Harworth Group

Dearne Valley Parkway, Rockingham, Barnsley – Phase 3

Biodiversity Impact Assessment

April 2022

FPCR Environment and Design Ltd
Registered Office: Lockington Hall, Lockington, Derby DE74 2RH
Company No. 07128076. [T] 01509 672772 [F] 01509 674565 [E] mail@fpcr.co.uk [W] www.fpcr.co.uk

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1.0 INTRODUCTION

1.1 This report has been prepared by FPCR Environment and Design Ltd on behalf of the Harworth Group in support of both requirements under the Section 106 schedule 4 agreement (10 Aug 2020) and condition 28 discharge for a reserved matters application (Outline [hybrid] planning permission-. 2019/1573).

1.2 This revision of the report has been updated to reflect minor landscape/planting changes on site and to address comments received from BMBC and their consultees on the preceding version of the report.

Site Location and Context

1.3 The Site sits to the north of Hoyland, adjacent to Shortwood Business Park in Barnsley, South Yorkshire (central grid ref: SE 3563 0103). The surrounding land use is largely arable and pasture with an area of broad-leaved semi-natural woodland to the north, forming part of the Short Wood and Hay Green LWS.

1.4 Phase 3 comprises an area to the north of Dearne Valley Parkway (A6195) and has largely been cleared of vegetation as part of the approved site clearance and earthworks. Retained areas consist of a periphery woodland and grassland.

Site Proposals

1.5 Site proposals are for a business park development comprising warehousing with associated parking, lorry compounds and access infrastructure, with landscaping and green infrastructure (GI), including attenuation facilities.

1.6 Phase 3 comprises a single plot with one commercial unit and associated infrastructure; alongside which will be an extensive area of green infrastructure and an attenuation feature. Woodland belts along the boundaries will buffer the development footprint from the environs beyond.

1.7 Access to the site will be provided from Dearne Valley Parkway, with new connecting infrastructure to be adopted by the highways agency.

Aims and Objectives

1.8 This Biodiversity Impact Assessment is based on the Chartered Institute of Ecology and Environmental Management (CIEEM) guidance[1]. The scope and objectives of this report are to:

- Summarise the results of the baseline UKHab survey undertaken on the Site and to present the results of habitat condition assessment surveys following the Defra Biodiversity Metric 2.0 Technical Guidance.
- Provide an overview of the proposed habitats following completion of the scheme.
- Present the results of the Defra Biodiversity Metric 2.0 assessment completed for the proposals
- Assess the feasibility of the proposals to achieve a net gain in biodiversity through the Defra Biodiversity metric 2.0

1 CIEEM (2021) Biodiversity Net Gain Report and Audit Templates Chartered institute of Ecology and Environmental Management, Winchester, UK.

- Recommendations for the proposals to maximise their biodiversity potential

1.9 This report provides an update to the biodiversity impact assessment submitted as part of the outline (hybrid) planning application and utilises the Soft Works Plan (Rev D. Urban Wilderness 2022) produced in support of the reserved matters application.

1.10 This report provides only a summary description of the habitat baseline and should be read in conjunction with the Ecological Appraisal (FPCR, 2019).

1.11 This report has also been informed by a Landscape and Ecological Management Plan (LEMP) (Rev C. Urban Wilderness 2022) which has been prepared for the proposals, which details how the retained and proposed habitats will be created and managed. Consequently, this report focuses on elements of creation and management that are relevant to the Biodiversity Metric 2.0 with details of the other practical elements of creation/management reserved for the accompanying LEMP. This report should therefore be read in conjunction with the LEMP.

Legislative and Policy Context

1.12 The UK Government, as signatory to the Rio Convention on Biological Diversity, is committed to conserving and enhancing biodiversity. This commitment is further enforced in the Natural Environment and Rural Communities Act (NERC) 2006 and the Natural Environment White Paper (June 2011).

1.13 DEFRAs 25 Year Environment Plan (2018) seeks to embed a 'net environmental gain' principle for development to deliver environmental improvements locally and nationally. Current policy is that the planning system should provide biodiversity net gains where possible; however, this is moving towards a mandatory requirement.

1.14 The NPPF (2021) in particular seeks to ensure that the planning system contributes to and enhances the natural and local environment, protect and enhance biodiversity and geodiversity by:

"174. d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

179. b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity."

1.15 The Barnsley local plan supplementary planning document: Biodiversity and Geodiversity states

The LPA will not support applications that would damage the ecological network and cause a net-loss in biodiversity in line with the NPPF.

1.16 With specific reference to sites located within the Nature Improvement Area (see 3.3) the above document states:

Within the NIA (Nature Improvement Area) we require specific biodiversity enhancements with developments over and above the minimum mitigation/ compensation measures……

…….Such quantifiable, significant benefits could include:

• New woodland;

• New wetland;

- *Enhancing areas of poor environmental quality;*
- *Improving public access, or*
- *Improving the management of existing habitats;*

The Environment Act

1.17 The Environment Act 2021 came into force on 9th November 2021. Of particular relevance is the requirement for all developments subject to the Town and Country Planning Act to provide an at least 10% biodiversity net gain (BNG), as calculated using a Biodiversity Metric and a Biodiversity Gain Plan, with habitat used for net gain to be secured for a minimum of 30 years. Delivery of BNG may be on site, off-site or undertaken using statutory biodiversity credits. The requirement for BNG does not over-ride the need to apply the mitigation hierarchy (avoidance, mitigation and compensation) when considering biodiversity assets and their loss and does not change existing environmental and wildlife legal protection.

1.18 Whilst the Act mandates a 10% BNG delivery and for this to be a condition of planning permissions (Part 6 section 98 and Schedule 14 part 1), section 147 (3) states that this will only come into force once the secondary legislation is in place to support this requirement. Therefore there is a transition period (the length of which is not defined, but anticipated as being around 2 years) until the mandated 10% is required under law.

Measurable net gain

1.19 A key point in the current legislative context is that the term “measurable net gain” is not defined within the NPPF. Additionally, this term currently has no agreed definition in local or UK policy. Whilst a figure of 10% is widely viewed as best practice, it currently has no adopted policy support at either a local or national level.

1.20 The section 106 agreement for the Site as a whole, stipulates that the development will deliver a 10% net gain in biodiversity units. This is expected to include additional offsite provision to compensate for on-site deficits.

1.21 The biodiversity units created and lost for each phase of the development will be tracked utilising the Biodiversity Metric 2.0. with updates submitted at each stage of reserved matters. Surplus units ‘banked’ and carried forward to future phases. Any deficits will be accounted for through offsite provision.

2.0 METHODOLOGY

Baseline Habitat Assessment

2.1 The following documents were used to inform this assessment:

- Ecological Appraisal. Rev A. (FPCR 2019)
- Biodiversity Impact Assessment. Rev B. (FPCR 2020)
- Landscape and Environmental Management Plan. Rev C. (Urban Wilderness 2022)
- Phase 3 Softworks Plan. Drawing No. 441-UW-P-002. Rev D. (Urban Wilderness 2021)

Natural England's The Biodiversity Metric 2.0

2.2 The biodiversity metric version 3.0 was published in 2021. This new version utilises new habitat condition assessments, revised modifiers, and updated habitat options. Published advice from Natural England states that "Users of the previous Biodiversity Metric 2.0 should continue to use that metric (unless requested to do otherwise by their client or consenting body) for the duration of the project it is being used for as they may find that the biodiversity unit values metric 2.0 generates will differ from those generated by Biodiversity Metric 3.0".

2.3 The Biodiversity Metric version 2.0 was utilised to undertake the initial assessment, with the relevant condition assessment used to guide habitat creation and management objectives for the site. For continuity the Biodiversity Metric 2.0 will be used to track all phases of the development.

2.4 Natural England's published biodiversity net gain metric is an MS Excel spreadsheet that is used to quantify the predicted net-change in biodiversity value ("biodiversity units") of a proposed development site before and after development. It treats the flat "habitats" and linear features "hedgerows" separately, and is based on pre-determined values, along with published written guidance, set by a Natural England-led team of experts.

2.5 To facilitate this, the Site has been mapped and digitised using QGIS, with the baseline habitats plotted and measured. In accordance with the 2.0 Metric User Guide, habitats have been defined under UK Habitat Classification. The detailed landscaping proposals for the Site were then uploaded into the QGIS, and the proposed habitats mapped and digitised to generate areas for each of the habitats proposed for creation.

2.6 These pre- and post-development habitat areas were then inputted into the 2.0 Metric Calculation tool. Pre-development habitats were grouped into their habitat type and condition based on the results of the UKHab and condition assessment surveys, while post-developments were classified into their UKHab type as identified through the classification of proposed habitats within landscaping plans into appropriate UKHab types and their target condition scores. The metric then provides a habitat distinctiveness score for each of the baseline and proposed habitats which are pre-assigned scores based on the habitat type.

2.7 The strategic significance of the habitats was also assessed for both the pre- and post-development habitats based on the location of the site, its proximity to existing areas of biodiversity interest and its setting within wider habitat corridors

2.8 With regards connectivity, Natural England's Biodiversity Metric 2.0 – Beta Test Version Consultation Response (August 2020) has updated this guidance and states that connectivity is now to be fixed at Low for all habitats until the metric is next reviewed.

2.9 The metric then assigns a range of pre-assigned factors to each of the proposed habitats. These have been advised by subject knowledge experts and are universal multipliers generated by the metric itself for the following variables relevant to habitat creation, enhancement or restoration proposals:

- Difficulty of creating or restoring/enhancing a habitat: This pre-assigned score is based on how difficult a particular habitat type is to create or restore/enhance
- Temporal risk: This is the 'time to target condition' for any particular habitat and determines how long a particular habitat type is likely to take to reach the condition score that the desired condition score assigned to it.
- Spatial Risk: This score is based on the distance between the site of habitat loss and any habitats creation or enhancement proposals at any offsite offsetting solutions.

2.10 Full details of the calculation methodology used is provided in the Biodiversity Metric 2.0 – User Guide[2].

Limitations

2.11 Data provided by third party sources collated during the desktop study is generally made up from a wide range of sources including (but not limited to) those submitted by ecological consultancies, wildlife conservation organisations and volunteers. As such, this data is typically focused on areas of known nature conservation, is reliant upon formal surveys having been undertaken within an area or the presence of an expert within the locality and as such this data can never be fully relied upon as a complete ecological dataset for any given area. Rather, this data is used as a guide to likely presence of notable ecological features and can never be relied upon for likely absence.

2.12 The UKHab habitat map has been reproduced from detailed field notes and informed by aerial imagery, OS mapping and site maps provided by the client. The accuracy of this figure is therefore ultimately guided by the accuracy of these sources and can only be relied upon to a certain degree of resolution.

2.13 Natural ecological communities are susceptible to change; at times this change can be rapid as a result of internal and external environmental factors. The biodiversity offsetting calculations are based on ecological assessments of habitats carried out during 2019; as a result, changes which may affect the conclusions of this report may occur, if a prolonged period of time elapses prior to the commencement of the project.

2.14 The aim of biodiversity offsetting is to compensate for significant adverse impacts on biodiversity identified after appropriate avoidance, minimisation and on-site rehabilitation measures have been taken, according to the mitigation hierarchy as required by the NPPF.

2.15 The most recent site survey was undertaken in October 2019 which is a sub-optimal time for habitat surveying as many plant species will not be present, making accurate determination of habitat

[2] Natural England, The biodiversity metric 2.0 (2019) Available at: http://publications.naturalengland.org.uk/publication/5850908674228224

types difficult. While the survey was conducted just outside the recommended survey season (April – September inclusive) it is however considered that sufficient information was collected to enable the determination of broad habitat and types and the identification and assessment of features of ecological value for the purposes of this assessment, given the extent of previous survey information recorded since 2015, including during the recommended seasons, and the nature of the habitats at the Site.

2.16 No other limitations specific to this report influenced this assessment.

3.0 BASELINE CONDITIONS

3.1 The baseline conditions are taken from the Biodiversity Impact Assessment (FPCR 2020) submitted in support of the site wide outline (hybrid) planning application which covers both phase 2 and 3.

Desktop Study

Internationally Designated Sites of Nature Conservation Importance

3.2 No international sites of nature conservation importance are present within a 5km radius of the subject site.

Nationally Designated Sites of Nature Conservation Importance

3.3 The site is located within the Dearne Valley Green Heart Nature Improvement Area (NIA) which is a national, landscape-scale nature conservation designation and is subject to requirements set out within the Barnsley Local Plan Supplementary Planning Document: Biodiversity and Geodiversity.

3.4 Subsequent to outline (hybrid) planning permission being granted, Dearne Valley Wetlands was notified by Natural England as a Site of Special Scientific Interest (SSSI) on 13th May 2021. Natural England confirmed Dearne Valley Wetlands SSSI under section 28 of the Wildlife and Countryside Act 1981 on 4 February 2022. The notified SSSI consists of 22 site units, with differing interest features[3]. Site unit 21 is made up of Barrow Hill Colliery and a section of Short Wood. The Short Wood section of the SSSI is located adjacent to the northern site boundary The notification for this site unit reports the features of interest to be breeding willow tit and breeding bird assemblage of lowland scrub. Both features of interest in this unit are reported in the notification documentation to be in favourable condition as of March 2020.

3.5 No other nationally designated statutory sites of nature conservation importance were located within the 2km search area.

Non-Statutory Sites

3.6 Two Local Wildlife Sites (LWS) are located within 1km of the site as detailed within Table 1 below.

Table 1: Designated Sites within Zones of Influence

Site Name/Ref	Designation	Designation Feature	Approximate Distance and Orientation from Site
Short Wood and Hay Green/637	LWS	Ancient woodland	25m north
Barrow Colliery Site –/1158	LWS	Ancient woodland and semi-improved neutral grassland	700m north-east

[3] Dearne Valley Wetlands SSSI South Yorkshire – Supporting Information. 2021. Natural England

Strategic Significance

3.7 The site is set within the Dearne Valley Green Heart NIA and as such all habitats meet the criteria for inclusion within the maximum valued strategic significance category- "*within area formally identified in local strategy*".

Biodiversity Units

Habitats

3.8 The site was dominated by agricultural fields utilised for livestock grazing. Native hedgerows bounded the majority of field compartments. Woodland blocks were present within and surrounding the site, with a woodland corridor running along the western boundary. Other habitats on-Site included areas of scrub and neutral grassland.

3.9 The baseline habitats and their conditions are detailed in Table 2 below and illustrated in Figure 1.

Table 2: Biodiversity Units: Baseline On-Site Habitats

Label	Habitat and Description	Area (ha)	Condition	Biodiversity Units
Phase 3 Redline				
1	Modified grassland Field compartments	4.07	Poor	9.36
2	Ruderal vegetation Soil mound	0.41	Poor	0.94
3	Other Neutral grassland Soil mound	0.33	Poor	1.52
4	Other Neutral grassland Woodland edges.	0.26	Moderate	2.39
5	Other woodland; broadleaved Plantation woodland ~5% coniferous	4.09	Poor	18.81
6	Mixed scrub Roadside scrub	0.08	Poor	0.37
7	Mixed scrub Scrub on neutral grassland	0.07	Moderate	0.64
N/A	Developed land; sealed surface Tracks	0.16	N/A	0
Access Works (adoptable by highways agency)				
5	Other woodland; broadleaved Plantation woodland ~5% coniferous	0.43	Poor	1.98
6	Mixed scrub Roadside scrub	0.27	Poor	1.24
N/A	Developed land; sealed surface Dearne Valley Parkway	0.24	N/A	0
	Total	**10.41**		**37.26**

Please note there may be minor discrepancies (rounding errors) between the columns and the totals, however, the numbers duplicate those presented within the matrix calculator.

Hedgerows

3.10 The biodiversity units for each hedgerow on the site have been calculated and are presented in Table 3.

Table 3: Biodiversity Units: Baseline On-Site Hedgerows

Habitat	Length (km)	Condition	Biodiversity Units
H1 Hedges: Native species rich hedge	0.22	Moderate	2.024
H2 Hedges: Native species rich hedge	0.33	Moderate	3.036
Total	0.55	-	5.06

Please note there may be minor discrepancies (rounding errors) between the columns and the totals, however, the numbers duplicate those presented within the matrix calculator.

4.0 PROPOSED DESIGN

Habitats

Retained/Enhanced

4.1 Habitat retention is illustrated in Figure 2.

4.2 The proposals include the retention of small boundary areas of scrub, grassland, and woodland, all of which will be maintained in their existing condition.

Habitat Creation

4.3 Habitat creation is shown in Figure 3.

4.4 Green infrastructure proposals include the creation of a range of habitats throughout the Site that will be managed for their biodiversity value; including woodland, scrub, species rich grassland and attenuation features with marginal planting.

4.5 Habitat creation on the development plot will include ornamental planting and amenity grassland. Planting a diverse range of plants will provide some interest for wildlife, particularly pollinators that can take advantage of flowering species. Grassland will be seeded with a diverse flowering lawn mix and, while management will prioritise their amenity character, it will ensure these areas provide some botanical interest, particularly during the spring/summer months.

4.6 New woodland planting and management along the northern boundary of the site will provide a buffer to the offsite habitats including the Short Wood and Hay Green LWS and Dearne Valley Wetlands SSSI.

4.7 The management targets for habitat creation on the Site are presented in Appendix A. Management prescriptions for the green infrastructure are detailed within the LEMP (Urban Wilderness 2021). On plot management will be focused on amenity value for low distinctiveness habitats, with biodiversity benefits bolstered through diverse planting/seeding mixes.

Hedgerows

Hedgerow Creation

4.8 In line with the accompanying LEMP (Urban Wilderness 2021) and detailed planting plans, the proposals include the creation of a number of native species-rich hedgerows as well as a number of formal hedgerows with a mix of native and ornamental species.

4.9 Native species-rich hedgerows will be planted to ensure they provide a diverse range of species along their length. A total of 1.26km of native species-rich hedgerow planting will be provided. Where possible these will be created in association with new ditches/banks providing valuable seasonally wet habitats for local amphibian species. These will be managed to target moderate condition by implementing the following measures:

- failed specimens will be replaced during establishment on a like-for-like basis,
- hedgerows will be managed to encourage tall, wide and bushy features,
- fertiliser use will be prohibited adjacent to hedgerows to reduce nutrient enrichment,

- a minimum of 1m adjacent to the hedgerows will be managed as 'undisturbed' ground where possible. Management of grasslands within these areas adjacent to hedgerows will be in line with the management of meadow grasslands.

4.10 The focus of management for the formal hedgerows will be for their ornamental value and these features have therefore been targeted as poor condition. These hedgerows will, however by planted with 50% hornbeam *Carpinus betulus*, a native species. In total, 460m of formal hedgerows will be planted.

Additional Enhancements

4.11 Additional mitigation measures will be implemented to contribute to a biodiversity net gain across the Site. This will focus on the provision of faunal enhancements that are not captured within the Natural England Biodiversity Metric 2.0 calculations. Full details of these measures are set out in the Habitat Creation, Biodiversity Mitigation and Enhancement Scheme (FPCR 2021). In brief:

- Provision of a bat hop-over across the site access road.
- Inclusion of baffles/louvres to reduce light spill onto sensitive habitats.
- Provision of a range of pole mounted bat boxes
- Provision of a range of bird nesting boxes
- Creation of hibernacula features in association with attenuation features.

5.0 BNG METRIC

5.1 The habitat retention, enhancement and creation proposals highlighted within this report have all been inputted into the Biodiversity Metric 2.0. Table 4 provides a summary of the headline results of the biodiversity metric 2.0 assessment completed for the proposals. The full metric has been provided in Appendix B.

Table 4: Biodiversity Metric 2.0 Headline Results

Baseline	Habitat Units	37.26
	Hedgerow Units	5.06
Post-Intervention	Habitat Units	17.13
	Hedgerow Units	6.5
Total Net Unit Change	Habitat Units	**-20.13**
	Hedgerow Units	**+1.44**
Total Net Percentage Change	Habitat Units	**-54.04%**
	Hedgerow Units	**+28.45%**

5.2 The assessment has demonstrated that this phase of the proposals will lead to a loss in area habitat units and a gain in hedgerow units.

5.3 A summary of post-intervention biodiversity units is provided in tables 5 and 6 below.

Table 5: Biodiversity Units: Post-intervention On-Site Habitats

Habitat and Description	Area (ha)	Condition	Biodiversity Units
Phase 3 Redline			
Heathland and shrub - Mixed scrub Structurally diverse native scrub.	0.4	Good	4.3
Other woodland; broadleaved Woodland providing connectivity across site.	1.26	Good	3.73
Other woodland; broadleaved Isolated blocks.	0.07	Moderate	0.15
Lakes- Ponds (Non-Priority Habitat) Over-deepened attenuation basin designed to hold permanent water.	0.07	Moderate	0.87
Other Neutral grassland Informal areas of grassland managed for biodiversity	0.92	Moderate	5.93
Urban – Amenity grassland Formal areas of species poor grassland.	0.44	Poor	0.98
Urban – Developed Land Access road	0.94	N/A - other	0
Urban – Developed Land Plot and associated infrastructure	6.05	N/A - other	0
Urban – Artificial unvegetated, unsealed surface Gabion Wall	0.05	N/A - other	0

Habitat and Description	Area (ha)	Condition	Biodiversity Units
Urban- Street Trees 42x Medium	0.175	Moderate	0.31
Urban - Introduced Shrub Formal planting	0.04	Poor	0.09
Access Works (adoptable by highways agency)			
Urban – Developed Land Access road	0.94	N/A - other	0
Total	**10.27**		**16.34**

Please note there may be minor discrepancies (rounding errors) between the columns and the totals, however, the numbers duplicate those presented within the matrix calculator. 0.78 baseline units are retained in addition to those created.

Table 6: Biodiversity Units: Post-intervention On-Site Hedgerows

Habitat	Length (km)	Condition	Biodiversity Units
Native Species Rich Hedgerow -	1.26	Moderate	6.5
Ornamental Hedgerow	0.46	Poor	0
Total	**1.72**	**-**	**6.5**

Please note there may be minor discrepancies (rounding errors) between the columns and the totals, however, the numbers duplicate those presented within the matrix calculator.

Habitat Trading Summary

5.4 Low distinctiveness modified grassland fields and ruderal vegetation will be compensated for through the creation of higher distinctiveness habitats.

5.5 A significant area of broadleaved woodland has been lost. This is a medium distinctiveness habitat and requires compensation to be equivalent or better. This will be compensated for through a combination of woodland habitat creation and enhancement.

6.0 BIODIVERSITY NET GAIN PRINCIPLES

6.1 The above have been guided by the Biodiversity Good Practice Principles (CIRIA-CIEEM-IEMA, 2016) Table 7 lists all of the principles along with a description of how the principles has been applied to this assessment.

Table 7: Application of the Biodiversity Net Gain Principles to the Proposals

Principle	Indicators
Principle 1: Apply the Mitigation Hierarchy	Medium distinctiveness habitats have been retained throughout site wide proposals wherever possible, notably the grassland and woodlands buffering pond P1 and ditch D1 which were included within Phase 2a.1.
Principle 2: Avoid losing biodiversity that cannot be offset by gains elsewhere	The proposals have sought to retain specific habitats of interest wherever possible. This included the grassland habitat surrounding pond P1 within Phase 2a.1.
Principle 3: Be inclusive and equitable	Preliminary biodiversity net gain calculations were provided during the design stage to inform the proposals. These were completed using the 2.0 metric prior to the release of the 3.0 metric.
Principle 4: Address risks	The habitats recommended for creation include those that would be suitable for establishment in line with the accompanying LEMP. The condition scores have been set at achievable levels, though management will ultimately strive to improve the condition scores above those stated above where possible.
Principle 5: Make a measurable Net Gain contribution	While this assessment has demonstrated an onsite loss in habitat biodiversity in phase 3, this has guided offsite habitat creation proposals. Further to this a range of other biodiversity enhancements are incorporated in the scheme including faunal features such as bird boxes, bat boxes and hibernacula to provide a range of features for faunal species to bring these species into the heart of the built environment as well as just on the peripheries.
Principle 6: Achieve the best outcomes for biodiversity	
Principle 7: Be additional	
Principle 8: Create a Net Gain legacy	The LEMP produced for the proposals will ensure that the management is secured in the long-term to ensure that the target conditions can be achieved.
Principle 9: Optimise sustainability	The drainage proposals have been designed to provide additional opportunities for habitat creation through the creation of attenuation features that will hold some degree of water year-round. The network of footpaths throughout the green infrastructure will provide opportunities for employees and local residents cross though the site and to take advantage of less formally managed habitats.
Principle 10: Be transparent	All assumptions have been set out within this report and its appendices to ensure that the information used to inform the biodiversity metric 2.0 calculations can be reviewed

7.0 IMPACTS

7.1 The impacts of habitat loss and site clearance works were assessed as part of the initial planning submission. Hybrid planning permission was granted which included full permission for earthworks. Under this approved permission site clearance works were undertaken prior to the notification of the Dearne Valley Wetlands SSSI.

7.2 A Construction and Environmental Management Plan (FPCR 2020), and a Tree Removal and Protection Plan (TEP 2020) were submitted and approved by BMBC. These documents detailed measures to minimise any potential risks to the ecological interest features of the Site and adjoining habitats including Short Wood and Hay Green LWS.

7.3 Site designs have buffered sensitive receptors with green infrastructure, and management prescriptions set out in the LEMP (Rev C. Urban Wilderness 2022) seek to minimise longer term impacts from the development on surrounding habitats, including the Dearne Valley Wetlands SSSI.

8.0 CONCLUSION

8.1 The approach to habitat creation has aimed to maximise biodiversity value within the space made available within the proposals for green infrastructure. Biodiversity Net Gain has then been used to inform the habitat creation and enhancement proposals for the scheme and to guide decisions around additional habitat provision.

8.2 The results of the assessment demonstrate that phase 3 will lead to an overall loss of biodiversity units associated with the area habitats and a gain in hedgerow units when compared with the baseline values.

8.3 The proposals for phase 2a.1 provided an overall surplus of biodiversity units in respect to that phase of development. The biodiversity offsetting scheme for phase 3 will combine excess units generated by phase 2a.1 and additional offsite habitat provision to compensate for the losses detailed within this assessment.

8.4 In order to comply with the Section 106 agreement (schedule 4), calculations for the remainder of the development should utilise the data provided within this report to track the site wide net gain and inform offsite habitat creation requirements.



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Key

- Redline Phase 3
- Access Works
- Intact hedge - native species-rich
- g3c - other neutral grassland
- g4 - modified grassland
- w1g - other woodland-broadleaved
- h3 - dense scrub
- u1b - developed land. sealed surface
- u1c - artificial unvegetated unsealed surface
- s - sparsely vegetated land

Label	Descriptor
1	Modified grassland
2	Soil mound (Tall ruderal vegetation)
3	Soil mound (Other neutral grassland)
4	Woodland edge (Other neutral grassland)
5	Plantation broadleaved woodland
6	Roadside mixed scrub
7	Successional mixed scrub on neutral grassland

FPCR Environment and Design Ltd, Lockington Hall, Lockington, Derby, DE74 2RH ■ t:01509 672 772 ■ f:01509 674 565 ■ e: mail@fpcr.co.uk ■ w: www.fpcr.co.uk
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client
Harworth Group

project
Dearne Valley Parkway, Rockingham, Barnsley - Phase 3

drawing title
Onsite Baseline Habitat

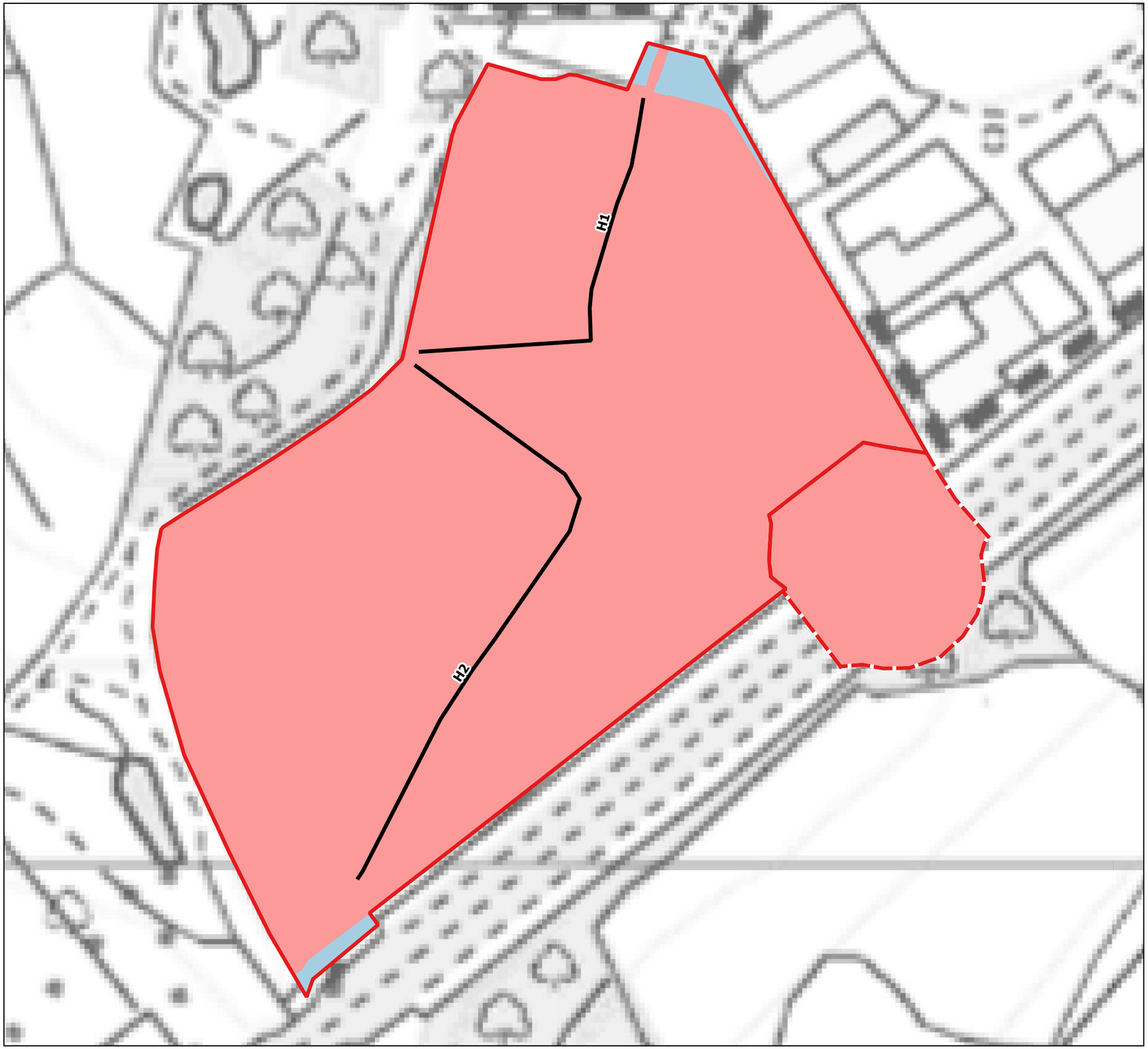
scale @ A3
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drawn
JDH

issue
10/12/202:

rev

drawing / figure number
Figure 1



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Key

- Redline Phase 3
- Access Works

Linear Habitats

- Lost Hedgerow

Area Habitats

- Lost
- Retained

FPCR Environment and Design Ltd, Lockington Hall, Lockington, Derby, DE74 2RH ■ t:01509 672 772 ■ f:01509 674 565 ■ e: mail@fpcr.co.uk ■ w: www.fpcr.co.uk
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0 25 50 75 100 m

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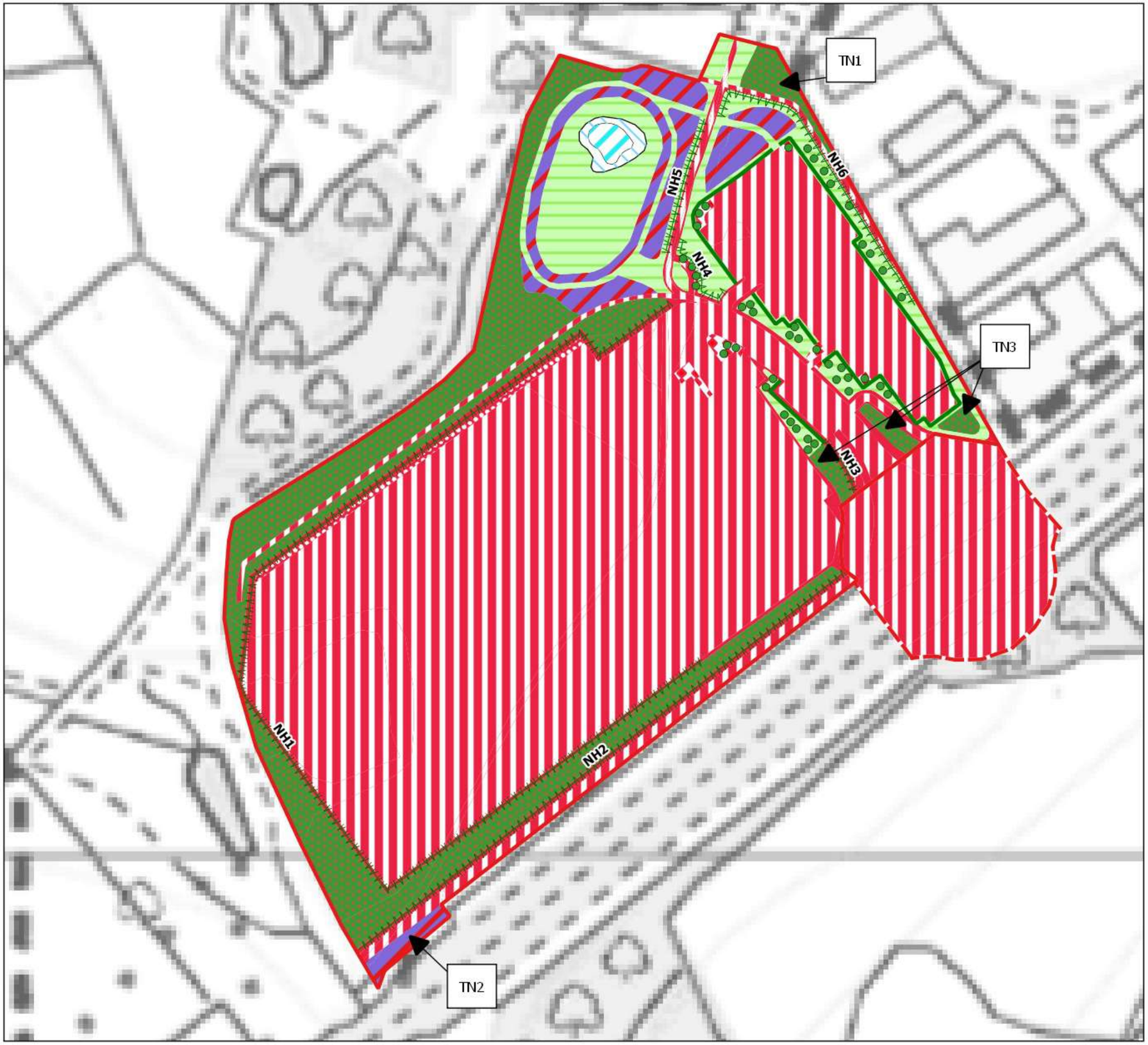
client
Harworth Group

project
Dearne Valley Parkway, Rockingham, Barnsley - Phase 3

drawing title
Onsite Habitat Retention

scale @ A3	drawn	issue
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drawing / figure number **Figure 2** rev



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Key

- Redline Phase 3
- Access Works
- Street trees
- Ornamental Hedges
- Intact hedge - native species-rich

proposed duplicate

- Developed land; sealed surface
- Developed land; sealed surface
- Artificial unvegetated, unsealed surface
- Introduced shrub
- Amenity grassland
- Other broadleaved woodland
- Other neutral grassland
- Mixed scrub
- Inundation Planting
- Standing water

TARGET NOTES
TN1- Retained woodland (poor condition)
TN2- Retained scrub (poor condition)
TN3- Small area of created woodland targetted for moderate condition.

client
Harworth Estates

project
Rockingham Business Park, Barnsley- Phase 3

drawing title
Onsite Habitats- Proposed

scale @ A3: 1:2000 | drawn: JDH | issue: 1/4/2022

drawing / figure number: **Figure 3** | rev: -

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APPENDIX A: PROPOSED HABITAT CREATION

Soft Landscaping Typology	Habitat (UKHab)	Targets for Creation/Management	Area (ha)	Target Condition
Ornamental Planting	Introduced shrub	These areas will be managed primarily for their ornamental value. A diverse range of species will provide benefits for insects.	0.04	Poor
Mown grass	Amenity Grassland	The flowering grassland areas will in part be managed as amenity grasslands, but this should include addition management measures: • Using Emorsgate Flowering Lawn mix or equivalent containing 12 species to encourage at least 6 species per m^2. • Regular management to prevent scrub/bracken encroachment • Reseeding any areas of failed establishment	0.44	Poor
Trees	Street Trees	Managed to reach a minimum of 30cm stem diameter at breast height.	0.175	Moderate
Native Woodland Planting	Other woodland; broadleaved (Main area)	1. This should be an area of trees with complete canopy cover. 2. Native species are dominant. Non-native and invasive species account for less than 10% of the vegetation cover. 3. A diverse age and height structure of the trees. 4. Free from damage [Bark stripping; Browse line; Damage shoot tips] (in the last five years) from stock or wild mammals with less than 20% of vegetation being browsed. 5. There should be evidence of successful (i.e. not browsed off before it gets well established) tree regeneration such as seedlings, saplings and young trees. 6. Standing and fallen dead wood of over 20 cm diameter are present including fallen large dead branches/stems and stumps. 7. Wetland habitat if they exist within the wood has little sign of drainage or channel straightening. 8. The area is protected from damage by agricultural and other adjacent operations. 9. There should be no evidence of inappropriate management (e.g. deep ruts, animal poaching or compaction). 10. Invasive non-native plants are below 5%. 11. No signs of significant nutrient enrichment present.	1.26	Good

		12. More than 3 different native trees and 3 shrub species in an average 10 m radius.		
Native Woodland Planting	Other woodland; broadleaved (TN3 isolated blocks)	1. This should be an area of trees with complete canopy cover. 2. Native species are dominant. Non-native and invasive species account for less than 10% of the vegetation cover. 3. Free from damage [Bark stripping; Browse line; Damage shoot tips] (in the last five years) from stock or wild mammals with less than 20% of vegetation being browsed. 4. The area is protected from damage by agricultural and other adjacent operations. 5. There should be no evidence of inappropriate management (e.g. deep ruts, animal poaching or compaction). 6. Invasive non-native plants are below 5%. 7. No signs of significant nutrient enrichment present. 8. More than 3 different native trees and 3 shrub species in an average 10 m radius.	0.07	Moderate
Scrub	Mixed scrub	1. There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be 100% cover). 2. There is a good age range – a mixture of seedlings, saplings, young shrubs and mature shrubs. 3. Pernicious weeds and invasive species make up less than 5% of the ground cover. 4. The scrub has a well-developed edge with un-grazed tall herbs. 5. There are many clearings and glades within the scrub.	0.4	Good
Wildflower Meadow	Other Neutral Grassland	1. The area is clearly and easily recognisable as a good example of this type of habitat and there is little difference between what is described in the relevant habitat classifications and what is visible on site. 2. Undesirable species and physical damage is below 5% cover. 3. Cover of bare ground no greater than 10% (including localised areas, for example, rabbit warrens). 4. Cover of bracken less than 20% and cover of scrub and bramble less than 5%.	0.92	Moderate
Inundation Vegetation / Open Water	Ponds (Non-Priority Habitat)	1. Are of good water quality, with clear water (substrate can be seen) and no obvious sign of pollution in the water body. 2. The water body should have semi natural riparian land for at least 10 m from the pond edge.	0.07	Moderate

		3. Non-woodland ponds should be dominated by plants, be they submerged or floating (note dominance of duckweed is a sign of eutrophication). 4. Non-woodland ponds [i.e. that have always been open] should not be shaded more than 50% 5. Non-native species should be absent. 6. Less than 10% of the pond should be covered with duckweed or filamentous algae. 7. Ponds will be fishless, those which naturally contain fish should not be stocked and should contain a native fish assemblage.		