



Habitat Management and Monitoring Plan

Site Name:	Wild Burnt Wood, Brierley Common, Great, Houghton, Barnsley
Date:	07/11/2024
Version:	2.0



Author:

Brindle & Green

Client:

WILD CAPITAL

Contents

1. Project Background..... 3

Summary of Management Plan 3

Site Boundary Plan PB-F01..... 4

Site Context Plan PB-F02..... 5

Roles and Responsibilities 7

Land Use Summary..... 8

Site Context Photos PB-F03..... 9

Site Baseline, Environmental Information and Associated Impacts Checklist PB-T01 10

Baseline and Environmental Information 12

Designated Sites (BI-T01) 12

Protected and Notable Species (BI-T02) 13

Biological Records Plan - Sites and Species (BI-F01)..... 14

Baseline Habitats Survey 15

Habitat Degradation 15

Baseline Habitat Descriptions and Condition..... 16

Baseline Habitats Plan (BI-F02) 18

Baseline Habitats Photos (BI-F04) 19

Geology and Topography 22

Geology and Topography Plan (EI-F02)..... 22

Agricultural Land Status 23

Agricultural Land Status Plan (EI-F03) 23

Soils and Substrates (EI-T02) 24

Soils and Substrate Plan (EI-F04) 24

2. Planned Management Activities 25

Principles Informed by Design Stage 25

Habitat and Condition Targets PM-T01 26

Habitat Retention..... 28

Creation, Enhancement and Management Targets and Prescriptions 29

Ditch 30

Creation, Enhancement and Management Summary (DI-T01) 30

Ditch 31

Creation, Enhancement and Management Detailed Methods (DI-T02) 31

Ditch Species Lists (DI-T03) 32

Grassland (Medium, High, and Very High Distinctiveness) 34

Creation, Enhancement and Management Summary (GH-T01)..... 34

Grassland (Medium, High, and Very High Distinctiveness) 35

Creation, Enhancement and Management Detailed Methods (GH-T02) 35

Grassland (Medium, High, and Very High Distinctiveness) Species Lists (GH-T03) 37

What Does Success Look Like? (GH-F01)..... 38

Hedgerow 39

Creation, Enhancement and Management Summary (HD-T01)..... 39

Creation, Enhancement and Management Methods (HD-T02) 41

Hedgerow Species Lists (HD-T03) 42

Scrub 43

Creation, Enhancement and Management Summary (SC-T01) 43

Scrub 44

Creation, Enhancement and Management Detailed Methods (SC-T02)..... 44

Scrub Species Lists (SC-T03) 45

Woodland 46

Creation, Enhancement and Management Summary (WO-T01) 46

Woodland 49

Enhancement and Management Detailed Methods (WO-T02) 49

Woodland Species Lists (WO-T03)..... 50

Habitat Creation and Management – Risk Register and Remedial Measures PM-T02 51

3. Monitoring Schedule..... 55

Monitoring Strategy..... 55

Monitoring Methods and Intervals MS-T01 55

Monitoring Reports 57

Adaptive Management..... 58

Version Control

The version control is used for updates to the content. Record the initial version and further version control details in this table each time the management plan is altered throughout the management and monitoring period.

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Document Details

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Project site: Wild Burnt Wood, Brierley Common, Great Houghton, Barnsley, S72 9HB

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1. Project Background

Summarise the key aspects of your management plan in this section. Table PB-B01 can be extended to suit the specific needs of individual projects.

Site Overview PB-B01	
Project type	Habitat Bank
Development Name and Address	Wild Burnt Wood Brierley Common Great Houghton Barnsley S72 9HB
BNG Project Name and Address	Wild Burnt Wood Brierley Common Great Houghton Barnsley S72 9HB
Author Organisation	Brindle & Green Ltd.
Landowner	Wild Capital
Land Manager	Jack Potter
Responsible person/organisation for creating or enhancing the habitat	Wild Capital
Period covered by this management plan	Autumn 2024 – Autumn 2054
Planning authority	Barnsley
Planning reference (if applicable)	N/A
BNG register reference (if applicable)	
Central OS grid reference	Grid reference: SE 42643 09248
Metric revision/title	Statutory biodiversity metric, from January 2024
Are any Irreplaceable Habitats present onsite	Yes: ☐ No: ☒

Summary of Management Plan

Habitats to be Retained, Created and Enhanced PB-B02

The site was dominated by an arable field which supported a cereal crop – this habitat will be lost to facilitate the creation of other neutral grassland (1ha good condition) and mixed native scrub (3.04ha good condition). Soil testing has been carried out to confirm that good condition other neutral grassland creation is achievable at the site.

A band of woodland (2.08ha) runs centrally through the site, extending to the north-eastern site boundary – this area is to be enhanced from moderate to good condition. A second parcel of woodland was located in the south-eastern corner of the site (0.11ha) which will be fully retained.

A non-native ornamental hedgerow bounds the site to the north (0.27km) which will be fully retained. A native hedgerow (inc. trees) which is associated with a ditch (0.24km) bounds the site to the west and will be enhanced from poor to moderate condition. A native hedgerow (0.12km) is located in the south-east corner of the site, which will be enhanced to a species rich hedgerow with trees, achieving good condition.

Timescales for Actions PB-B03

2024 – 2054

Monitoring will happen annually for first 5 years post implementation, and then at regular intervals. Intervals will be discussed in this document, with different habitats requiring different monitoring intervals.

Monitoring Requirements PB-B04

Monitoring will commence annually following habitat establishment, before moving to monitoring every 5 years. Monitoring will be carried out on behalf of the client / responsible body.

Required Consents and Licences PB-B05

Afforestation screening opinion

Funding PB-B06

Wild Capital set aside an independently managed endowment to secure the capital required to deliver the scheme for its term.

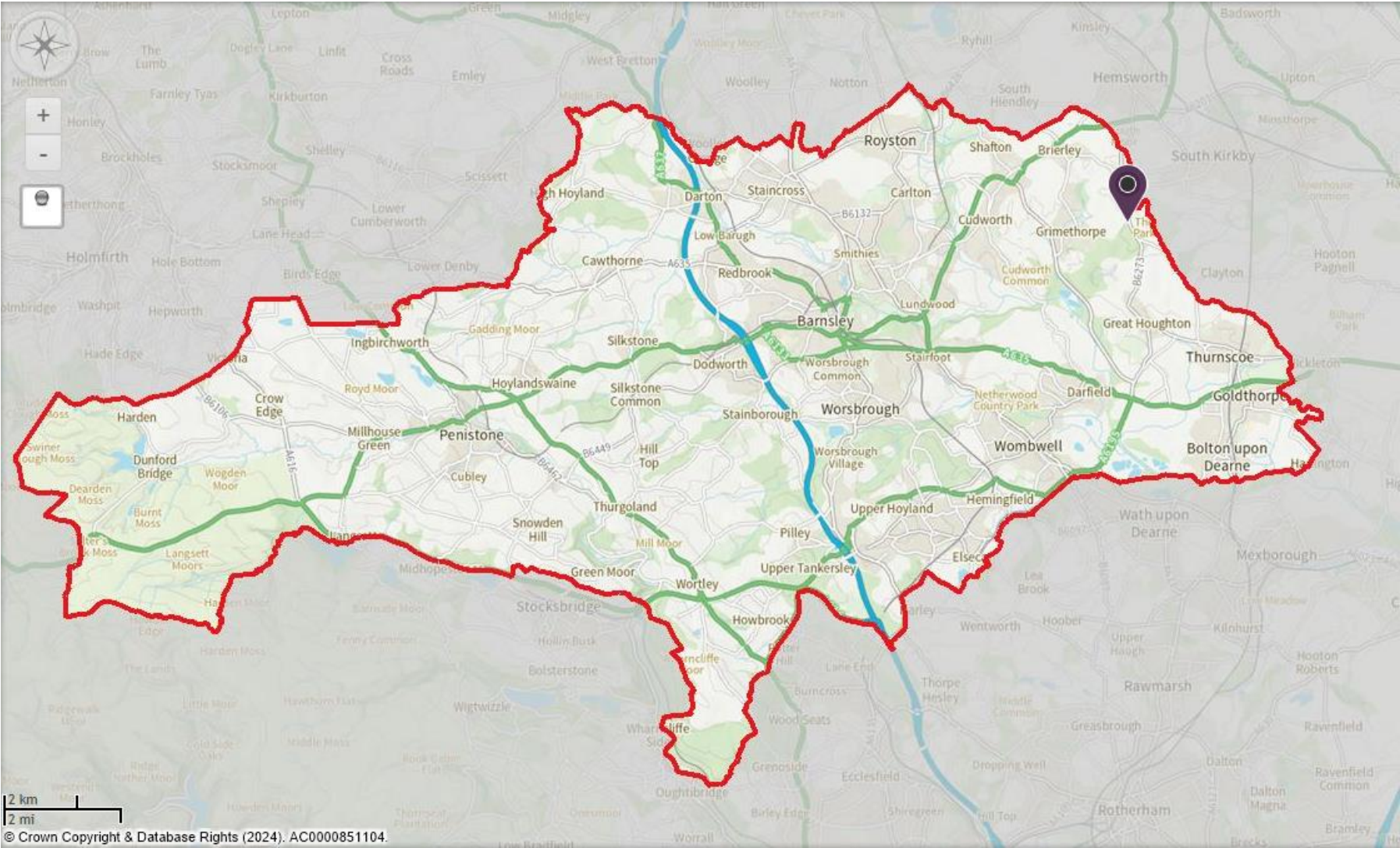
Legal Agreement PB-B07

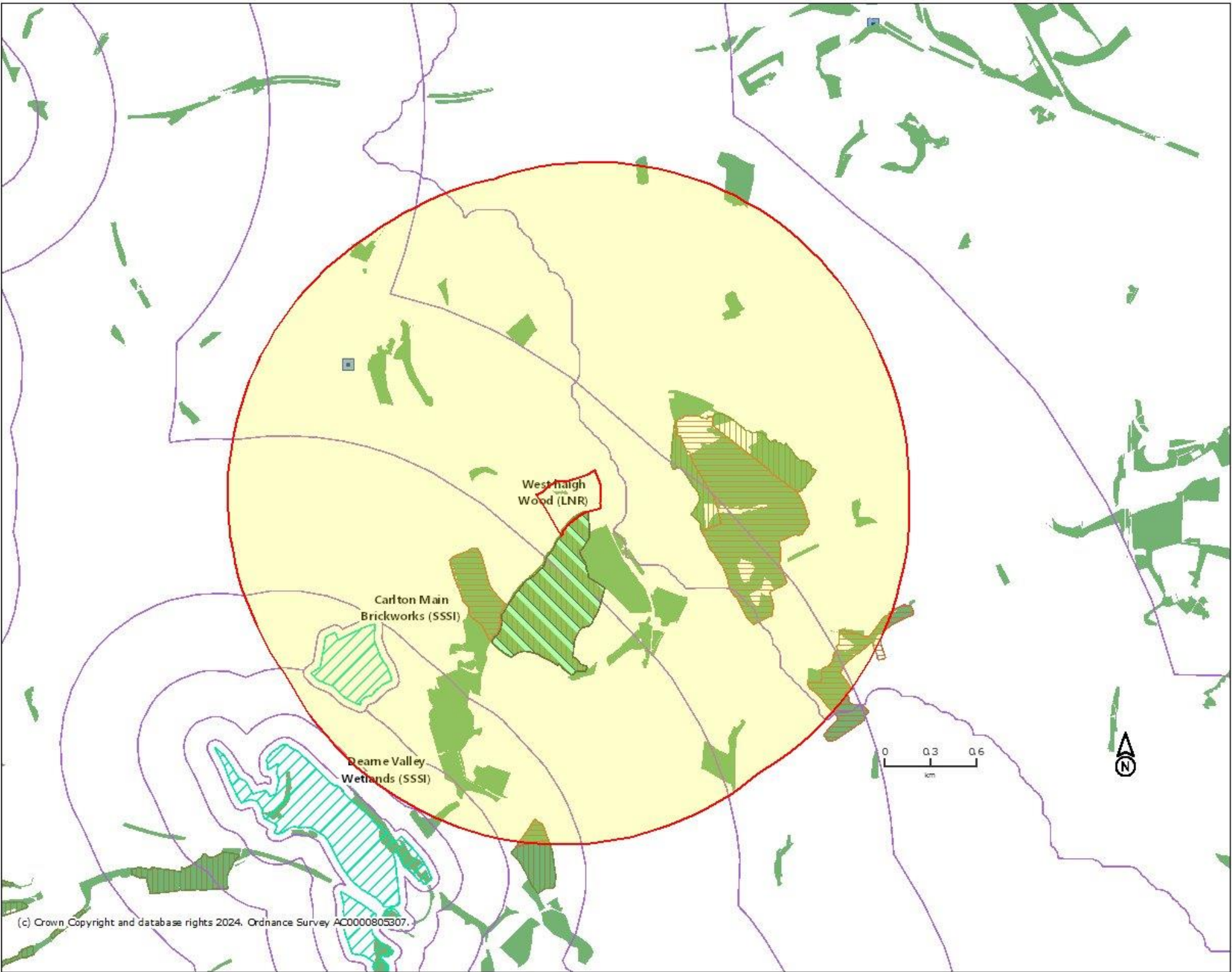
This HMMP will be secured through a legal agreement with a Responsible Body.

Site Boundary Plan PB-F01



Site Context Plan PB-F02





Legend

- Local Nature Reserves (England)
- National Nature Reserves (England)
- Ramsar Sites (England)
- Proposed Ramsar Sites (England)
- Sites of Special Scientific Interest (England)
- SSSI Impact Risk Zones - for LPAs to determine likely impacts on terrestrial SSSIs and when to consult Natural England
- Special Areas of Conservation (England)
- Special Protection Areas (England)

Ancient Woodland (England)

- Ancient and Semi-Natural Woodland
- Ancient Replanted Woodland
- Priority Habitat Inventory - Deciduous Woodland (England)

Granted European Protected Species Applications (England)

- Amphibian
- Bat
- Cetacean
- Invertebrate
- Other Mammal
- Plant
- Reptile

Projection = OSGB36
xmin = 437900
ymin = 407000
xmax = 448000
ymax = 411600
Map produced by MAGiC on 14 October, 2024.
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Roles and Responsibilities

Provide details of the responsible persons and organisation(s) for delivering this management plan.

Ecologist or Other Professional Responsible for HMMP PB-B09				
Name or Initials		An agent working on behalf of Wild Capital		
Organisation		Brindle and Green Ltd.		
Responsibility	Start Date:	2024	End Date:	2024
Brindle and Green Ltd. are responsible for overseeing the preparation of this HMMP and for providing ecological input and advise to Wild Capital.				
Statement of Competency				
All work is overseen and signed off by Lucinda Sweet PhD, MCIEEM, Natural England Bat Licence Class 2 (2019-39122-CLSCLS), Great Crested Newt licence (2016-22852-CLS-CLS), Director. Lucie has worked in consultancy for over ten years and holds MCIEEM membership.				

Landowner or Land Manager PB-B10				
Name or Initials				
Organisation		Wild Capital		
Responsibility	Start Date:	2024	End Date:	2054
At the time of writing (October 2024), Wild Capital is responsible for the implementation of this HMMP, including the delivery of the habitat creation, enhancement and management prescriptions set out within this document. Wild Capital will also be responsible for ensuring that ongoing monitoring is undertaken and reported back to the responsible body, according to the timescales outlined in this document.				
Statement of Competency				

Wild Capital is a leading developer of Biodiversity Net Gain (BNG) and Nutrient Neutrality (NN) credits, combining financing with ecological delivery to enhance regeneration of UK biodiversity, at scale. They have expertise in large-scale development, environmental restoration, planning and finance.

The team provide the complete range of biodiversity net gain services, in order to make the process simple, reduce risk, cost and secure the requirement for long term management in order to generate effective biodiversity habitat creation and enhancement across the UK. Important to this is their expertise in establishing habitat across the UK, to provide a range of habitat units across the UK.

Management Organisation(s) Responsible for Implementing the HMMP PB-B11				
Name or Initials				
Organisation		Wild Capital		
Responsibility	Start Date:	2024	End Date:	2054
Responsible for implementing the management onsite in accordance with the measures set out in this management plan. This will include undertaking management measures including traditional grassland, hedgerow, scrub and woodland practices.				
Statement of Competency				
Responsible management team will require appropriate certification, licenses and equipment to undertake the management required.				

LPA or Responsible Body for Reviewing HMMP PB-B12				
Name or Initials		Responsible Body		
Organisation		TBC		
Responsibility	Start Date:	2024	End Date:	2054
This HMMP will be secured through a legal agreement between Wild Capital and a responsible body, who will be responsible for assessing and monitoring reports, as well as enforcement when targets are not achieved.				

Land Use Summary

Overview of Baseline Site Use PB-B13

The site is approximately 9.3ha in extent and is located to the west of the B6273, approximately 2.1km north of the village of Great Houghton, in the Metropolitan Borough of Barnsley in South Yorkshire (Figure 1). The site supported an arable field, with a parcel of woodland running centrally though the site, extending to the north-eastern site boundary. The northern portion of this parcel of woodland is designated within the Priority Habitat Inventory as an area of Deciduous Woodland. The surrounding landscape to the north is dominated by agricultural farmland, supporting a network of mature hedgerows and treelines. The southern boundary of the site abuts West Haigh Wood, an area of ancient and semi-natural woodland, designated as a Local Nature Reserve (LNR), covering 38ha of land to the south. Howell Wood Country Park, an area of ancient, replanted woodland is located 0.7km to the east, covering 53.8ha.

Further details on the habitats within the site:

- Cropland – Cereal Crop
Cereal crop field dominating the site. The field supported a cereal crop, at a height of 20-30cm at the time of survey. The field has localised areas of bare ground from crop failure. However, the field is in regular arable management and assessed as such. The metric auto-populates the condition for this habitat as N/A.
- Woodland and forest – Other woodland; mixed
Considered to qualify as UKHab code w1h5: Other woodland - mixed - mainly broadleaved. The woodland was a mixture of broadleaved and coniferous trees in which broadleaved species make up 50-80% of the tree cover. This woodland habitat scored 'Moderate' condition assessment as it scored an average of 27-28 points across the sampling locations. The threshold for 'Good' condition is 32. *Rhododendron* sp. was recorded within the woodland, as well as Himalayan balsam (*Impatiens glandulifera*) recorded in the southern extent of the woodland parcel.
- Woodland and forest – Other woodland; mixed
Smaller parcel of woodland in the south-eastern corner of the boundary. The area was restricted in size and scores a condition score of 24, below the threshold for achieving 'Moderate' condition, therefore considered to score 'Poor' condition. This area will be retained under the scheme.
- H1: Non-native and ornamental hedgerow
Hedgerow along northern boundary, composed entirely of Holly, however multiple species present with not all considered native specimens. The hedgerow was regularly flailed into a tight box shape and therefore on-going management should seek a more relaxed approach to encourage nesting birds, and small mammals. The metric auto populates the condition for this habitat type.
- H2: Native hedgerow with trees - associated with bank or ditch

Hedgerow along the western boundary. Mature oak trees supporting valuable features for roosting bats and nesting birds. Fails criteria B1, C1, C2, D2, E1 and E2.

- H3: Native hedgerow
Hedgerow along the northern fringe of Woodland Parcel 2 in the south-east corner of the boundary. The hedgerow was managed to harsh box shape and eligible for enhancement through appropriate management, and management of adjacent habitats. Fails criteria C1, C2, D2.
- Ditches (D1)
D1 runs along the southern boundary of Woodland Parcel 1 in the northern extent of the site. Fails criteria A, B, G, H.

Overview of Proposed Site Use PB-B14

The site is currently arable, annually cultivated, which at the time of the baseline assessment in April 2024, was supporting a young cereal crop. The field is contained within mature boundaries, and at present is not publicly accessible.

Proposed habitats within the site include neutral grassland, mixed native scrub and enhanced woodland. The areas will remain out of the public domain and will be managed minimally to ensure natural growth and regeneration.

The proposed neutral grassland will be managed through mechanical practices comprising single annual hay cuts, rather than grazing, however, should the grassland be considered to benefit from a controlled grazing regime once well establish, this should be considered at the appropriate point.

The above enhancements and habitat creation prescriptions will increase the ecological value of the site, providing biodiversity gains and new opportunities for local wildlife. The prescriptions outlined in this document will increase structural diversity and ecological connectivity across to the and to offsite local designated sites.

Site Context Photos PB-F03

Photograph 1: Woodland Parcel 1 running centrally through the site, extending to the north-western site boundary. The woodland scores ‘Moderate’ condition.

Photograph 2: Northern portion of the arable field supporting cereal crop. Woodland Parcel 1 can be seen in the background of the image, down the slope.



Site Baseline, Environmental Information and Associated Impacts Checklist PB-T01

Consider the Baseline and Environmental Information listed below. These are likely to be appropriate factors informing your proposals and project design. They can provide the reviewer with important contextual information for the management prescriptions provided later in this document. Use your professional judgement to determine which factors are relevant to your specific project.

Please use the check box to indicate which are included in your plan. For any not included, provide brief reasons why the factor is not relevant to your project using your professional judgement. Where this information is provided elsewhere, you can reference existing reports and, or, plans that have informed your decisions. For the templates for each heading see pages 3-20 of the Companion Document.

Baseline and Environmental Information	Prompts for when these may be relevant. This is not an exhaustive list. Use your professional judgement to determine which are required for your HMMP	Check box if included	Document Reference or Reason if not included
Statutory / Non-statutory Designated Sites	The nature and scale of the proposed habitat creation and enhancement at the site is not considered to have any negative direct or indirect impact on local designated sites.	☒	BG24.217 June 2024 ‘BNG Offsetting and Habitat Bank Opportunity Assessment Report’:
Protected and Notable Species	Data from the local records centre was requested	☒	BG24.217 June 2024 ‘BNG Offsetting and Habitat Bank Opportunity Assessment Report’
Invasive Non-Native Species (INNS)	At present, the woodland supports <i>Rhododendron</i> species and Himalayan balsam in the southern extent.	☒	BG24.217 June 2024 ‘BNG Offsetting and Habitat Bank Opportunity Assessment Report’
Biological Records Plan - Sites and Species	The presence of local designated sites is not considered to form a constraint to the proposals.	☒	BG24.217 June 2024 ‘BNG Offsetting and Habitat Bank Opportunity Assessment Report’
Baseline Habitats Survey	Baseline site visit carried out in April 2024, reported in BG24.217 June 2024 ‘BNG Offsetting and Habitat Bank Opportunity Assessment Report’	☒	BG24.217 June 2024 ‘BNG Offsetting and Habitat Bank Opportunity Assessment Report’
Public Access	Not relevant to this application as the site is not publicly accessible and will remain private following the implementation and ongoing management.	☐	Not relevant to this project
Climate	Not relevant to this application	☐	Not relevant to this application
Geology and Topography	The woodland has been subject to nutrient enrichment from runoff from the adjacent arable field, with the topography of the site ensuring that runoff channels into the woodland down the slope.	☒	BG24.217 June 2024 ‘BNG Offsetting and Habitat Bank Opportunity Assessment Report’
Agricultural Land Status	The site is currently an arable field that will be taken out of crop production and associated management.	☒	BG24.217 June 2024 ‘BNG Offsetting and Habitat Bank Opportunity Assessment Report’
Soils and Substrates	The site is currently arable, and soil testing has been carried out to inform the habitat creation proposals. Soil inversion will be required to rebalance nutrient levels, so the site is suitable for neutral grassland creation.	☒	BG24.217 June 2024 ‘BNG Offsetting and Habitat Bank Opportunity Assessment Report’
Contaminated Land	Not relevant to this application	☐	Not relevant to this application

Hydrology and Drainage	Not relevant to this application	☐	Not relevant to this application
Flood Risk Zones	Not relevant to this application	☐	Not relevant to this application
Landscape Character and Designations	Not relevant to this application	☐	Not relevant to this application
Historic Land Use	Addressed under ‘Soil and Substrates’	☒	Addressed under ‘Soil and Substrates’
Historic Environment and Earth Heritage	Not relevant to this application	☐	Not relevant to this application
Other – please specify	Not relevant to this application	☐	Not relevant to this application

Baseline and Environmental Information

Designated Sites (BI-T01)

Provide a concise summary of the designated features within the designated sites that could be affected by the project. Categorise any potential impacts from the project, whether positive, negative, or negligible, as determined by your professional judgement.

Site Name	Designation	Distance from Project Site	Potential Impact from Project
West Haigh Wood LNR	Local Nature Reserve (LNR) and Local Wildlife Site (LWS)	Adjacent to the southern boundary	Positive – the site will increase connectivity for local wildlife to this designation
Carlton Main Brickworks SSSI	Site of Special Scientific Interest (SSSI)	1.4km SW of site	Negligible - the site is distant from the proposed Site and therefore a negligible impact is anticipated.

The nature and scale of the proposed habitat creation and management practices will have no anticipated negative impact (direct or indirect) on the integrity of West Haigh Wood LWS, LNR. Given the habitat prescriptions and management that will be ongoing at the site, it is considered that a minor positive impact will be seen by the designation through increased connectivity and native species planting adjacent to the designation boundary.

The proximity of the Carlton Main Brickworks SSSI, located approx. 1.4km south-west of the site, is not considered to form a constraint to the proposals. The proposed habitat creation and enhancement works at the site are not considered to pose any impact, either positive or negative, on the integrity of this designation. Carlton Main Brickworks is designated for geological significance and therefore the proposals pose no threat to this designation.

Summary of Designated Sites (BI-B01)

Site Name	Grid Ref.	Status	Reason for Designation	Distance from site
West Haigh Wood LNR	SE425085	Local Nature Reserve (LNR) and Local Wildlife Site (LWS)	Mixed deciduous woodland, abandoned Victorian ponds	Adjacent to the southern blue line boundary and small portion of southern red line boundary
Carlton Main Brickworks SSSI	SE412081	Site of Special Scientific Interest (SSSI)	Geological	1.4km SW of site

The site is not subject to any statutory designated sites of importance for nature conservation, such as Special Protection Areas (SPA), Special Areas of Conservation (SAC), Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR) or Local Nature Reserves (LNR). The site falls within the IRZ (Impact Risk Zone) for Carlton Main Brickworks SSSI, however it does not meet the criteria for this designation.

Constraints and Opportunities for Project (BI-B02)

Protected and Notable Species (BI-T02)

Provide a concise summary of the notable species records within the zone of influence of the project and any potential impacts from the project.

Summary of Protected and Notable Species (BI-B03)

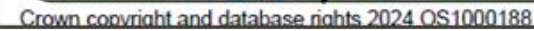
Summary of relevant protected and priority species records from the last ten years:

Species	Grid Ref.	Date	Description
Birds			
Bullfinch (<i>Pyrrhula pyrrhula</i>)	SE4147309971	09/03/2020	Two records returned, the closest and most recent record was of 2 males and 1 female 1.3km north-west of site.
Buzzard (<i>Buteo buteo</i>)	SE4309	02/10/2016	A single record returned, of at least one individual mewing overhead approx.0.3km south-east of site.
Chaffinch (<i>Fringilla coelebs</i>)	SE420084	24/05/2019	A singe record returned of at least one singing individual located 0.9km south-west of site.
Great Spotted Woodpecker (<i>Dendrocopos major</i>)	SE426086	10/05/2017	A single record returned of at least one individual recorded in the woodland adjacent south to the blue and red line boundary. Grid reference provided is a site centroid – 0.5km south of site.
Kestrel (<i>Falco tinnunculus</i>)	SE426086	10/05/2017	A single record returned of at least one individual recorded in the woodland adjacent south to the blue and red line boundary. Grid reference provided is a site centroid – 0.5km south of site.
Nuthatch (<i>Sitta europaea</i>)	SE4309	02/10/2016	A single record of two individuals calling in yew wood approx.0.3km south-east of site.
Bats			
Common Pipistrelle (<i>Pipistrellus pipistrellus</i>)	SE426086	26/07/2018	Five records returned. The closest and most recent record was of at least one individual approx. 0.5km south of site associated with West Haigh Wood LWS.
Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>)	SE426086	26/07/2018	Two records returned, both associated with West Haigh Wood LWS. The more recent record was from 2018 of at least one individual approx. 0.5km south of site.
Myotis sp. (<i>Myotis sp.</i>)	SE426086	26/07/2018	Two records returned, both associated with West Haigh Wood LWS which is adjacent to the southern blue line boundary. The more recent record was from 2018 of at least one individual recorded on heterodyne bat detector.
Mammals			
Badger (<i>Meles meles</i>)	SE413118	06/02/2017	Two records returned, both records are of fresh droppings found in small plantation in 'BARNSELEY MBC' 2.7km north-west of site.
Water Vole (<i>Arvicola amphibius</i>)	SE415097	16/10/2019	A single record returned of field signs recorded near the Dell, Grimethorpe 1.1km north-west of site.
Bank Vole (<i>Myodes glareolus</i>)	SE430084	06/02/2017	Two records returned, both pertaining to the record of five skeletons in discarded milk bottle found 0.8km south-east of site.

The desk study identified a limited number of protected and notable species within the wider landscape, with no reptiles or amphibian records returned.

Constraints and Opportunities for Project (BI-B04)

Protected and / or notable species are not considered to form a constraint to the proposals for habitat creation and enhancement. The site is considered to deliver an increase in biodiversity net gain, as such, will provide increased opportunities for local wildlife through increase nesting and foraging resources for a range of species.



Baseline Habitats Survey

Ecologist responsible for baseline surveys (BI-T03)	
Name or Initials	
Organisation	Brindle and Green Ltd.
Survey Date	26.04.2024
Statement of Competency	
The survey was carried out by Victoria Halford BSc (Hons), Senior Ecologist; and Jenna Churchill BSc (Hons), Graduate Ecologist. The survey was overseen by Lucinda Sweet PhD, MCIEEM Natural England Bat Licence (Class Level 2, 2019-9122-CLS-CLS), Great Crested Newt Licence (Class Level 1, 2016-22852-CLS-CLS), Director.	
Survey conditions and limitations	
The survey was undertaken at 11:00am on the 26 th April 2024. The outside temperature was recorded as 10°C, with dry, windy conditions, and 3/8 cloud cover. It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment.	

Habitat Degradation

Are there any signs or evidence that the baseline habitats have been purposefully degraded since 30 th January 2020? (BI-B05)
There was no evidence that the baseline habitats have been purposefully degraded since 30 th January 2020. The site is an arable field with a small parcel of woodland running through the western and central extent, along with a second woodland parcel in the south-eastern corner of the site. The arable field has been in regular cultivation for many years (as evidence by historic satellite imagery). Other than the agricultural practices required to work the land, there was no evidence of purposeful degradation of the site.
If habitats have been purposefully degraded, provide details of how this has been accounted for (BI-B06)
N/A

Baseline Habitat Descriptions and Condition

Use the following tables to provide details of the relevant baseline habitats information. Provide a concise overview of the justification for the condition chosen for each parcel(s) in the appropriate column.

Habitats (BI-T04)

Parcel Refs	Habitat Type and Code	Irreplaceable	Priority	Description and Condition Justification	Condition	Area (ha)
1	Cropland – Cereal Crops (c)	No	No	Cereal crop field dominating the site. The field supported a cereal crop, at a height of 20-30cm at the time of survey. The field has localised areas of bare ground from crop failure. However, the field is in regular arable management and assessed as such. The metric auto-populates the condition for this habitat as N/A.	N/A	7.15
2	Woodland and Forest – Other woodland; mixed (w1h5)	No	Yes	Considered to qualify as UKHab code w1h5: Other woodland - mixed - mainly broadleaved. The woodland was a mixture of broadleaved and coniferous trees in which broadleaved species make up 50-80% of the tree cover. This woodland habitat scored 'Moderate' condition assessment as it scored an average of 27-28 points across the sampling locations. The threshold for 'Good' condition is 32.	Moderate	2.08
3	Woodland and Forest – Other woodland; mixed (w1h5)	No	Yes	Smaller parcel of woodland in the south-eastern corner of the boundary. The area was restricted in size and scores a condition score below the threshold for achieving ‘Moderate’ condition (24).	Poor	0.11

Hedgerows (BI-T05)

Feature Refs	Habitat Type and Code	Irreplaceable	Priority	Description and Condition Justification	Condition	Length (km)
1	Non-native and ornamental hedgerow (h2b)	No	No	Hedgerow along northern boundary, composed entirely of Holly, however multiple species present with not all considered native specimens. The hedgerow was regularly flailed into a tight box shape and therefore on-going management should seek a more relaxed approach to encourage nesting birds, and small mammals. The metric auto populates the condition for this habitat type.	Poor	0.27
2	Native hedgerow with trees - associated with bank or ditch (h2_190)	No	Yes	Hedgerow along the western boundary. Mature oak trees supporting valuable features for roosting bats and nesting birds. The hedgerow was gappy and eligible for enhancement through native species planting and appropriate management. Criteria Passed: A1, A2, B1, D1	Poor	0.24
3	Native hedgerow (h2a)	No	Yes	Hedgerow along the northern fringe of Woodland Parcel 2 in the south-east corner of the boundary. Hedgerow was managed to harsh box shape and eligible for enhancement through appropriate management, and management of adjacent habitats. Criteria passed: A1, B1, B2, D1	Moderate	0.12

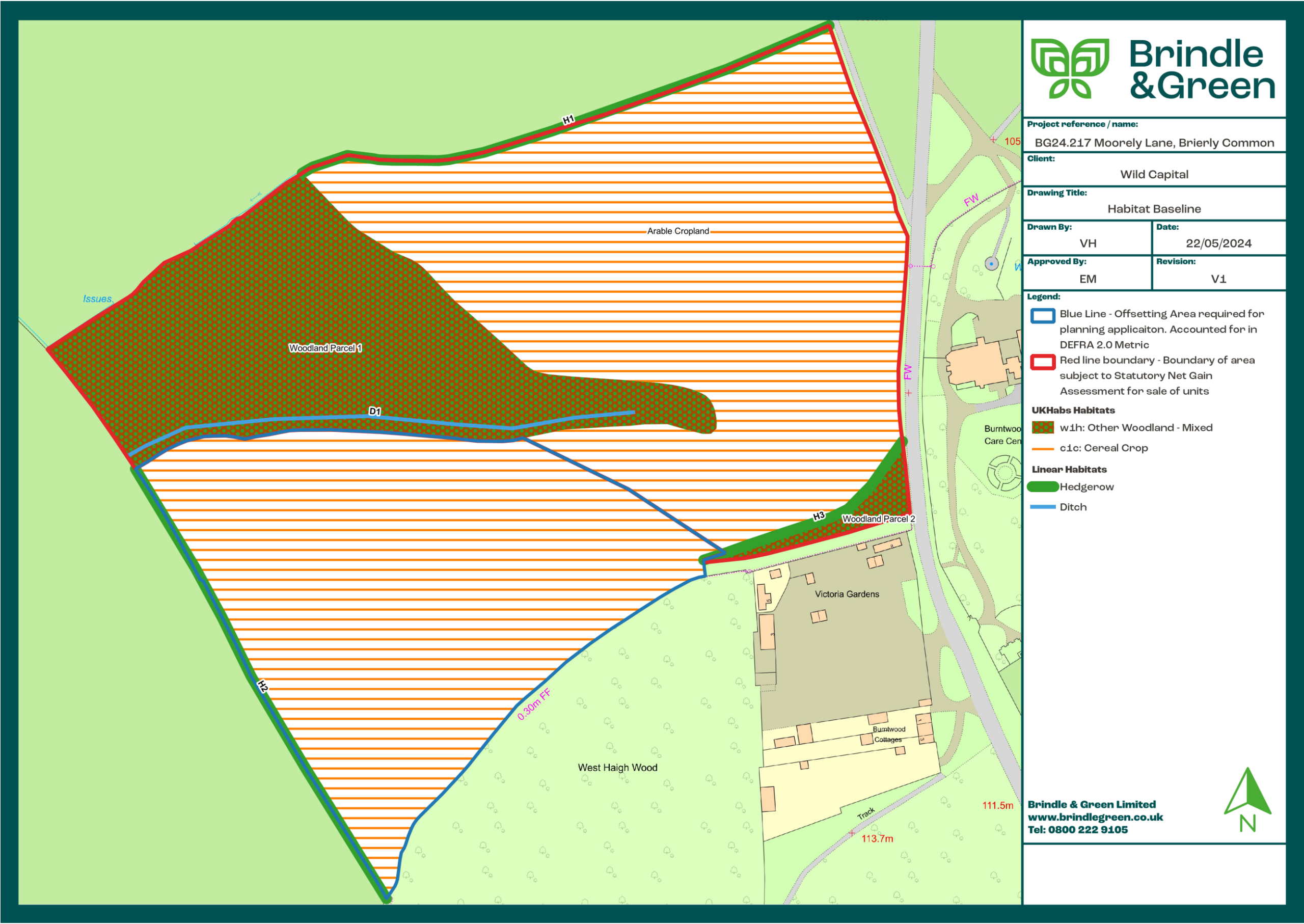
Watercourses (BI-T06)

Feature Refs	Habitat Type and Code	Irreplaceable	Priority	Description and condition justification	Condition	Length (km)
1	Ditches (50)	No	No	D1 runs along the southern boundary of Woodland Parcel 1 in the northern extent of the site. The ditch held water which, given the volume, was flowing west. Sewage was identified within the ditch and the water within, enhancements must be made to increase the quality of the ditch, and increase biodiversity opportunities in the area through aquatic and marginal planting. Criteria Passed: C	Poor	0.25

Priority and Irreplaceable Habitats

Summary of Priority and Irreplaceable Habitats (BI-B07)
Data supplied by MAGIC includes a UKBAP priority habitat inventory. MAGIC returned an area of priority habitat deciduous woodland within the northern extent of the central woodland parcel within the site boundary. Additionally, priority habitat deciduous woodland and ancient woodland is adjacent to the southern site boundary.
Potential Constraints and Opportunities for Project (BI-B08)
Priority habitat deciduous woodland located within the site boundary was recorded in moderate condition when assessed against the condition assessment sheets for the statutory metric. The woodland is eligible for enhancement due to its location, size and baseline condition.

Baseline Habitats Plan (BI-F02)



Baseline Habitats Photos (BI-F04)

Provide a range of photographs representative of the baseline. Add additional pages for photos as required.







Geology and Topography

Geological Information (EI-B07)

The site lies within two different bedrock geologies:

- 1) Ravenfield Rock - Sandstone. Sedimentary bedrock formed between 315.2 and 309.5 million years ago during the Carboniferous period.
- 2) Pennine Upper Coal Measures Formation - Mudstone, siltstone and sandstone. Sedimentary bedrock formed between 315.2 and 308 million years ago during the Carboniferous period.

According to <https://geologyviewer.bgs.ac.uk>, accessed 07/11/2024.

Potential Impact to Scheme (EI-B08)

None anticipated.

Topography (EI-B09)

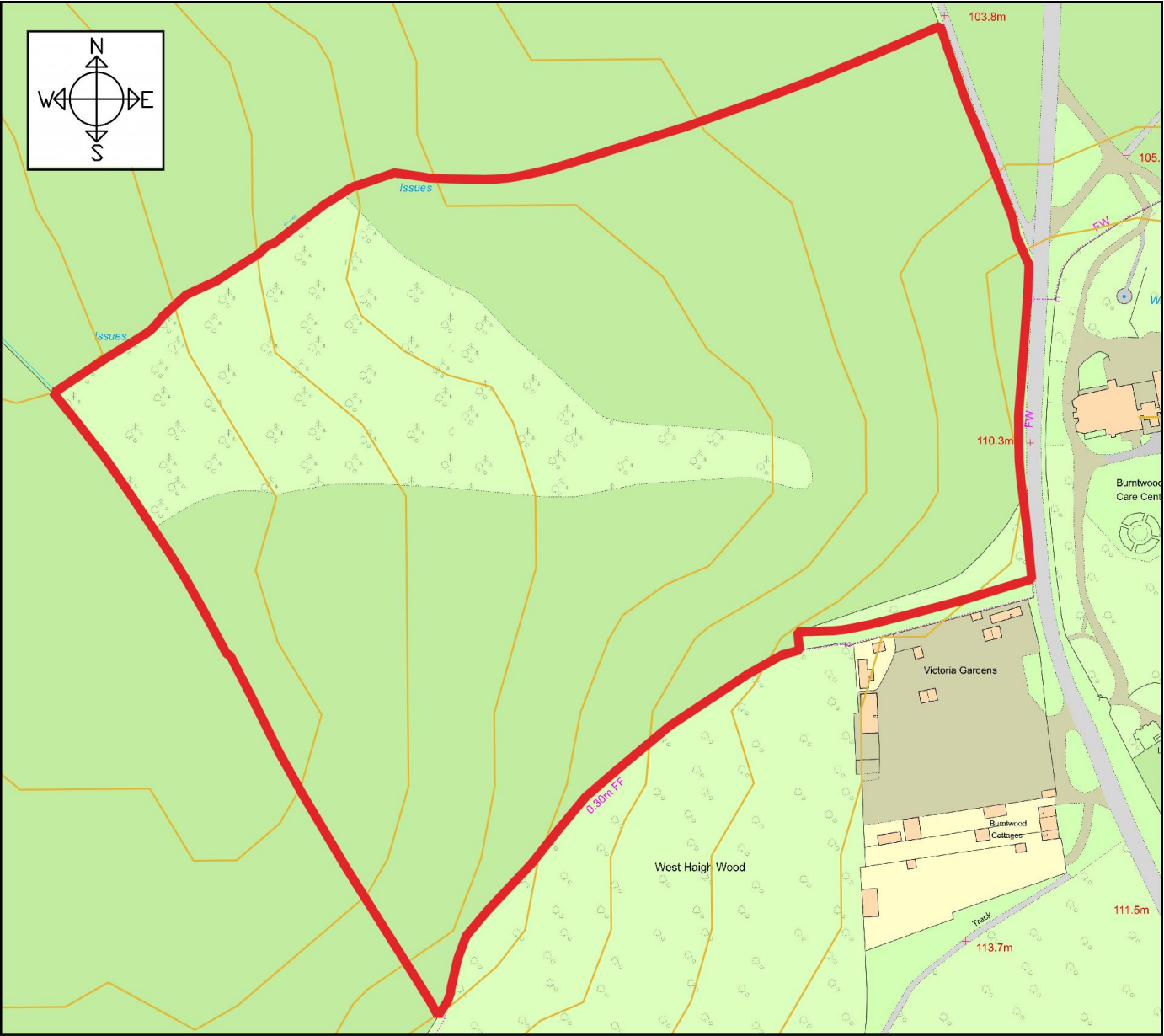
The eastern extent of the site is the highest point, with the slope of the hill falling away west, supporting the woodland, with the north-western corner of the site forming the lowest point. The slope of the site can be clearly seen from the site photographs.

Potential Impact to Scheme (EI-B10)

The historic use of the site for agricultural purposes has given rise to elevated nutrient levels through the application of fertilisers, pesticides and herbicides. The woodland has been subject to nutrient enrichment from runoff from the adjacent arable field, with the topography of the site ensuring that runoff channels into the woodland down the slope. The neutral grassland creation proposed to the east of the woodland, on the higher level of the site, as well as the change in management, will remove the regular application of fertiliser/pesticides etc, which will reduce the damage incurred to the woodland.

Geology and Topography Plan (EI-F02)

Below plan shows the topography of the site, showing the slope westwards towards the woodland.



Agricultural Land Status

Agricultural Land Status (EI-B11)

The site is currently dominated by arable land, regularly cultivated. At the time of the baseline survey, the site supported a young cereal crop, although several areas showed limited signs of germination suggesting crop failure.

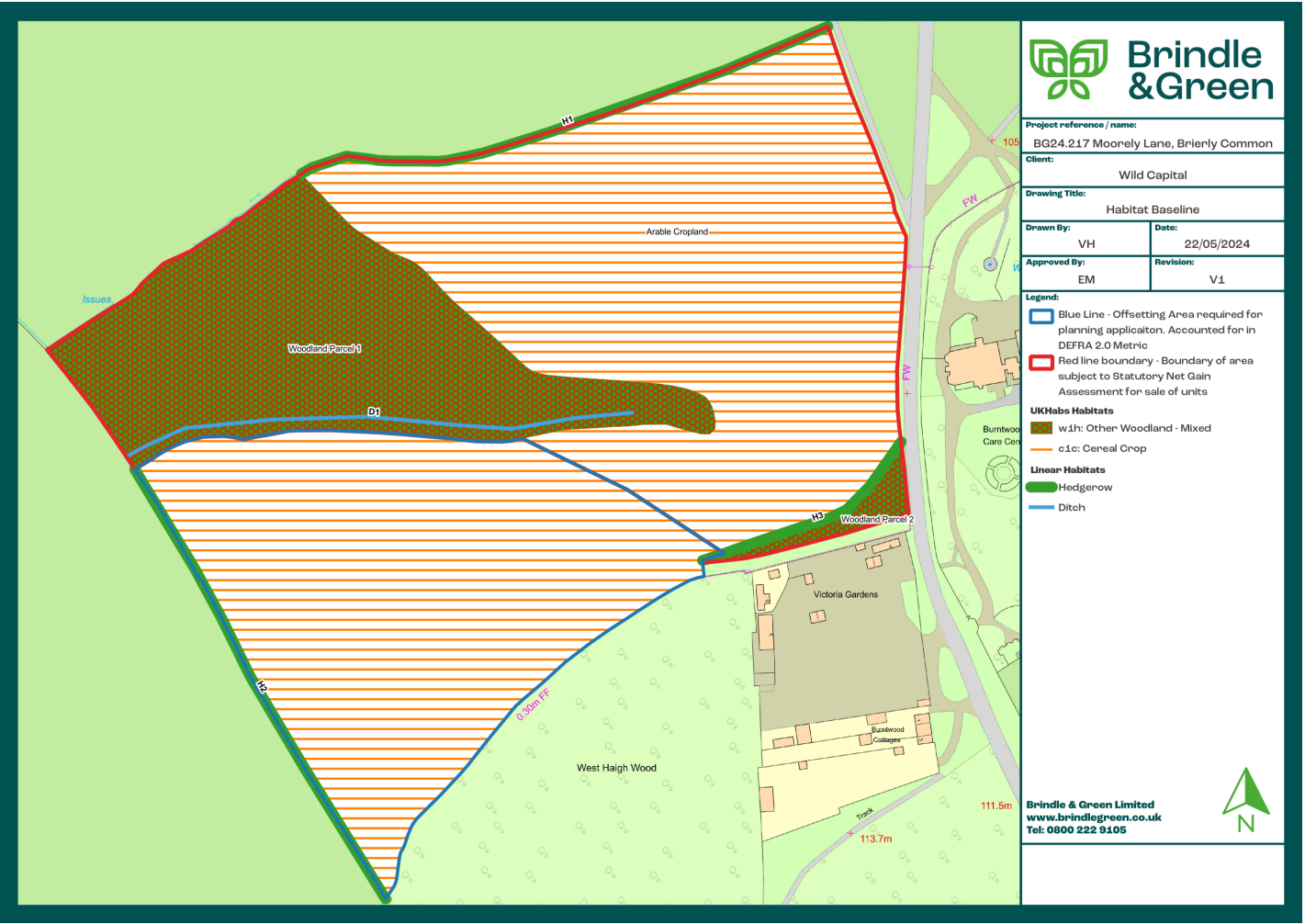
The soil of the site is Grade 3 under the Defra Agricultural Land Classification database. Grade 3 land is defined as “*Land with moderate limitations that affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in grades 1 and 2.*”

Potential Impact on Project (EI-B12)

The scheme's proposals involve the loss of agricultural cropland habitats; however, this loss is not considered significant to agricultural production across the local area. Furthermore, the scheme will help protect and enhance the landscape by increasing biodiversity and rebalancing soil chemistry.

Agricultural Land Status Plan (EI-F03)

Baseline plan showing extent of the arable cropland



Soils and Substrates (EI-T02)

Provide the results of the soil analysis. Modify the table below to provide the relevant soils information to inform targeted habitat creation proposals.

Parcel Refs	pH	Extractable Phosphorous (P) (mg/l)
Topsoil	7.56	29
Subsoil	7.73	<5

Summary of Soils Information (EI-B13)

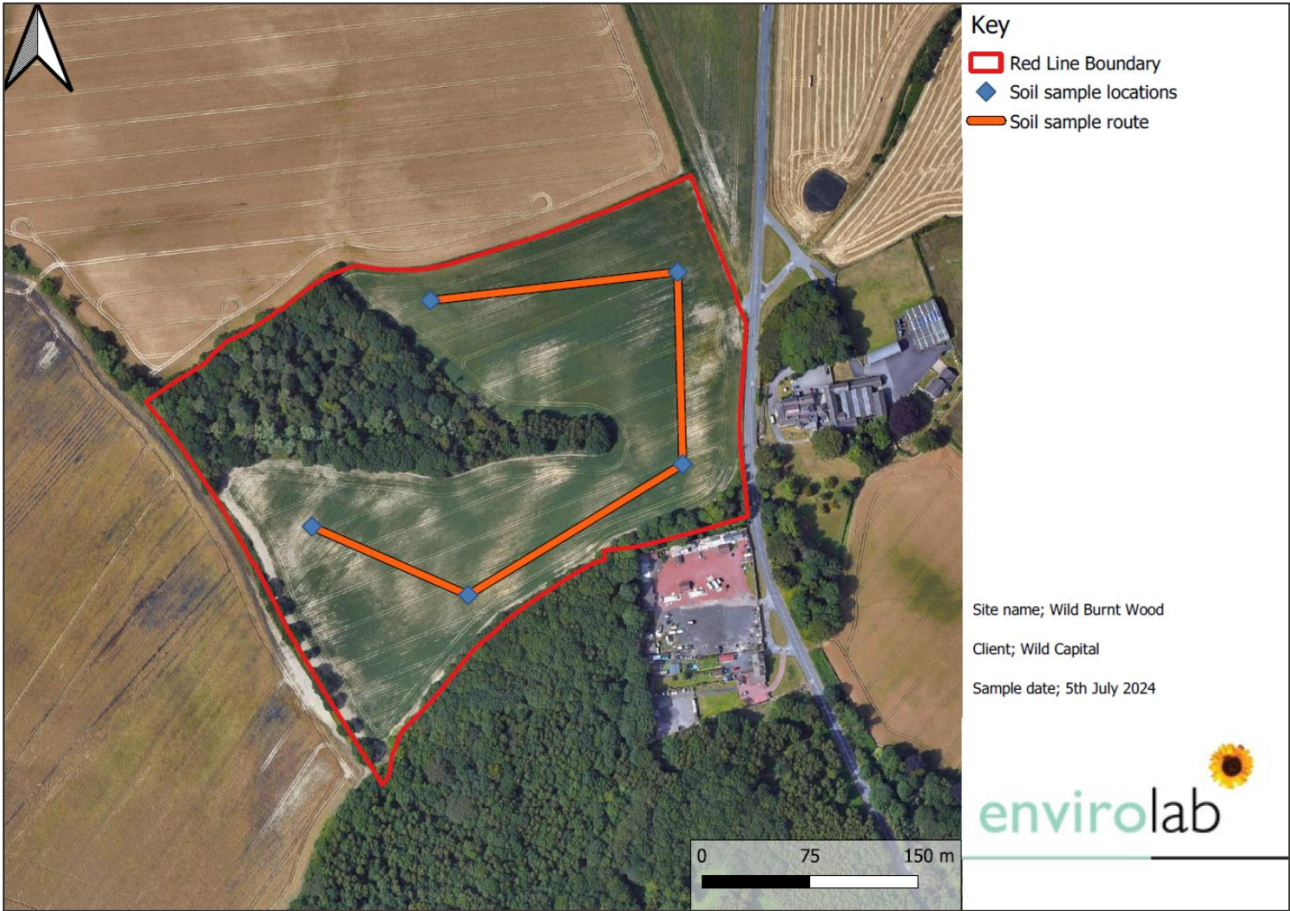
The site lies within Soilscape 6: Free draining slightly acid loamy soils. This soilscape has low fertility (ref: Cranfield University 2024. *The Soils Guide*. Available: www.landis.org.uk. Cranfield University, UK. Last accessed 10/10/2024).

Potential Impact on Project (EI-B14)

Soil analysis has confirmed alkaline soils (pH > 6.5), in line with the historic agricultural practices at the site, soil amelioration practices must be implemented to lower the soil pH to a neutral range (4.5 ≤ pH ≤ 6.5) for successful other neutral grassland creation.

Neutral grassland creation will be further impacted by the moderate / high phosphorus in the topsoil. Management will aim to lower the phosphorus levels across the site, through soil inversion to bring the subsoil to the surface. The suggested species mix for sowing will be selected based on these pH/soil texture requirements to include some species that will favour slightly alkaline soils in addition to species with broad pH requirements that are characteristic of neutral grasslands.

Soils and Substrate Plan (EI-F04)



2. Planned Management Activities

Provide the site-wide aims and objectives. These should consider the Project Background information section outlined above as well as the outcomes of the Metric.

Management Plan Aims and Objectives PM-B01

This document refers to the proposed habitats outlined within the supporting metric and Biodiversity Impact Assessment report (BG24.217 Moorley Lane BNG Offsetting and Habitat Bank Opportunity Assessment, June 2024) and accompanying metrics (BG24.217 Biodiversity Metric 2.0 Calculation Tool Beta Test; BG24.217 Moorley Lane, Barnsley Statutory_Biodiversity Metric_Rev2).

Areas of cropland will be lost to facilitate the creation of native mixed scrub (good condition) and other neutral grassland (good condition). Woodland enhancement will seek to increase the structure and species diversity of the woodland, creating increased opportunities for wildlife.

The mixed scrub will be created towards the centre and western extent of the site, forming ecotones adjacent to the retained and enhanced woodland parcels. The scrub planting will include native woody species such as hazel (*Corylus avellana*) and blackthorn (*Prunus spinosa*) and will be managed to achieve ‘Good’ condition.

The proposed neutral grassland in the eastern extent of the site, will form open grassland. The area, previously arable cropland, will undergo soil amelioration measures, including soil inversion, to bring the sub soil to the surface, which has been confirmed by soil testing to be suitable for neutral grassland creation. Once inverted, the area will be sown with an appropriately species rich wildflower seed mix.

Native hedgerows will be enhanced through appropriate management and additional native species planting to gap fill defunct areas. The ditch associated with the hedgerow should be enhanced through appropriate aquatic and marginal planting to provide an understorey community to offer opportunity for aquatic invertebrate species, as well as improving connectivity between local habitats, as part of the wider ditch network in the local environment.

Management prescriptions are influenced by the results of the previous ecological report and biodiversity metrics and seek planting and management to safeguard the ecological function of habitats. Subsequent recommendations for the site are focused on improving the biological diversity within the retained habitat, and where possible within proposed habitats.

The management plan will be informed by the monitoring of created and enhanced habitats outlines within the biodiversity monitoring strategy. Where required, the plan should be amended if habitats have not met their targets.

Principles Informed by Design Stage

The project's BNG target(s) should be set and documented early in the design process. Outline how background and baseline information influenced key design principles for the project from an early stage. This can provide useful context for the proposed retention, creation and enhancement measures.

Design Principles Informed by Baseline Information PM-B02

The key principles that have guided the project design include soil conditions, agricultural land status, and topography. Each has been carefully considered at the design stage of the habitat creation proposals to ensure their feasibility and likelihood of success.

The baseline assessment contains habitats ranging from very low to high distinctiveness. High distinctiveness habitats pertain to the native species hedgerow with trees associated with a ditch along the western boundary of the site. The site will continue to function as private land. The metric and biodiversity impact assessment has been compiled to guide habitat creation and enhancement proposals, to incorporate areas of medium distinctiveness habitat such as mixed scrub and other neutral grassland, both considered more valuable habitats than the arable cropland they are replacing.

Habitat and Condition Targets PM-T01

This table presents a summary record of what you have agreed to deliver based on the biodiversity metric. These habitat condition targets form the basis of what the management plan is setting out to achieve. Include the relevant ‘Area’, ‘Hedgerow’, and ‘Watercourse’ types to be implemented and managed throughout the period of 30 years or more.

Baseline Habitat Type	Target Habitat Type	Parcel / Feature Refs	Baseline Condition	Targeted Condition	Years to Targeted Condition	Condition Assessment Targets	Comments
Cereal crops	Mixed scrub	Scrub Creation - Parcel 1	Condition Assessment N/A	Good	Standard time to target condition from the statutory biodiversity metric.	Good condition will be targeted by achieving a pass in all criteria A – E.	Parcel of scrub creation in the eastern extent of the boundary. This band of scrub creation will connect the two existing woodland parcels on site to be enhanced (woodland parcel 1 & woodland parcel 2). The area of scrub should be managed as a successional habitat to provide structure to the woodland edge, providing a valuable band of vegetation for birds, bats and small mammals. The area must be managed to provide a varied structure to promote invertebrate populations. A species rich mix of specimens must be planted. Stock must also have varied age ranges at time of planting, creating a multi-layered band of vegetation, providing initial structure. The management plan governing this habitat to be created must detail the watering schedule, as well as details on guards and stake management to ensure that growth of young stock is not hindered by tree guards or additional supports that do not get removed at the appropriate point in the management schedule.
Cereal crops	Other neutral grassland	Other Neutral Grassland Creation	Condition Assessment N/A	Good	Standard time to target condition from the statutory biodiversity metric.	Good condition will be targeted by achieving a pass in all criteria A – E, including criteria F for non-acidic grassland.	Soil testing has confirmed that the subsoil nutrients of the site are conducive for neutral grassland creation. The area will require soil treatment, through soil inversion, to bring the subsoil to the surface. Following this, the area will be sown with a species rich seed mix, such as EM3 from Emorsgate Seeds. The grassland must be managed according to the condition assessment criteria - it must adhere to a recognisable NVC community specification, be free of invasive non-native species, with the adjacent habitats managed to prevent excessive scrub encroachment. The management plan for this habitat type will allow the sward to establish, flower and set seed prior to cutting, to provide opportunities for nectar feeding invertebrates.
Other woodland; mixed	Other woodland; mixed	Woodland Parcel 1	Moderate	Good	Standard time to target condition from the statutory biodiversity metric.	Good condition will be targeted be targeting criteria C, I and M.	The woodland was a mixture of broadleaved and coniferous trees in which broadleaved species make up 50-80% of the tree cover. The woodland currently scores an average of 27-28 across the survey sampling points across the woodland, equating to 'Moderate' condition. In order to reach the threshold of 32 which would equate to a 'Good' condition score the following criteria must be improved: c) Invasive Plant Species; i) Vegetation and Ground Flora; m) Woodland Disturbance.
Other woodland; mixed	Other woodland; mixed	Woodland Parcel 2	Poor	Poor	N/A as area to be retained	N/A as area to be retained	Smaller parcel of woodland in the south-eastern corner of the boundary. The area was restricted in size and scores a condition score below the threshold for achieving ‘Moderate’ condition (24).
Non-native and ornamental hedgerow	Non-native and ornamental hedgerow	H1	Poor	Poor	N/A as area to be retained	N/A as area to be retained	

Native hedgerow with trees - associated with bank or ditch	Native hedgerow with trees - associated with bank or ditch	H2	Poor	Moderate	Standard time to target condition from the statutory biodiversity metric.	Criteria to be targeted are: B2, C2, D2 and E2.	The hedgerow and associated trees can be enhanced through appropriate management, additional native species planting to gap fill defunct areas.
Native hedgerow	Species-rich native hedgerow with trees	H3	Moderate	Good	Standard time to target condition from the statutory biodiversity metric.	Criteria to be targeted are: A2, C2, D2, E1 and E2	The hedgerow will be thinned, to allow for native tree planting. Native trees planting will feature a range of age classes to fulfil E1. All new stock will be protected with guards and supported with stakes which will be regularly checked as part of the management of the hedgerow.
Ditches	Ditches	D1	Poor	Moderate	Standard time to target condition from the statutory biodiversity metric.	Criteria to be targeted: A, B, D, E, H	Himalayan Balsam should be treated and eradicated. Submergent and floating-leaved plants should be planted to increase opportunities for wildlife. Selective thinning of the woodland habitat associated with the linear feature should aim to reduce the shading of this habitat to encourage the establishment of aquatic and marginal species.

Habitat and Condition Targets Further Comments

Further benefits to biodiversity that fall outside of the scope of the biodiversity metric calculations, can be achieved within this scheme. Faunal enhancements can be integrated into the site, increasing opportunities for local species. The installation of bat and bird boxes across the site, on trees within the woodland parcels, will provide additional roosting and nesting opportunities for these species. Boxes should be selected and installed under the supervision of a suitably qualified ecologist.

Habitat Retention

Provide a concise description of the habitats that are to be retained in their baseline condition. Habitats being retained may still require ongoing measures to maintain their baseline condition.

Measures to be Implemented to Protect Retained Habitats PM-03

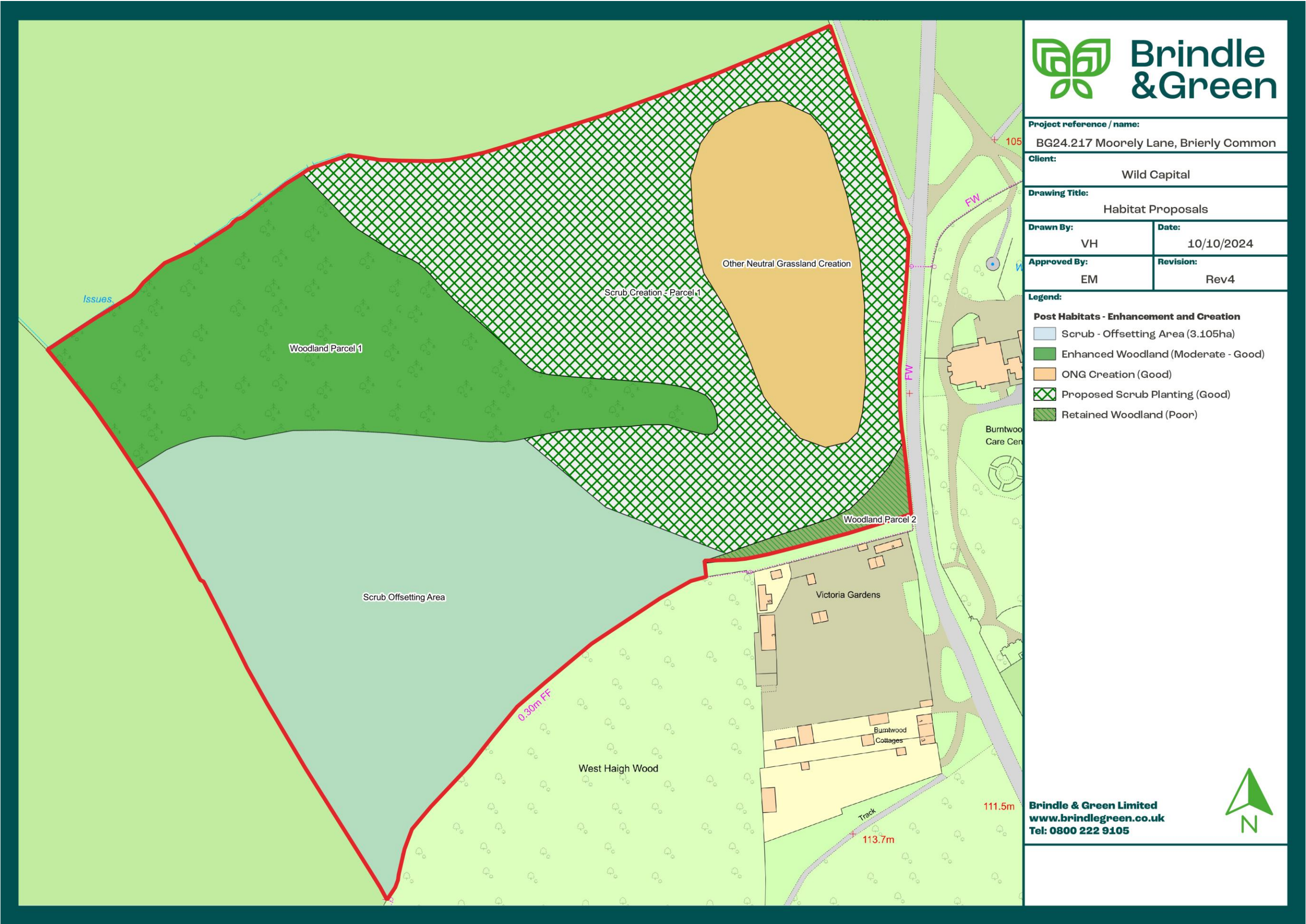
The smaller parcel of woodland (Woodland Parcel 2) located in the south-eastern corner of the site is to be retained under the proposals. Management will continue as currently practiced, with overhanging limbs removed when considered dangerous. Hedgerow H3 bounds this area of woodland, which is to be enhanced, thus protecting the woodland beyond from impacts associated with scrub and grassland management which will be incurred by the adjacent habitats.

As the proposals are for habitat creation and management in order to create a habitat bank site, the risk of the retained woodland being damaged intentionally or through accident is considered to be low. It is therefore not considered necessary to implement protective measures such as protective fencing or exclusion zones.

Specification of Protective Measures to be Used PM-04

N/A

Creation, Enhancement and Management Targets and Prescriptions



Ditch

Creation, Enhancement and Management Summary (DI-T01)

Target Habitat:		Ditch			
Condition Assessment Criteria		Targeted	Relevant Parcels	Enhancement Approach	Management Approach
A	The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	Yes	Ditch 1	The baseline water quality within the ditch was poor, with evidence of sewage run-off. Investigation to identify the source of the pollution will be carried out. Appropriate remedial measures must be implemented following identification of the pollution source.	Fertiliser application will be prohibited across the site which will prevent run-off from entering the ditches leading to eutrophication. Monitoring of the ditch will check for signs of pollution and implement remediation measures where appropriate to restore.
B	A range of emergent, submerged and floating leaved plants are present. As a guide >10 species of emergent, floating or submerged plants present in a 20 m ditch length.	Yes	Ditch 1	Clearance of existing scrub and invasive species dominating the bankside vegetation will create opportunities for natural regeneration of aquatic species. Selected planting of submergent and floating leaved plants to increase biodiversity for wildlife.	Monitoring to review species diversity and introduce remedial measures such as targeted strimming and/or plug-planting as required Himalayan balsam monitoring will be carried out and control measures implemented as required by condition H.
C	There is less than 10% cover of filamentous algae and or duckweed <i>Lemna</i> spp. (these are signs of eutrophication).	Yes	Ditch 1	N/A	Fertiliser application will be prohibited across the site which will prevent run-off from entering the ditches leading to eutrophication.
D	A fringe of marginal vegetation is present along more than 75% of the ditch.	Yes	Ditch 1	Clearance of existing scrub and invasive species dominating the bankside vegetation will create opportunities for natural regeneration of marginal species.	Adjacent scrub habitats will be managed to ensure they do not encroach onto the ditch.
E	Physical damage is evident along less than 5% of the ditch, with examples of damage including: excessive poaching, damage from machinery use or storage, or any other damaging management activities.	Yes	Ditch 1	N/A	Monitoring will take place during periods of grazing, with buffer to the ditch and woodland to prevent access for livestock.
H	There is an absence of non-native plant and animal species.	Yes	Ditch 1	A programme of Himalayan balsam removal will be undertaken along the banks of the ditch.	Regular monitoring will track the presence of invasive non-native species or and will trigger remedial action where necessary to remove their presence.

Ditch

Creation, Enhancement and Management Detailed Methods (DI-T02)

Action	Relevant Parcels	Timing	Prescriptions
Plug planting	Ditch 1	Establishment works (Year 0)	A range of plug plant tolerant of growing on saturated substrates will be planted into the ditch channel. Planting will occur April – May once the risk of frost reduces. Plants will be sourced from a local reputable supplier. Fertiliser or imported topsoil must not be used.
Invasive species removal	Ditch 1	Establishment works and annual aftercare Year 1 - 5	Himalayan Balsam individuals identified along the ditch will be removed in accordance with best practice guidelines. This will include hand-pulling or targeted strimming each year prior to seed dispersal.
Scrub clearance	Ditch 1	Establishment works (Year 0)	Scrub clearance will be undertaken along the ditch to allow light to penetrate, which will allow marginal plants to naturally colonise. Clearance works can be targeted along alternative banks to encourage structure, which limiting woody growth, every 2 years.

Ditch Species Lists (DI-T03)

Common Name	Scientific Name	Abundance (number of plants)
Yarrow	Achillea millefolium	1
Water-plantain	Alisma plantago-aquatica	1
Wild angelica	Angelica sylvestris	1
Common knapweed	Centaurea nigra	1
Teasel	Dipsacus fullonum	1
Common spike-rush	Eleocharis palustris	1
Hemp-agrimony	Eupatorium cannabinum	1
Meadowsweet	Filipendula ulmaria	2
Hedge bedstraw	Galium mollugo	2
Lady’s bedstraw	Galium verum	2
Water avens	Geum rivale	1
Yellow iris	Iris pseudacorus	2
Ox-eye daisy	Leucanthemum vulgare	1
Ragged robin	Lychnis flos-cuculi	1
Gypsywort	Lycopus europaeus	1
Purple loosestrife	Lythrum salicaria	1
Ribwort plantain	Plantago lanceolata	1
Cowslip	Primula veris	1
Selfheal	Prunella modularis	1
Meadow buttercup	Ranunculus acris	3
Yellow rattle	Rhinanthus minor	1
Common sorrel	Rumex acetosa	1

Red campion	Silene dioica	1
Betony	Stachys officinalis	1
Common bent	Agrostis capillaris	10
Crested dog’s-tail	Cynosurus cristatus	25
Red Fescue	Festuca rubra	25
Meadow fescue	Schedonorus pratensis	10
Marsh marigold	Caltha palustris	25
Purple loosestrife	Lythrum salicaria	10
Water-mint	Metha aquatica	25
False-fox sedge	Carex obtrubae	10
Common watercrowfoot	Ranunculus aquatalis	25
Spiked water-milfoil	Myriophyllum spicatum	10
Water violet	Hottonia palustris	10
Frogbit	Hydrocharis morsus-ranae	20

Grassland (Medium, High, and Very High Distinctiveness)

Creation, Enhancement and Management Summary (GH-T01)

Target Habitat				Other Neutral Grassland in Good Condition – Created		
Condition Assessment Criteria		Targeted	Relevant Parcels	Creation Approach	Enhancement Approach	Management Approach
A	<p>The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type.</p> <p>Note – this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.</p>	Yes	1	<p>Soil inversion will lift the subsoil to the surface, which will be harrowed and tilled to a fine tilth. Grassland will be sown with an agreed native species rich neutral grassland seed mix (Emorsgate EM2 mix, or a meadow mix for loamy soils).</p> <p>Fertiliser applications will cease to continue to drive down soil nutrient levels.</p>	N/A	<p>The grasslands will be managed in the long-term through either hay management or grazing. The grasslands will be monitored annually for the first 5 years, and the method of management will be amended as required over the 30-year period to that which achieves the target criteria whilst ensures that the area undergoes continued nutrient stripping.</p> <p>If grazing, livestock will be removed where over-poaching occurs.</p> <p>Implementation of both management practices will enhance species diversity and sward structure, and preventing dominance from pernicious grass species. Sown seed will include yellow rattle, which will prevent the dominance from grasses.</p>
B	<p>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.</p>	Yes	1	<p>Selected seed mixes will increase species diversity, promoting sward structure. Ongoing management will remain relevant, ensuring the sward structure is positively enhanced.</p>	N/A	<p>Under both management regimes, the sward will be left to grow, flower and set seed for at least 6 weeks between May and July inclusive.</p> <p>Monitoring will track the sward diversity and may influence the density of grazing where necessary to promote structural diversity in the sward or the requirement to leave a proportion of the sward unmown on rotation from year to year.</p>
C	<p>Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.</p>	Yes	1	<p>Selected seed mixes will increase species diversity, promoting sward structure. During establishment, should any sown areas show signs of failure, reseeding will be required to ensure that the cover of bare ground does not exceed the 5% threshold.</p>	N/A	<p>Hay-cut and/or grazing management will help create areas of bare ground which provide microclimates within the sward.</p> <p>Should additional areas be required, restricted areas of bare ground could be introduced where necessary/appropriate.</p>
D	<p>Cover of bracken <i>Pteridium aquilinum</i> less than 20% and cover of scrub (including bramble) less than 5%.</p>	Yes	1	<p><i>Pteridium aquilinum</i> will not be planted within the site, nor included within any seed mixes. Scrub creation is planned around the area of neutral grassland creation; however, no scrub planting will be carried out within the grassland area.</p>	N/A	<p>Annual management, including hay cut and/or grazing, will prevent bracken and scrub establishing within the grassland area. Regular monitoring will log the location of scrub and/or bracken encroachment, which will trigger remedial action as required.</p>
E	<p>Combined cover of species indicative of suboptimal condition and physical damage (such as excessive poaching, damage from</p>	Yes	1	<p>Selected seed mixes will increase species diversity, promoting sward structure.</p>	N/A	<p>Fertiliser input will cease throughout the life of this management plan. Regular monitoring will track the presence of invasive nonnative species or those indicative of sub-optimal condition and</p>

	<p>machinery use or storage, damaging levels of access, or any other damaging activities) accounts for less than 5% of total area.</p> <p>If any invasive non-native species (as listed on Schedule 9 of WCA) are present, this criterion is automatically failed.</p>			<p>The area will be prepared by machinery to facilitate soil inversion. Following the removal of machinery from site, the area will be levelled and prepared by hand. Sowing of the chosen seed mix will also be carried out but hand, to promote a natural sward establishing. Germination success will be monitored, and undesirable species will be removed through spot treated.</p>		<p>will trigger remedial action where necessary to remove or reduce their presence respectively.</p> <p>The established grassland will be spot treated for unwanted perennial weeds such as dandelion, docks, thistles, ragwort. No fertiliser is to be applied to the turf.</p>
F	<p>There are 10 or more vascular plant species per m² present, including forbs that are characteristic of the habitat type.</p> <p>Note – this criterion is essential for achieving Good condition for non-acid grassland types only.</p>	Yes		<p>The selected seed mix will be species rich and contain at least 10 species per m². Sowing will be carried out according to the manufacturer’s instructions to increase likelihood of successful establishment.</p>	N/A	<p>Through soil inversion, the nutrient levels will be favourable for a native species-rich grassland which will help to reduce the competitiveness of pernicious weeds undesirable species. Ongoing management will continue to drive down nutrient level – hay cut and collect management will strip nutrients over time and further boost sward diversity over time.</p>

Grassland (Medium, High, and Very High Distinctiveness)

Creation, Enhancement and Management Detailed Methods (GH-T02)

Provide detailed prescriptions for the creation and management of the habitat.

Action	Relevant Parcels	Timing	Prescriptions
Management – Seed mix	1	Establishment works (Year 0)	<p>Soil inversion, through a deep plough to a minimum of 30cm, will bring the lower subsoil to the surface. Once inverted, the area requires further preparation through harrowing to form a fine, firm seedbed before sowing seed.</p> <p>Areas will be seeded following the manufacturers guidelines (Emorsgate Meadow Mixture for Loamy Soils) by sowing in either autumn or spring. The seed mix can either be spread by hand with an even distribution and tread in or be distributed by machinery where feasible. The first growing season should incorporate a mid to late summer cut to allow seeds to establish and remove weed species from the seed bank. All arisings should be removed from the area and composted to prevent enrichment.</p> <p>Post-sowing rolling is essential to compress the soil, keeping moisture in the seedbed, whilst promoting seed-to-soil contact, aiding successful germination. The selected seed mix must contain yellow rattle to help reduce competitiveness of dominant grasses, promoting a varied sward structure to facilitate a species rich grassland.</p>
Aftercare – Seed mix	1	Year 1	<p>Initiate long-term management consisting of either low density grazing or a hay-cutting regime, as directed by adaptive management monitoring. A mix between the two management styles is appropriate at this site.</p> <p><u>Hay Cutting</u></p> <p>Spring hay crop taken before allowing the sward to establish over summer. Following this, take a late summer (late July / August) hay crop, in appropriate weather and ground conditions.</p> <p><u>Grazing</u></p>

			Introduce low-density grazing. Stock to be removed over summer to allow the grassland to flower and set seed. Ground conditions must be monitored throughout grazing period to ensure poaching and bare ground occurs across <5% of the grassland habitat area. If poaching or bare ground is recorded above this 5% threshold, stock must be removed, and the areas reseeded. Where reseeding occurs, the cover of pernicious weeds will be monitored, and spot treated as required to prevent the dominance of undesirable species.
Short term management	1	Year 2-5	<p>Continued management through annual hay cuts or low-density grazing, unless a management review indicated a need to manage otherwise. This dynamic review will ensure the condition of the grassland is not compromised through inappropriate management.</p> <p>Stock density must be reviewed annually as part of monitoring review. If grassland condition is improving, maintain grazing density. If grassland condition stable or declining, stock density must be reduced to lower pressures on the grassland.</p>
Long term management	1	Years 5+	<p>In years 5 – 30, continue to manage through annual hay cutting and / or low-density grazing.</p> <p>Continue to manage in perpetuity unless a management review indicated the need to change the management practices, to ensure that the condition of the grassland is met.</p> <p>Where pernicious weeds and / or invasive species establish despite management practices, these areas will be managed through strimming and / or hand pulling. Typically, this will occur in late summer. Where this management practice does not prove effective, then spot treatment through the application of herbicide, such as glyphosate spray, as appropriate.</p>
Supplementary seeding	1	As required	Supplementary seeding with UK native wildflower seed mixes, sourced from a local supplier (where possible) to be applied on areas of poor uptake from previous seed application. If the monitoring reviews indicate low species diversity, or dominance from grass species, plug planting of yellow rattle to control dominant grasses.

Grassland (Medium, High, and Very High Distinctiveness) Species Lists (GH-T03)

Provide a detailed species list for the habitat to be created

Common Name	Scientific Name	Abundance / %	Common Name	Scientific Name	Abundance / %
Yarrow	<i>Achillea millefolium</i>	0.6	Cowslip	<i>Primula veris</i>	0.8
Agrimony	<i>Agrimonia eupatoria</i>	0.8	Selfheal	<i>Prunella vulgaris</i>	0.4
Betony	<i>Stachys officinalis</i>	0.4	Meadow Buttercup	<i>Ranunculus acris</i>	0.2
Common Kapweed	<i>Centaurea nigra</i>	2.8	Bulbous Buttercup	<i>Ranunculus bulbosus</i>	0.1
Wild Carrot	<i>Daucus carota</i>	0.6	Yello Rattle	<i>Rhinanthus minor</i>	1.00
Lady’s Bedstraw	<i>Galium verum</i>	1.5	Bladder Campion	<i>Silene vulgaris</i>	0.4
Meadow Crane’s-bill	<i>Geranium pratense</i>	0.6	Tufted Vetch	<i>Vicia cracca</i>	0.4
Field Scabious	<i>Knautia arvensis</i>	1.5	Sweet Vernal	<i>Anthoxanthum odoratum</i>	1.6
Rough Hawkbit	<i>Leontodon hispidus</i>	0.1	Quaking Grass	<i>Briza media</i>	3.20
Oxeye Daisy	<i>Leucanthemum vulgare</i>	1.8	Crested Dogtail	<i>Cynosurus cristatus</i>	56.00
Birdsfoot Trefoil	<i>Lotus corniculatus</i>	0.2	Red Fescue	<i>Festuca rubra</i>	10.40
Musk Mallow	<i>Malva moschata</i>	2.20	Common Bent	<i>Agrostis capillaris</i>	8.0
Ribwort Plantain	<i>Plantago lanceolata</i>	2.4	Yellow Oat-grass	<i>Avena flavescens</i>	0.8
Salad Burnet	<i>Sanguisorba minor</i>	1.2			

What Does Success Look Like? (GH-F01)



Hedgerow

Creation, Enhancement and Management Summary (HD-T01)

Provide details of the approach to delivering each of the targeted condition criteria and hedgerow type. Conditions from Statutory Biodiversity Metric habitat condition assessment sheets – Sheet 8. Hedgerow

Target Hedgerow Type:					
Native hedgerow with trees, associated with a ditch					
Condition Assessment Criteria		Targeted?	Relevant Features	Enhancement Approach	Management Approach
A1	Height >1.5m average along length.	Yes	H2, H3	The hedgerow will be managed to maintain a height of at least 1.5m	The hedgerow will be managed on a two-to-three-year rotation, aiming for an A line profile at the top, with a base with of at least 1.5m metres and height of at least 1.5m metres.
A2	Width >1.5m average along length.	Yes	H2, H3	The hedgerow will be planted with additional native species and allowed to grow out to a width of at least 1.5m and managed accordingly to allow this to be maintained.	
B1	Gap – hedge base Gap between ground and base of canopy <0.5m for >90% of length.	Yes	H2, H3	The hedgerow will be enhanced through the planting of understorey species, comprising aquatic and semi-aquatic plants associated with the adjacent ditch, to offer a suitable habitat for faunal species, particularly invertebrates.	The understorey will be incorporated into the ditch management regime outlined within DI-T01
B2	Gap – hedgerow canopy continuity Gaps make up <10% of total length; and no canopy gaps >5m.	Yes	H2, H3	The hedgerow will be enhanced through planting of additional native species in order to gap fill defunct areas of hedgerow.	Native species whips will be planted within targeted areas identified as ‘defunct’ and to fill gaps within the existing hedgerow. The trees will be, as far as is reasonably possible, locally sourced and of appropriate local provenance (as defined by Forestry Commission Practice Note [1999] Using Local Stock for Planting Native Trees and Shrubs) [Local Provenance Regions 304 or 403 - regions ordered by preference, most preferable – least preferable]. Tree stakes should be used to support newly planted whips, boarded by bio-degradable tree guards to protect during establishment.
C2	Nutrient-enriched perennial vegetation Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	Yes	H2, H3	The hedgerow and areas immediately adjacent will not be subject to enrichment of nutrients such as through application of fertiliser. The hedgerow will also be subject to planting of understorey species, to remediate the plant species indicative of nutrient enrichment.	The understorey will be sown with a shade tolerant seed mix (Emorgate EH1 Hedgerow mixture) to promote ground flora community.
D1	Invasive and neophyte species >90% of the hedgerow and undisturbed ground is free of	No	H2, H3	H2 and H3 already pass D1 and is therefore not a targeted criteria.	H2 and H3 already pass D1 and is therefore not a targeted criteria.

	invasive non-native plant species (including those listed on Schedule 9 of WCA3) and recently introduced species.				
D2	Current damage >90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	Yes	H2, H3	The hedgerow will be retained and managed for the purposes of biodiversity and will be protected from damage by human activities such as excessive trampling and agricultural activities.	Tree stakes should be used to support newly planted whips, boarded by bio-degradable tree guards to protect during establishment. Whips will be protected by a mulch mat, e.g. c.1m2 Hemcore Biomats (or similar). Biomats are fully biodegradable and will reduce the need for post restoration watering and weed control.
E1	Tree class (applicable to hedgerows with trees only) There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient), and there is on average at least one mature, ancient or veteran tree present per 20 – 50m of hedgerow.	Yes	H3	The hedgerow will be planted with additional native species in order to create a variety of age classes and will be managed accordingly so that mature trees will be retained within the hedgerow.	In the first year of establishment, from May until September establishing trees within the hedgerow should be watered with 5-10L of water per metre, supplied once per week. In periods of dry weather (No rain for a period of over 10 days) this effort should be increased to twice per week. Tie checks will be conducted once every 2 months to promote establishment until year 3. Trees within hedgerows will be inspected annually in late summer for the first 5 years of establishment. Specimens which have died or become diseased will be replaced within the following winter planting season
E2	E2. Tree health (applicable to hedgerows with trees only) At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	Yes	H2, H3	Newly planted trees within the hedgerows will be managed in order to maintain health and existing trees within the hedgerow will be monitored and managed accordingly.	

Creation, Enhancement and Management Methods (HD-T02)

Action	Relevant Features	Timing	Prescriptions
Hedge planting of existing gaps	H2	Year 0	<p>Any whips planted to bolster gappy areas of hedgerow will comprise native whips of 40-60cm transplants.</p> <p>Tree stakes should be used to support newly planted whips, boarded by bio-degradable tree guards to protect during establishment.</p> <p>In the first year of establishment, from May until September establishing specimens should be watered with 5-10L of water per metre, supplied once per week. In periods of dry weather (No rain for a period of over 10 days) this effort should be increased to twice per week. Tie checks will be conducted once every 2 months to promote establishment until year 3.</p> <p>Newly planted hedgerows will be inspected annually in late summer for the first 5 years of establishment. Specimens which have died or become diseased will be replaced within the following winter planting season.</p>
Improved Structure	H2, H3	Year 2+	<p>Formative prune hedgerows during establishment to encourage a dense, bushy structure. Once established, hedgerows should be managed on a 2-year rotational basis to ensure foraging resources are available year-round for protected species. Management should avoid nesting bird season (March to September inclusive).</p> <p>Non-biodegradable stakes, netting, guards or ties are to be removed from the site once the hedgerow is established (this is to be assessed during the annual late summer check) and disposed of at an appropriate licensed site</p>

Hedgerow Species Lists (HD-T03)

Provide a detailed species list for the habitat to be created

Common Name	Scientific Name	Abundance / %
Hawthorn	Crataegus monogyna	Individual standards for gap planting
Hazel	Corylus avellana	
Field Maple	Acer campestre	
Blackthorn	Prunus spinosa	
Guelder Rose	Viburnum opulus	
Holly	Ilex aquifolium	
Spindle	Euonymus europaeus	
Dogwood	Cornus sanguinea	
Hornbeam	Carpinus betulus	

Scrub

Creation, Enhancement and Management Summary (SC-T01)

Target Habitat: Mixed Scrub – Good condition - creation					
Condition Assessment Criteria		Targeted	Relevant Parcels	Creation approach	Management Approach
A	<p>The parcel represents a good example of its habitat type – the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range).</p> <ul style="list-style-type: none">- At least 80% of scrub is native,- There are at least three native woody species,- No single species comprising more than 75% of the cover (except hazel <i>Corylus avellana</i>, common juniper <i>Juniperus communis</i>, sea buckthorn <i>Hippophae rhamnoides</i> or box <i>Buxus sempervirens</i>, which can be up to 100% cover).	Yes	1	<p>The area will incorporate a mixture of native species which produce flowers and berries such as hawthorn (<i>Crataegus monogyna</i>), blackthorn (<i>Prunus spinosa</i>), guelder rose (<i>Viburnum opulus</i>), field maple (<i>Acer campestre</i>), hazel (<i>Coryllus avellana</i>), and dog rose (<i>Rosa canina</i>).</p>	<p>In the first year of establishment, from May until September scrub specimens should be watered once per week. In periods of dry weather (No rain for a period of over 10 days) this effort should be increased to twice per week. Tie checks will be conducted once every 2 months to promote establishment until year 2.</p> <p>Any dead or dying plants should be removed and replaced during the next available planting season.</p> <p>Prune scrub species annually until established to prevent woodiness, remove dead branches and promote a dense bushy structure. Shrubs suitable for coppicing such as hazel will be cut back on a rotational basis to prevent them becoming dominant.</p>
B	<p>Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.</p>	Yes	1	<p>Trees will be planted with native species in order to create a variety of age classes and will be managed accordingly so that more mature trees will be retained within the scrub alongside the natural regeneration of saplings to create a varied age structure.</p>	<p>The area must be managed to provide a varied structure to promote invertebrate populations. A species rich mix of specimens must be planted. Stock must also have varied age ranges at time of planting, creating a multi-layered band of vegetation, providing initial structure.</p>
C	<p>There is an absence of invasive non-native species (as listed on Schedule 9 of WCA) and species indicative of suboptimal condition make up less than 5% of ground cover.</p>	Yes	1	<p>Flora will be managed to remove any presence of invasive species (as listed on Schedule 9 of WCA)</p>	<p>Any evidence of invasive or pernicious species encroachment into the scrub should be managed and removed in the same planting season.</p>
D	<p>The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.</p>	Yes	1	<p>Scrub will be planted in a way to create a connection between the two retained woodland parcels and will provide structure to the woodland edge.</p>	<p>Planting should be conducted in early spring and grouped in clusters of native species to emulate natural regeneration and scrub composition. Rotational coppicing will aim to maintain clearing throughout scrub blocks.</p>
E	<p>There are clearings, glades or rides present within the scrub, providing sheltered edges.</p>	Yes	1	<p>Scrub will be planted in order to create glides within the habitat and clusters of tree planting to emulate natural regeneration and scrub composition.</p>	<p>Specimen planting should be conducted in early spring, set approximately 1.5m apart Tubex (or equivalent) tree shelters will be used to protect specimens from rodent and rabbit damage and held in</p>

					place by a bamboo stake. Tree guards and stakes will require loosening and removal once established.
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Scrub

Creation, Enhancement and Management Detailed Methods (SC-T02)

Action	Relevant parcels	Timing	Prescriptions
Native whip planting	1	Establishment	Planting should be conducted in early spring. Specimen planting should be conducted in early spring, set approximately 1.5m apart Tubex (or equivalent) tree shelters will be used to protect specimens from rodent and rabbit damage and held in place by a bamboo stake. Tree guards and stakes will require loosening and removal once established.
Watering	1	Establishment – Year 2	<p>In the first year of establishment, from May until September scrub specimens should be watered once per week. In periods of dry weather (No rain for a period of over 10 days) this effort should be increased to twice per week. Tie checks will be conducted once every 2 months to promote establishment until year 2.</p> <p>Prune scrub species annually until established to prevent woodiness, remove dead branches and promote a dense bushy structure. Shrubs suitable for coppicing such as hazel will be cut back on a rotational basis to prevent them becoming dominant.</p> <p>Any dead or dying plants should be removed and replaced during the next available planting season.</p>
Fencing of areas of scrub planting (Only required if grazing management is implemented on adjacent grassland habitat)	1	Establishment	Areas of scrub creation will be fenced off to protect young specimens from grazing pressure. Fencing used will be stock proof if grazing used as the management tool.
Spot treat pernicious weeds	1	Year 2 - 5	Spot treatment of species indicative of sub-optimal condition will be undertaken following establishment and informed by monitoring surveys.
Long-term management	1	Year 5+	<p>If grazing used as a management prescription on neighbouring grassland, scrub growth will be monitored to ensure livestock grazing is not damaging scrub growth within this habitat.</p> <p>Monitoring required to ensure scrub diversity and structure is maintained, with professional ecological or landscape architect advise sought where particular species have failed to establish.</p>

Scrub Species Lists (SC-T03)

Common Name	Scientific Name	Abundance / %
Hawthorn	Crataegus monogyna	20
Hazel	Corylus avellana	20
Field Maple	Acer campestre	5
Blackthorn	Prunus spinosa	20
Guelder Rose	Viburnum opulus	10
Holly	Ilex aquifolium	5
Spindle	Euonymus europaeus	5
Dogwood	Cornus sanguinea	5
Wayfaring tree	Viburnum lantana	5
Goat willow	Salix caprea	5

Woodland

Creation, Enhancement and Management Summary (WO-T01)

Target Habitat: Other Broadleaved woodland – mixed						
Condition Assessment Criteria			Target Score	Relevant Parcels	Enhancement Approach	Management Approach
A	Age distribution of trees	Three age classes present	N/A	N/A	Not targeted criteria for either woodland.	Periodic thinning of canopy trees as necessary
		Two age classes present				
		One age class present				
B	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland	N/A	N/A	Not targeted criteria for either woodland.	Monitoring to ensure continued absence of significant browsing pressure, and corrective measures undertaken is recorded.
		Evidence of significant browsing pressure is present in 40% or less of whole woodland				
		Evidence of significant browsing pressure is present in 40% or more of whole woodland				
C	Invasive plant species	No invasive species present in woodland	3	1	Himalayan balsam, Rhododendron sp. and cotoneaster sp were recorded in the woodland. The enhancements to the ditch will see the eradication of the Himalayan balsam (see Ditch section above). Other invasive species will be removed and replace with understorey planting with native shrub species.	Monitoring will ensure persistent absence of invasive species and corrective measures undertake if recolonisation confirmed.
		Rhododendron <i>Rhododendrion ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, other invasive species <10% cover				
		Rhododendron or laurel present, or other invasive species) 10% cover				
D	Number of native trees species	Five or more native tree or shrub species found across woodland parcel	N/A	N/A	Not targeted criteria for either woodland.	Selective felling of non-native species to maintain criteria.
		Three to four native tree or shrub species found across woodland parcel				
		Two or less native tree or shrub species present across woodland parcel				
E	Cover of native tree and shrub species	>80% of canopy trees and >80% of understorey shrubs are native	N/A	N/A	Not targeted criteria for either woodland. Selective felling of non-native species to maintain criteria. The selective thinning of canopy trees will encourage the natural regeneration of the woodland parcel and increase the structural diversity of trees present. Supplementary planting of native trees within the canopy gaps will also be undertaken on an <i>ad hoc</i> basis where required.	Monitoring to ensure >80% presence of native species in the canopy and sub-canopy levels.
		50 – 80% of canopy trees and 50-80% of understorey shrubs are native				
		<50% of canopy trees and <50% understorey shrubs are native				

F	Open space within woodland	10-20% of woodland has areas of temporary open space.	N/A	N/A	Not targeted criteria for either woodland. The selective thinning of canopy trees will encourage the natural regeneration of the woodland parcel and increase the structural diversity of trees present. Supplementary planting of native trees within the canopy gaps will also be undertaken on an <i>ad hoc</i> basis where required.	Monitoring to ensure no more than 40% of the woodland has temporary open space.
		Unless woodland <10ha in which case 0-20% temporary open space is permitted.				
		21-40% of woodland has areas of temporary open space				
		<10% or >40% of woodland has areas of temporary open space. But if woodland <10ha has <10% temporary open space, please see Good category.				
G	Woodland regeneration	All three classes present in woodland; trees 4-7cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth	N/A	N/A	Not targeted criteria for either woodland.	Implementing coppicing and selective thinning will encourage the natural regeneration of gaps. Monitoring to ensure that natural regeneration
		One or two classes only present in woodland				
		No classes or coppice regrowth present in woodland				
H	Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback	N/A	N/A	Not targeted criteria for either woodland.	Monitoring to ensure natural regeneration is occurring.
		11% to 25% mortality and/or crown dieback or low risk pest or disease present				
		Greater than 25% tree mortality and or any high risk pest or disease present				
I	Vegetation and ground flora	Recognisable NVC plant community at ground layer present, strongly characterised by ancient woodland flora specialists.	3	1	Selective thinning of tree with thin the canopy layer, allowing light to penetrate the lower canopy levels and ground. Woodland mixture (EW1, Emorsgate seeds) will be sown to establish a ground flora community. Seed mix will contain ancient woodland flora specialists such as lords and ladies, bluebell, foxglove, and primrose.	Monitoring to ensure ground flora establishes. NVC surveys to confirm community composition. If the species diversity does not form a recognisable NVC community, selective seeding must be implemented to increase diversity of target species.
		Recognisable NVC plant community at ground layer present				
		No recognisable NVC plant community at ground layer present.				
J	Woodland vertical structure	Three or more storeys across all survey plots or a complex woodland.	N/A	N/A	Not targeted criteria for either woodland.	Monitoring to ensure natural regeneration is occurring.
		Two storeys across all survey plots				
		One of less storey across all survey plots				
K	Veteran trees	Two of more veteran per hectare	N/A	N/A	Not targeted criteria for either woodland.	Monitoring to ensure natural regeneration is occurring.
		One veteran tree per hectare				
		No veteran trees present in woodland				
L		50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead	N/A	N/A	Not targeted criteria for either woodland.	

	Amount of deadwood	branches and or stems and stumps, or an abundance of small cavities.				Monitoring to ensure natural regeneration is occurring.
		Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or steams, stubs and stumps, or an abundance of small cavities.				
		Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or steams, stubs and stumps, or an abundance of small cavities.				
M	Woodland disturbance	No nutrient enrichment or damaged ground evident	2	1	Nutrient enrichment from agricultural run-off has affected the criteria of this habitat. However, the loss of arable cropland for mixed scrub and neutral grassland creation, will see the reduction in fertiliser application, and subsequent run-off.	Monitoring to ensure nutrient enrichment does not increase further. Monitoring of species indicative of enrichment such as nettle and dock species.
		Less than 1 hectare in total of nutrient enrichment across woodland area and or less than 20% of woodland area has damaged ground				
		More than 1 hectare of nutrient enrichment and or more than 20% of woodland area has damaged ground				

Woodland

Enhancement and Management Detailed Methods (WO-T02)

Action	Relevant Parcels	Timing	Prescriptions
Protected species	1	To inform all Arboricultural works	<p>All works undertaken within the woodland must consider protected species. Prior to any work on trees within the woodland (including, but not limited to, felling, pruning, pollarding) the following must be considered:</p> <ul style="list-style-type: none">• Trees to be impacted must be assessed for their potential to support roosting bats. If a tree is considered to have potential roosting features, works which could impact a potential roost should be avoided, unless further surveys are undertaken to confirm absence of roosting bats, or a European protected species licence acquired to allow works to proceed.• Aim to undertake all management work involving vegetation removal outside of the nesting bird season (March to August inclusive). Where this is not possible, to ensure that the area of proposed work has been checked by a competent ecologist for the presence of nesting bird activity;• A pre-commencement survey to identify any badger setts within 30m of proposed works. Should any evidence of badger be recorded within 30m of the working area, works must cease and the advise of an ecologist sought. a badger licence may be required to legitimise works and advise should be sought from the project ecologist.
Removal of invasive and undesirable species	1	Establishment works (Year 0), Years 2-5	<p>Locate and eradicate stands of Himalayan balsam, Rhododendron sp. and cotoneaster.</p> <p>Himalayan balsam treatment must be discussed with a suitable removal contractor.</p> <p>Replacement shrub layer planting must be carried out to increase the structure of the woodland.</p>
Native tree and shrub planting	1	Establishment works (Year 0)	<p>Tree stakes will be used to support newly planted whips, boarded by biodegradable tree guards to protect during establishment. Sufficient manual watering and tie checks will be conducted at regular intervals to promote establishment. In the first year of establishment, from May until September young trees will be watered with 5-10L of water, supplied once per week. In periods of dry weather (No rain for a period of over 10 days) this effort should be increased to twice per week. Tie checks will be conducted once every 2 months to promote establishment until year 3. Any dead or dying plants will be removed and replaced during the next available planting season. Formative prune during winter where necessary to establish a strong central leader on trees. Trees will be assessed annually during years 3 5 removing and reducing side shoots. This work should be ongoing until the tree is established.</p>
Thinning	1	Establishment works (Year 0)	<p>The first thinning must be carried out during the establishment phase. In the late summer, mark up approx. < 5% of trees, targeting non-native species and dense stands.</p> <p>Pruning and tree works must be undertaken in late autumn / winter (November – February) to avoid the nesting bird season. All tree works will be carried out to BS 3993 – 2010 by a qualified arborist / tree surgeon.</p> <p>Consultation with the local Forestry Commission officer is recommended at an early stage to agree management for the lifespan of the project.</p>
Thinning	1	Years 7, 14, 21, 28	<p>Thinning to be done every 7 years, when needed and at the discretion of an ecologist and the land manager.</p>

Woodland Species Lists (WO-T03)

Common Name	Scientific Name	Abundance / %
Field maple	Acer campestre	10
Silver birch	Betula pendula	10
Pedunculate oak	Quercus robur	10
Goat willow	Salix caprea	10
Holly	Ilex aquifolium	10
Hawthorn	Crataegus monogyna	10
Spindle	Euonymus europaeus	10
Wild Privet	Ligustrum vulgare	10
Hazel	Corylus avellana	10
Rowan	Sorbus aucuparia	10

Habitat Creation and Management – Risk Register and Remedial Measures PM-T02

Provide a site-wide risk register associated with creating, enhancing and, or, managing each habitat type. Consider your approach to delivering the BNG targets in case the management prescriptions do not deliver as expected.

Risk Identification Date	Habitat Type	Risk Factor	Trigger for Action	Remedial Measure
Project Lifetime	All habitats	Establishment of invasive non-native species	Monitoring confirms presence of non-native invasive species	Initiate programme of eradication of the identified non-native invasive species. Specialist advise must be sought to ensure appropriate eradication methods for any species.
Project Lifetime	Other Neutral Grassland	Failed areas of seeding	Greater than 10% bare ground during years 2-5 and then greater than 5% bare ground cover after 5 years	Apply additional seed in areas of failed establishment. Appropriate seed mix to be used for the compartment where reseedling is required.
Project Lifetime	Other Neutral Grassland	Poor sward diversity	Where <20% of the sward is <7cm and <20% of the sward is >7cm	Alternate between grazing and hay cut management. Where grasses become too dominant, yellow rattle should be sown to outcompete dominant grasses.
Project Lifetime	Other Neutral Grassland	Scrub or bracken encroachment	Scrub or bracken cover greater than 5% or 20% respectively	Commence programme of scrub and/or bracken removal as required. This can be executed through mechanical removal or spot treatment with herbicide.
Project Lifetime	Other Neutral Grassland	Establishment of species indicative of sub-optimal condition	Where species indicative of sub-optimal conditions comprise >5% of the sward	Commence programme of spot treatment for undesirable species using herbicide.
Project Lifetime	Other Neutral Grassland	Damage through poaching or rabbit grazing	Evidence of damage and/or poaching >5% of ground cover	Firstly, identify the cause of the damage. If caused by livestock as part of grazing management, reduce grazing intensity by reducing the number of stock in the area, or switch to hay cut management. If damage source identified as rabbits, initial rabbit population control measures, e.g. shooting.
Project Lifetime	Mixed Scrub	Newly planted whips and specimens failing to establish	10% of targeted number of newly planted specimens found to be dead during years 1-10.	Plant a larger number of specimens initially as contingency against some losses in the early years. Undertake a second round of planting, replacing failed specimens on a like-for-like basis

Risk Identification Date	Habitat Type	Risk Factor	Trigger for Action	Remedial Measure
Project Lifetime	Mixed Scrub	Insufficient variation of age classes	Where less than 5% cover over the scrub area of each block is represented by saplings and less than 80% is represented by mature scrub. The remaining scrub should comprise immature scrub.	Selective thinning to allow natural regeneration. Where unsuccessful, additional planting of native specimens must be introduced.
Project Lifetime	Mixed Scrub	Overdominance of one species within the canopy	Where one species of scrub within a scrub block represents more than 50% of the canopy cover	Selective thinning of dominant species to allow other species to establish.
Project Lifetime	Mixed Scrub	Insufficient species diversity	Where block of scrub includes less than three species	Selective thinning and planting of additional species. A minimum of 2 additional species should be plated to increase the chances of ensuring each scrub block includes more than 3 species.
Project Lifetime	Mixed Scrub	Poorly developed edges	Where the edges of the scrub do not grade into adjacent habitats, where there is an absence of scattered scrub and tall grassland and/or forbs	Reduce management of scrub habitats to allow more diverse edges and promote the growth of scattered scrub and tall grasses. These areas may require more attentive management, e.g. using hand tools.
Project Lifetime	Mixed Scrub	Establishment of species indicative of sub-optimal condition	Where species indicative of sub-optimal conditions comprise >5% of the sward	Commence programme of spot treatment for undesirable species using herbicide.
Project Lifetime	Mixed Scrub	Insufficient structure	Lack of clearings, glade or rides within the scrub	Initiate a programme of targeted dense scrub removal to create glades and rides through the habitat.
Project Lifetime	Ditch	Marginal vegetation diversity loss	Monitoring will check fringe of aquatic marginal vegetation. Where significant losses in vegetation result in more than 15% loss in diversity, action is required.	Replacement planting and reseeding where vegetation is lacking.
Project Lifetime	Ditch	Pollution of water in the ditch system	Monitoring identifies poor water quality or a potential source of pollution in the ditch	Investigation to identify the source of the pollution if unknown. Appropriate remedial measures must be implemented following identification of the pollution source.
Project Lifetime	Ditch	Signs of physical damage along the ditch	Monitoring will check for signs of physical damage along the ditch. Where more than 5% of the ditch shows evidence of damage, remedial action will be triggered. Examples of damage include: poaching, damage from	Where signs of damage are identified, the source will be identified, and appropriate remedial and restoration works will be implemented. For example, excluding the

Risk Identification Date	Habitat Type	Risk Factor	Trigger for Action	Remedial Measure
			machinery use or storage, or any other damaging management activities.	riparian zone through fencing to prevent grazing and machinery pressures in the area.
Project Lifetime	Other Broadleaved Woodland	Tree Health	<div>Either:<ul style="list-style-type: none">• Ash Dieback due to <i>Hymenoscyphus fraxineus</i> fungus noted within the woodland;• More than 10% mortality rate of trees;• Any of the following high-risk disease or pests are present:<ul style="list-style-type: none">- Acute/Chronic Oak Decline- <i>Anoplophora chinensis</i>- Ash dieback- Asian Longhorn beetle- Bronze Birch borer- <i>Cryphonectria parasitica</i>- Emerald Ash borer- <i>Gibrella circinate</i>- Horse Chestnut Bleeding Canker- <i>Ips amitinus</i>- <i>Ips duplicatus</i>- <i>Ips typographus</i>- <i>Phytophthora lateralis</i>- <i>Phytophthora kernoviae</i>- <i>Phytophthora ramorum</i>- <i>Phytophthora austrocedrae</i>- <i>Phytophthora spp.</i>- Pine Lappet Moth- Pine Porcessionary Moth- Bed Band Needle Blight- Weevils</div>	If action is triggered, seek advise from a qualified arboriculturalist and follow current Forestry Commission Guidance for management and best practice felling or pollarding of diseased trees is required.
Project Lifetime	Other Broadleaved Woodland	Significant browsing damage	When browsing pressure in the woodland is considered significant (Browsing pressure is considered to be significant where >20% of vegetation visible within a 10m x 10m survey	Fencing off the woodland to deter livestock entry.

Risk Identification Date	Habitat Type	Risk Factor	Trigger for Action	Remedial Measure
			plot shows damage from any type of browsing pressure) OR When one of three regeneration classes is missing from the woodland or coppice growth is being significantly impacted.	If browsing pressure from deer, control measures will be implemented, although this is often not practical as needed on a widespread population-level management. As an alternative, it is recommended that any coppice regrowth is protected by piling over the cut stumps to protect new shoots which will germinate through the brash.
Project Lifetime	Other Broadleaved Woodland	Poor species diversity at ground flora and lower canopy levels	When no recognisable NVC plant community at ground layer present	Selective thinning of upper canopy to allow light penetration to ground layer. Sowing of shade tolerant seed mixes, which will be monitored and resown in areas of failure.

3. Monitoring Schedule

To deliver BNG, a robust strategy is critical to monitor successes and challenges. Routine monitoring informs progress and facilitates the required management plan updates at set intervals.

Monitoring Strategy

Provide details of the monitoring strategy to encourage successful implementation of the management plan (MS-B01)

This plan will be reviewed at years 1, 2, 3, and 5, with the production of a new plan, incorporating revisions following the review of the results of the monitoring of habitat conditions as described. A rolling 5-year revision of the management plan will be conducted thereafter. Monitoring of habitats will occur at years 1, 2, 3, and 5 with a rolling 5-year monitoring schedule to ensure prescriptions remain relevant, and that predicted target conditions within the Biodiversity Net Gain Assessment are being met. Reviews, monitoring and management of the site will be conducted for the 30 years to comply with the monitoring requirements of Biodiversity Net Gain.

It is expected that the 30-year monitoring period will commence following the completion of the establishment works. Where there is a delay to the establishment works, this monitoring strategy will extend to year 35 (if required) to allow for 30 years monitoring to be completed.

Monitoring Methods and Intervals MS-T01

Provide details of the methods you will use to adequately monitor the progress towards the targets stated in the management plan and as agreed with the Local Planning Authority.

Habitat Type	Monitoring Methods	Monitoring Interval and Timing
Other Neutral Grassland	<p>During the establishment phase of the grassland, monitoring will focus on determining the relative abundances of species present throughout the sward, using the DAFOR or DOMIN scales for assessing relative abundance. Monitoring will also focus on determining whether a sufficient number of species within the seed mixes used have established. The percentage cover of palatable grasses must also be recorded.</p> <p>During years 10 – 30, the following factors will be reviewed:</p> <ul style="list-style-type: none">Species diversity per m2Percentage cover of bare groundPercentage cover of scrub/brackenPercentage cover of species indicative of sub-optimal conditionPresence of non-native invasive speciesDAFOR Abundances of wildflowers, sedges and rushesSward height diversityLevel of poaching or trampling damage <p>Grassland assessment to ensure target criteria are being met, will be carried out May – August.</p>	<p>Annually from years 1 – 5, then every 5 years thereafter</p> <p>Surveys to be completed May - August</p>
Mixed Scrub	<p>During years 1 – 5, individual specimen scrub plants will be monitored for their health. The abundance of species indicative of sub0optimal habitat condition, as well as the presence of non-native invasive species, will be reviewed annually.</p> <p>During years 10 – 30, scrub will be monitored for:</p> <ul style="list-style-type: none">The number of native scrub canopy species in each blockThe percentage cover of various age ranges of scrub throughout scrub blocksPercentage cover of species indicative of sub-optimal condition	<p>Years 1, 2, 5, 10, 15, 20, 25, 30</p> <p>Scrub monitoring to be completed May – September</p>

	<ul style="list-style-type: none">• Presence of non-native invasive species• The character of edge habitats• The presence of clearings, glades and rides	
Other Broadleaved Woodland	<p>Throughout the management plan period, the woodland will be monitored for:</p> <ul style="list-style-type: none">• Tree age• Tree health• Presence of invasive species• Species diversity• Cover of native tree and shrub species• Woodland structure, including distribution of open space and regeneration• Vegetation and ground flora assemblage• Woodland disturbance, including soil enrichment and pollution	<p>Years 1, 2, 5, 10, 15, 20, 25, 30</p> <p>Woodland monitoring will occur March – May</p>
Hedgerows	<p>For the lifespan of the management plan, the hedgerows will be monitored for:</p> <ul style="list-style-type: none">• Hedgerow structure (inc. height and width)• Continuity (i.e. hedgerow gaps)• Level of disturbance at the base of the hedgerow (inc. nutrient enrichment, buffers to adjacent habitat types)• Presence of invasive and neophyte species• Signs of damage <p>For the hedgerows with trees, the following criteria will be monitored:</p> <ul style="list-style-type: none">• Age range and morphologies of trees• Tree health	<p>Years 1, 2, 5, 10, 15, 20, 25, 30</p> <p>Hedgerow monitoring will be conducted May – August</p>
Ditches	<p>Throughout the management plan period, the woodland will be monitored for:</p> <ul style="list-style-type: none">• Water quality and signs of pollution• Cover of marginal species along the banks• Filamentous algae and duckweed coverage• Signs of damage or poaching• Water levels• Presence of non-native and invasive plant / animal species	<p>Years 1, 2, 5, 10, 15, 20, 25, 30</p> <p>Monitoring of the ditch will be carried out July – September</p>

Monitoring Reports

Following completion of habitat creation and initial enhancement works, prepare for your monitoring report for the Local Planning Authority or Responsible Body. You should monitor each habitat type comprising the BNG project. Provide sufficient detail for the reviewing authority to assess the progress. The ‘Monitoring Report Template’ can help you do this. The requirements and regularity with which the monitoring reports are required are at the discretion of the LPA or Responsible Body. Prepare the monitoring requirements below.

Monitoring Report Schedule MS-T02

Provide details of the person or organisation that will be responsible for submitting the monitoring reports. Also state the responsible organisation for receiving and reviewing the reports.

Organisation Responsible for Submitting the Monitoring Reports	Organisation Receiving and Responsible for Reviewing Reports
Wild Capital	Responsible Body

Provide details of when the monitoring surveys and reports will be undertaken and submitted. You can extend the table and adjust according to your required schedule.

Project Year	Month Report to be Submitted	Management Plan to be reviewed	Comments
Establishment	Years 1-4	Yearly site walkover with progress report. Reports will be submitted to the Responsible Body during the establishment phase by January of the following year with updates to the management plan made as necessary.	Establishment
Post-establishment management	Year 5	2029	Post-establishment management
Post-establishment management	Year 10	2034	Post-establishment management
Long-term management	Year 15	2039	Long-term management

Long-term management	Year 20	2044	Long-term management
Long-term management	Year 25	2049	Long-term management
Final Report	Year 30	2054	Final Report

Adaptive Management

Summary of Adaptive Management Approaches (MS-B02)

Adaptive management is a systematic approach to natural resource management that involves monitoring and evaluating the effectiveness of management actions then adjusting as necessary to improve outcomes over time. It is an iterative process in which management actions are followed by targeted monitoring outcomes. These, in turn, inform the ongoing management.

Monitoring results inform necessary management changes to promote achieving BNG targets stated in the statutory biodiversity metric and HMMP. The monitoring can pick up any unexpected, external influences. Some examples are dealing with a new plant disease, an invasive species that is thriving due to climate change, or changes to site access due to site flooding.

To ensure its effectiveness, this HMMP document will undergo regular updates and reviews every 5 years. The monitoring reports will provide feedback on the implementation of the proposals, and any necessary changes will be made accordingly. Furthermore, the plan will identify and address any previously unknown risks that may arise.

It is important to note that any significant changes to management prescriptions that could alter the expected outcomes will be discussed and agreed upon with the relevant authority before implementation.