

# Land off Darton Lane, Mapplewell

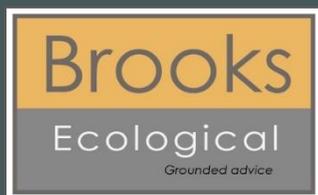


## Biodiversity Net Gain Assessment

ER-6517-02C

01/03/2024

Duchy Homes



<b>Report reference</b>	<b>ER-6517-02C - Biodiversity Net Gain Assessment</b>			
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<b>Date</b>	24/04/2023			
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<b>Amendment</b>	<b>Date</b>	<b>Author</b>	<b>QA</b>	<b>Summary of changes</b>
ER-6517-02A	15/06/2023	JAR	VAB	Inclusion of off-Site offsetting areas and alignment with findings of detailed vegetation survey
ER-6517-02B	21/06/2023	JAR	DL	Update to landscape plans rev.s C
ER-6517-02C	01/03/2024	JAR	PST	Update to address comments made by LPA ecologist



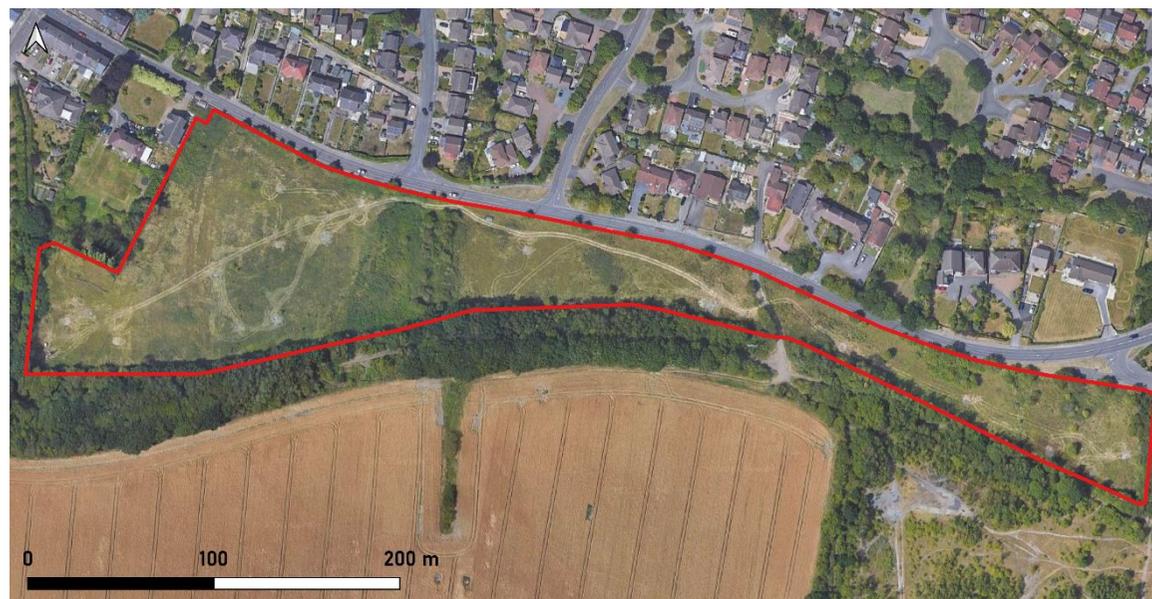
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## Introduction

1. Brooks Ecological Ltd was commissioned by Duchy Homes to carry out a Biodiversity Net Gain (BNG) Assessment of the proposed development Site at Land off Darton Lane, Mapplewell. The assessment applies to the parcel of land shown in Figure 1 opposite.
2. The assessment is informed by works carried out by Brooks Ecological: a Preliminary Ecological Appraisal carried out in January 2023 (ref. ER-6517-01A) and a detailed Vegetation Survey carried out in June 2023 (ER-6517-03). To conform with DEFRA's Biodiversity Metric 3.1, habitats have been mapped in accordance with the UK Habitats Classification.
3. Whilst an updated version of the Metric (4.0) has since been released, these calculations proceed in the version under which the Site baseline was assessed, following guidance in DEFRA (2022).
4. Biodiversity Accounting metrics are used to quantify the value of a site in Biodiversity Units, which helps in assessing the ecological impacts of the proposed development on the Site.
5. Biodiversity Units can help to inform avoidance, or on-Site mitigation levels required; or as a last resort can translate to a direct monetary value where compensation (off-Site) is required.

**Figure 1** Extent of BNG assessment (red line boundary)



## Pre-development baseline

### Habitats identified

6. The Site supports the following habitats:
  - u1c - Artificial unvegetated, unsealed surface
  - h3d - Bramble scrub
  - h3h - Mixed scrub
  - g3c - Other neutral grassland
  - NE0012 - Ponds (non-Priority Habitat)
  - 1170 - Individual trees
  - h2NE5 - Native hedgerow
  - r1eNE2 - Ditches
7. Each habitat is mapped in Figure 2 opposite.
8. Trees were initially mapped as 'broadleaved woodland' superimposed on the grassland habitat. Version C of this report has updated these to 'urban trees' at the LPA's request, using the Arboricultural Report edp3487\_r002b (The Environmental Dimension Partnership Ltd, Sep. 2019) to confirm stem diameter and species of each tree. Consequently, several trees previously mapped and included in calculations have been removed, as they fall below the 75mm DBH threshold required to be counted as individual trees.
9. Areas for trees have been calculated as  $\pi \times r^2$ , where r is 12 times the radius presented in the arboricultural report, following guidance in the Metric 3.1 User Guide. This is elaborated in Appendix 1 of this report.

### Condition assessment

10. The condition assessment for each habitat is based on the available criteria set out in the DEFRA (2022) Biodiversity Metric 3.1 Technical Supplement. These

are presented in Excel spreadsheet CA-6517-01 Habitat Condition Assessment Sheets, which should be read in conjunction with this report.

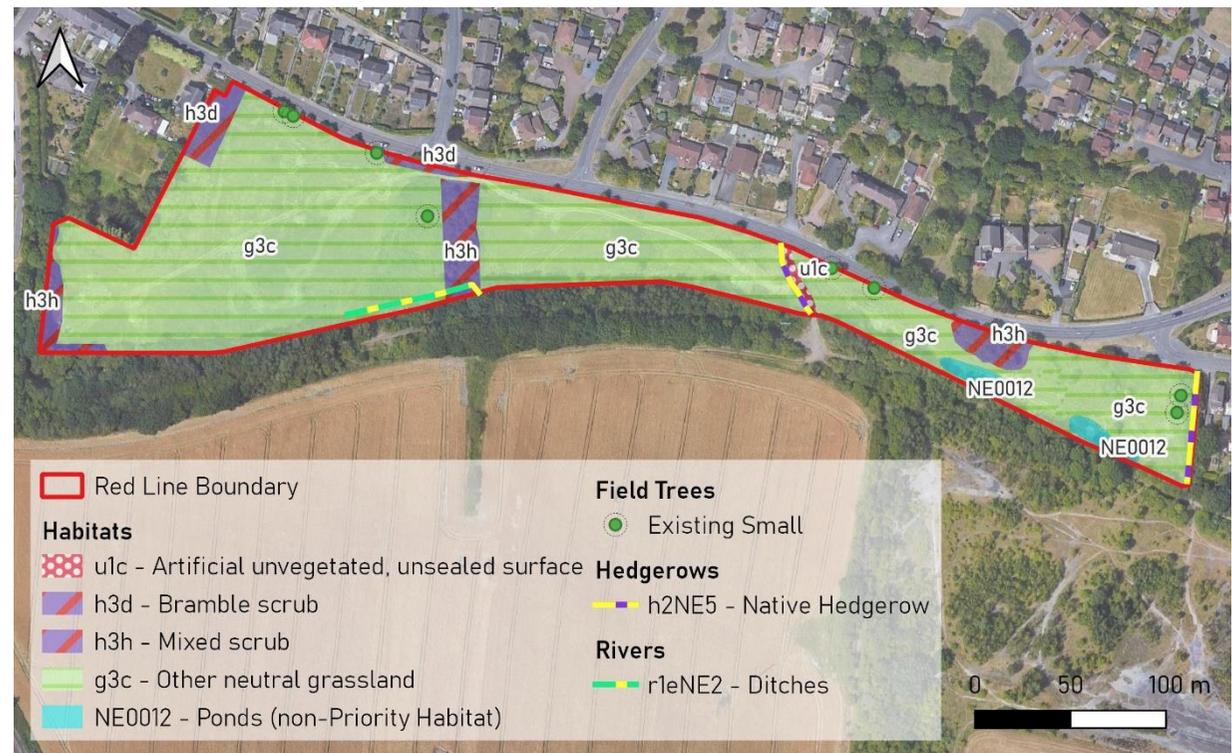
### Strategic significance

11. Habitats in the eastern portion of the Site, immediately adjacent to the Mapplewell Tip Local wildlife Site (LWS), are assigned strategic significance of 'Location ecologically desirable but not in local strategy'. All other habitats on-Site are assigned strategic significance 'area/compensation not in local strategy/no local strategy'.

### Habitat score

12. The Site has been assessed as having a baseline score of 30.47 Habitat Units, 0.56 Hedgerow Units, and 0.27 River Units.

**Figure 2** Pre-development habitats.



## DEFRA Metric<sup>1</sup> (Baseline)

13. This metric sets out the baseline for the Site. Proposals should seek to achieve at least a 'no net loss' situation through **avoiding** areas of higher value, **mitigating** any loss on-Site through retention and enhancement, or habitat creation. The Local Planning Authority may require you to **compensate** any residual loss elsewhere, either through direct works or an off-setting contribution.

Land off Darton Lane, Mapplewell								
A-1 Site Habitat Baseline								
Condense / Show Columns			Condense / Show Rows					
Main Menu			Instructions					
Habitats and areas				Distinctiveness	Condition	Strategic significance	Suggested action to address habitat losses	Ecological baseline
Ref	Broad Habitat	Habitat Type	Area (hectares)	Distinctiveness	Condition	Strategic significance		Total habitat units
1	Grassland	Other neutral grassland	0.6117	Medium	Good	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (≥)	7.34
2	Grassland	Other neutral grassland	1.0338	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (≥)	8.27
3	Grassland	Other neutral grassland	0.623	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (≥)	4.98
4	Grassland	Other neutral grassland	0.6686	Medium	Moderate	Location ecologically desirable but not in local strategy	Same broad habitat or a higher distinctiveness habitat required (≥)	5.88
5	Grassland	Other neutral grassland	0.2451	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (≥)	0.98
6	Heathland and shrub	Bramble scrub	0.0828	Medium	Condition Assessment N/A	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (≥)	0.33
7	Heathland and shrub	Mixed scrub	0.1779	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (≥)	1.42
8	Heathland and shrub	Mixed scrub	0.0577	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (≥)	0.23
9	Lakes	Ponds (Non- Priority Habitat)	0.0644	Medium	Moderate	Location ecologically desirable but not in local strategy	Same broad habitat or a higher distinctiveness habitat required (≥)	0.57
10	Urban	Artificial unvegetated, unsealed surface	0.0154	V.Low	N/A - Other	Area/compensation not in local strategy/ no local strategy	Compensation Not Required	0.00
11	Urban	Urban Tree	0.0575	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (≥)	0.46
12	<b>Total habitat area</b>		<b>3.64</b>					<b>30.47</b>

<sup>1</sup> Our report provides an estimate of the Site's value in Biodiversity Units. This is based on thorough assessment at the time of survey and using the information available at this time. In this assessment we have used Version 3.1 DEFRA's Biodiversity Metric Tool, the UK Habitats Classification, and relevant guidance. This assessment requires subjective judgments to be made in terms of habitat type and condition and could be open to other interpretations. Reliance on the Unit Score, or conversion of this into a monetary value, would be at the developer's own risk. Where conversion to monetary value is required, it is always advisable to get calculations checked independently.

B-1 Site Hedge Baseline								
Condense / Show Columns			Condense / Show Rows					
Main Menu			Instructions					
UK Habitats - existing habitats				Habitat distinctiveness	Habitat condition	Strategic significance	Suggested action to address habitat losses	Ecological baseline
Baseline ref	Hedge number	Hedgerow type	Length (km)	Distinctiveness	Condition	Strategic significance		Total hedgerow units
1	Central	Native Hedgerow	0.038	Low	Good	Area/compensation not in local strategy/ no local strategy	Same distinctiveness band or better	0.23
2	Eastern	Native Hedgerow	0.056	Low	Good	Area/compensation not in local strategy/ no local strategy	Same distinctiveness band or better	0.34
3								
4								
5								
			0.09					0.56

C-1 Site River Baseline									
Condense / Show Columns			Condense / Show Rows						
Main Menu			Instructions						
Existing river type			Habitat distinctiveness	Habitat condition	Strategic significance	Watercourse encroachment	Riparian encroachment	Suggested action	Ecological baseline
Baseline ref	River type	Length (km)	Distinctiveness	Condition	Strategic significance	Extent of encroachment	Extent of encroachment		Total river units
1	Ditches	0.073	Medium	Poor	Within Local Plans	Minor	No Encroachment	Restore	0.27
2									
3									
4									
5									
		0.07							0.27

## Post-development Score

### Proposed habitats

14. Habitats present on-Site post-development have been based on the Landscape Masterplans (Figure 3, opposite) dwg.s R/2675/1C, /2C, and /3C rev.s C (FDA Landscape, June 2023).
15. Planting types specified in the Landscape Masterplan have been assigned a UK Habitat Classification description that best fits the target habitat.
16. Habitats assigned are shown in Figure 4 overleaf.

### Condition assessment

17. The condition assessment for each proposed habitat is based on what is realistic and achievable for the Site, based on the Landscape Masterplan.

**Figure 3** Landscape Masterplan dwg.s R/2675/1C, /2C, /3C, rev.s C (FDA Landscape, June 2023).



## Post-development habitats

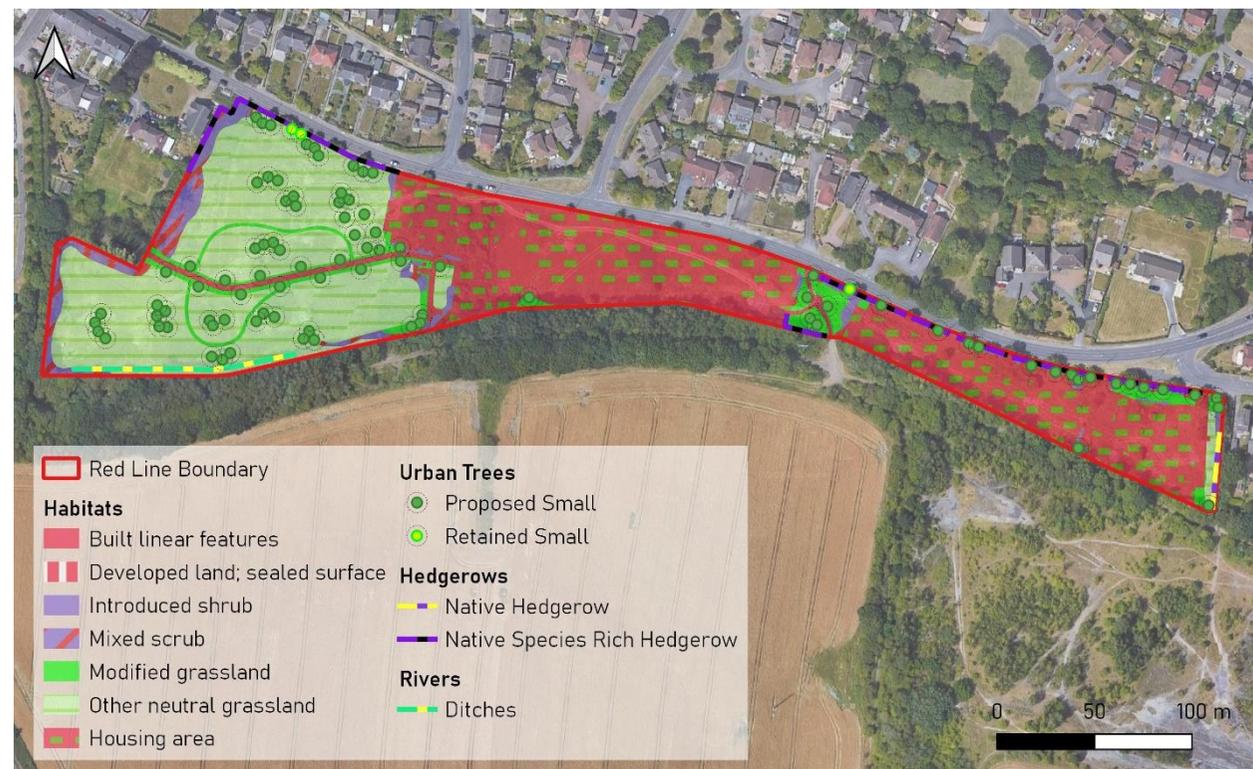
### Habitat Score

18. The Site has been assessed as having a post-development score of 20.44 Habitat Units, 2.58 Hedgerow Units, and 0.44 River Units.
19. This score is based on our interpretation of the Landscape Masterplan, as shown in Figure 4 opposite.
20. For areas of housing, homes and gardens have not been mapped individually at this stage; blocks of housing are assigned as *70% developed land; sealed surface:30% vegetated garden*, following guidance in DEFRA 3.1 (2022). Streets and footpaths have been mapped as *built linear features*.
21. Areas of retained and enhanced grassland are mapped as *other neutral grassland* in Good condition. Areas of newly created wildflower grassland have been mapped as *other neutral grassland* in Moderate condition, except in the areas between retained grassland and scrub, where it is mapped in Fairly Good condition due to the retention of Good-condition grassland to the immediate east, which may increase its biodiversity value.
22. Areas of amenity and species-rich grass are mapped as *modified grassland* in Poor and Good condition, respectively. Ornamental planting is mapped as *introduced shrub*. Native shrub is mapped as *mixed scrub* in Moderate condition, assuming good management practices will be followed.
23. Newly planted trees have been mapped as 'small' *urban trees* in Moderate (native species) or Poor (non-native species or ornamental cultivars)

condition. This includes the group of five fruit trees planted to form a 'community orchard' in the west of the Site; it is assumed that management practices will lead this area to more closely resemble individual trees, than either a traditional or intensive orchard.

24. Newly-planted hedgerows will be composed of five woody species, meeting the threshold for classification as 'species-rich'. These have been mapped in Moderate condition.
25. A new ditch will be created in the southwest of the Site, c. 110m long. These calculations assume it will meet the criteria for Poor condition, but a greater score may be achievable through more rigorous management.

**Figure 4** Post-development habitats.



## DEFRA Metric<sup>2</sup> (Post-development)

26. This metric sets out the predicted score for the Site following the completion of development. This is based on the Landscape Masterplan provided by the client.

### Habitat retention

Land off Darton Lane, Mapplewell											
A-1 Site Habitat Baseline											
Condense / Show Columns				Condense / Show Rows							
Main Menu				Instructions							
Ref	Habitats and areas			Distinctiveness	Condition	Strategic significance	Suggested action to address habitat losses	Ecological baseline	Retention cate		
	Broad Habitat	Habitat Type	Area (hectares)	Distinctiveness	Condition	Strategic significance		Total habitat units	Area retained	Area enhanced	Baseline units retained
1	Grassland	Other neutral grassland	0.6117	Medium	Good	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	7.34	0.5387	0	6.46
2	Grassland	Other neutral grassland	1.0338	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	8.27	0.0044	0	0.04
3	Grassland	Other neutral grassland	0.623	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	4.98	0	0.623	0.00
4	Grassland	Other neutral grassland	0.6696	Medium	Moderate	Location ecologically desirable but not in local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	5.88	0.0241	0	0.21
5	Grassland	Other neutral grassland	0.2451	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.98	0.0041	0	0.02
6	Heathland and shrub	Bramble scrub	0.0828	Medium	Condition Assessment N/A	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.33	0	0	0.00
7	Heathland and shrub	Mixed scrub	0.1779	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	1.42	0	0	0.00
8	Heathland and shrub	Mixed scrub	0.0577	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.23	0	0.006	0.00
9	Lakes	Ponds (Non-Priority Habitat)	0.0644	Medium	Moderate	Location ecologically desirable but not in local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.57	0	0	0.00
10	Urban	Artificial unvegetated, unsealed surface	0.0154	V Low	N/A - Other	Area/compensation not in local strategy/ no local strategy	Compensation Not Required	0.00	0	0	0.00
11	Urban	Urban Tree	0.0575	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required (2)	0.46	0.0334	0	0.27
12											
		<b>Total habitat area</b>	<b>3.64</b>					<b>30.47</b>	<b>0.60</b>	<b>0.63</b>	<b>7.00</b>

<sup>2</sup> Our report provides an estimate of the Site's value in Biodiversity Units. This is based on thorough assessment at the time of survey and using the information available at this time. In this assessment we have used Version 3.1 of DEFRA's Biodiversity Metric Tool, the UK Habitats Classification, and relevant guidance. This assessment requires subjective judgments to be made in terms of habitat type and condition and could be open to other interpretations. Reliance on the Unit Score, or conversion of this into a monetary value, would be at the developer's own risk. Where conversion to monetary value is required, it is always advisable to get calculations checked independently.

Habitat creation

Land off Darton Lane, Mapplewell	
A-2 Site Habitat Creation	
Condense / Show Columns	Condense / Show Rows
Main Menu	Instructions

Post development/ post intervention habitats											
Broad Habitat	Proposed habitat	Area (hectares)	Distinctiveness	Condition	Strategic significance		Temporal multiplier		Difficulty	Habitat units delivered	
			Distinctiveness	Condition	Strategic significance	Standard or adjusted time to target condition	Final time to target condition/years	Final difficulty of creation			
Grassland	Modified grassland	0.1265	Low	Good	Area/compensation not in local strategy/ no local strategy		Standard time to target condition applied		7	Low	0.59
Grassland	Modified grassland	0.0452	Low	Good	Location ecologically desirable but not in local strategy		Standard time to target condition applied		7	Low	0.23
Grassland	Modified grassland	0.0342	Low	Poor	Area/compensation not in local strategy/ no local strategy		Standard time to target condition applied		1	Low	0.07
Grassland	Modified grassland	0.0077	Low	Poor	Location ecologically desirable but not in local strategy		Standard time to target condition applied		1	Low	0.02
Grassland	Other neutral grassland	0.0528	Medium	Fairly Good	Area/compensation not in local strategy/ no local strategy		Standard time to target condition applied		7	Low	0.41
Grassland	Other neutral grassland	0.234	Medium	Moderate	Area/compensation not in local strategy/ no local strategy		Standard time to target condition applied		5	Low	1.57
Heathland and shrub	Mixed scrub	0.1897	Medium	Moderate	Area/compensation not in local strategy/ no local strategy		Standard time to target condition applied		5	Low	1.27
Heathland and shrub	Mixed scrub	0.07	Medium	Moderate	Location ecologically desirable but not in local strategy		Standard time to target condition applied		5	Low	0.52
Urban	Built linear features	0.3638	V.Low	N/A - Other	Area/compensation not in local strategy/ no local strategy		Standard time to target condition applied		0	Low	0.00
Urban	Built linear features	0.1276	V.Low	N/A - Other	Location ecologically desirable but not in local strategy		Standard time to target condition applied		0	Low	0.00
Urban	Developed land, sealed surface	0.0016	V.Low	N/A - Other	Area/compensation not in local strategy/ no local strategy		Standard time to target condition applied		0	Medium	0.00

Continued overleaf.

Land off Darton Lane, Mapplewell									
A-2 Site Habitat Creation									
Condense / Show Columns					Condense / Show Rows				
Main Menu					Instructions				
Post development/ post intervention habitats									
Broad Habitat	Proposed habitat	Area (hectares)	Distinctiveness	Condition	Strategic significance	Temporal multiplier	Difficulty		Habitat units delivered
			Distinctiveness	Condition	Strategic significance	Standard or adjusted time to target condition	Final time to target condition/years	Final difficulty of creation	
Urban	Introduced shrub	0.0111	Low	Condition Assessment N/A	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	1	Low	0.02
Urban	Introduced shrub	0.0129	Low	Condition Assessment N/A	Location ecologically desirable but not in local strategy	Standard time to target condition applied	1	Low	0.03
Urban	Developed land, sealed surface	0.46025	V.Low	N/A - Other	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	0	Medium	0.00
Urban	Developed land, sealed surface	0.31185	V.Low	N/A - Other	Location ecologically desirable but not in local strategy	Standard time to target condition applied	0	Medium	0.00
Urban	Vegetated garden	0.19725	Low	Condition Assessment N/A	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	1	Low	0.38
Urban	Vegetated garden	0.13365	Low	Condition Assessment N/A	Location ecologically desirable but not in local strategy	Standard time to target condition applied	1	Low	0.28
Urban	Urban Tree	0.2686	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	27	Low	0.82
Urban	Urban Tree	0.0877	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	10	Low	0.27
<b>Total habitat area</b>		<b>2.75</b>							<b>6.48</b>
<b>Site Area (Excluding area of Urban trees and Green walls)</b>		<b>2.38</b>							

Habitat enhancement

Land off Darton Lane, Mapplewell															
A-3 Site Habitat Enhancement															
Condense / Show Columns					Condense / Show Rows										
Main Menu					Instructions										
Post development/ post intervention habitats															
Baseline ref	Baseline habitats		Proposed Habitat (Pre-populated but can be overridden)		Change in distinctiveness and condition			Area (hectares)	Distinctiveness	Condition	Strategic significance	Temporal risk multiplier		Difficulty risk multipliers	Habitat units delivered
	Baseline habitat	Proposed Broad Habitat	Proposed habitat	Distinctiveness change	Condition change	Strategic significance	Standard or adjusted time to target condition				Final time to target condition/years	Final difficulty of enhancement			
3	Grassland - Other neutral grassland	Grassland	Other neutral grassland	Medium - Medium	Moderate - Good	0.623	Medium	Good	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	10	Low	6.73		
8	Heathland and shrub - Mixed scrub	Heathland and shrub	Mixed scrub	Medium - Medium	Poor - Moderate	0.006	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	5	Low	0.04		
						<b>0.63</b>							<b>6.77</b>		

Hedgerow retention

B-1 Site Hedge Baseline													
Condense / Show Columns				Condense / Show Rows									
Main Menu				Instructions									
UK Habitats - existing habitats				Habitat distinctiveness	Habitat condition	Strategic significance	Suggested action to address habitat losses	Ecological baseline	Retention category biodiversity				
Baseline ref	Hedge number	Hedgerow type	Length (km)	Distinctiveness	Condition	Strategic significance		Total hedgerow units	Length retained	Length enhanced	Units retained	Units enhanced	
1	Central	Native Hedgerow	0.038	Low	Good	Area/compensation not in local strategy/ no local strategy	Same distinctiveness band or better	0.23	0	0	0.00	0.00	
2	Eastern	Native Hedgerow	0.056	Low	Good	Area/compensation not in local strategy/ no local strategy	Same distinctiveness band or better	0.34	0.037	0	0.22	0.00	
3													
4													
5													
			0.09					0.56	0.04	0.00	0.22	0.00	

Hedgerow creation

B-2 Site Hedge Creation										
Condense / Show Columns				Condense / Show Rows						
Main Menu				Instructions						
Proposed habitats				Habitat distinctiveness	Habitat condition	Strategic significance	Temporal multiplier		Difficulty risk multipliers	Hedge units delivered
Baseline ref	New hedge number	Habitat type	Length (km)	Distinctiveness	Condition	Strategic significance	Standard or adjusted time to target condition	Final time to target condition/years	Final difficulty of creation	
1		Native Species Rich Hedgerow	0.352	Medium	Moderate	Area/compensation not in local strategy/ no local strategy	Standard time to target condition applied	5	Low	2.36
2										
3										
4										
5										
			0.35							2.36

River creation

C-2 Site River Creation											
Condense / Show Columns			Condense / Show Rows								
Main Menu			Instructions								
Baseline ref	Proposed habitats		Habitat distinctiveness	Habitat condition	Strategic significance	Temporal multiplier		Difficulty multipliers	Watercourse encroachment	Riparian encroachment	River units delivered
	River type	Length (km)	Distinctiveness	Condition	Strategic significance	Standard or adjusted time to target condition	Final time to target condition/years	Final difficulty of creation	Extent of encroachment	Extent of encroachment	
1	Ditches	0.113	Medium	Poor	Low potential/action not identified in any plan	Standard time to target condition applied	1	Low	No Encroachment	No Encroachment	0.44
2											
3											
4											
5											
		0.11									0.44

## Off-Site offsetting

27. Current on-Site proposals result in a 33.56% Net Loss of Habitat Units. Therefore, two areas of local land owned by the Yorkshire Wildlife Trust have been put forward as locations for off-Site offsetting, under Section 106 agreement 2019/1244.

### Barnsley Canal

28. The first is a section of the Barnsley Canal Local Wildlife Site (LWS) north of Greenfoot Lane, c. 1.7km southeast of the Site.

**Figure 5** Barnsley Canal - baseline habitats.



### Baseline

29. The LWS was visited on the 30<sup>th</sup> May 2023 by Brooks Ecological. The field is accessible from all boundaries, and is subject to intensive horse and rabbit grazing, and accessible by dog walkers. Despite the sward being very short and damaged in places, a range of grasses and forbs were present with at least 9

species per square meter recorded. These included meadow grasses, red fescue and crested dog's-tail, with frequent yellow rattle, bulbous buttercup, bird's foot trefoil, yarrow, selfheal, as well as smaller amounts of oxeye daisy, greater stitchwort, pignut and common knapweed. This grassland fits the UK Habitat Classification of 'g3a Lowland Meadow'.

30. The boundaries appear likely to have once been hedgerow but are now gappy, representing pockets of hawthorn, blackthorn, apple, elder and bramble.

### DEFRA 3.1 condition score - Moderate

Non-Acid Grassland - Medium, High & Very High Distinctiveness			
Criteria		Pass/Fail	Condition
1	Closely matches UKHab definition. Indicator species clearly visible. <b>Essential for achieving moderate condition.</b>	Pass	5-6 passes, including 1 = Good
2	Varied sward height.	Fail	
3	Bare ground cover 1-5%.	Pass	3-4 passes, including 1 = Moderate
4	Bracken cover <20%; scrub cover <5%.	Pass	
5	Absence of INNS. Undesirable species and physical damage combined <5% cover.	Fail	0-2 passes, OR 3-4 passes excluding 1 & 6 = Poor
6	>9 species per m <sup>2</sup> . <b>Essential for achieving good condition.</b>	Pass	
<b>4/6 = MODERATE</b>			

**Figure 6** Typical view of habitat (30.05.23).



**Figure 7** Close up view of sward (30.05.23).



**Post-enhancement**

Proposals are to enhance the existing lowland meadow from Moderate to Good condition, by limiting access of grazing horses to reduce physical damage and allow areas of longer sward to develop. Grazing animals should not be excluded entirely, as their actions will suppress scrub and bramble encroachment.

**Smithies Marsh**

- 31. Land at Smithies Marsh west of Smithies Lane, c. 2.5km southeast of the Site, has also been outlined for offsetting. It is included in the Yorkshire Wildlife Trust's Biodiversity Enhancement Management Plan (BEMP) for Smithies Marsh, within area SM1 - see separate report.

**Figure 8** Smithies Marsh - baseline habitats.



**Baseline**

- 32. The Site was visited on the 30<sup>th</sup> May 2023 by Brooks Ecological and was found to be in the early stages of the BEMP's enhancement strategy, with the ponds and scrapes created, but dry and unvegetated respectively. The wider grassland had also been subject to vehicle tracking and disturbance with the sward damaged throughout.
- 33. This area of Smithies Marsh was assessed in the YWT BEMP as 'floodplain wetland mosaic' in 'moderate' condition; therefore, these calculations proceed with it as this habitat type, although as of May 2023 it would have been assessed as 'poor' due to the lack of management (resulting in an unvaried sward height and presence of scrub) and significant damage from the enabling works (areas of bare and damaged ground frequent).

**DEFRA 3.1 condition score - Moderate (as per the YWT BEMP)**

**Figure 9** Typical view of habitat (30.05.23).



**Figure 10** Newly created 'scrape' (30.05.23).

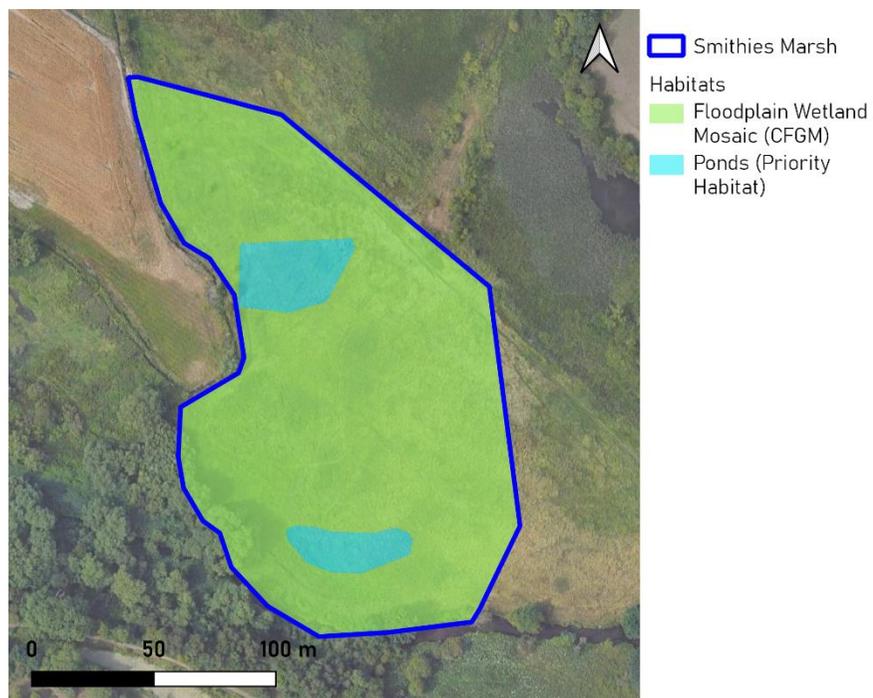


**Post-enhancement**

- 34. Proposals set out by the YWT in their BEMP are to enhance the majority of existing floodplain wetland mosaic from Moderate to Good condition, while creating two priority ponds. These plans have been used to inform Brooks Ecological's calculations.
- 35. Five narrow, linear scrapes have been created, with two falling partly or entirely within the section to be used for offsetting. These are judged to be 'ditches' and are therefore included within the floodplain wetland mosaic habitat, rather than considered separately.

36. A target condition score for the ponds was not given in the BEMP; therefore, a condition of Moderate has been assumed.
37. The enhancement works were conducted in summer of 2022, and so the 'habitat created in advance' temporal risk multiplier has been set to 2 years. This assumes development on-Site will commence in summer 2024; should Site clearance occur significantly later, this number may need to be increased.

**Figure 11** Smithies Marsh - post-enhancement habitats (as per YWT BEMP).



## Biodiversity Gain Assessment

38. On-Site and off-Site measures identify an overall Net Gain of 2.18 Habitat Units (+7.14%), 2.01 Hedgerow Units (+357.18%), and 0.17 River Units (+62.37%).
39. Calculations for the change in Habitat Units have been based on large areas of the Site being cleared of existing vegetation and land reprofiled, which results in the loss of 18.47 Habitat Units present pre-development.
40. Post-development calculations include Habitat Units gained through the retention and enhancement of grassland to the west, creation of private gardens and planting within Public Open Space (POS), which includes amenity grass, flowering lawn, wildflower grassland, native scrub, and tree planting. Achieving the conditions outlined in this report is dependent on suitable management of habitats, which could be detailed in a Biodiversity Management Plan secured by condition.
41. A considerable net gain in Hedgerow Units is achieved by planting c. 350m of new native species-rich hedgerow around the Site's boundaries.
42. The net gain in River Units is due to the provision of a new ditch in the southwest of the Site, replacing the existing ditch scheduled to be lost.
- Habitat Trading Rules**
43. Current proposals do not satisfy DEFRA's habitat trading rules, which specify like-for-like or like-for-better replacement of lost habitats. In order to satisfy these rules, the development will need to provide 12.02 Units from medium-distinctiveness grassland habitats, 0.16 Units from scrub, and 0.57 Units from ponds, in addition to what is already being provided.
44. The client has been provided with a copy of the Biodiversity Metric 3.1 Calculation Tool Excel spreadsheet (ref. BM-6517-01D). This can be made available for review if required.

Land off Darton Lane, Mapplewell		Return to results menu
Headline Results		
On-site baseline	Habitat units	30.47
	Hedgerow units	0.56
	River units	0.27
On-site post-intervention <small>(including habitat retention, creation &amp; enhancement)</small>	Habitat units	20.25
	Hedgerow units	2.58
	River units	0.44
On-site net % change <small>(including habitat retention, creation &amp; enhancement)</small>	Habitat units	-33.56%
	Hedgerow units	357.18%
	River units	62.37%
Off-site baseline	Habitat units	48.54
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention <small>(including habitat retention, creation &amp; enhancement)</small>	Habitat units	60.94
	Hedgerow units	0.00
	River units	0.00
Total net unit change <small>(including all on-site &amp; off-site habitat retention, creation &amp; enhancement)</small>	Habitat units	2.18
	Hedgerow units	2.01
	River units	0.17
Total on-site net % change plus off-site surplus <small>(including all on-site &amp; off-site habitat retention, creation &amp; enhancement)</small>	Habitat units	7.14%
	Hedgerow units	357.18%
	River units	62.37%
Trading rules Satisfied?	No - Check Trading Summary ▲	

## References

CIEEM (2019) Advice Note - On the Lifespan of Ecological Reports and Surveys

DEFRA (2022) Biodiversity Metric 3.1 - Auditing and accounting for biodiversity calculation tool (macro enabled)

DEFRA (2022) Biodiversity Metric 3.1 - Technical Supplement

DEFRA (2022) Biodiversity Metric 3.1 - User Guide

Norford, H. (2022) *Smithies Marsh Biodiversity Management Plan 2022-2052*. Doncaster, UK; Yorkshire Wildlife Trust.

## Appendix 1 - on-Site field trees

Only trees included in the original BNG assessment of this Site have been included in calculations. Trees with a diameter below the 75mm threshold required to be regarded as an individual tree are marked 'excluded'.

Arb. Ref	Species	Stem diameter (mm)	Size	Metric area (ha)
T1	Hawthorn	6x60	Excluded	-
T2	Hawthorn	220 250 260	Small	0.0268
T3	Hawthorn	90 90	Small	0.0037
G6	Hawthorn	6x60	Excluded	-
T7	Hawthorn	6x60	Excluded	-
T8	Hawthorn	90	Small	0.0037
T16	Hawthorn	6x60	Excluded	-
T18	Hawthorn	6x60	Excluded	-
T19	Hawthorn	6x60	Excluded	-
T20	Hawthorn	6x60	Excluded	-
T21	Hawthorn	6x60	Excluded	-
T22	Hawthorn	8x60	Excluded	-
T28	Hawthorn	6x80	Small	0.0029
T29	Goat willow	150	Small	0.0102
T31	Hawthorn	6x60	Excluded	-
G33	Hawthorn	6x60	Excluded	-
G34	Elder, field maple, hawthorn	150	Small	0.0102
			<b>Total</b>	<b>0.0575</b>