

COYNE ENVIRONMENTAL LTD

**Mill Farm
Charlton
Hitchin
SG5 2AB**



Biodiversity Net Gain & MoRPh Report

November 2024

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INTRODUCTION

Coyne Environmental Ltd has been instructed by Howkins & Harrison to carry out an Ecological Assessment of Mill Farm, Charlton, Hitchen SG5 2AB. This is to establish the potential presence or absence of protected ecological features of significance for a planning application to develop part of the site. A Preliminary Ecological Appraisal (PEA) has found no ecology of importance and a Biodiversity Net Gain (BNG) in accordance with the Environment Act 2021 has achieved a BNG above the mandatory 10% Net Gain.

As the site is bisected by the River Hiz, an important chalk stream, an additional Modular River Survey (MoRPh) is required and from the results of this assessment, it has been analysed as part of the BNG metric. The PEA has found no ecology of importance, including bats (European Protected Species). The MoRPh survey has been undertaken and the results incorporated into the standard Statutory Biodiversity Metric (BNG) and has achieved a **35.67%** habitat net gain and a **12.02%** watercourse net gain. This is for a Planning Application to be submitted to North Herts District Council (NHDC).



This study has been supervised by Principal Ecologist, Kenneth Coyne CMLI, who has over 40 years' experience in the environmental field. This includes being a licence bat worker (Bat Licence 2015-15943-CLS-CLS). The initial PEA survey was carried out on the 6th August 2024 by Assistant Ecologist, Pierce McKeon AIEEM. The standard Statutory Biodiversity Metric was undertaken by Senior Ecologist, Ejaz Majoka BSc (Hons) and the Modular River Survey (MoRPh) was carried out on 16th October 2024 by specialist Sarah Downing BSc (Hon) CIEEM, Defra MoRPh Accredited Surveyor.

MODULAR RIVER ASSESSMENT (MoRPh)

A Modular River Survey (MoRPh) is a scaled hydromorphological assessment method for rivers, combining information from three different sized river units, (modules, sub-reaches, reaches). The MoRPh survey records information on, vegetation structure, sediment calibre, landforms, flow types, and human pressures /interventions. It is part of a River Condition Assessment (RCA). Understanding a river's condition helps to determine the restoration techniques required to achieve mandatory Biodiversity Net Gain (BNG).

A MoRPh survey was undertaken of the River Hiz which flows through Mill Farm yard, making use of standardised methodology, in order to inform a baseline biodiversity assessment for the Site. The Modular River Survey follows a recognised methodology to record physical habitat and hydro-Morphological function of a watercourse to assess the overall condition. As this watercourse reach is **<50m** in length, a single MoRPh5 survey, consisting of five individual 'survey modules' has been enough to capture the general physical and vegetative habitat within the survey area. The preliminary score for the watercourse is assessed as '**moderate**'. This is primarily due to human interference (modified re-sectioned banks), management of bank tops (amenity land and agriculture) and the presence of NNIPS (Hairy Willowherb- *Epilobium hirsutum*)

The results from the MoRPh survey indicate that the River Hiz (a Priority River) is classified as **Type K River** (straight, sinuous, coarse base material, gravel or pebble, average bed material -silt) This has achieved a preliminary condition score of **0.66** (moderate condition) but by including the watercourse banks the Final Score is Fairly Poor. The watercourse is on the border of the red line boundary, but there will be no development encroachment on the riparian zone or actual watercourse.

Biodiversity Net Gain (BNG)

The standard Statutory Biodiversity Metric has been used for this project to obtain the BNG for the site and the results of the MoRPh have been incorporated into the revised calculation. This has achieved a **35.67%** Habitat Net Gain and a **12.02%** Watercourse Net Gain, in the accompanying Excel Sheets all on site and this meets the mandatory requirement in the Environment Act 2021

HEAD LINE RESULTS

Total net unit change		
	Habitat Units	35.67%
	Hedgerow Units	00.00%
	Watercourse Units	12.02%
Total net % change		
	Habitat Units	35.67%
	Hedgerow Units	00.00%
	Watercourse Units	12.02%
Habitats units needed required to meet target		

	Habitat Units	00.00
	Hedgerow Units	00.00
	Watercourse Units	00.00

This indicates that the required BNG will be achieved with additional mitigation, to gain the necessary overall 10% gain, as seen in the Detailed Results and as will be set out in the Review.

ASSESSMENT RESULTS

Base Line Value		
	Habitat Units	0.06
	Hedgerow Units	0.00
	Watercourse Units	0.81
Post development value		
	Habitat Units	0.08
	Hedgerow Units	0.00
	Watercourse Units	0.91
On site net change		
	Habitat Units	0.02
	Hedgerow Units	0.00
	Watercourse Units	0.10
Cumulative net change		
	Habitat Units	0.02
	Hedgerow Units	0.00
	Watercourse Units	0.10
Total net % change		
	Habitat Units	35.67%
	Hedgerow Units	00.00%
	Watercourse Units	12.02%

DETAILED RESULTS

Type	Target	Baseline Unit	Unit Required	Unit Deficit	Note
Habitat Unit	10%	0.06	0.07	0.00	No additional habitat units needed to meet target
Hedgerow Unit	10%	0.00	0.00	0.000	No additional habitat units needed to meet target
Watercourse Units	10%	0.81	0.89	0.00	No additional habitat units needed to meet target

ANALYSIS

The Biodiversity Metric shows a Total Net % change unit for the scheme of **35.67%** habitat units, 00.00 hedgerow units and **12.02%** watercourse units so the overall BNG does gains the minimum 10.00 % required. This therefore meets the Environment Act 2021 mandatory requirement for information on biodiversity.

REVIEW

To achieve the 35.67% habitat net gain and 12.02% watercourse net gain, it will be necessary to enhance a **20m section** of the River Hiz, to improve the condition from **poor** to **good** as follows:

Enhance Bank top Vegetation

- Plant native species (e.g., willows, alder, grasses) along the bank top to increase cover and structure, improving stability, shade, and habitat diversity.
- Control Non-Native Invasive Species (NNIPS) (Hairy Willowherb- *Epilobium hirsutum*)
- Set up a regular monitoring programme to detect and promptly remove any invasive species to protect native plant growth.

Remove Artificial Bank Reinforcement

- Replace concrete or artificial reinforcements with natural bioengineering (e.g., willow staking) to restore natural bank processes and improve habitat quality.

Increase Bank and Channel Margin Vegetation

- Introduce marginal and aquatic plants (e.g., water mint, *Mentha aquatica*, yellow flag *Iris pseudocorus*) along bank and channel edges to enhance stability, habitat cover, and water quality.

Reduce Silt in the Channel Bed

- Conduct controlled de-silting to remove excess silt and improve substrate quality, complemented by planting riparian vegetation to reduce future sediment runoff.

Create Flow Diversity

- Add flow deflectors or woody debris to encourage the formation of natural pools and riffles, which will create diverse habitats for fish and invertebrates.

These actions should effectively improve the river's condition and contribute to the biodiversity net gain for the project. A Preliminary Ecological Analysis (PEA) has been undertaken and found no ecology of significance. The requirement for information on

Biodiversity Net Gain (BNG) has now been calculated, taking into account the River Hiz, an important chalk stream, that flows through the site.

Using the Statutory Biodiversity Metric this indicates that the mandatory 10% Net Gain can be achieved with additional mitigation enhancements to the river riparian habitat. The two Reports and the accompanying Excel Sheet form a joint proposal of the Ecological Assessment (EA) indicating that the development will have minimal effect on ecology and provide the opportunity to increase the areas biodiversity.

CONCLUSION

Coyne Environmental Ltd has been instructed to assess the potential presence or absence of protected ecological features of significance at Mill Farm, Charlton, Hitchin, SG5 2AB and carry out an assessment to obtain a Biodiversity Net Gain (BNG) in accordance with the Environment Act 2021. This is part of a planning proposal to be submitted to North Herts. District Council.

In accordance with BCT Guidelines and having regard to the Conservation of Habitats and Species Regulations 2017, I conclude that this site does not contain evidence of areas of significance and high biodiversity value, including European Protected Species (EPS) and any impact of the proposal on the River Hiz. I assess that no further surveys would be needed to confirm this absence.

Therefore, in my professional opinion the Preliminary Ecological Appraisal Report and the recommendations in this Biodiversity Net Gain Report /MoRPh assessment and accompanying Excel spread sheets, should satisfy the requirements in respect of ecology and biodiversity enhancement. The application can be considered on this basis and that no further environment surveys are necessary to determine the application to North Herts. District Council.

REFERENCES

Location Plan

MoRPh Habitat Plan

Ecological Appraisal Plan

Coyne Environmental Ltd PEA Report

BNG Excel Sheet

MoRPh Excel Sheet

Wildlife & Countryside Act 1981

Environment Act 2021





LEGEND

- Survey Points - Morph5 = 50m
(1-5 = Control),
6-10 (Baseline)
- Redline
- ▨ Riparian Zone
- River

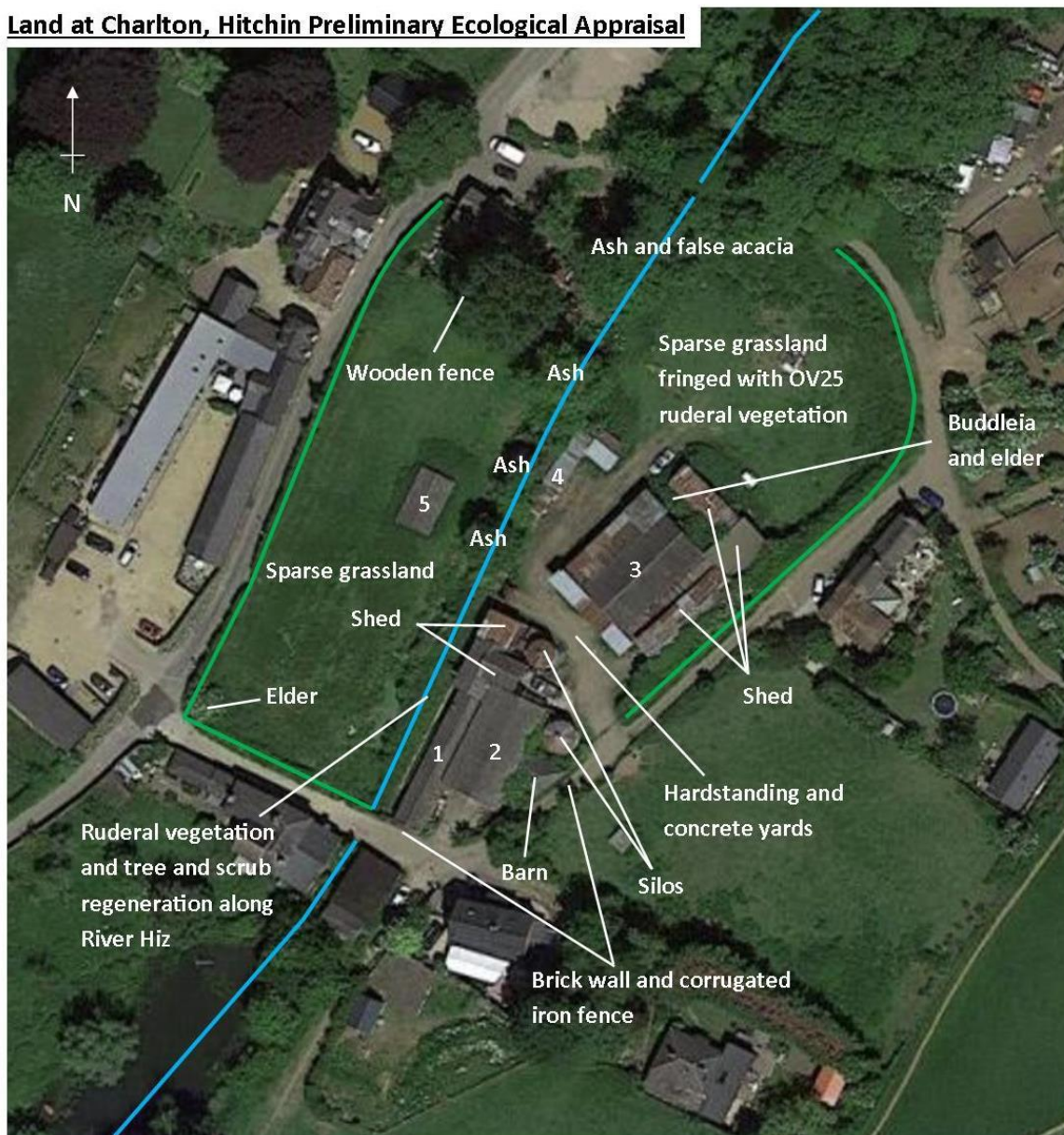
Reproduced with Google
Earth

Scale - See plan

Drawn by SD



Land at Charlton, Hitchin Preliminary Ecological Appraisal



Key

- 4 Buildings subject to survey (as described in text)
- River Hiz
- Hedgerow