

**Whitcher Wildlife Ltd.
Ecological Consultants.**



**LAND SOUTH OF DONCASTER ROAD,
DARFIELD, DEVELOPMENT PHASE TWO.**

OS REF: SE 40239 04991.

BIODIVERSITY NET GAIN ASSESSMENT.

Ref No: 240123/PHASE2/BNG.

Date: 27th June 2024.

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1. INTRODUCTION.

1.1. A hybrid planning application is being submitted for the development of a large residential estate to the south of Doncaster Road, within the village of Darfield, Barnsley. The application is for full planning permission within the northern section of the development, known as 'Phase one', and for outline planning permission within the southern section of the site, known as 'Phase two'.

1.2. Whitcher Wildlife Ltd was therefore commissioned to undertake a Biodiversity Net Gain (BNG) assessment of the entire site, to determine the baseline calculations of the entire survey area.

1.3. Due to the nature of the application, full details of phase two are not yet available and therefore, it is not possible to complete finalised calculations. This report instead outlines the baseline score for phase two and discusses how a net gain is likely to be achieved. Phase one is covered within a separate report.

1.4. An initial site visit was carried out on 17th January 2024 when a Preliminary Ecological Appraisal (PEA) was carried out. This ascertained rough baseline calculations including broad habitats and sizes, but detailed calculations could not be done due to survey being carried out well outside the optimum survey season.

1.5. Repeat visits have been undertaken throughout June to allow for an updated assessment of the habitats, including for condition assessments of each habitat parcel. A combination of both the initial survey and these repeat surveys make up the findings of this assessment.

1.6. Much of the information within this report is also included within the Preliminary Ecological Appraisal but is also included here due to its relevance to BNG.

2. SURVEY METHODOLOGY.

2.1. All surveys were carried out in line with the Chartered Institute of Ecological and Environmental Management (CIEEM) survey standards and advice.

2.2. A baseline survey was carried out of the site to establish the baseline biodiversity value of the area. Prior to visiting the site, the survey area was cross referenced to maps and aerial photographs to give a general idea of the habitats and potential issues within the area and to identify potential access and walking routes.

2.3. The survey area was walked where access was agreed. All habitats within and immediately around the survey area were documented and the dominant species within that habitat listed in line with the UK Habitat Classification methodology to identify the primary habitat types throughout the survey area. All primary habitats are accompanied by secondary codes which are used to add further specific details where necessary. Each primary habitat and unique set off secondary codes will be shown individually in the appended annotated map.

2.4. All habitat surveys, including the initial Preliminary Ecological Appraisal were undertaken by Mitchel Greenhalgh, Managing Director of Whitcher Wildlife, and an Ecological Consultant with an array of experience in conducting surveys on a variety of flora and fauna in a professional capacity. Mitchel holds a level two Natural England survey licence in respect of both bats and great crested newts, a NatureScot licence in respect of bats and Natural England class licences for various invertebrates. He is also working towards gaining further survey licences. He has attended courses run by CIEEM, the Species Recovery Trust and the FSC and also holds a BSc in environmental science attained from the University of Leeds. He is an Associate member of CIEEM and he is therefore committed to continuous professional development.

3. SITE DESCRIPTION.

3.1. The Survey Area.

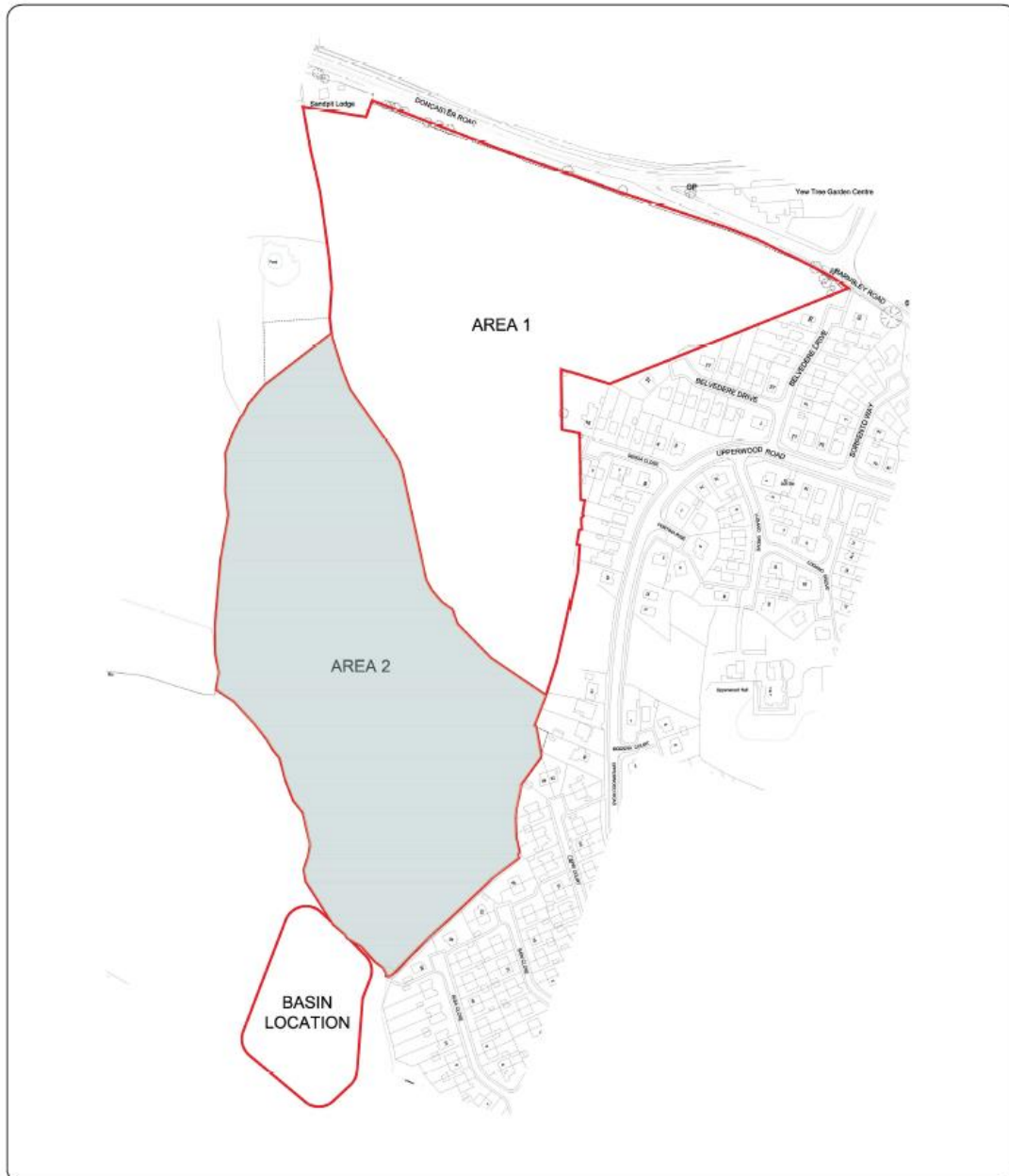
3.1.1. The overall survey area comprises mainly arable land, separated into two main fields. It is located to the west of the north end of the village of Darfield, south of Doncaster Road and west of Upperwood Road and the 'Italian' estate.

3.1.2. Historic aerial imagery and maps show that the bulk of the site has been arable for a considerable length of time, having never been shown as land used for any other purpose.

3.1.3. The aerial map below shows the approximate location of the entire survey area, marked by the red shape.



3.1.4. However, phase two comprises only the southern section, which is shown as 'Area 2' on the below drawing.



3.1.5. The further surroundings comprise predominantly further arable land, residential housing estates, and scattered woodland and grassland pockets.

3.2. Description of Habitats.

3.3.1. Appendix V of this report contains an annotated map marked up with the varying habitats within the site and is cross referenced to target notes listed in Appendix VI. The habitats on the site are: -

- c1c – Cereal Crops

- g3c – Other Neutral Grassland
- w1f7 – Other Lowland Mixed Deciduous Woodland
- h3h – Mixed Scrub
- h3d – Bramble Scrub
- r2 – Other Rivers and Streams

3.3.2. c1c – Cereal Crops.

Secondary codes: 516 active management.

The majority of phase two is made up by a large arable field within the survey area.



3.3.4. g3c – Other Neutral Grassland.

3.3.4.1. Secondary codes: 10 scattered scrub– **ONG3**.

To the south of the arable field but north of the watercourse, there is a grass margin which comprises a mixture of coarse grasses, tall forbs and typical riparian species. These include reed canary grass (*Phalaris arundinacea*), false oat grass (*Arrhenatherum elatius*), soft brome (*Bromus hordeaceus*), timothy (*Phleum pratense*), Yorkshire fog (*Holcus lanatus*), perennial rye grass (*Lolium perenne*), cocksfoot (*Dactylis glomerata*), rough meadow grass (*Poa trivialis*), great willowherb (*Epilobium hirsutum*), marsh woundwort (*Stachys palustris*), nettle (*Urtica dioica*), creeping thistle (*Cirsium arvense*), teasel (*Dipsacus fullonum*), southern marsh orchid (*Dactylorhiza praetermissa*), meadowsweet (*Filipendula ulmaria*), bristly oxtongue (*Helminthotheca*

echioides), hogweed (*Heracleum sphondylium*), broadleaved dock (*Rumex obtusifolius*) and ragwort (*Jacobaea vulgaris*). Bramble (*Rubus* sp.) is frequent within this habitat.



3.3.4.2. Secondary codes: 10 scattered scrub– **ONG6.**

The grassland along the eastern boundary of phase two and just south of W4 comprises a ranker and less diverse sward than the above. It comprises false oat grass (*Arrhenatherum elatius*), Yorkshire fog (*Holcus lanatus*), timothy (*Phleum pratense*), creeping bent (*Agrostis stolonifera*), rough meadow grass (*Poa trivialis*), soft brome (*Bromus hordeaceus*), Italian rye grass (*Lolium multiflorum*), bristly oxtongue (*Helminthotheca echioides*), great willowherb (*Epilobium* sp.) and hogweed (*Heracleum sphondylium*).



3.3.4.3. The condition assessments for these habitats are shown below. Both grasslands are assessed as being of moderate condition.

Condition Assessment Criteria		Criterion passed (Yes or No)	
		ONG3	ONG6
A	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present. Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.	Yes	Yes
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Yes	No
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens ¹ .	Yes	Yes
D	Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus</i> agg.) is less than 5%.	No	No
E	Combined cover of species indicative of sub-optimal condition ² and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴) are present, this criterion is automatically failed.	Yes	Yes
F	There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count). Note - this criterion is essential for achieving Good condition for non-acid grassland types only.	No	No
Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)		No	No
Number of criteria passed		4	3
Condition Assessment Result	Condition Assessment Score	Score Achieved ×/✓	
Non-acid grassland Types (Result out of 6 criteria)			
Passes 5 or 6 criteria, including essential criterion A and additional criterion F.	Good (3)		
Passes 3 - 5 criteria, including essential criterion A.	Moderate (2)	✓	✓
Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F.	Poor (1)		

3.3.5. w1f7 – Other Lowland Mixed Deciduous Woodland.

Secondary codes: 34 Ecologically valuable line of trees.

3.3.5.1. The only line of trees (**LOT3**) within phase two is a row of mature willows (*Salix* spp.) and oaks (*Quercus robur*) which run along the western boundary of the southern field. Some of the oaks are of considerable size.



3.3.5.2. The condition assessments for this habitat is shown below. The line of trees passes four of the five criteria and is therefore assessed as being of moderate condition.

Condition Assessment Criteria		Criterion passed (Yes or No)
		LOT3
A	At least 70% of trees are native species.	Yes
B	Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.	Yes
C	One or more trees has veteran features and or natural ecological niches for vertebrates and invertebrates, such as presence of standing and attached deadwood, cavities, ivy or loose bark.	Yes
D	There is an undisturbed naturally-vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other human activities (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice ² .	No
E	At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	Yes
Condition Assessment Result (out of 5 criteria)		Condition Assessment Score
Passes 5 criteria		Good (3)
Passes 3 or 4 criteria		Moderate (2) ✓
Passes 2 or fewer criteria		Poor (1)
		Score Achieved ×/✓

3.3.6. h3h - Mixed Scrub.

Secondary codes: 532 scattered grass – S3.

3.3.6.1. Up the western side of phase two, beneath the line of trees described above and extending eastwards is dense scrub with ruderals and grasses. Species include

predominantly bramble (*Rubus* sp.) and willows (*Salix* spp.). Other species include a mixture of this described in ONG3.

3.3.6.2. The condition assessment for the scrub habitat described above is shown below. The habitat passes three of the five criterion and is therefore assessed as being of moderate condition.

Condition Assessment Criteria		Criterion passed (Yes or No)
		S3
A	The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural range). The appearance and composition of the vegetation closely matches the characteristics of the specific scrub type. At least 80% of scrub is native, and there are at least three native woody species ¹ , with no single species comprising more than 75% of the cover (except hazel <i>Corylus avellana</i> , common juniper <i>Juniperus communis</i> , sea buckthorn <i>Hippophae rhamnoides</i> or box <i>Buxus sempervirens</i> , which can be up to 100% cover).	Yes
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran ²) shrubs are all present.	Yes
C	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴) and species indicative of sub-optimal condition ⁵ make up less than 5% of ground cover.	Yes
D	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	Yes
E	There are clearings, glades or rides present within the scrub, providing sheltered edges.	No
Condition Assessment Result (out of 5 criteria)		Condition Assessment Score
Passes 5 criteria		Score Achieved ×/✓
Passes 3 or 4 criteria		Good (3)
Passes 2 or fewer criteria		Moderate (2) ✓
		Poor (1)

3.3.7. h3d – Bramble Scrub.

Secondary codes: None – S4.

3.3.7.1. To the northeast of phase two, southeast of W4, is a fringe of bramble scrub.



3.3.7.2. There is no condition assessment for bramble scrub.

3.3.8. r2 – Other Rivers and Streams.

Secondary codes: None.

3.3.8.1. Leading down from the woodland pond, along the west of W1, and then down the western boundary of the field, is a very small watercourse. During both surveys it held only a very small amount of water and during the summer survey was heavily overgrown by vegetation, only being barely visible at crossing points.



3.3.8.2. A river condition assessment, undertaken by an accredited surveyor, is required to determine the condition of this watercourse.

4. BIODIVERSITY NET GAIN ASSESSMENT.

4.1. Baseline Biodiversity Value.

The below tables demonstrate the baseline units of phase two using the Statutory Metric.

Area habitats:

Habitat Type	Extent (Ha)	Distinctiveness	Condition	Biodiversity units
Cereal crops	6.1821	Low	N/A	12.36
Mixed Scrub	0.3813	Medium	Moderate	3.05
Bramble Scrub	0.56	Medium	N/A	0.22
Other Neutral Grassland	0.2017	Medium	Moderate	1.61
Other Neutral Grassland	0.1641	Medium	Moderate	1.31
Total	6.99			18.57

Linear habitats:

Hedgerow Type	Length (km)	Distinctiveness	Condition	Biodiversity units
Ecologically valuable line of trees associated with bank or ditch	0.186	Medium	Moderate	1.49
Total	0.186			1.49

Watercourse habitats:

A baseline calculation for the watercourse will be provided upon completion of a river condition assessment undertaken by an accredited surveyor.

4.2. Post Development Habitat Creation.

4.2.1. Due to the scale of the development and the number of proposed units, it will not be possible to achieve a net gain on site. The units require will be offset off site, either close to the site or within the local planning authority boundary, but details at this time have not yet been finalised due to the outline nature of the application.

4.2.2. Based on the indicative layout, which does provide much detail, most of the land on site is to be lost to facilitate the development, but some areas of public open space are provided. These will allow for the creation of areas of amenity grassland which will provide a small number of biodiversity units.

4.2.3. A small area of the land to the northwest of phase two is also proposed to be left open for planting, which should allow for the implementation of further other neutral grassland to tie in with the habitat which will remain to the north of the parcel.

4.2.4. Preliminary plans also show the inclusion of approximately sixty-five street trees which will add additional biodiversity units.

4.2.5. The watercourse on site is still to be properly assessed, but is to remain unaffected by the development. Further comments on this will be available once the assessment is completed and further plans are provided.

4.2.6. The remainder of the site is mostly to comprise a suburban mosaic of housing, roads, gardens, verges and other typical features of a residential estate. The development is too large, and the plans are not sufficiently detailed at this stage, to allow for the mapping of each individual feature so a 70:30 split between developed land; sealed surface and vegetated gardens have been used as per the Statutory Metric User Guide.

4.2.7. The remainder of the biodiversity units will require offsetting. Further details of this will be provided at a later stage, but it will be achieved through planting off site.

4.2.8. The tables below show proposals for a how a net gain is expected to be achieved.

4.2.8.1. Area habitats on site:

Habitat Type	Extent (Ha)	Distinctiveness	Condition	Biodiversity units
<i>Created Habitats</i>				
Other neutral grassland	0.0761	Medium	Moderate	0.51
Modified grassland	0.6422	Low	Moderate	2.23
Vegetated Garden	1.8801	Low	N/A	3.63
Developed land; sealed surface	4.3868	V.Low	N/A	0
Urban Tree	0.2646*	Medium	Moderate	1.2
Total	6.99			7.17

*Not included in area calculations

4.2.8.2. Linear habitats on site:

Hedgerow Type	Length (km)	Distinctiveness	Condition	Biodiversity units
<i>Retained Habitats</i>				
Ecologically valuable line of trees associated with bank or ditch	0.186	Medium	Moderate	1.49
Total	0.186			1.49

4.3. Biodiversity Net Gain Results.

4.3.1. Based on the above, phase two of the development, including the basin area, will result in an area loss of 11.39 biodiversity units (-61.35%), linear units to remain the same, and watercourse results to be confirmed at a later stage.

FINAL RESULTS		
Total net unit change <small>(Including all on-site & off-site habitat retention, creation & enhancement)</small>	<i>Habitat units</i>	-11.39
	<i>Hedgerow units</i>	0.00
	<i>Watercourse units</i>	0.00
Total net % change <small>(Including all on-site & off-site habitat retention, creation & enhancement)</small>	<i>Habitat units</i>	-61.35%
	<i>Hedgerow units</i>	0.00%
	<i>Watercourse units</i>	0.00%
Trading rules satisfied?	No - Check Trading Summaries ▲	

4.3.2. The requirement for off site habitat to help achieve a net gain is understood and will be arranged prior to any development commencing. Should outline planning permission for phase two be granted, it would be expected that a condition be included detailed exactly how a net gain will be achieved is provided and agreed with the local planning authority.

4.3.3. To ensure the above is achieved once agreed, a Habitat Management and Monitoring Plan (HMMP) will be required which details how the proposed habitats will be both implemented and managed for a minimum of a thirty-year period.

Prepared by:	
Mitchel Greenhalgh BSc ACIEEM.	Date: 27 th June 2024.

Checked by:	
Ruth Georgiou. BSc, MCIEEM.	Date: 27 th June 2024.

5. REFERENCES.

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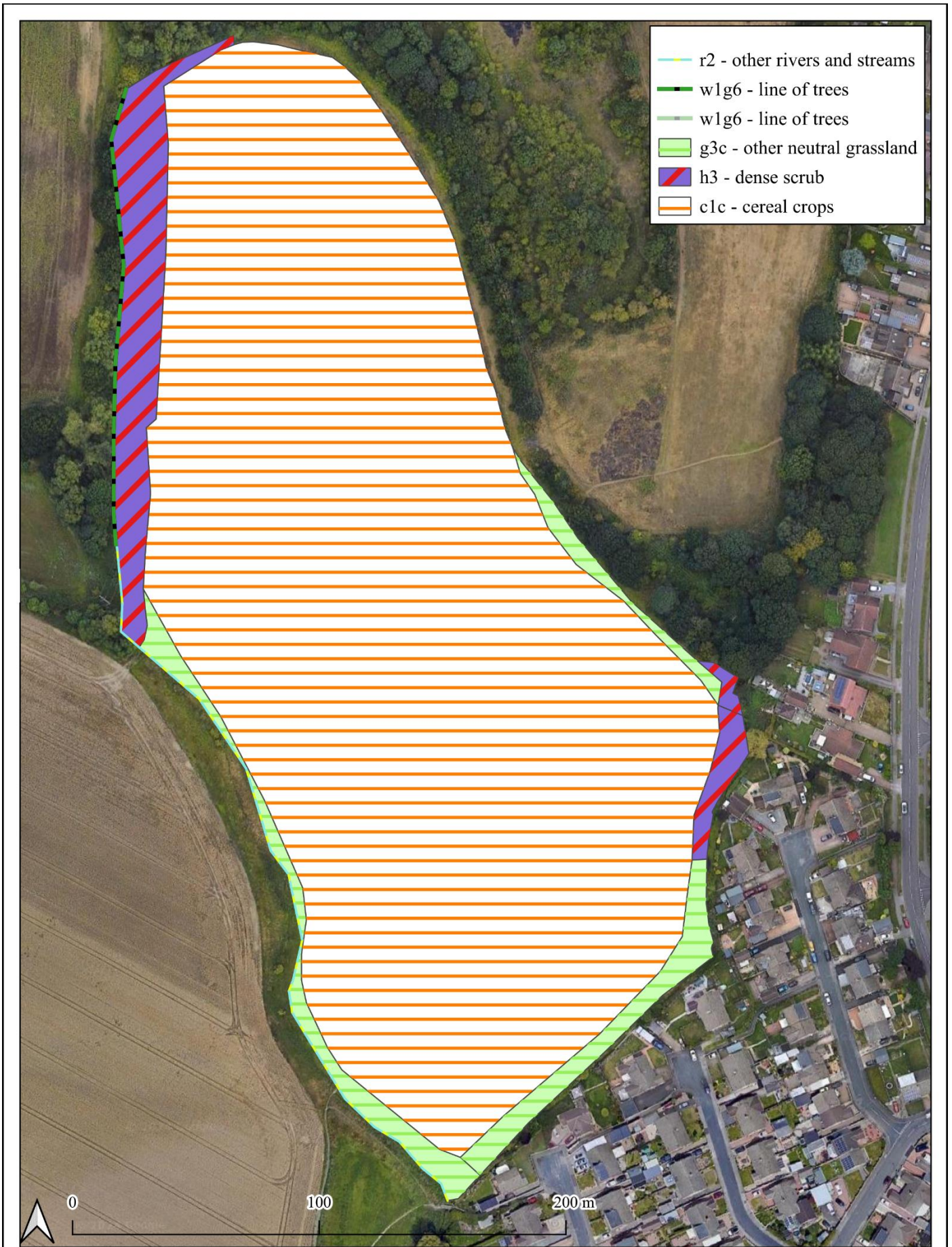
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Appendix I. ANNOTATED MAP OF PHASE TWO – BASELINE.



Site: Doncaster Road, Darfield Phase Two Baseline

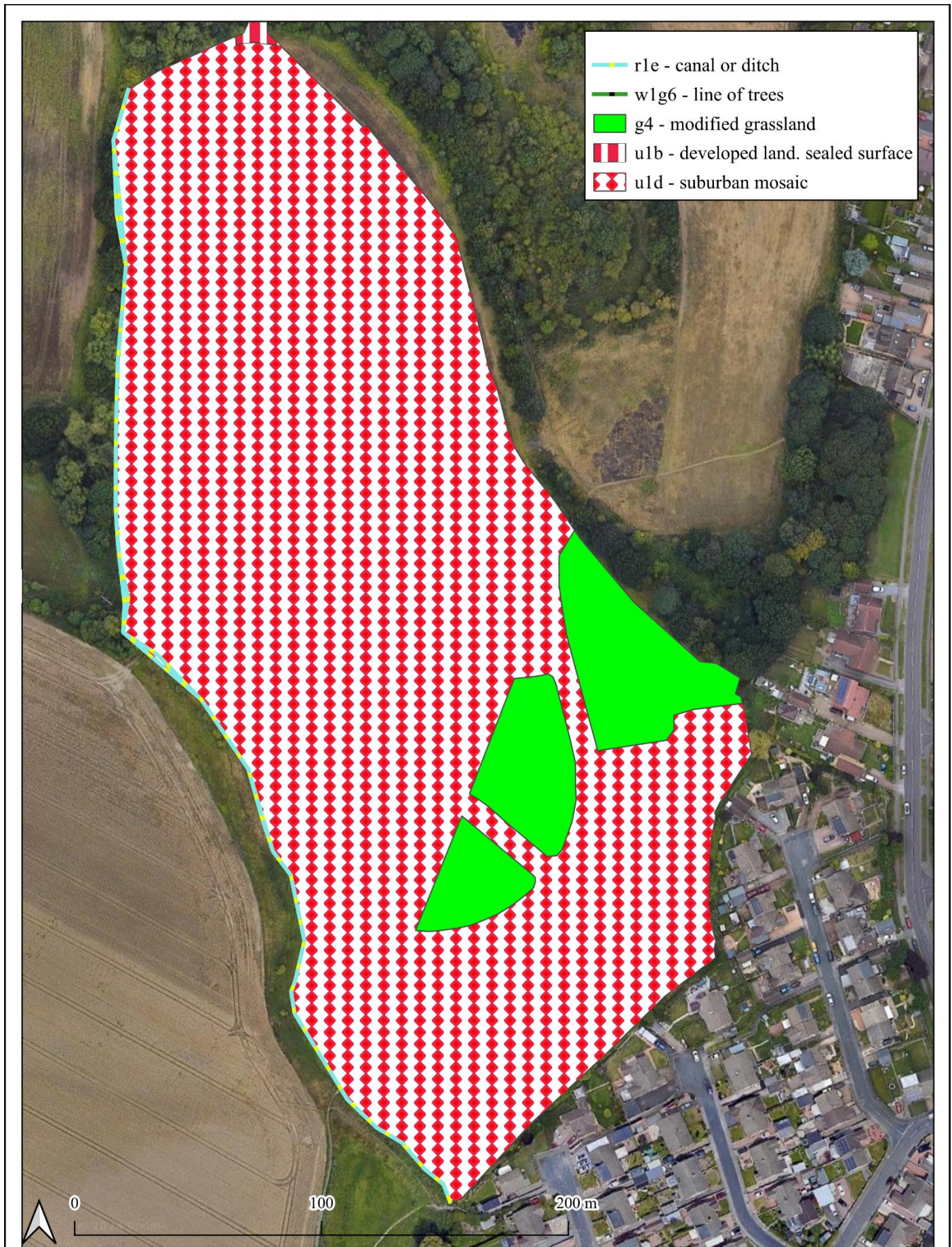
Reference: 240123/P2B

Date: 27.06.2024

Produced by: Mitch Greenhalgh



Appendix II. ANNOTATED MAP OF PHASE TWO – POST DEVELOPMENT.



Site: Doncaster Road, Darfield Phase Two Post

Date: 27.06.2024

Reference: 240123/P2P

Produced by: Mitch Greenhalgh



