

BIODIVERSITY NET GAIN PLAN

LAND EAST OF STOKE ROAD AND NORTH OF NORMANDY
WAY (A47), HINCKLEY, LEICESTERSHIRE, NR LE10 1YA

ON BEHALF OF

RICHBOROUGH ESTATES AND MR & MRS ADCOCK

REFERENCE: ZEL_265

DATE: May 2022

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Report Data	
Report Title	Biodiversity Net Gain Plan
Report Reference	ZEL_265
Client	Richborough Estates and Mr & Mrs Adcock
Site	Land east of Stoke Road and north of Normandy Way (A47), Hinckley, Leicestershire, Nr LE10 1YA
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V1	Biodiversity Net Gain Plan	E. Seaton	16 May 2022

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1.0 INTRODUCTION

Background to the Development

- 1.1 Zebra Ecology Ltd was commissioned by Richborough Estates and Mr & Mrs Adcock to complete a Biodiversity Net Gain Plan of the land east of Stoke Road and north of Normandy Way (A47), Hinckley, Leicestershire (centred on Ordnance Survey grid reference SP 420 956).
- 1.2 The site is 25.4ha in area and comprises five separate fields subject to cattle grazing with a further parcel of land located to the west of Stoke Road surrounded by mixture of native species-rich and species-poor hedgerows. The application site boundary is shown in Figure 1.



Figure 1: Application Site Boundary

- 1.3 Planning consent is being sought from Hinckley and Bosworth Council for '*outline permission for the erection of up to 475 dwellings, including public open space, land reserved for a primary school together with future expansion land (Use Class F1(a)), landscaping, drainage and associated infrastructure*'.
- 1.4 This Biodiversity Net Gain Plan has been informed by the Preliminary Ecological Appraisal undertaken for the site completed during November 2021 and December 2021. Habitat and hedgerow condition assessments were subsequently completed in May 2022. The calculation of biodiversity net gain units has been undertaken using the Natural England Biodiversity Metric 3.1 and follows guidance set out within the Biodiversity Net Gain: Good practice principles for development (Baker *et al.*, 2019).

Objectives

- Classify the type, distinctiveness, condition and strategic significance of existing and post-development habitats.
- Calculate baseline existing and post-development habitat and hedgerow units for the site based on current development and soft landscaping proposals.
- Maximise biodiversity net gain through habitat creation and enhancement measures.
- Aim to achieve biodiversity net gain on site where feasible; with off-site measures or purchase of credits considered as an alternative option.

2.0 BIODIVERSITY NET GAIN

- 2.1 Biodiversity Net Gain (BNG) is defined as ‘*development that leaves biodiversity in a better state than before, and an approach where developers work with local governance, wildlife groups, landowners and other stakeholders in order to support their priorities for nature conservation*’.
- 2.2 In 2016, the *BNG: Good practice principles for development* was published to support developments across the UK achieve BNG in accordance with good practice. These principles aimed to set a benchmark of ‘*what good looks like*’ and they include the mitigation hierarchy and avoiding impacts of irreplaceable habitats. In 2019, the principles were supplemented with practical guidance on designing, implementing and the long-term maintenance and monitoring of BNG through the project lifecycle.
- 2.3 Good practice principles for biodiversity net gain are set out within Table 1.1 of Biodiversity Net Gain: Good Practice Principles for Development (Baker et al., 2019):

Table 1: The UK’s good practice principles for biodiversity net gain (after Baker, 2016)

Principle	In Practice
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 with the development footprint is not possible or does not generate the most benefits for nature conservation, then offset biodiversity losses by gains elsewhere.
Avoid losing biodiversity that cannot be offset elsewhere	Avoid impacts on irreplaceable biodiversity – these impacts cannot be offset to achieve no net loss / net gain.
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.
Address risk	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 compensate for the time between the losses occurring and the gains being fully realised.
Make a measurable net gain contribution	Achieve a measurable, overall gain for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.
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: - delivering compensation that is ecologically equivalent in type, amount and condition that accounts for the location and timing of biodiversity losses - compensating for losses of one type of biodiversity offsetting by providing a different type that delivers greater benefits for nature conservation - achieving net gain locally to the development whilst 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.
Be additional	Achieve nature conservation outcomes that demonstrably exceed existing obligations i.e. do not deliver something that would occur anyway
Create a net gain legacy	Ensure net gain generates long-term benefits by: - engaging stakeholders- and jointly agreeing practical solutions that secure Net Gain in perpetuity - 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
Optimise sustainability	Prioritise BNG and, where possible, optimise the wider environment benefits for sustainable society and economy
Be transparent	Communicate all net gain activities in a transparent and timely manner, sharing the learning with all stakeholders.

3.0 METHODOLOGY

Preliminary Ecological Appraisal

- 3.1 A Preliminary Ecological Appraisal (including Phase 1 Habitat Survey) was completed during November 2021 and December 2021. Habitats are mapped with the Phase 1 Habitat Plan in Appendix A.
- 3.2 The Biodiversity Metric 3.1 requires habitats to be classified using UK Habitat Classification methodology (UKHAB Working Group, 2018). Habitats were translated from Phase 1 to UKHAB using the 'Translation Phase 1' tab within the calculator. These habitats were used to inform the baseline units within the calculator.

Desk Study

- 3.3 Existing ecological and nature conservation data relevant to the site was collated from various sources including the Multi Agency Geographic Information for the Countryside (MAGIC) online database (<http://magic.defra.gov.uk>) and Leicestershire and Rutland Environment Records Centre (LRERC).
- 3.4 A third-party data search was undertaken to attain biological records from Leicestershire and Rutland Environment Records Centre (LRERC) during November 2021 to identify any designated sites and protected / notable species within a 2km radius of SP 420 956.
- 3.5 A search of European statutory designated sites such as Special Areas of Conservation (SAC) or Special Protection Areas (SPA) within 10km of the site boundary was also undertaken.

Condition Assessments

- 3.6 Condition assessments were completed on 9 May 2022. Habitat condition was assigned following guidance from the 'Technical Supplement' document (Natural England, 2021) to be read in conjunction with Biodiversity Metric 3.1. The condition of each broad habitat type was assessed following this guidance.

Strategic Significance

- 3.7 The strategic significance of the site was assessed by determining whether any area of the site falls within a strategic location for biodiversity or forms part of an ecological network identified within local plans. Neither were identified for the site; therefore, the site has been classified as '*area / compensation not in local strategy / no local strategy*'.

Measurement of Habitat and Hedgerow Units

- 3.8 Baseline habitat parcels were measured using habitat mapping and aerial imagery overlain in QGIS. Post-development habitats were calculated by measuring the Detailed Soft Landscaping Plan produced by Zebra Landscape Architects (ref: ZLA_1213-L-200) in

AutoCAD, with reference to the detailed POS Landscape Proposals (Pegasus Group), allowing areas of retained, created and enhanced habitats to be identified.

4.0 RESULTS

Calculating Biodiversity Units

- 4.1 The Biodiversity Metric 3.1 was used to calculate the change in biodiversity (habitat and hedgerow units) and the overall percentage change. Metric calculations have been undertaken by A. Elliott BSc (Hons).
- 4.2 Headline results can be seen within 4.9 with the full copy of the metric accompanying this report.

Existing Habitats Condition Assessment

Grassland

- 4.3 All grassland fields have been categorised as low distinctiveness 'modified grassland'. The fields have previously been utilised as arable land (information attained from Google aerials). They have now been put back to grass and are subject to cattle grazing. The vegetation is dominated by fast-growing grasses (e.g. perennial ryegrass) on neutral soils. Grass cover is high forming >90% of the sward.
- 4.4 Broadleaved species are restricted to include dandelion *Taraxacum sp.*, white clover *Trifolium repens*, field speedwell *Veronica persica*, shepherd's purse *Capsella bursa-pastoris*, creeping buttercup *Ranunculus repens*, creeping thistle *Cirsium arvense*, daisy *Bellis perennis*, cow parsley *Anthriscus sylvestris*, ribwort plantain *Plantago lanceolata*, broadleaved plantain *Plantago major*, common groundsel *Senecio vulgaris* and chickweed *Stellaria media*.
- 4.5 Botanical quadrat data was collected in randomly selected locations of each field on 9 May 2022 to assess average species per m². This did not average 6 or more species in any of the fields. The grassland has therefore been classified as being in 'fairly poor' condition as 6-8 species per m² is an essential criterion to achieve 'moderate' condition. As a small number of quadrats supported over 6 species per m² within F1 and F2, the grassland has been classified as 'fairly poor', rather than 'poor' as a precaution within these areas.
- 4.6 The sward height is uniform (c.150mm in height), absent of scrub with physical damage (e.g. by excessive poaching) noted in less than 5% of the grassland area. There is an absence of invasive non-native species as listed on Schedule 9 of The Wildlife and Countryside Act, 1981. Full Condition Assessment results can be seen in Appendix C.

Hedgerows

- 4.7 A total of thirteen hedgerows are present on-site. Four (H1-H3 and H11) have been classified as native species rich hedgerow with trees – associated with bank or ditch and therefore hold very high distinctiveness. Four hedgerows (H4-H7) fall under native species rich hedgerow with trees holding high distinctiveness. Two native species-rich hedgerows (H8 and H10), A single native species-associated with ditch or bank (H11) and a single native hedgerow with trees (H12) hold medium distinctiveness. A native hedgerow (H9) and line of trees (H13) hold low distinctiveness.

- 4.8 None of the hedgerows are associated with a >1m width of undisturbed ground with perennial herbaceous vegetation for 90% of length due to grazing. Undesirable species such as nettles *Urtica* spp., cleavers *Galium aparine* and docks *Rumex* spp.) exceeds >20% cover of undisturbed ground. All hedgerows (excluding H1, H2 and H13) have been subject to damage through intense felling. On this basis, H1, H2 and H13 have been classified as 'good' condition. All remaining hedgerows (H3-H12) have been classified as 'moderate' condition. The majority of hedgerows (excluding H8, H9, H11 and H12) are over 1.5m in height.

Ponds

- 4.9 Two non-priority ponds (P1 and P2) are present on-site. Both ponds held low water levels (c.200mm in depth) on 9 May 2022 with an absence of pipework allowing water levels to fluctuate naturally throughout the year. Both ponds are located in depressions surrounded by trees. Pond 1 is turbid and not directly grazed by livestock due to the presence of fencing. It has therefore been classified as being in 'moderate' condition. P2 was noted to hold clear water and classified as being in 'good' condition.

Arable

- 4.10 An area (1.41ha) of land utilised for arable purposes (cereal crops) is located to the west of Stoke Road. This is a low distinctiveness habitat with condition assessments not applicable.

Scrub

- 4.11 A small area (0.2ha) of bramble scrub is present at the southern end of Hedgerow 6 (H6). It reaches up to 1m in height and is of medium distinctiveness.

Habitat Creation and Enhancement

Created Habitats

- 4.12 Extensive habitat creation is proposed within open spaces at the site. A summary of these habitats has been provided below and should be read in conjunction with the detailed soft landscaping plan produced by Zebra Landscape Architects. Measures to establish and secure the long-term management of these areas will be specified within a Landscape and Ecological Mitigation Plan (LEMP) for the site.
- Five attenuation basins to be planted with a wet tolerant grassland mix. Basins will not be permanently wet and will be managed as a moderate condition neutral grassland (other neutral grassland).
 - Planting of 288 small trees and 240 small (fruit) trees.
 - Introduced shrub within front gardens forming approximately 1/3 of front garden areas
 - Species-rich (minimum 9 species per m²) wildflower meadow areas / strips to be created across the site and managed in a moderate condition.
 - Species-rich grassland to be planted within LEAP / NEAP areas and managed in poor condition.
 - Permeable hoggan paths created across site, rather than developed, sealed surfaces.
 - Four bioswales to be created across the site and designed to achieve moderate condition.

- Mixed scrub planted adjacent to existing scrub, around perimeters and within a concentrated area to the north of the site. To be managed in moderate condition.
- Vegetated gardens forming 2/3 of front garden and all of rear gardens. Condition assessment n/a.
- School safeguarding area – classified as 0.7ha retained modified grassland and 1.3ha hardstanding for the purpose of the calculator.
- Total of 4.7km of native species-rich hedgerow with trees proposed.

Biodiversity Unit Calculations

- 4.13 The proposed development will result in an overall gain of 13.6 habitat units (+23.51 net gain) and 21.44 hedgerow units (+34.47%).

Table 2: Habitat Biodiversity Impact

Factor	Habitats
Baseline units	55.96 units
Post-intervention biodiversity units	69.12 units
Total net unit change	13.6 units
Total project biodiversity % change	+ 23.51%

Table 3: Hedgerow Biodiversity Impact

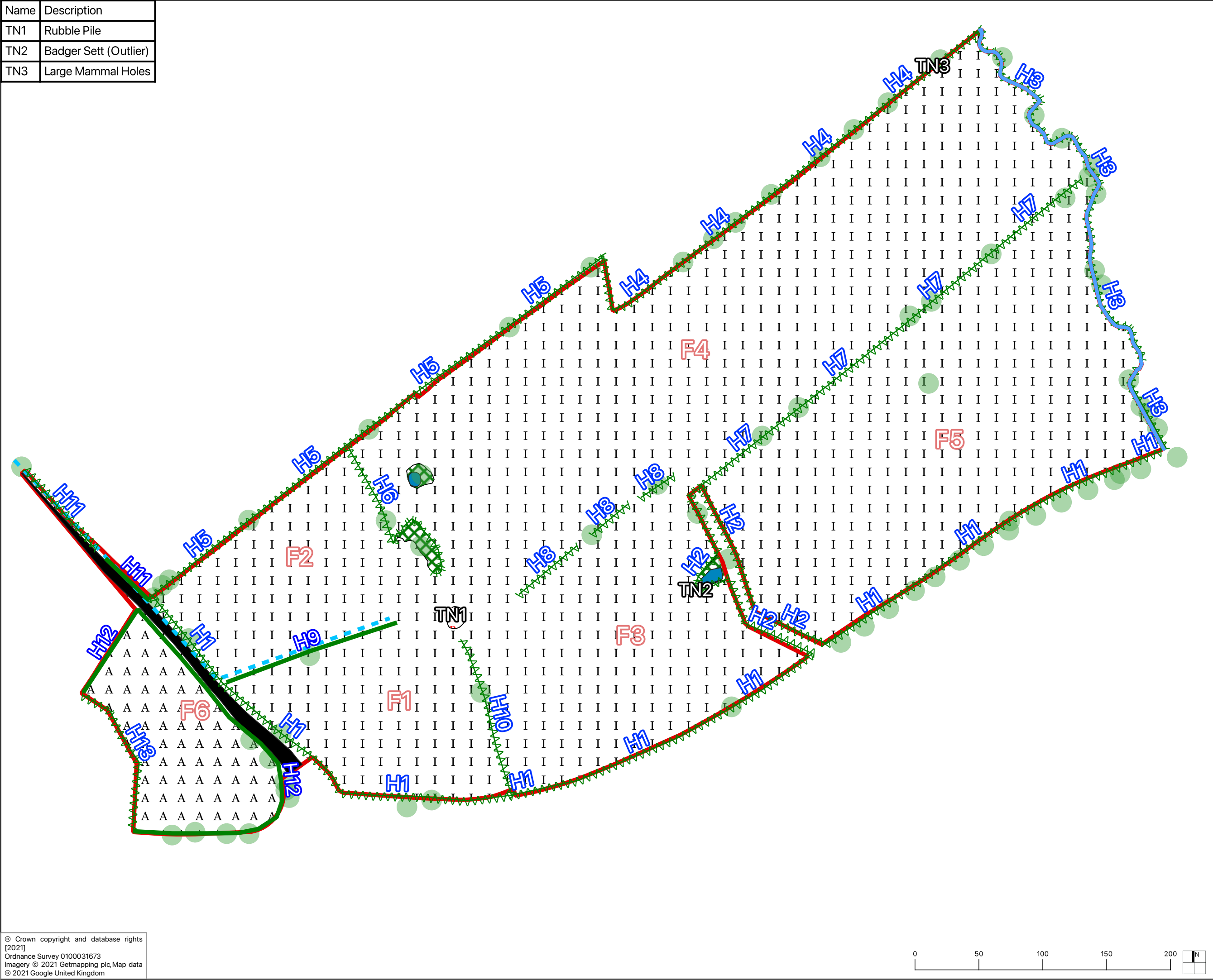
Factor	Hedgerows
Baseline units	62.34 units
Post-intervention biodiversity units	83.78 units
Total net unit change	21.44 units
Total project biodiversity % change	+ 34.47%

- 4.14 The scheme provides the opportunity to exceed the 10% net increase in biodiversity (habitat and hedgerow units) mandated under the Environment Bill. This is in line with Chapter 15, paragraph 179 of the NPPF, requiring measurable net gains for biodiversity.

APPENDIX A

Phase 1 Habitat Plan

Name	Description
TN1	Rubble Pile
TN2	Badger Sett (Outlier)
TN3	Large Mammal Holes



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APPENDIX A

- Red Line Boundary
- Species-poor Improved Grassland
- Arable
- Ponds
- Scrub
- Rubble pile
- Hardstanding
- Target Notes
- Trees
- Species-poor hedgerow
- Species-rich hedgerow
- River Tweed Tributary
- Ditch



Richborough Estates
Land east of Stoke Road and north of
Normandy Way (A47), Hinckley

Leicestershire

Phase 1 Habitat Map

February 2022

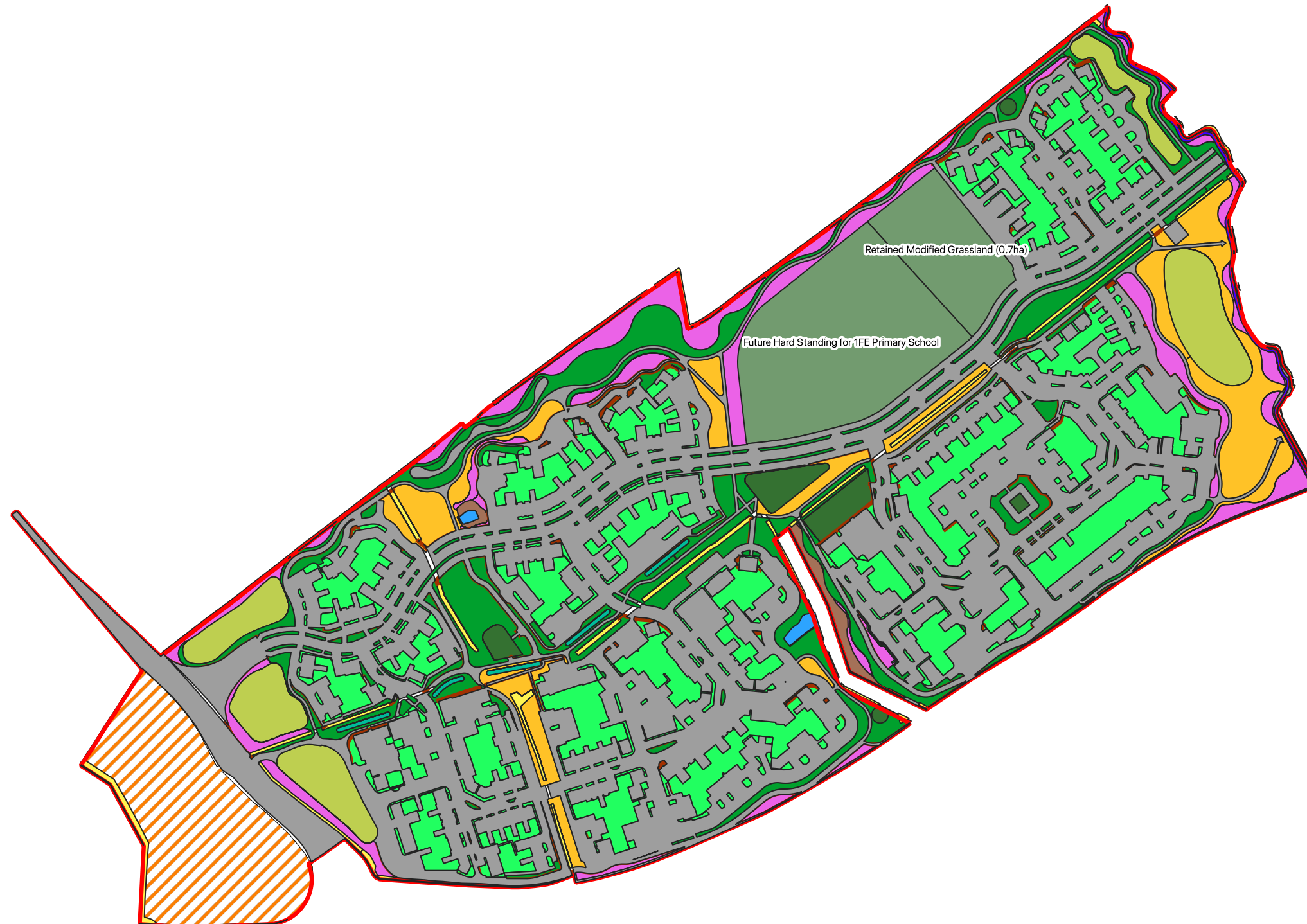
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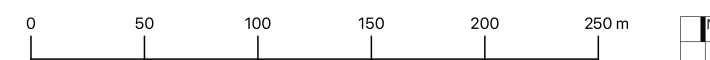
APPENDIX B

Post-development Habitats Map

APPENDIX B



- Red Line Boundary
- Area Designated for 1FE Primary School 1.3ha Hardstanding and 0.7 retained Modified Grassland (Fairly Poor Condition)
- Bioswales - Other Neutral Grassland (Moderate Condition)
- Retained Hedgerows
- Buildings & Hardstanding
- Proposed Community Orchards Areas (Moderate Condition Other Neutral Grassland with scattered fruit trees)
- Playspaces - Other Neutral Grassland (Poor Condition)
- Other Neutral Grassland Across Site (Moderate Condition)
- Attenuation Basins - Other Neutral Grassland (Moderate Condition)
- Vegetated Rear Gardens
- Scrub - Bramble (Poor Condition)
- Vegetated Front Gardens - 1/3 ornamental
- Scrub - Mixed (Moderate Condition)
- Arable Land Enhanced to Other Neutral Grassland (Moderate Condition)
- River Tweed
- Retained Ponds
- Proposed Species Hedgerows with Trees



Richborough Estates
ZEL 203

Land to the East of Stoke Road
Hinckley

E-101

Post-Development Habitat Map

April 2022

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APPENDIX C

Condition Assessments

Table 4: Grassland – Low Distinctiveness

Condition Assessment Criteria	
1	There must be 6-8 species per m ² . If a grassland has 9 or more species per m ² it should be classified as a moderate distinctiveness grassland habitat type. NB - this criterion is non-negotiable for achieving moderate condition.
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.
3	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.
4	Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.
5	Cover of bare ground between 1% and 10%, including localised areas, for example, rabbit warrens.
6	Cover of bracken less than 20%.
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).
Condition Assessment Result	
Condition Assessment Score	
Passes 6 or 7 of 7 criteria including passing essential criterion 1	Good
Passes 4 or 5 of 7 criteria; OR passes 4 of 5 criteria including passing essential criterion 1.	Moderate
Passes 0, 1, 2 or 3 of 7 criterion or 4, 5, 6 of criteria but failing criterion 1	Poor

Table 5: Grassland – Low Distinctiveness. Assessment Results

Habitat	Criteria							Score
	1	2	3	4	5	6	7	
Field 2 – Field 5 (modified grassland). Twenty-one quadrats were assessed randomly within the fields. Average of 5 species recorded.	N	N	Y	Y	Y	Y	Y	Poor

NOTE: occasional quadrats were recorded to support >5 species per m² within Fields 1 & 2 but averaged <6 species per m². As a precautionary approach, these fields have been classified to be in 'fairly poor' condition.

Table 6: Pond

Condition Assessment Criteria	
CORE CRITERIA – applicable to all ponds (woodland and non-woodland)	
1	The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.
2	There is semi-natural habitat (i.e. moderate distinctiveness or above) for at least 10 m from the pond edge.
3	Less than 10% of the pond is covered with duckweed or filamentous algae.
4	The pond is not artificially connected to other waterbodies, either via streams, ditches or artificial pipework.
5	Pond water levels should be able to fluctuate naturally throughout the year. No obvious dams, pumps or pipework.
6	There is an absence of non-native plant and animal species.

7	The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.
ADDITIONAL CRITERIA – only applicable to non-woodland ponds	
8	In non-woodland ponds, plants, be they emergent, submerged or floating (excluding duckweeds) ³ , should cover at least 50% of the pond area that is less than 3 m deep.
9	The surface of non-woodland ponds is no more than 50% shaded by woody bankside species.
Condition Assessment Result	Condition Assessment Score
If 7 criteria assessed (woodland ponds)	
Passes 7 criteria	Good
Passes 5 or 6 criteria	Moderate
Passes 0, 1, 2, 3 or 4 criteria	Poor
If 9 criteria assessed (non-woodland ponds)	
Passes 9 criteria	Good
Passes 6, 7 or 8 criteria	Moderate
Passes 0, 1, 2, 3, 4 or 5 criteria	Poor

Table 7: Pond. Assessment Results

Habitat	Criteria									Score
	1	2	3	4	5	6	7	8	9	
P1 (woodland pond)	N	Y	Y	Y	Y	Y	Y	-	-	Moderate
P2 (woodland pond)	Y	Y	Y	Y	Y	Y	Y	-	-	Good

APPENDIX D

Qualifications and Experience

Zebra Ecology Ltd is Registered Practice of the Chartered Institute of Ecology and Environmental Management (CIEEM). A comprehensive range of ecological services are offered including Preliminary Ecological Appraisal (PEA), Ecological Impact Assessment (EclA), Habitat Regulations Assessment (HRA), Biodiversity Impact Assessment (BIA) and European Protected Species (EPS) Surveys / Licensing.

The practice works closely with clients to achieve their aspirations alongside securing the best outcomes for the environment. With wildlife legislation and policy as its basis; commercial awareness, pragmatism and defensible advice is combined to form Zebra Ecology's approach.

As well as offering a wide range of ecological services, Zebra Ecology forms part of Zebra Group offering an in-house collaborative approach in conjunction with Zebra Architects, Zebra Landscape Architects, Zebra Trees and Zebra Land and Development.

Emma Seaton BSc (Hons) MCIEEM

Emma holds a BSc (Hons) degree in Biology from the University of Sheffield and has since gained a postgraduate certificate in Ecological Consultancy. Her ecological experience includes Preliminary Ecological Appraisals, Ecological Impact Assessments (EclA), surveying for notable / European Protected Species, mitigation / licensing advice and providing Continued Professional Development (CPD) sessions for developers on Biodiversity Net Gain. She has held Natural England survey licences for bats (Class 2), great crested newts and white-clawed crayfish since 2015. She is also a Registered Consultant under the Bat Mitigation Class Licence (BMCL) licence. Emma is a Full member of the Chartered Institute of Ecology and Environmental Management.

Andrew Elliott BSc (Hons)

Andy holds a BSc (Hons) degree in Biological Sciences (Zoology) from the University of Birmingham, and has a particular passion for ornithology, as well as social ecology. Since graduating, Andy has spent considerable time on the African continent, contributing to research projects in fields such as evolutionary sociality in birds, black rhinoceros behavioural ecology and linear infrastructure wildlife-mortality mitigation. Andy holds a Class 1 survey licence for bats, and has a broad range of consulting experience, working on large and small-scale projects across the UK.