Biodiversity Net Gain Assessment

Land at Cow Ark

Clitheroe

August 2024

Prepared for: Ribble Rivers Trust Ltd

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This document is to be read in conjunction with:

- **The Statutory Biodiversity Metric Calculation Tool – Cow Ark excel tool**
- **Habitat Condition Sheets – Cow Ark excel sheet**
- **Preliminary Ecological Appraisal – Cow Ark. Verity Webster Ltd. August 2024.**

EXECUTIVE SUMMARY

- On 20th August 2024 an Ecological Survey to inform the Biodiversity Net Gain Assessment was undertaken on land at Cow Ark, Clitheroe in respect of a wetland creation project.
- The site supports modified grassland with tall herb vegetation, bounded by trees lines and hedgerow and boarding woodland.
- The development will result in the loss of 0.039ha of modified grassland as a result of the creation of waterbodies, wetland and woodland. In addition, 0.29km of native hedgerow will be planted and 0.09km of ditch.
- The Statutory Biodiversity Metric shows that following development there will be an overall net gain in biodiversity. The proposals will result in a 14.62% net gain in Area/Habitat Units and 25.87% net gain in Hedgerow Units. Watercourse units are not calculated as there is no watercourse on site or within 10m of the site at baseline.

1. Introduction

1.1 Application Site

1.1.1 This report details a Biodiversity Net Gain Assessment of land at Cow Ark, Clitheroe, BB7 3DF. Ordnance Survey grid reference (centre of site): SD67274519.

1.1.2 Ribble River Trust Ltd commissioned Verity Webster Ltd to undertake a Biodiversity Net Gain Assessment in order to inform the proposals for the site.

1.2 Objectives

1.2.1 The objectives of the Biodiversity Net Gain Assessment are to determine:

- Potential for enhancement or compensation (offsetting) on the site for protected species, habitats of conservation interest and overall biodiversity with the aim of achieving 10% net gain in biodiversity.

1.3 Proposals

1.3.1 The proposals comprise construction of waterbodies, wetland, woodland and hedgerow to improve the functionality of Cow Ark Brook.

1.4 Ecologist

1.4.1 The Ecological Assessment was undertaken by Verity Webster. Verity is a Chartered Ecologist and a full member of the Chartered Institute of Ecology and Environmental Management.

1.4.2 Verity has worked as an ecological consultant since 2007. She has undertaken Ecological Assessments and protected species surveys for a large variety of projects and schemes, producing the required impact assessment and subsequent mitigation schemes and method statements when necessary.

2. Site Location and Description

2.1 Site Location

2.1.1 The survey site is located in rural Cow Ark, approximately 2km southeast of Whitewell and 3km northwest of Bashall Eaves, Clitheroe.

2.1.2 The site is surrounded by farmland, a mixture of pasture and arable land divided by a matrix of tree lines hedgerow and plots of woodland.

2.1.3 Linear strips of woodland follow the waterways that thread through the landscape. Cow Ark Brook Runs northwest to southwest approximately 20m from the northeast boundary of the site, whilst mill brook Runs east to southwest approximately 325m to the south.

2.1.4 The site is in an area with high suitability for protected species in the locality. See Figures 1 and 2.

Figure 1: Ordnance survey map showing the location of the proposed development site.

Figure 2: Aerial image showing the proposed development site and immediate surroundings

2.2 Site Description

2.2.1 The survey site encompasses a roughly rectangular area of land. A lane runs long the northeast boundary. There are mature trees and a short section of mixed native hedgerow that boarder the lane. Cow Ark Brook Wood and Adjoining Grasslands BHS runs along the northwest boundary. A steep slope runs from approximately 5m into this woodland down to Cow Ark Brook which lies approximately 20m from the survey site boundary. Woodland also extends along the southwest boundary. The southern section of the southeast boundary is continuous with grassland to the southeast. The northern section of the southeast boundary is bounded by mature trees that run along a dry ditch. There is also a line of trees and shrubs, following a partial ditch, dividing the northern section of the site from the southern section of the site.

2.2.2 The open fields comprise modified grassland with patches of tall forb vegetation and some areas of the grassland that are dominated by rush.

2.2.3 See UK Habitat Classification Plan, Figure 3.

The Habitats

Modified grassland

2.2.4 The grassland (TN1) is dominated by Yorkshire fog (*Holcus lanatus*) and rye grass (*Lolium perenne*), which vary is dominance across the site. Tor grass (*Brachypodium pinetum*) is also abundant to the southwest. Herbs were rare and comprise broad-leaved dock (*Rumex obtusifolius*), creeping buttercup (*Ranunculus repens*), silverweed (*Potentilla anserina*) and very occasional spear thistle (*Cirsium vulgare*). There are occasional stands of soft rush (*Juncus effusus*) indicating wetter ground. These stands of rush are particularly dense in patches along the northwest boundary (TN2) where there are depressions in the ground indicating water run-off or a higher water table. Toad rush (*Juncus bufonis*) is also present here in patches. Soft rush is also more dominant around the boundaries of the field, and along the ditch that spans across the centre of the site dividing the northern section from the southern section. The central ditch (TN3) supports dense soft rush, common nettle and greater bird's-foot trefoil (*Lotus pedumculatus*.

2.2.5 This stand meets the criteria under the UK Habitat Classification of Modified grassland as it supports under 9 species per m^2, is dominated by palatable grasses including Yorkshire fog and rye grass, and because the grass cover is over 75%.

Tall forb vegetation

2.2.6 Tall forb vegetation (TN4) is present in patches where there is nutrient enrichment and around the site boundaries. This vegetation is still classified under g4, modified grassland. The forbs are composed of common nettle (*Urtica dioica*), soft rush and Dock.

Native hedgeroe

2.2.7 The native hedgerow (TN5) spans approximately 63m along the northern length of the northeast boundary. This is composed of a mix of hawthorn (*Crategus monogyna*), hazel (*Corylus avellana*), guelder rose (*Viburnum opulus*) and alder (*Alnus glutinosa*) with dog rose (*Rosa canina*) and bramble (*Rubus fruticosus* agg.).

Tree Lines

2.2.8 The tree line along the northeast boundary adjacent to the road (TN6) is composed of mature ash (*Fraxinus excelsior*) and horse chestnut (*Aesculus hippocastanum*). The southeast boundary (TN7), adjacent to the ditch comprises a line of mature alder (*Alnus glutinosa*) with occasional hawthorn.

2.2.9 Trees across the centre of the site (TN8) comprise alder, oak (*Quercus petraea*), birch (*Betula pendula*) and hawthorn.

2.2.10 Along the southwest boundary (TN9) the trees are mainly mature oak and this boundary is continuous with the woodland adjacent to the northwest of the site.

2.2.11 All the tree lines are considered ecologically valuable as connective habitat in the wider landscape, creating habitat corridors, but also because the mature trees provide ecological functionality for a range of wildlife alone.

3. Legislation

3.1 Planning Policy and Legislation

3.1.1 In England, biodiversity net gain is required under a statutory framework introduced by Schedule 7A of the Town and Country Planning Act 1990 (inserted by the Environment Act 2021). This is referred to as biodiversity net gain in Planning Practice Guidance to distinguish it from other or more general biodiversity gains.

3.1.2 Under the statutory framework for biodiversity net gain, every grant of planning permission is deemed to have been granted subject to a general biodiversity gain condition to secure the biodiversity gain objective. This objective is to deliver at least a 10% increase in relation to the pre-development biodiversity value of the development granted permission. This increase can be achieved through onsite biodiversity gains, registered offsite biodiversity gains or statutory biodiversity credits (Gov.Uk Biodiversity Net Gain, 2023).

3.1.3 Under the NERC Act 2006, planning authorities are obliged to make sure that they have all the information on the presence of protected species on site before they make a decision on the planning permission.

3.1.4 The National Planning Policy Framework (NPPF, 2021) encourages Local Planning Authorities to conserve and enhance biodiversity.

Chapter 15, Para 180 of NPPF states: *''The planning system should contribute to and enhance the natural and local environment by:*

a) ***protecting and enhancing valued landscapes, sites of biodiversity*** *or geological value and soils….*

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***".

Para 181 states: "*Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.''*

Para 185 identifies that plans should do the following to protect and enhance biodiversity and geodiversity:

a) "***Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and***

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

Para 186 states that "*when determining planning applications, local authorities should apply the following principles:*

a) ***if significant harm to biodiversity from a development cannot be avoided…,adequately mitigated, or, as a last resort compensated for, then planning permission should be refused''***

3.1.5 The local planning authority has a responsibility, therefore, to obtain all information regarding the potential for protected species on a site prior to making a decision about a proposal.

4. Methodology

4.1 Biodiversity Net Gain Assessment

4.1.1 Biodiversity Offsetting was developed by Defra. The pilots of the study were first published in 2012.

4.1.2 The Biodiversity Calculator is a system created by Defra to quantify change in biodiversity of a site in biodiversity units.

4.1.3 *The Biodiversity Offsetting Pilots: Guidance for Developers* (Defra, 2012) details the original metric for calculating biodiversity loss or gain as a result of development proposal.

4.1.4 *The Statutory Biodiversity Metric* (Natural England, 2023) and the associated guidance was used to assess the habitat condition and calculate potential change in biodiversity within the survey site.

4.1.5 The calculation of change in biodiversity units has been based upon areas provided by Ribble Rivers Trust Ltd in Dwg: Cow Ark Wetlands, 8/04/2024

5. Biodiversity Net Gain Assessment

5.1 Baseline condition and potential impacts on Biodiversity

Offsetting and the Biodiversity Calculator

5.1.1 The baseline condition of the habitat and the predicted change as a result of the proposals has been assessed with the use of the Biodiversity Offset principals.

5.1.2 Biodiversity offsetting principal: What is it?

> "Using the biodiversity offsetting approach means than an offset provider delivers quantifiable amount of biodiversity benefit to offset the loss of the biodiversity resulting from the development. The losses and gains are measured in the same way, even if the habitats concerned are different. In the biodiversity offsetting pilot, the measurement is done in **'biodiversity units'**, which are the product of the **size of an area**, **the distinctiveness** and **the condition** of the habitat it comprises. The assessment of biodiversity units lost and gained can be calculated" (Defra, 2012).

5.1.3 The Biodiversity Calculator is a system created by Defra to quantify change in biodiversity of a site in biodiversity units. The current calculator is known as Statutory Biodiversity Metric (Gov.UK Statutory Biodiversity Metric Tool, 2023).

5.1.4 This quantitative assessment will be considered in relation to the other qualitative ecological functions of the site in order to assess the impact (i.e. functionality for protected species), but is a useful tool to show predicted or potential loss of habitat, change in condition and enhancement (net gain).

Habitat Types

5.1.5 There are five baseline habitat types on site:

- Modified grassland g4, scattered rushes (14)
- Modified grassland g4, rushes dominant (15)
- Tall forb vegetation: Modified grassland g4 with secondary code 16 (tall forb).
- Native hedgerow h21
- Broadleaved tree line w1, ecological valuable line of trees (34)

5.1.6 Area habitat, linear habitat and watercourse habitat are treated separately in the Statutory metric.

Modified grassland (TN1)

Modified grassland dominated by rushes (TN2)

Dense soft rush (TN3)

Modified grassland

Tal forb (Tn4)

The northwest boundary with Cow Ark Wood

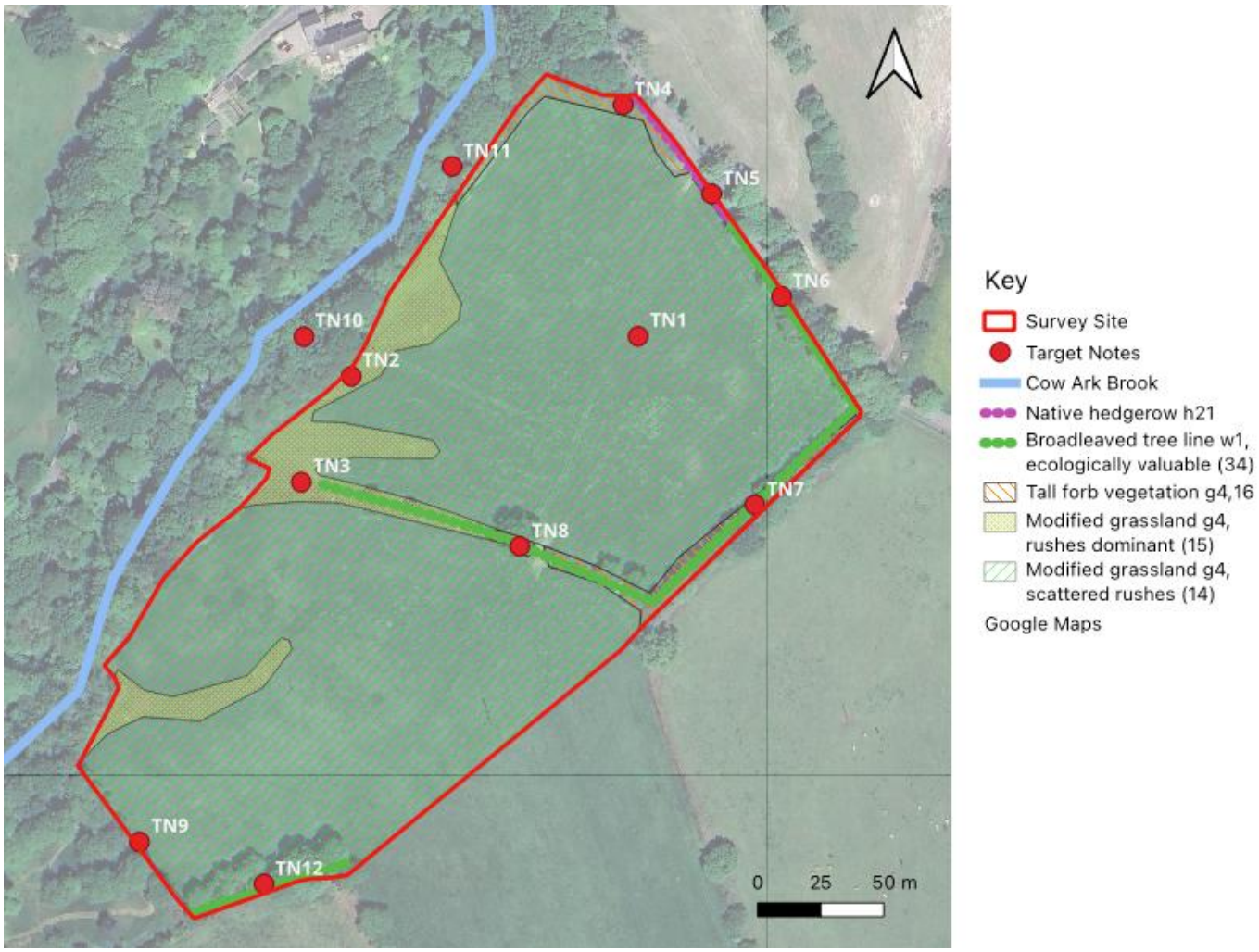
Tree line (TN8)

Tree line (TN7)

Tree line (TN6)

Native hedgerow (TN5)

Figure 3: The Survey Site – UK Habitat Classification Plan



Target Notes

TN1 – Modified grassland dominated by rye grass with few herbs.
TN2 – Modified grassland dominated by rushes, mainly soft rush.
TN3 – Ditch dominated by rush, nettle and greater bird's-foot trefoil
TN4 – Tall forb including dock and common nettle.
TN5 – Native hedgerow with hawthorn, hazel, bramble and guelder rose.
TN6 – Tree line with mature ash and horse chestnut.
TN7 – Tree line of mature alder along a dry ditch.
TN8 – Sparse tree line with oak, birch, alder and hawthorn.
TN9 – Oak trees that are continuous with Cow Ark Wood.
TN10 – Cow Ark Wood and Associated Grasslands Biological Heritage Site and Ancient Woodland.
TN11 – Cow Ark Wood that has understorey of Rhododendron and laurel. Scots pine is also present.
TN12 – Tree line comprising mainly mature oak.

Distinctiveness of the Habitat

5.1.7 Under the Biodiversity Calculator principals each habitat is categorised into a distinctiveness band.

5.1.8 The distinctiveness of the habitat is based upon parameters such as species richness, diversity, rarity (at local, regional, national and international scales) and the degree to which a habitat supports species rarely found in other habitats (Treweek *et al*, 2010)

- **Modified Grassland is considered to have LOW distinctiveness** as the habitat is common, widespread and of low conservation value.
- **Native hedgerows are considered to have LOW distinctiveness** as a habitat as they are, generally, species poor.
- **Lines of trees that is ecologically valuable are considered to have MEDIUM distinctiveness**

Habitat Condition Assessment

5.1.9 The condition the habitat on site can be categorised as low, moderate or good and is based upon the Habitat Condition Assessment Sheets within the Statutory Biodiversity Metric. See excel condition assessment. Habitat parcel references relate to the Target Note numbers on the UK Habitat plan.

- The Modified Grassland, including that with (TN2) and without dense rush (TN1) and inclusive of tall forb habitat (TN4) is considered to be of poor condition. This is because it is species poor. The majority of the grassland (TN1) is also of uniform height.

- The ecologically valuable line of trees TN6, TN8 and TN12 are considered to be of moderate condition.

- The ecologically valuable line of trees at TN7 is considered to be of good condition because the canopy is fairly continuous.

5.2 Achieving Biodiversity Net Gain

5.2.1 The EU is committed to halt the loss of biodiversity and the degradation of ecosystem services by 2020. The Biodiversity Strategy sets out 6 targets and 20 specific actions geared towards this overall objective. Action 7 is to ensure no net loss of biodiversity and ecosystem services.

5.2.2 The 'mitigation hierarchy' is included with current planning policy, aiming to halt the loss of biodiversity. The National Planning Policy Framework, consolidating planning guidance states that '*if significant harm cannot be avoided, adequately mitigated, or as a last resort, compensated for, planning permission should be refused*'.

5.2.3 Defra's biodiversity offsetting pilot was developed to address this requirement and ensure development, economic growth and biodiversity conservation are compatible (British Ecological Society, 2013).

5.2.4 Biodiversity net gain, as a good practice principal, has been developed by Ciria, CIEEM and IEMA (BNG, 2016). At the very least developments should aim for no net loss as part of the proposals.

5.2.5 The Statutory Biodiversity Metric shows the distinctiveness and condition of the habitats on site at baseline (prior to development).

5.2.6 The Headline Results in the Statutory Biodiversity Metric show the overall net change in Biodiversity Units as a result of the development and creation of new habitat.

Habitat lost as a result of wetland creation

5.2.7 The proposals to create the wetland habitat and woodland will result in the loss of 0.039ha of modified grassland.

Area habitats to be created

5.2.8 The following habitats are to be created on site:

- **0.2476ha of ponds**
- **0.0325ha of wetland overflow habitat, which is included as modified grassland**
- **0.0725ha of other woodland, broadleaved, which includes approximately 60m2 of wet woodland.**

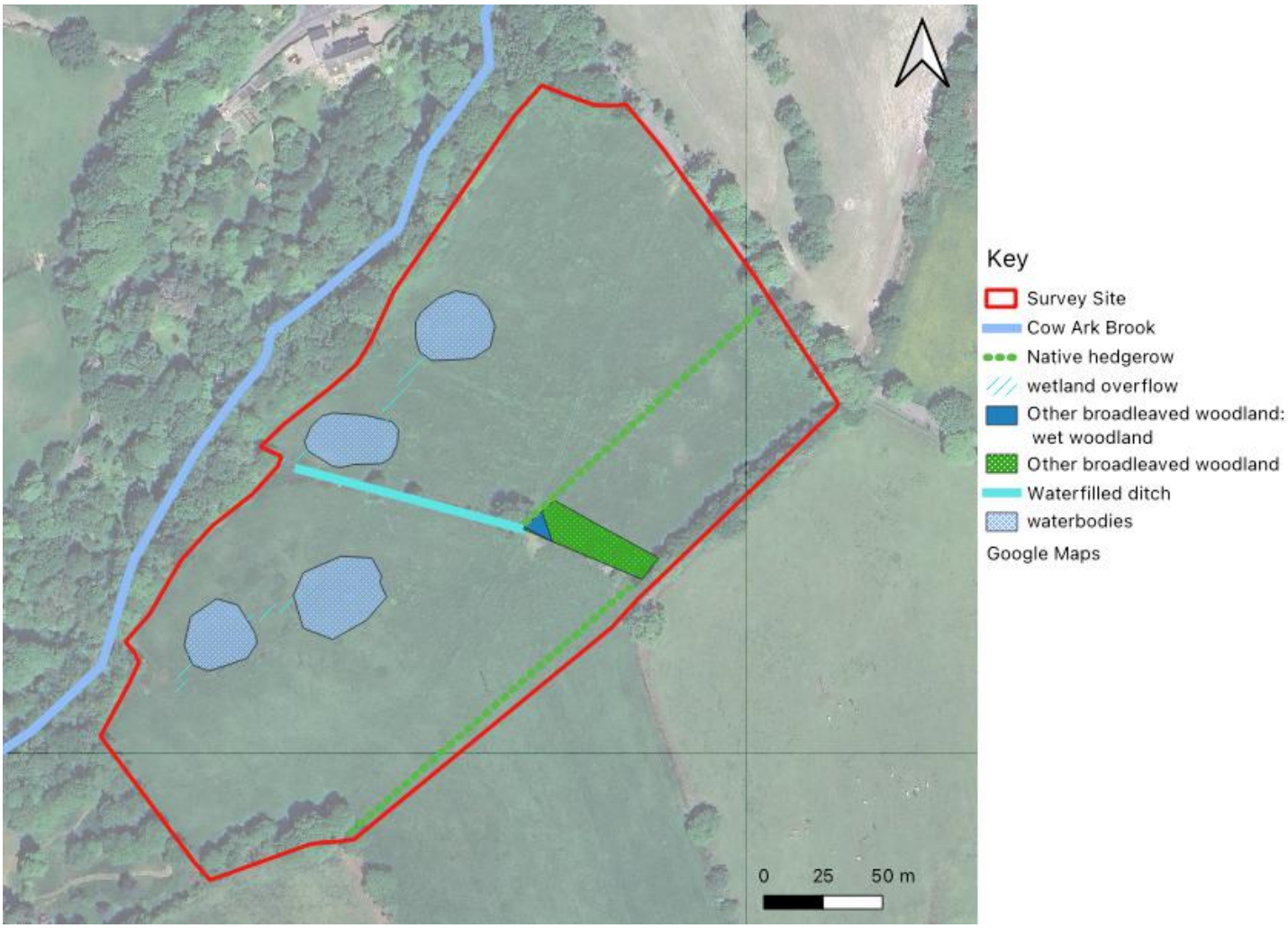
Linear habitat and watercourse to be created

5.2.9 The following habitats are to be created on site:

- **0.29km of native species hedgerow.**
- **0.09km of ditch**

5.2.10 The native species-rich hedgerows will be composed of native species such as hawthorn (*Crataegus monogyna*) hazel (*Corylus avellana*), alder (*Alnus glutinosa*), willow (*Salix alba*), rowan (*Sorbus aucuparia*) and guelder rose (*Viburnum opulus*).

Figure 4: Proposed Habitat Creation



5.3 Percentage Change in Biodiversity Units

5.3.1 The Statutory Biodiversity Metric shows there will be an 14.62% increase in area/habitat units and a 25.87% increase in linear hedgerow units. There is no depicted increase in watercourse units as there are no watercourses within 10m of the development site at baseline.

5.4 Biodiversity Net Gain Conclusion

5.4.1 If the proposals are implemented it is evident that there will be an overall net gain in biodiversity at Cow Ark which is considered likely to be of benefit to the local flora and fauna at a site level and at a landscape level given the increased heterogeneity in habitat and connectivity to natural habitats in the wider area.

5.4.2 The new habitats will take between 1-20 years to establish, however, and so it will be necessary for the areas to be appropriately managed during this time.

6. References

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