



FUTURESECOLOGY

Thornhill Estates

Land off Gernhill Avenue, Fixby

BIODIVERSITY IMPACT ASSESSMENT (BIA)

Report Reference Number: FE478/BIA01

December 2024

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1.0 INTRODUCTION

- 1.1 The following report has been prepared by Futures Ecology Ltd. on behalf of Thornhill Estates. This summary report presents the results of the Biodiversity Impact Assessment (BIA) calculations using the Statutory Biodiversity Metric Calculation Tool produced in respect of proposals for the development of land off Gernhill Avenue, Fixby (grid reference: SE 13469 20040).

SITE LOCATION AND CONTEXT

- 1.2 The application Site was c. 0.38ha in extent and located in the northwest of Fixby. The habitats present on-site comprised improved grassland and a small strip of broadleaved plantation woodland, that had been cleared prior to the Site visit. Broadleaved woodland is present to the south of the redline boundary, with pastoral fields to the north and west. New residential development associated with Gernhill Avenue is present to the east.
- 1.3 The broadleaved woodland to the south of Site is under the ownership of the Applicant, 0.15ha of this is proposed for enhancements, shown within the blue line. This area is mapped within Kirklees Wildlife Habitat Network (KWHN).

DEVELOPMENT PROPOSALS

- 1.4 The Site proposals are for a forestry track to enable management works to be undertaken of the woodland adjacent to the south.

2.0 METHODOLOGY

PERSONNEL

- 2.1 The habitat condition assessment was conducted by M. Baker BSc (Hons), MSc, ACIEEM. M. Baker has over 5 years' experience in ecological consultancy, including habitat surveys and site assessments for protected species. M. Baker is appropriately qualified for the surveys based on the CIEEM competencies for species surveys and is registered to use a GCN *Triturus cristatus* licence (2020-49701-CLS-CLS). M. Baker was certified in May 2021 to conduct River Condition Assessments (RCA).

HABITAT APPRAISAL

- 2.2 A Habitat Survey of the on-site habitats was completed on the 1st November 2024.
- 2.3 Survey methodology followed guidance from Joint Nature Conservation Committee (JNCC) 2016¹ comprising a walkover of the survey area mapping (using JNCC standard habitat codes) and broadly describing and classifying the principal habitat types and identifying the dominant plant species present within each habitat type, noting any features of interest. The frequencies at which plant species occurred were noted using

¹ JNCC (2016) *Handbook for Phase1 Habitat Survey – a technique for environmental audit*. ISBN 0 86139 636 7

the DAFOR² method³. Whilst the plant species lists obtained should not be regarded as exhaustive, sufficient information was obtained to determine broad habitat types.

- 2.4 The Statutory Biodiversity Metric works best where habitat types are classified using the UK Habitats Classification methodology (UKHab Ltd., 2023)⁴. Therefore, habitats were also described and evaluated in accordance with the UK Habitats Classification methods aligning the assessed habitats with the Biodiversity Metric habitat types.
- 2.5 The surveys used were sufficient to determine the Statutory Biodiversity Metric habitat types present onsite and to fully inform the Biodiversity Impact Assessment (BIA) using the Statutory Biodiversity Metric. This information was used to adequately map the onsite habitats to inform the BIA.

Habitat Condition Assessment (HCA)

- 2.6 Habitat condition was assessed and assigned during the Phase 1 assessment following the guidance from the 'The Statutory Biodiversity Metric – Technical Annex 1: Condition Assessment Sheets and Methodology' excel document (Natural England, February 2024) which accompanies the Statutory Biodiversity Metric. Assessment criteria were followed for each broad habitat type, to determine the condition of each habitat.

Grassland Survey

- 2.7 A total of three 1m² quadrats were surveyed on-site. The DAFOR⁵ for each botanical species observed within the quadrat was recorded. This information was used to determine the average number of species present per metre squared. Please see Appendix B for full results.

Strategic Significance

- 2.8 The strategic significance of the on-site baseline habitats was determined by whether the habitats fell within:
- any designated sites;
 - any national habitat networks (as identified using the Multi Agency Geographic Information for the Countryside (MAGIC)⁶); or
 - any local sites or green infrastructure corridors.

Biodiversity Impact Assessment (BIA)

- 2.9 To quantify deliverable net gain for the application, the baseline value of the habitats within the application Site have been calculated utilising the Statutory Biodiversity Metric.

² DAFOR: D=dominant, A=abundant, F=frequent, O=occasional, R=Rare, L=Locally

³ WJ Sutherland (August 2006) Ecological Census Techniques. A Handbook, 2nd Edition. ISBN: 9780521606363

⁴ UKHab Ltd. (July 2023) UK Habitat Classification Version 2.0 <https://ukhab.org/>

⁵ DAFOR: D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare.

⁶ www.magic.defra.gov.uk

Survey Limitations

2.10 The Site visit was undertaken in November, which is outside the optimal period for surveys (April – September). However, this area was also assessed as part of wider surveys for the same client on 3rd April 2024. The habitat classifications and condition assessments were based on both visits and therefore no constraint to the results is anticipated.

3.0 BASELINE ECOLOGY

3.1 The baseline habitats are shown on Figure 1. A summary of the habitats present is provided in Table 1 below.

Table 1: Summary of Baseline Habitats

Phase 1 Habitat	Biodiversity Metric Habitat Type	Photographs (01.11.2024)	Brief Description and Habitat Condition Assessment (HCA)
Onsite Habitats			
Improved grassland (g4)	Grassland: Modified grassland		<p>Cattle grazed grassland field dominated by perennial ryegrass <i>Lolium perenne</i>, with frequent creeping buttercup <i>Ranunculus repens</i> and white clover <i>Trifolium repens</i>. Cock's-foot <i>Dactylis glomerata</i> was noted occasionally within the sward.</p> <p>Condition Assessment: Passes; A, C, E, F and G. Fails; B, D.</p> <p>Moderate condition</p> <p>See Appendix B for quadrat data.</p>
Plantation broadleaved woodland (wf1)	Woodland and forest: Other broadleaved woodland		<p>Strip of plantation woodland in the east of Site. Section within Site forms a 10m gap cleared prior to Site visit, condition based on the remaining woodland strip.</p> <p>Condition Assessment: A=1, B=3, C=2, D=3, E=3, F=3, G=3, H=3, I=1, J=2, K=1, L=1, M=2.</p> <p>Score: 28 points, Moderate condition</p>

Phase 1 Habitat	Biodiversity Metric Habitat Type	Photographs (01.11.2024)	Brief Description and Habitat Condition Assessment (HCA)
			
Offsite Habitats			
Broadleaved woodland – semi-natural	Woodland and forest: Other broadleaved woodland		<p>Broadleaved woodland to the south of Site, dominated by beech <i>Fagus sylvatica</i>, some herbivore damage as no regeneration noted. Himalayan balsam <i>Impatiens glandulifera</i> present but less than 10%. English bluebell <i>Hyacinthoides non-scripta</i> present in wider area, but no NVC community / other ancient woodland indicators.</p> <p>Condition Assessment: A=2, B=2, C=2, D=2, E=2, F=3, G=1, H=3, I=2, J=2, K=1, L=1, M=2. Total Score: 25. Score: 25 points, Poor condition</p>

Strategic Significance

- 3.2 No on-site habitats fell within any of the strategic significance criteria set out in the methodology. As such, all on-site habitats are considered to have a low strategic significance.
- 3.3 The woodland within the blueline is mapped within Kirklees Wildlife Habitat Network (KWHN) and therefore the strategic significance has been assigned as ‘Formally identified in local strategy’.

Baseline Summary

- 3.4 From the completed Statutory Biodiversity Metric, the value of the existing onsite habitats is **1.59 Area Habitat Units**. The value of the existing blueline habitats is **0.70 Area Habitat Units** (see Appendix A).

4.0 **BIODIVERSITY IMPACT ASSESSMENT**

- 4.1 In accordance with the NPPF (December 2024)⁷, the Environment Act 2021⁸ (which became mandatory on 12th February 2024) as well Policy LP30 of the Kirklees Local Plan⁹, the aim is to generate a 10% net gain for biodiversity.
- 4.2 The Biodiversity Gain Hierarchy¹⁰ (which does not apply to irreplaceable habitats) sets out a list of priority actions:
- first, in relation to onsite habitats which have a medium, high and very high distinctiveness (a score of four or more according to the statutory biodiversity metric), the avoidance of adverse effects from the development and, if they cannot be avoided, the mitigation of those effects; and
 - then, in relation to all onsite habitats which are adversely affected by the development, the adverse effect should be compensated by prioritising in order, where possible, the enhancement of existing onsite habitats, creation of new onsite habitats, allocation of registered offsite gains and finally the purchase of biodiversity credits.
- 4.3 Figure 2 outlines the habitat areas post development across the Application Site.

Retained Habitats

- 4.4 The majority of the grassland will be retained, with the exception of the proposed forestry track area.

Created Habitats

- 4.5 The proposals are for a forestry track [Urban: Developed land; sealed surface] linking to Gernhill Avenue.

Enhanced Habitats

- 4.6 The proposals include the enhancement of the woodland within the blueline [Woodland and forest: Other woodland; broadleaved]. Long-term management of this area will include selective thinning of non-native trees (beech) to allow more light to the ground flora, and the removal of Himalayan balsam *Impatiens glandulifera*. This will compensate for the woodland strip that has already been removed and provide a 10% net gain on the redline habitats.

SUMMARY

- 4.7 Post development, the net unit change as a result of the on-site habitat retention, enhancement, and creation (Figure 2) with long-term management (for a minimum of 30 years) is summarised below.

⁷ Ministry of Housing, Communities & Local Government (December 2024). National Planning Policy Framework. London

⁸ <https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted>

⁹ <https://www.kirklees.gov.uk/beta/planning-policy/pdf/local-plan-strategy-and-policies.pdf>

¹⁰ https://www.gov.uk/guidance/biodiversity-net-gain?utm_medium=email&utm_campaign=govuk-notifications-topic&utm_source=406bfa99-898d-4dc6-b383-067c9ed1a773&utm_content=immediately#phased-development

- 4.8 Post development, the onsite habitat creation will achieve 1.26 Biodiversity Habitat Units. This is a total net unit change of -0.33 Biodiversity Habitat Units. This equates to a -20.81% net loss in Biodiversity Habitat Units.
- 4.9 The offsite habitat enhancements with long-term management (for a minimum of 30 years) will achieve 1.20 Biodiversity Habitat Units. This is a total net unit change of +0.49 Biodiversity Habitat Units. This equates to a +70.03 % net gain in Biodiversity Habitat Units.
- 4.10 Therefore, the combined net unit change for onsite and offsite habitats is 0.16 Biodiversity Habitat Units. This equates to a +10.19% net gain in Biodiversity Habitat Units.

Table 2: Summary of Headline Results

	Baseline Units (Redline / Blueline)	Proposed Units (Redline / Blueline)	Combined Net Unit Change	Combined Net Percentage Change	Trading Rules Satisfied?
Habitat Units	1.59 / 0.70	1.26 / 1.20	0.16	10.19%	Yes

5.0 GOOD PRACTICE PRINCIPLES FOR DEVELOPMENT

- 5.1 The CIEEM Good Practice Principles for Development¹¹ provide an industry-standard to demonstrate that development projects have followed best practice. Table 3 below provides a summary of how these principles have been followed throughout this project.

Table 3: Biodiversity Net Gain Good Practice Principles for Development¹² Summary

Principle	Justification of measures in place to achieve each Principle
<p>Principle 1: Apply the Mitigation Hierarchy Do everything possible to first avoid and then minimise impacts on biodiversity. Only as a last resort, and in agreement with external decision-makers where possible, compensate for losses that cannot be avoided. If compensating for losses within the development footprint is not possible or does not generate the most benefits for nature conservation, then offset biodiversity losses by gains elsewhere.</p>	Onsite grassland is of low ecological value. The woodland strip had already been cleared prior to the Site visit, so retention was not possible. Instead, compensatory planting will be implemented.
<p>Principle 2: Avoid losing biodiversity that cannot be offset by gains elsewhere Avoid impacts on irreplaceable biodiversity - these impacts cannot be offset to achieve No Net Loss or Net Gain.</p>	No irreplaceable habitats onsite, all baseline habitats are able to be offset (if required).

¹¹ <https://cieem.net/wp-content/uploads/2019/02/Biodiversity-Net-Gain-Principles.pdf>

¹² <https://cieem.net/wp-content/uploads/2019/02/Biodiversity-Net-Gain-Principles.pdf>

Principle	Justification of measures in place to achieve each Principle
<p>Principle 3: Be inclusive and equitable Engage stakeholders early, and involve them in designing, implementing, monitoring and evaluating the approach to Net Gain. Achieve Net Gain in partnership with stakeholders where possible, and share the benefits fairly among stakeholders.</p>	<p>The design team were informed of the net gain requirements for the Site. Collaborative work with the client optimised the biodiversity outcomes for the Site.</p>
<p>Principle 4: Address risks Mitigate difficulty, uncertainty and other risks to achieving Net Gain. Apply well-accepted ways to add contingency when calculating biodiversity losses and gains in order to account for any remaining risks, as well as to compensate for the time between the losses occurring and the gains being fully realised.</p>	<p>The post-development habitats have been assumed to achieve 'Moderate' condition, which removes a lot of the risk when calculating the resultant net gains. Habitats will be managed for a minimum of 30 years to achieve their target condition, with remediation undertaken if required over that time.</p>
<p>Principle 5: Make a measurable Net Gain contribution Achieve a measurable, overall gain¹ for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.</p>	<p>10% net gain in Habitat Units has been achieved.</p>
<p>Principle 6: Achieve the best outcomes for biodiversity Achieve the best outcomes for biodiversity by using robust, credible evidence and local knowledge to make clearly-justified choices when:</p> <ul style="list-style-type: none"> • Delivering compensation that is ecologically equivalent in type, amount and condition, and that accounts for the location and timing of biodiversity losses • Compensating for losses of one type of biodiversity by providing a different type that delivers greater benefits for nature conservation • Achieving Net Gain locally to the development while also contributing towards nature conservation priorities at local, regional and national levels • Enhancing existing or creating new habitat • Enhancing ecological connectivity by creating more, bigger, better and joined areas for biodiversity 	<p>The net gains in Habitat Units within the blue line boundary will have a benefit for biodiversity and incorporate woodland enhancement which will have benefits for local wildlife populations, such as bats, nesting birds, hedgehogs, and invertebrates etc.</p>
<p>Principle 7: Be additional Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e. do not deliver something that would occur anyway).</p>	<p>The net gains in Habitat Units on-site would not occur in the absence of this exercise.</p>

Principle	Justification of measures in place to achieve each Principle
<p>Principle 8: Create a Net Gain legacy Ensure Net Gain generates long-term benefits by:</p> <ul style="list-style-type: none"> • Engaging stakeholders and jointly agreeing practical solutions that secure Net Gain in perpetuity¹³ • Planning for adaptive management and securing dedicated funding for long-term management • Designing Net Gain for biodiversity to be resilient to external factors, especially climate change • Mitigating risks from other land uses • Avoiding displacing harmful activities from one location to another • Supporting local-level management of Net Gain activities 	<p>Long-term management of the habitats created will be secured under a planning condition or legal agreement.</p>
<p>Principle 9: Optimise sustainability Prioritise Biodiversity Net Gain and, where possible, optimise the wider environmental benefits for a sustainable society and economy</p>	<p>The proposed woodland enhancements within the blue line boundary will be of benefit for local residents.</p>
<p>Principle 10: Be transparent Communicate all Net Gain activities in a transparent and timely manner, sharing the learning with all stakeholders</p>	<p>Net gain information has been communicated in a transparent and timely manner.</p>

¹³ Biodiversity compensation should be planned for a sustained Net Gain over the longest possible timeframe. For development in the UK, the expectation is that compensation sites will be secured for at least the lifetime of the development (e.g. often 25-30 years) with the objective of Net Gain management continuing in the future.

APPENDIX A: FE478 STATUTORY BIODIVERSITY METRIC CALCULATION TOOL

The headline results are provided below. Please see the accompanying Excel document for further details.

Gernhill Avenue, Fixby		Return to results menu	
Headline Results			
Scroll down for final results			
On-site baseline	Habitat units	1.59	
	Hedgerow units	0.00	
	Watercourse units	0.00	
On-site post-intervention <small>(including habitat retention, creation & enhancement)</small>	Habitat units	1.26	
	Hedgerow units	0.00	
	Watercourse units	0.00	
On-site net change <small>(units & percentage)</small>	Habitat units	-0.33	-20.81%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Off-site baseline	Habitat units	0.70	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention <small>(including habitat retention, creation & enhancement)</small>	Habitat units	1.20	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change <small>(units & percentage)</small>	Habitat units	0.49	70.03%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Combined net unit change <small>(including all on-site & off-site habitat retention, creation & enhancement)</small>	Habitat units	0.16	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Spatial risk multiplier (SRM) deductions	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
FINAL RESULTS			
Total net unit change <small>(including all on-site & off-site habitat retention, creation & enhancement)</small>	Habitat units	0.16	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Total net % change <small>(including all on-site & off-site habitat retention, creation & enhancement)</small>	Habitat units	10.19%	
	Hedgerow units	0.00%	
	Watercourse units	0.00%	
Trading rules satisfied?	Yes ✓		

APPENDIX B: GRASSLAND QUADRAT SURVEY DATA

Common Name	Scientific Name	Quadrat Ref.	Q1	Q2	Q3
		Quadrat Grid Ref.	SE1344919979	SE1344419999	SE1344419986
Bittercress	<i>Cardamine</i> sp.		-	LA	-
Chickweed	<i>Stellaria media</i>		-	R	-
Cock's foot	<i>Dactylis glomerata</i>		O	O	-
Common ragwort	<i>Jacobaea vulgaris</i>		-	R	R
Creeping buttercup	<i>Ranunculus repens</i>		F	F/LA	F
Creeping thistle	<i>Cirsium arvense</i>		-	O	-
Greater plantain	<i>Plantago major</i>		-	O	-
Perennial rye grass	<i>Lolium perenne</i>		D	D	D
Ribwort plantain	<i>Plantago lanceolata</i>		-	-	R
Rough meadow grass	<i>Poa trivialis</i>		-	-	O
Selfheal	<i>Prunella vulgaris</i>		-	R	-
White clover	<i>Trifolium repens</i>		F	F	O
Yorkshire fog	<i>Holcus lanatus</i>		-	-	O
Total number of species (forbs):			4 (2)	10 (9)	7 (5)
Average number of species (forbs):			7 (5.33)		



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Key

-  Site Boundary
-  Blueline Enhancement Land
-  Kirklees Wildlife Habitat Network (KWHN)

Pre-development Habitats

-  Improved grassland
[Grassland: Modified grassland]
-  Broadleaved woodland - plantation (previously cleared)
[Woodland and forest: Other woodland; broadleaved]
-  Broadleaved woodland - semi-natural
[Woodland and forest: Other woodland; broadleaved]



Client: Thornhills Estates
 Project: Land off Gernhill Avenue, Fixby
 Title: Figure 1 - Baseline Habitat Plan

Plan Reference: FE478_01
 Project Reference: FE478
 Report Reference: FE478/BIA01

Author: KEH
 Date: 18/12/2024
 Scale: 1:500

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Key

-  Site Boundary
-  Blueline Enhancement Land
-  Kirklees Wildlife Habitat Network (KWHN)

Post-development Habitats

-  Hardstanding
[Urban: Developed land; sealed surface]
-  Retained Improved grassland
[Grassland: Modified grassland]
-  Enhanced Broadleaved woodland - semi-natural
[Woodland and forest: Other woodland; broadleaved]



Client: Thornhill Estates
 Project: Land off Gernhill Avenue, Fixby
 Title: Figure 2 - Proposed Habitat Plan

Plan Reference: F478_02
 Project Reference: FE478
 Report Reference: FE478/BIA01

Author: KEH
 Date: 18/12/2024
 Scale: 1:500



C:\Users\kate.haymes\OneDrive - Futures Ecology Ltd\Projects\FE478 Gernhill Avenue Forestry Track\QGIS\1_Plans\FE478_Biodiversity Net Gain Plan.qgs
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