UKHab Classification Type	Area (Hectares)	Distinctiveness	Condition	Strategic Significance	Ecological Baseline - Total Habitat Units	Area Retained (Total Hab. Units)	Area Enhanced (Total Hab. Units)	Area Lost (Hab. Units Lost)	Assessment Comments
Grassland	Modified grassland	0.0735	Low	Poor	Formally identified in local strategy	0.17	N/A	N/A	0.17	Improved grassland area which was formerly the primary school's playing field. Passes 3 (2, 6 and 7) of the criteria which equates to poor.
Heathland and shrub	Mixed scrub	0.2011	Medium	Poor	Formally identified in local strategy	0.93	N/A	N/A	0.93	Areas of bramble, buddleia and willow dominated scrub, predominantly on the margins of the site. Only 1 (2) of the criteria are passed which equates to poor.
Urban	Developed land/sealed surface	0.3471	Very low	N/A	Low strategic significance	0.00	N/A	N/A	0.00	Area of derelict ground which were formerly the areas used as car parking and the hard standing playground.
Sparsely vegetated land	Ruderal	0.3614	Low	Poor	Formally identified in local strategy	0.83	N/A	N/A	0.83	Short, ephemeral habitat has appeared in areas of what was suspected to be formally hard standing.

Broad Habitat Type	UKHab Classification Type	Area (Hectares)	Distinctiveness	Condition	Strategic Significance	Ecological Baseline - Total Habitat Units	Area Retained (Total Hab. Units)	Area Enhanced (Total Hab. Units)	Area Lost (Hab. Units Lost)	Assessment Comments
Urban*	Urban tree	0.0104	Medium	Good	Formally identified in local strategy	0.14	0.0091	N/A	0.01	Existing tree species to be retained include; ash, cherry, rowan. Scores 3 of the 6 criteria (moderate). Criteria 1, 3 and 4.
Urban*	Urban tree	0.097	Medium	Moderate	Formally identified in local strategy	0.89	0.0485	N/A	0.45	Existing tree species to be retained include; ash, cherry, rowan. Scores 3 of the 6 criteria (moderate). Criteria 1, 3 and 4.
Total(s)		0.9831				2.96	Habitat Units Lost (before mitigation)		2.39	

*Urban trees are not accounted for in the total area of the red line boundary.

A summary of the baseline results for hedgerows on site is provided in Table 3 below.

Table 3 – Site Hedge Baseline

Hedge Number	Hedgerow Type	Length (km)	Distinctiveness	Condition	Strategic Significance	Ecological Baseline -Total Hedgerow Units	Length Retained (Total Habitat Units)	Length Enhanced (Total Habitat Units)	Retention Category Biodiversity Value	Assessment Comments
1	Hedge ornamental non-native	0.038	Very low	Poor	Formally identified in local strategy	0.04	0.038	N/A	0.04 (retained)	Cotoneaster, privet, laurel dominated hedge with holly, elder and a rose species.
Total length		0.038					Habitat Units Lost (before mitigation)		0.04	

3.2 ON-SITE HABITAT MITIGATION

Below is a summary of the habitats proposed to be implemented as part of the development of the site. In total **2.14 habitat units** have been delivered (**2.96 habitat units** were recorded as a result of the baseline habitats surveyed).

A summary of the post-development on-site habitat mitigation is provided in Table 4 below.

Table 3 Site Habitat Creation

Broad Habitat Type	UKHab Classification Type	Area (Hectares)	Distinctiveness	Condition	Strategic Significance	Standard Time to Target Condition (Years)	Habitat Units Delivered	Assessment Comments
Urban	Introduced shrub	0.0301	Low	N/A	Formally identified in local strategy	1	0.07	Proposed shrub mix to include laurel and pyracantha.
Heathland and shrub	Mixed scrub	0.0949	Medium	Moderate	Formally identified in local strategy	5	0.73	Proposed species to include dogwood, hazel, hawthorn, holly, cherry laurel, blackthorn, dog rose, goat willow and guelder rose. Reviewing the Condition Assessment Criteria the mixed scrub is likely to achieve three of the five (1, 2 and 3) required to reach 'moderate' condition.
Grassland	Other neutral grassland	0.0971	Medium	Moderate	Formally identified in local strategy	5	0.75	Grass mix to comprise Emorsgate EL1 Flowering Lawn Mixture' sown with 'Fine Lawn Grass Mixture'. The EL1 mix does comprise 10 wildflower species, five grass species and two 'forb' species. If managed favourably (i.e., not mown regularly and during flowering periods) then 3 of the 6 criteria will be met thus achieving 'moderate' condition (criteria 2, 4 and 5).
Urban	Developed land; sealed surface	0.761	Very low	N/A	Not in local strategy	0	0.00	Combination of buildings, hard standing i.e., car parking, walkways etc.
Urban*	Urban Tree	0.17	Medium	Moderate	Formally identified in local strategy	27	0.60	Native species to be planted alder, silver birch, cherry, and rowan.
Total(s)		0.9831*	Habitat Units Delivered				2.14	

*Urban trees are not accounted for in the total area of the red line boundary.

A summary of the post-development on-site hedgerow mitigation is provided in Table 5 below.

Table 4 – Site Hedge Creation

Hedge Type	Area (km)	Distinctiveness	Condition	Strategic Significance	Time To Target Condition (Years)	Hedge Units Delivered	Assessment Comments
Habitat Creation/Enhancement							
Native species rich hedgerow	0.119	Medium	Medium	Formally identified in local strategy	5	0.92	Species to include dogwood, hazel, hawthorn, holly, blackthorn, dog rose and guelder rose. Condition assessment criteria passed are A1, B1, B2, C1, C2 and D1. However, this is very subjective given the hedgerow will be within a supermarket carpark.
Hedge ornamental native	0.025	Very low	Poor	Formally identified in local strategy	1	0.03	Species to include red robin.
Total(s)		Total On-site Habitat Units Delivered				0.94	

3.3 BIODIVERSITY NET GAIN SUMMARY

Based on the relevant calculations carried out by the Biodiversity Metric Calculator 3.1 (Panks *et al.*, 2022), the development will provide a **-8.33% biodiversity net gain (-0.25 biodiversity units)**. A summary of these results is provided in Table 6.

Table 5 - Summary of the biodiversity metric gains and/or losses (where applicable)

Gains / Losses	Biodiversity Metric Calculations	Baseline Habitat/Hedgerow Units	Habitat/Hedgerow Units Delivered	Habitat/Hedgerow Unit Change	Percentage Change
Losses	Total Habitat Units	2.96	2.71	-0.25	-8.33
	Total Hedgerow Units	0.00	0.00	0.00	0.00
Gains	Total Habitat Units	0.00	0.00	0.00	0.00
	Total Hedgerow Units	0.04	0.99	+0.94	+2159.96%

4. DISCUSSION

4.1 SUMMARY OF CALCULATION FINDINGS

The landscape plan for the development has attempted to off-set as much of the biodiversity loss as possible, with the inclusion of the following measures:

1. Implementation of mixed scrub (0.0949ha), wildflower meadow (0.0971ha) and introduced shrub (0.0301ha) throughout the development, notably on the outer extents of the sites adjacent to Doncaster Road and the residential housing and Asda supermarket on the sites' southern boundary. The landscape design has generally aimed to maximise the area of soft landscaping where feasibly possible.
2. Implementation of 119m of new native species rich hedgerow particularly along the sites' northern and western boundaries adjacent to Doncaster Road and High Street. An additional 25m of ornamental hedgerow will also be planted along the site's eastern boundary.
3. Implementation of 13 'large' trees across the site. Additionally, existing trees will be retained throughout the site.
4. The Trading Summary has not been met on the Medium Distinctiveness habitats.
5. Overall, maximising the areas within the site for habitat creation has led to an overall biodiversity net loss with the Biodiversity Metric Calculator 3.1 indicating the site will lead to **-8.33% biodiversity net loss (-0.25 biodiversity units)**.

REFERENCES

Joint Nature Conservancy Council (2016) Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit. Nature Conservancy Council.

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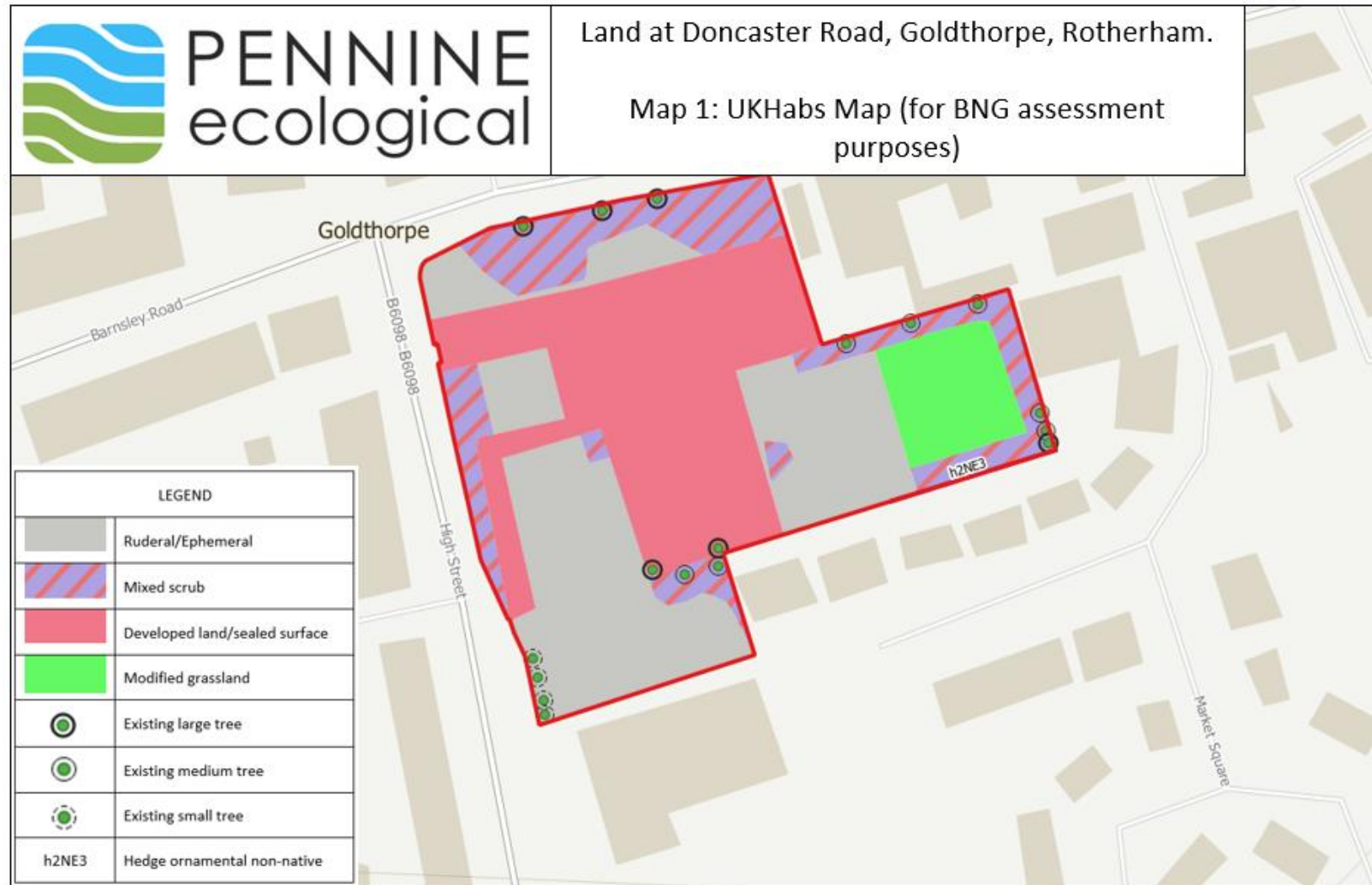
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PENNINE Ecological, 2021. Land at Doncaster Road, Goldthorpe, Preliminary Ecological Appraisal.

The UK Habitat Classification (2020) System (<https://ukhab.org/>)

Appendix A - Figures

Figure 1 – Baseline Habitats (PENNINE Ecological, December 2021)



Biodiversity Net Gain Summary Report
Land at Doncaster Road, Goldthorpe

Figure 2 – Proposed Site Habitat Mitigation (Rosetta Landscape Design, March 2022)

