

Habitat Management and Monitoring Plan

Site Name:	Habitat Support Area (biodiversity) Stones Farm, Cricklade
Date:	23/09/2026
Version:	V4



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Version Control

Version	Issue Status	Prepared by / Date	Approved by / Date
V1	Draft	Emily Preston, Environmental Consultant Stefan Bigsby, Assistant BNG Consultant	Martin Smith, Head of Biodiversity and GI

Document Details

Authorship Details
Ethos Environmental Planning. There are no specific copywriting requirements in terms of this report.

1. Project Background

Site Overview PB-B01	
Project type	On-site
Development Name and Address	Stones Farm, Cricklade
BNG Project Name and Address	Stones Farm, Cricklade
Author Organisation	Ethos Environmental Planning
Landowner	Newland Homes
Land Manager	Newland Homes Ltd
Responsible person/organisation for creating or enhancing the habitat	Newland Homes Ltd
Period covered by this management plan	A minimum of 80 years following completion of habitat establishment, with management, maintenance and monitoring thereafter continuing in perpetuity for the lifetime of the development.
Planning authority	Wiltshire
Planning reference (if applicable)	APP/Y3940/W/24/3351265
BNG register reference (if applicable)	N/A
Central OS grid reference	SU 09112 94287
Metric revision/title	Statutory Biodiversity Metric V1
Are any Irreplaceable Habitats present onsite	Yes: ☐ No: ☒

Summary of Management Plan

Habitats to be Retained, Created and Enhanced PB-B02

Baseline Summary

The site comprises two fields currently dominated by modified grassland and areas of other neutral grassland, bounded by native hedgerows with occasional mature willow trees. The River Thames forms the northern boundary of the site and is locally bordered by areas of scrub and riparian vegetation.

All existing hedgerows, trees and riparian habitats will be retained and enhanced as part of the scheme.

Summary of Proposals

The primary habitat enhancement will involve the restoration of the existing modified grassland to species-rich lowland meadow, delivered through traditional hay meadow management including grazing, annual hay cutting and nutrient reduction. The resulting grassland will provide habitat function consistent with the nearby North Meadow and Clattinger Farm SAC, helping reduce fragmentation of semi-natural grasslands within the local landscape.

A riparian buffer will be maintained along The River Thames, where management intervention will be minimal to allow the development of a semi-natural grassland and scrub mosaic. This area will provide suitable habitat for riparian species such as water vole and otter.

A network of ponds will also be created within the northern part of the site to provide aquatic and wetland habitats and improve ecological connectivity across the riparian corridor.

Purpose of Management Plan

The Habitat Support Area (HSA) at Stones Farm has been designed primarily to provide mitigation for potential recreational impacts on the North Meadow and Clattinger Farm Special Area of Conservation (SAC) arising from the proposed residential development. The purpose of the HSA is therefore to provide high quality semi-natural habitats which function as a landscape buffer between the development and The River Thames corridor, while also contributing to the conservation objectives of the SAC through the restoration and long-term management of species-rich grassland.

The planning application for the development was submitted prior to the mandatory requirement for Biodiversity Net Gain under the Environment Act 2021, and as such the HSA is not being delivered as a Biodiversity Net Gain site or for the purpose of generating biodiversity units. Instead, the habitat proposals are designed specifically to mitigate potential impacts on the SAC and to deliver ecological enhancements in line with the agreed Habitat Support Area Strategy.

This Habitat Management and Monitoring Plan (HMMP) has been prepared using the Natural England HMMP template, which provides a structured framework for setting out habitat creation, management prescriptions and monitoring requirements. While the template is commonly used for Biodiversity Net Gain projects, in this case it is used solely to provide a clear and robust framework for the delivery and long-term management of the Habitat Support Area.

Timescales for Actions PB-B03

This work will be implemented within 1 year following the commencement of the proposed development at Stones Farm, see APP/Y3940/W/24/3351265
Monitoring Requirements PB-B04
Monitoring will include soil sampling, quadrats surveys of the proposed lowland meadow, and an updated condition assessment every five years.
Required Consents and Licences PB-B05
None required.
Funding PB-B06
Private funding by Newland Homes.
Legal Agreement PB-B07
Secured through a S106 agreement.



Figure 1 Site Location Plan

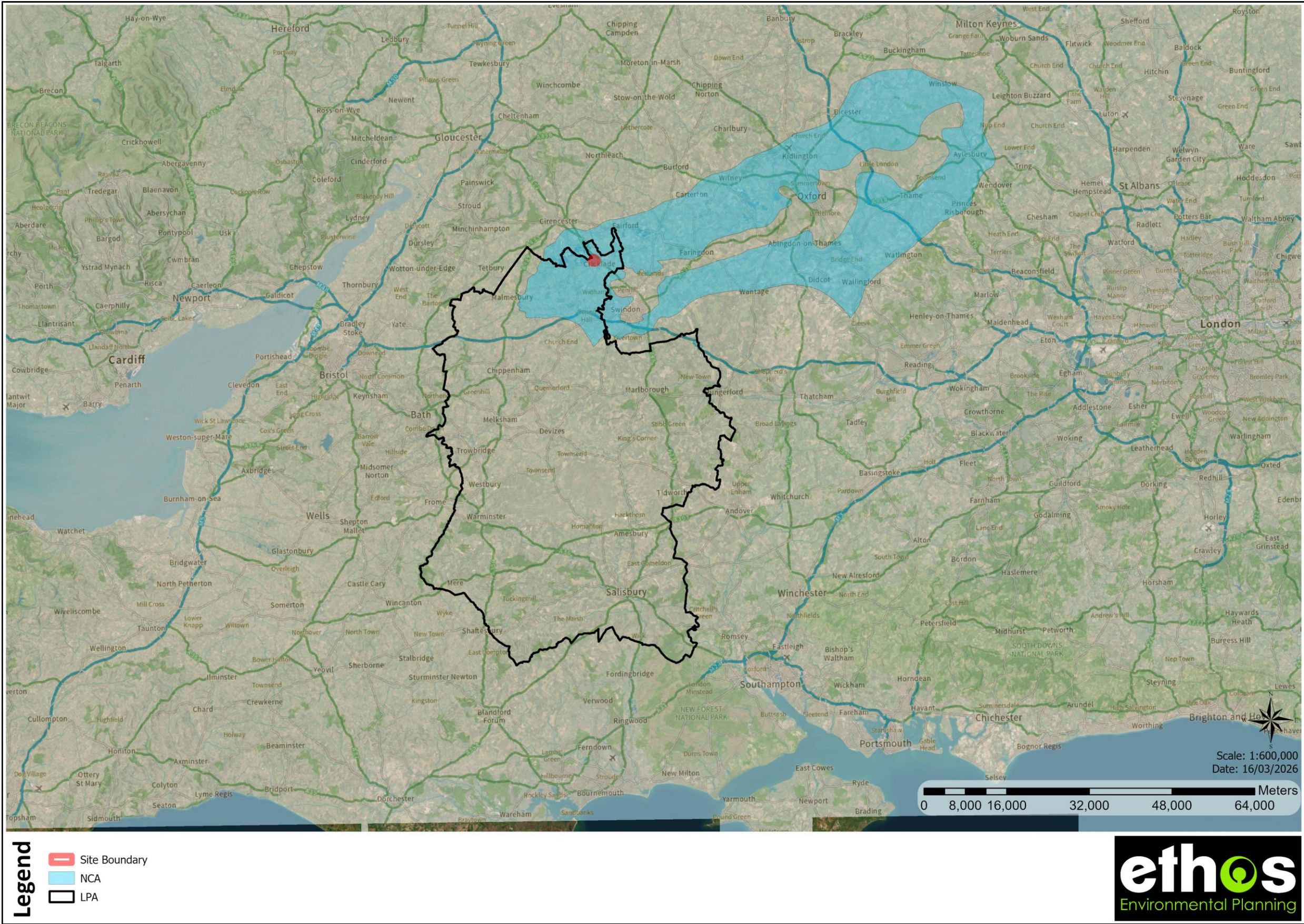


Figure 2 Site Context Plan

Phasing strategy

Will the proposed work measures be delivered in phases? PB-B08		Yes: ☐ No: ☒	
This project will be provided in a single phase following the commencement of the proposed development at Stones Farm.			

Roles and Responsibilities

Ecologist or Other Professional Responsible for HMMP PB-B09				
Name or Initials		Martin Smith		
Organisation		Ethos Environmental Planning		
Responsibility	Start Date:	2022	End Date:	2026
Ethos Environmental Planning are responsible for the implementation of this HMMP. Martin Smith is the project manager for this scheme and has overseen the baseline surveys, client communication, and the provision of this plan. Ethos Environmental Planning have been involved with all ecology matters for the Stones Farm development.				
Statement of Competency				
Martin is a principal BNG consultant and leads the BNG Team at Ethos. Martin has worked at Ethos for seven years following graduating from the Royal Agricultural University. Within his role Martin specialises in landscape habitat restoration, the long-term management of habitats especially within agricultural environments, and how to best achieve biodiversity gains with sustainable management. Martin has worked on various projects within the southwest, from tenant farms delivering biodiversity gains within areas on the farm, to mid-scale wilding projects and delivering strategic biodiversity gains. Martin is a qualified River Condition Assessment surveyor and has works closely with geomorphologists and habitat contractors outside of Ethos to deliver projects. Martin has a good ecological understanding and is a generalist in terms of species knowledge. Martin has a Class 2 Bat Licence, dormouse licence, and GCN licence (NE) and understands how to provide BNG offsetting sites to support notable and protected species.				

Landowner or Land Manager PB-B10				
Name or Initials		Tom Shepherd		
Organisation		Newland Homes		
Responsibility	Start Date:	2026	End Date:	2106
Newland Homes will be responsible for establishing the HSA as detailed in the previous sections. Following practical completion of the HSA, the site will then be managed by a dedicated management company established by the Client in consultation with Natural England if required, who will be responsible for implementing the annual work plan. Newland Homes will be responsible for monitoring the site, appointing appropriate professionals (ecology, arboriculture) and producing the five-year monitoring report. Updates to the LEMP following the first five years of monitoring will be the responsibility of Newland Homes.				
Statement of Competency				
Newland Homes is a reputable and established housebuilder with a strong track record of delivering residential developments across the region. Newland Homes recognises the importance of the long-term stewardship of habitats created and enhanced as part of its developments and has experience in overseeing the management of on-site habitats through the appointment of appropriately qualified contractors and ecologists. On its developments, Newland Homes takes responsibility for coordinating and resourcing the practical delivery of habitat management and monitoring, while engaging specialist contractors to carry out management works and appropriately qualified ecologists (CIEEM-accredited) and arboriculturists (Arboricultural Association-accredited) to undertake condition monitoring, produce monitoring reports, and advise on any necessary updates to the LEMP. This approach ensures that habitats are maintained and monitored to a professional standard by suitably experienced specialists, while Newland Homes retains overall responsibility and oversight for delivery.				
LPA or Responsible Body for Reviewing HMMP PB-B12				
Name or Initials				
Organisation				
Responsibility	Start Date:		End Date:	

Land Use Summary

Overview of Baseline Site Use PB-B13

The site comprises approximately 8.3 hectares of agricultural land formed of two grassland fields located to the north of the proposed residential development at Stones Farm, Cricklade. The fields are currently managed as improved or modified pasture and are grazed periodically by cattle.

The western field is dominated by modified grassland characterised by a high proportion of perennial ryegrass (*Lolium perenne*) and other agricultural grass species, while the eastern field comprises predominantly modified grassland with areas of other neutral grassland located toward the northern margins.

The River Thames forms the northern boundary of the site and is locally bordered by areas of riparian vegetation including scattered scrub and marginal grasses. Several native hedgerows subdivide the site and form field boundaries, with occasional hedgerow trees present.

A public right of way crosses the site in an east–west direction and provides pedestrian access between the surrounding rural landscape and the wider countryside. Aside from agricultural grazing and pedestrian access, the site is subject to relatively limited management and disturbance.

Overview of Proposed Site Use PB-B14

The site will function as Habitat Support Area (HSA) – Area 1, providing a biodiversity-focused landscape buffer between the proposed development and the nearby North Meadow and Clattinger Farm Special Area of Conservation (SAC).

The primary objective of the site is to enhance and manage habitats to support biodiversity and contribute to the conservation objectives of the SAC. This will be achieved through the restoration of the existing grassland to species-rich lowland meadow, managed through traditional hay meadow management including seasonal grazing, annual hay cutting, and removal of arisings.

A network of ponds will be created within the northern part of the site to increase habitat diversity and provide aquatic and wetland habitats which will benefit amphibians, aquatic invertebrates, bats and birds.

A riparian buffer zone will be maintained along The River Thames with limited management intervention to allow the development of a semi-natural mosaic of grassland, scrub and marginal vegetation. This area will provide important habitat for riparian species such as water vole and otter and improve ecological connectivity along the river corridor.

Existing native hedgerows and trees will be retained and enhanced to strengthen habitat connectivity across the site and provide shelter, nesting habitat and foraging opportunities for birds, bats and invertebrates.

Public access will continue to be provided via the existing public right of way which crosses the site. This route will be maintained through the mowing of a narrow path through the meadow to ensure continued accessibility while minimising disturbance to the surrounding habitats.

Following establishment, the habitats will be managed through a combination of seasonal grazing and annual hay cutting, with long-term management likely to be undertaken by either Natural England, a conservation organisation, or a management company established by the developer, as set out within the Section 106 agreement.

Site Context Photos PB-F03



Photo 1 Northern edge of the site looking west



Photo 2 Easterly field with middle hedgerow

Baseline and Environmental Information

Biological Records

Designated Sites (BI-T01)

Site Name	Designation	Distance from Project Site	Potential Impact from Project
North Meadow and Clattinger Farm	Special Area of Conservation (SAC)	105m	Positive
North Meadow Cricklade	Site of Special Scientific Interest (SSSI)	105m	Positive
Cricklade North Meadow	National Nature Reserve (NNR)	105m	Positive
Elmlea Meadows	Site of Special Scientific Interest (SSSI)	1km	Negligible
Cotswold Water Park	Site of Special Scientific Interest (SSSI)	1km	Negligible

Summary of Designated Sites (BI-B01)

North Meadow and Clattinger Farm SAC

North Meadow and Clattinger Farm SAC totals 104ha and is one of two sites with lowland hay meadows in the UK. The site contains a very high proportion of the surviving UK population of fritillary *Fritillaria meleagris*, a species of highly characteristic of damp lowland meadows in Europe and now rare throughout its range.

North Meadow Cricklade SSSI

North Meadow is a traditionally managed hay meadow with a rich flora which includes the largest British population of snakeshead fritillary *Fritillaria meleagris*. It is estimated to support about 80% of the British population of wild fritillary plants.

Cricklade North Meadow

The NNR has a great variety of wildflowers and is of international importance as one of the finest examples of a lowland hay meadow in Europe. Around 80% of Britain's snakehead fritillaries grow at North Meadow.

Elmlea Meadows SSSI

Located to the west of the site, it is designated for its species-rich meadow grassland characterised by meadow foxtail and great burnett. The site is particularly important as it contains the nationally scarce fritillary *Fritillaria meleagris* and has a rich sedge flora including the nationally rare downy-fruited sedge *Carex tomentosa*.

Cotswold Water Park SSSI

Cotswold Water Park is designated for its biological and geological importance covering 2,074ha. This includes breeding birds, wintering and waterbirds. It has nationally significant overwintering wildfowl including Gadwall, Tufted Duck and Snew.

Constraints and Opportunities for Project (BI-B02)

It will provide opportunities to contribute to the Site Improvement Plan (SIP) for the North Meadow and Clattinger Farm SAC. This includes assisting with the following actions of the SIP:

Action 2A – reduce fragmentation

The Cricklade HSA will contain areas of lowland meadow which will be well-connected to other areas of semi-natural grassland around the site. This will support the objective to reduce the fragmentation of semi-natural grasslands in the area around the SAC.

Action 2B – secure long term conservation management of buffer land

The development will provide 8.3 hectares of habitat enhancements. The area will include the enhancement of poor condition modified grassland to lowland meadow, the provision of a grassland buffer to The River Thames, and a series of grazed ponds. The habitat works will also provide an increase in habitat diversity than the habitats currently present and will be likely to support a diverse range of protected and notable species.

Improvements to the riparian habitat along the northern boundary will be undertaken, this will include the establishment of a watercourse buffer which will include minimal management intervention. It is expected that this will provide suitable habitat for otter and water vole which are present onsite.

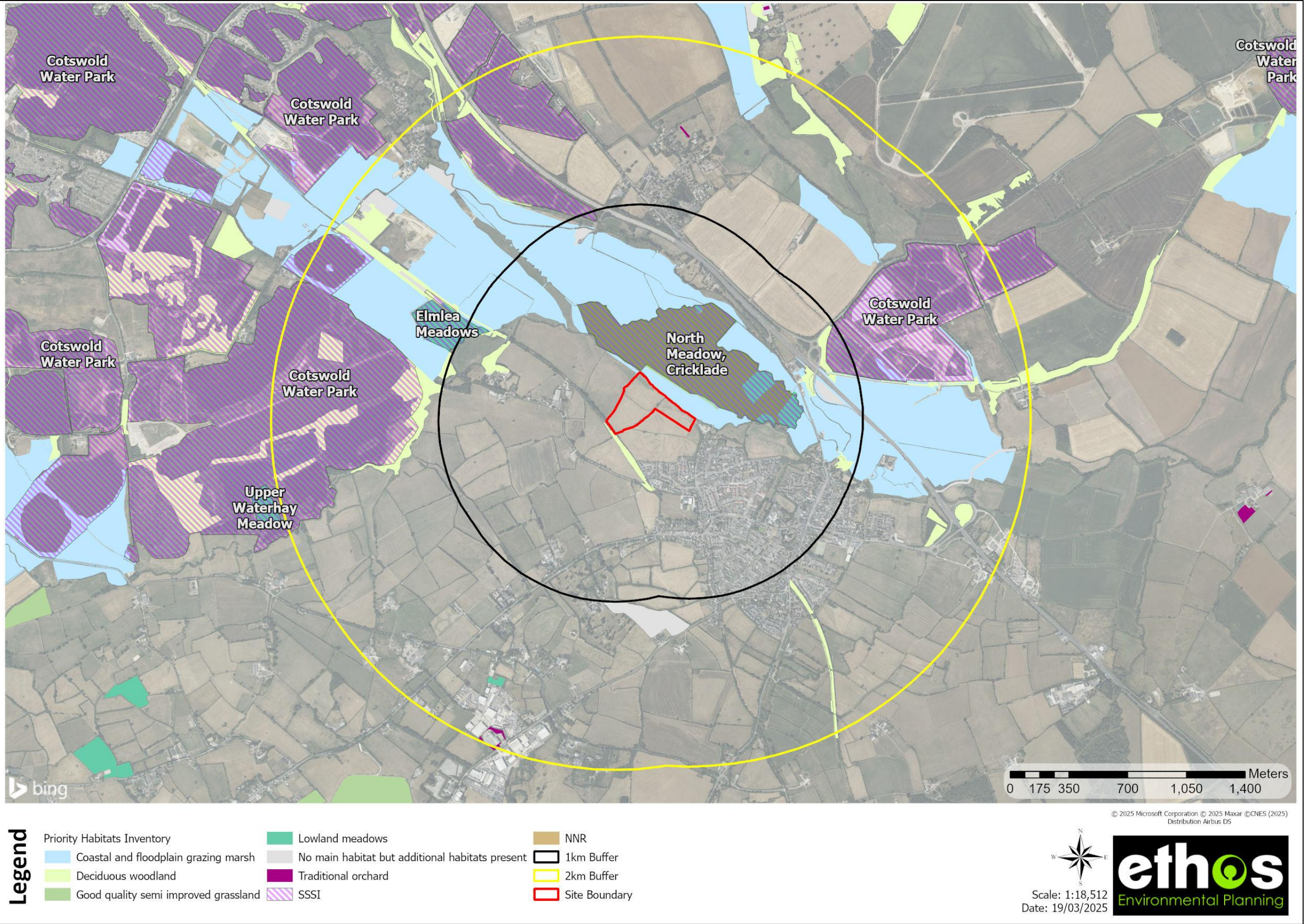


Figure 3 Designated Sites within 2km

Protected and Notable Species (BI-T02)

Species	Dates	Conservation Status	Distance of Closest Record	Potential Impact from Project
Common pipistrelle (<i>Pipistrellus pipitrellus</i>)	Between 1994 – 2020	Wildlife and Countryside Act, LC IUCN red list	On site	Positive
Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>)	Between 1994 – 2020	Wildlife and Countryside Act, LC IUCN red list	On site	Positive
Noctule bat (<i>Nyctalus noctula</i>)	2020	Wildlife and Countryside Act, LC IUCN red list	On site	Positive
Daubentons (<i>Myotis daubentonii</i>)	2020	Wildlife and Countryside Act, LC IUCN red list	On site	Positive
Water Vole	2014 and 2015	NERC S41	Within 1km	Positive
Otter	Between 2000 and 2014	NERC S41	65m	Positive
Lapwing (<i>Vanellus vanellus</i>)	5 between 1993 and 2015	BoCC Red List	Within 1km	Positive
Curlew (<i>Numenius arquata</i>)	2014	BoCC Red List	Within 1km	Positive
Cuckoo (<i>Cuculus canorus</i>)	4 between 1994 and 2015	BoCC Red List	Within 1km	Positive
Grasshopper warbler (<i>Locustella naevia</i>)	2014	BoCC Red List	Within 1km	Positive
Skylark (<i>Alauda arvensis</i>)	20 between 1994 and 2015	BoCC Red List	Within 1km	Positive
Fieldfare (<i>Turdus pilaris</i>)	18 between 1993 and 2014	BoCC Red List	Within 1km	Positive
Redwing (<i>Turdus iliacus</i>)	7 between 1993 and 2014	BoCC Red List	Within 1km	Positive

Species	Dates	Conservation Status	Distance of Closest Record	Potential Impact from Project
House sparrow (<i>Passer domesticus</i>)	3 between 1994 and 2015	BoCC Red List	Within 1km	Positive
Lesser redpole (<i>Acanthis cabaret</i>)	7 between 2013 and 2014	BoCC Red List	Within 1km	Positive
Yellowhammer (<i>Emberiza citrinella</i>)	5 between 2003 and 2013	BoCC Red List	Within 1km	Positive
Common tern (<i>Sterna hirundo</i>)	2015	BoCC4 Amber List	Within 1km	Positive
Green sandpiper (<i>Tringa ochropus</i>)	8 between 2004 and 2014	BoCC4 Amber List	Within 1km	Positive
Short-eared owl (<i>Asio flammeus</i>)	2 between 1994 and 2004	BoCC4 Amber List	Within 1km	Positive
Kingfisher (<i>Alcedo atthis</i>)	10 between 1994 and 2015	BoCC4 Amber List	Within 1km	Positive
Reed bunting (<i>Emberiza schoeniclus</i>)	21 between 1994 and 2015	BoCC4 Amber List	Within 1km	Positive
Barn owl (<i>Tyto alba</i>)	2015	Wildlife and Countryside Act Schedule 1 species	630m	Positive

Summary of Protected and Notable Species (BI-B03)

Otter and water vole surveys found no evidence of otters on-site, though nearby records confirm their presence. However, signs of water voles, including latrines, burrows, and trails, were recorded on site. The area is likely used occasionally by otters for feeding and commuting.

Bat activity surveys conducted by Ethos and by record centre searches identified four species of bat: common pipistrelle, soprano pipistrelle, noctule, and Daubenton’s bat. Overall, bat activity was moderate, with the central hedgerow serving as a key foraging and commuting route due to its high habitat suitability.

While notable bird species were not recorded on-site, a great number have been documented in the neighbouring SAC and nearby SSSI sites.

Constraints and Opportunities for Project (BI-B04)

Notable species on site will provide a variety of opportunities for enhancement. The creation of long grass areas within the meadow habitat will benefit brown hares, while new wildflower meadows will enhance foraging opportunities for badgers. The site will act as a buffer between the river and the housing development, reducing disturbance to otters and water voles. No activities are proposed that could hinder water vole use of this section of The River Thames. Over time, the riverbank is expected to improve, providing better burrowing habitat and increasing foraging vegetation for water voles.

Two new ponds will enhance foraging opportunities for bats, including Daubenton’s bat, which feed over water. Hedgerows will be retained, ensuring continued nesting and foraging habitat for birds. The creation of lowland meadow and ponds will support a diverse range of bird species post-construction. The ponds will also create habitat for aquatic invertebrates, further enriching the foraging resource for bats. Additionally, the creation of lowland meadows and hedgerow enhancement will benefit invertebrates, particularly butterflies, moths, and crickets.

Baseline Habitats Survey

Ecologist responsible for baseline surveys (BI-T03)

Name or Initials	Ben Smurthwaite, Emily Preston,
Organisation	Ethos Environmental Planning
Survey Date	Original survey – March 2022 Update – 12/03/2025
Statement of Competency	

Previous Surveys

A range of ecological surveys have been undertaken at the site by Ethos Environmental Planning over several years to inform the Ecological Impact Assessment (EclA), the Habitat Support Area (HSA) strategy and the current Habitat Management and Monitoring Plan.

Initial ecological surveys were undertaken in 2016, including bat activity surveys and static detector surveys to assess the use of the site by commuting and foraging bats. These surveys identified low to moderate bat activity associated primarily with the hedgerow network and river corridor.

Cricklade EclA

A comprehensive programme of ecological surveys was subsequently undertaken in 2020 to inform the EclA. This included:

- A UK Habitat Classification (UKHab) survey undertaken in March 2020, mapping habitats across the site and informing the baseline biodiversity metric assessment.
- Bat activity surveys undertaken on 29 June 2020, 23 July 2020 and 18 August 2020, supported by static detector surveys between May and August 2020 to assess bat activity levels across the site.
- Riparian mammal surveys for otter and water vole undertaken on 29 June 2020 and 7 September 2020, which confirmed the presence of water vole along The River Thames and the suitability of the river corridor for otter commuting and foraging.
- An updated water vole survey was undertaken in January 2022, which confirmed the continued presence of water vole burrows along The River Thames adjacent to the site.

Recent UKHab Survey

More recently, additional walkover surveys and habitat condition assessments were undertaken in 2025 to inform the Biodiversity Net Gain assessment and the preparation of this Habitat Management and Monitoring Plan. These surveys confirmed that the habitats present on site remain broadly consistent with those previously recorded, comprising predominantly modified grassland fields bounded by native hedgerows and The River Thames.

Overall, the site has been subject to multiple ecological surveys over a period of nearly a decade, covering a range of seasons and ecological receptors. The land use and habitat composition of the site have remained largely unchanged during this period, with the fields continuing to be managed as grazed pasture. As a result, Ethos Environmental Planning has developed a strong understanding of the ecological baseline and habitat characteristics of the site, and it is considered that the available survey information provides a robust evidence base to inform the proposed habitat creation and long-term management strategy.

Habitat Survey

The habitat surveys were undertaken following the UK Habitat Classification (UK Hab). Each habitat feature was given a primary habitat code, and where necessary, more detail has been added with the use of secondary codes. UK Hab has its own symbology which has been used when creating maps for the existing and proposed habitats.

Grasslands were surveyed using as systematic approach, using 1x1m quadrat samples. A minimum of three quadrants were undertaken of each grassland section. Where considered

necessary further quadrat samples were conducted to consider the variation across the grassland or the extent of the field. Information collected within each quadrat included aspect, slope, average ground cover, sward variation, species and their percentage cover.

Condition Assessments

Condition assessments were undertaken for each habitat which required a condition assessment, following the methodology and criteria provided within the Statutory Biodiversity Metric – Technical Annex 1: Condition Assessment Sheets and Mythology (2024).

Survey conditions and limitations

The most recent habitat condition assessment and site walkover were undertaken in February 2025, which falls outside the optimal botanical survey period (generally May–September) recommended within the Statutory Biodiversity Metric guidance for grassland condition assessments.

However, the site has been subject to multiple ecological surveys over a number of years, including a UK Habitat Classification survey undertaken in March 2020, bat activity and static detector surveys undertaken between May and August 2020, riparian mammal surveys undertaken in June and September 2020, and an updated water vole survey in January 2022. These surveys were undertaken during appropriate survey seasons and provide a robust understanding of the ecological baseline of the site.

The site has remained in agricultural grassland management throughout this period, with no significant changes in land use or habitat composition recorded during subsequent site visits. The habitats present are relatively straightforward to interpret outside of the peak botanical survey period, being dominated by modified grassland with areas of other neutral grassland, hedgerows and riparian habitat.

Given the continuity of ecological survey effort and the limited change in site conditions, the timing of the most recent survey is not considered to materially affect the interpretation of baseline habitats or the development of the habitat management proposals set out within this HMMP. A further condition assessment will be undertaken during the appropriate survey season (May–September) as part of the long-term monitoring programme.

Baseline Habitat Descriptions and Condition

Habitats (BI-T04)

Parcel Refs	Habitat Type and Code	Irreplaceable	Priority	Description and Condition Justification	Condition	Area (ha)
A1	Modified Grassland (g4)	No	No	The eastern field contains modified grassland which is dominated (34 – 50%) by perennial ryegrass (<i>Lolium perenne</i>). Passed 5 of 7 criteria, but failed criteria 1 which is an essential criterion for achieve moderate or good condition. Criteria 1: Fail – dominated by perennial ryegrass. Criteria 2: Fail – not particularly varied, grass is all a similar height. Criteria 3: Pass – no scrub present. Criteria 4: Pass – no significant damage evident. Criteria 5: Pass – percentage of bare ground around 5%. Criteria 6: Pass – no bracken present. Criteria 7: Pass – no invasive non-native plant species present.	Poor	1.79
A2	Modified Grassland (g4)	No	No	The western field comprises of modified grassland which is dominated (>75%) by perennial ryegrass (<i>Lolium perenne</i>). There are some areas that are worn by footfall where the public right of way is. Passed 6 of 7 criteria, but failed criteria 1 which is an essential criterion for achieve moderate or good condition. Criteria 1: Fail – dominated by perennial ryegrass. Criteria 2: Pass – evidence of tufted hair grass and varied ground level. Criteria 3: Pass – no scrub present. Criteria 4: Pass – no significant damage evident. Criteria 5: Pass – percentage of bare ground around 5%. Criteria 6: Pass – no bracken present. Criteria 7: Pass – no invasive non-native plant species present.	Poor	6.18
A3	Other Neutral Grassland (g3c)	No	No	The northern edge of the western field bordering The River Thames has a portion of other neutral grassland. The grassland passes 4 of 6 criteria, including criteria 1 which is essential for moderate condition, but failing criteria 6 which is essential for achieving good condition. Criteria 1: Pass – assumed but incomplete species list. Criteria 2: Pass – sward is varied with areas of tussocky grassland. Criteria 3: Fail – bare ground is between 5 – 10% with a mixture of mammal digging, access damage and wet ground damage. Criteria 4: Pass – no bracken or scrub present. Criteria 5: Pass – no significant levels of physical damage or suboptimal species. Criteria 6: Fail – assumed that there was a poor species density.	Moderate	0.17

Parcel Refs	Habitat Type and Code	Irreplaceable	Priority	Description and Condition Justification	Condition	Area (ha)
A4	Other Neutral Grassland (g3c)	No	No	The northern edge of the eastern field also has a portion of other neutral grassland which follows along The River Thames. The grassland passes 5 of 6 criteria, including criteria 1 which is essential for moderate condition, but failing criteria 6 which is essential for achieving good condition. Criteria 1: Pass – assumed but incomplete species list. Criteria 2: Pass – sward is varied with areas of tussocky grassland. Criteria 3: Pass – bare ground is less than 5% with minimal evidence of localised bare grounds. Criteria 4: Pass – no bracken or scrub present. Criteria 5: Pass – some small areas of human physical damage but less than 5%. Criteria 6: Fail – assumed that there was a poor species density around 5 species.	Moderate	0.17

Hedgerows (BI-T05)

Feature Refs	Habitat Type and Code	Irreplaceable	Priority	Description and Condition Justification	Condition	Length (km)
H1	Native hedgerow (h2a)	No	No	This native hedgerow is in good condition with the hedgerow passes all criteria. However, it is classed species poor as there were only 4 species recorded, these being hawthorn, blackthorn, English elm, and dog rose. This hedgerow is found along the southwest boundary of the site. A1. Height: >1.5m average along length. Pass Grown out approximately >5m. A2. Width: >1.5m average along length. Pass 3m wide. B1. Gap - hedge base: Gap between ground and base of canopy 90% of length. Pass No gaps, some small 1m gaps. B2. Gap - hedge canopy continuity: Gaps make up 5m. Pass Continuous along entire length. C1. Undisturbed ground and perennial vegetation: >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length measured from outer edge of hedgerow, on at least one side of the hedge. Pass No evidence of disturbance C2. Undesirable perennial vegetation: Plant species indicative of nutrient enrichment of soils dominates. Pass Some docks and nettle but <5%. D1. Invasive and neophyte species: >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species. Pass None identified. D2. Current damage: >90% of the hedgerow or undisturbed ground is free of damage caused by human activities. Pass	Good	0.094

				None evident.		
H2	Native hedgerow with trees (ha2)	No	Yes	This native hedgerow with trees is in poor condition with it failing four condition assessment criteria within two functional groups. This hedgerow fails in relation to the size of the gaps between the ground and base of the canopy and the hedge canopy continuity. Regarding the trees within the hedgerow, there is only one age class of tree (mature) and more than 5% of trees are found to be in an unhealthy condition. It contains an average of 4 species: Elder, hawthorn, blackthorn, crack willow. This hedgerow can be found along the southern boundary of the site and separates A1 and A2. A1. Height: >1.5m average along length. Pass Grown out approximately 3 to 4m in height. A2. Width: >1.5m average along length. Pass 3m width. B1. Gap - hedge base: Gap between ground and base of canopy 90% of length. Fail Large sections of larger than 5m gaps. B2. Gap - hedge canopy continuity: Gaps make up 5m. Fail Significant gaps due to large swaths of bramble. C1. Undisturbed ground and perennial vegetation: >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length measured from outer edge of hedgerow, on at least one side of the hedge. Pass Good generally no crops or poached ground C2. Undesirable perennial vegetation: Plant species indicative of nutrient enrichment of soils dominates. Pass Some clover but not dominant. D1. Invasive and neophyte species: >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species. Pass None identified. D2. Current damage: >90% of the hedgerow or undisturbed ground is free of damage caused by human activities. Pass None evident. E1. Tree age. Fail Only mature trees E2. Tree Health. Fail Small proportion of trees in poor condition.	Poor	0.393
H3	Native hedgerow	No	No	This native hedgerow with trees is in good condition with it failing only one condition assessment criteria. This is due to one gap in the canopy being greater than 5m. It contains an average of two species being hawthorn and blackthorn. A1. Height: >1.5m average along length. Pass Grown out approximately 5m in height. A2. Width: >1.5m average along length. Pass	Good	0.364

				Approximately 4m wide. B1. Gap - hedge base: Gap between ground and base of canopy 90% of length. Pass Woody ay entire length. One 5m gap but apart from that woody throughout B2. Gap - hedge canopy continuity: Gaps make up 5m. Fail One 5m gap but then continuous. C1. Undisturbed ground and perennial vegetation: >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length measured from outer edge of hedgerow, on at least one side of the hedge. Pass Field margin, no disturbed ground. C2. Undesirable perennial vegetation: Plant species indicative of nutrient enrichment of soils dominates. Pass Less than 5% but some nettle and clovers. D1. Invasive and neophyte species: >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species. Pass None identified. D2. Current damage: >90% of the hedgerow or undisturbed ground is free of damage caused by human activities. Pass Unmanaged hedgerow no damage.		
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Watercourses (BI-T06)

Feature Refs	Habitat Type and Code	Irreplaceable	Priority	Description and condition justification	Condition	Length (km)
R1	Other rivers and streams	No		The watercourse at Stones Farm, Cricklade, forms part of The River Thames and is characteristic of a lowland river system, with gravel and sand comprising the dominant bed material. Within the site, the channel is relatively straight and supports abundant marginal and in-channel vegetation, indicating likely low stream power under typical flow conditions. There is a notable absence of geomorphological features such as point bars, riffle–pool sequences or other depositional features, suggesting a simplified and modified channel form. The bank-top vegetation comprises largely unmanaged grassland, with mature willow (<i>Salix</i> spp.) present along sections of the channel margins. The morphology of the watercourse indicates a history of anthropogenic modification. Review of aerial imagery suggests that the present alignment may have been diverted from a former course, potentially one that previously flowed through North Meadow SAC, with the current channel possibly created or altered to discharge toward the now redundant canal. A ditch branches from the main channel in the upstream section, which is heavily modified and straightened. Evidence of historic dredging is also present, resulting in raised and locally over-steepened banks that are likely to limit lateral connectivity with the floodplain and restrict natural processes such as overbank flow and sediment deposition. Sections of the banks show evidence of past livestock poaching, although these areas have since re-vegetated. Further downstream, near the confluence with the River Churn, the channel becomes more sinuous and exhibits a more naturalistic planform.	N/A	0.433

				Based on the above characteristics, the watercourse can be classified as a modified lowland river with reduced geomorphological diversity and constrained floodplain connectivity. The watercourse is not identified as a Priority Habitat.		
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Figure 4 Baseline Habitats

Baseline Habitats Photos (BI-F04)



Photo 3 Hedgerow along middle section of the site



Photo 4 Western field



Photo 5 Modified grassland – western field



Photo 6 Eastern field

Land Tenure and Public Access

Relevant Land Tenure Information (EI-B01)
Newland Homes currently own the land.
Potential Impact to Scheme (EI-B02)
Should the landownership change during the management period, the S106 agreement will include backstop provisions such as default notices and step in rights to provide additional certainty that the HHMP will be delivered.
Public Access Information (EI-B03)
There is one public footpath running through the site as can be seen on figure 5. This footpath has two gates at either ends of the site which acts as access to the fields. This length of footpath will be retained during the course of the project as a public right of way will and will be maintained through mowing a path through the lowland meadow. It is expected that these arrangements will remain the same throughout the scheme.
Potential Impact to Scheme (EI-B04)
This is not expected to have any significant impacts to the scheme, however, the strip which is classed as a PRow will be mown short in order to make access through the fields easier. Due to the human activities which will therefore take place on this linear path, the habitat classification for the proposed habitats will be modified grassland rather than lowland meadow which the rest of the site comprises of.

Land Tenure and Public Access Plan (EI-F01)



Figure 5 Public access plan

Geology and Topography

Geological Information (EI-B07)

The bedrock geology of the entire site is classified as *Oxford Clay Formation*, a mudstone-dominated Jurassic bedrock characterised by clay-rich contents and very low impermeability. This geology leads to slowly draining soils that remain most for prolonged periods, particularly during winter. These conditions limit drought stress but can cause short-term waterlogging, shaping the suitability of species-rich habitats. The clay-rich geology is also associated with moderate natural fertility.

The site also has a superficial geology deposit layer comprising of alluvium (clay, silt, sand, and gravel), these materials are deposited on site through fluvial processes namely as the site acts as a floodplain.

Potential Impact to Scheme (EI-B08)

The seasonally wet nature of clay soils can provide favourable conditions for the restoration of neutral and damp meadow communities, particularly where traditional management such as hay cutting and conservation grazing is implemented. These conditions broadly reflect those found within the nearby North Meadow and Clattinger Farm SAC, which is also located on alluvial clay soils within the floodplain of the Upper Thames.

Overall, the underlying geology and soil conditions are considered compatible with the proposed habitat restoration and creation measures, although management practices such as grazing intensity, machinery access and timing of hay cutting may need to be adapted in wetter periods to avoid excessive soil compaction or poaching.

Geology Plan (EI-F02a)

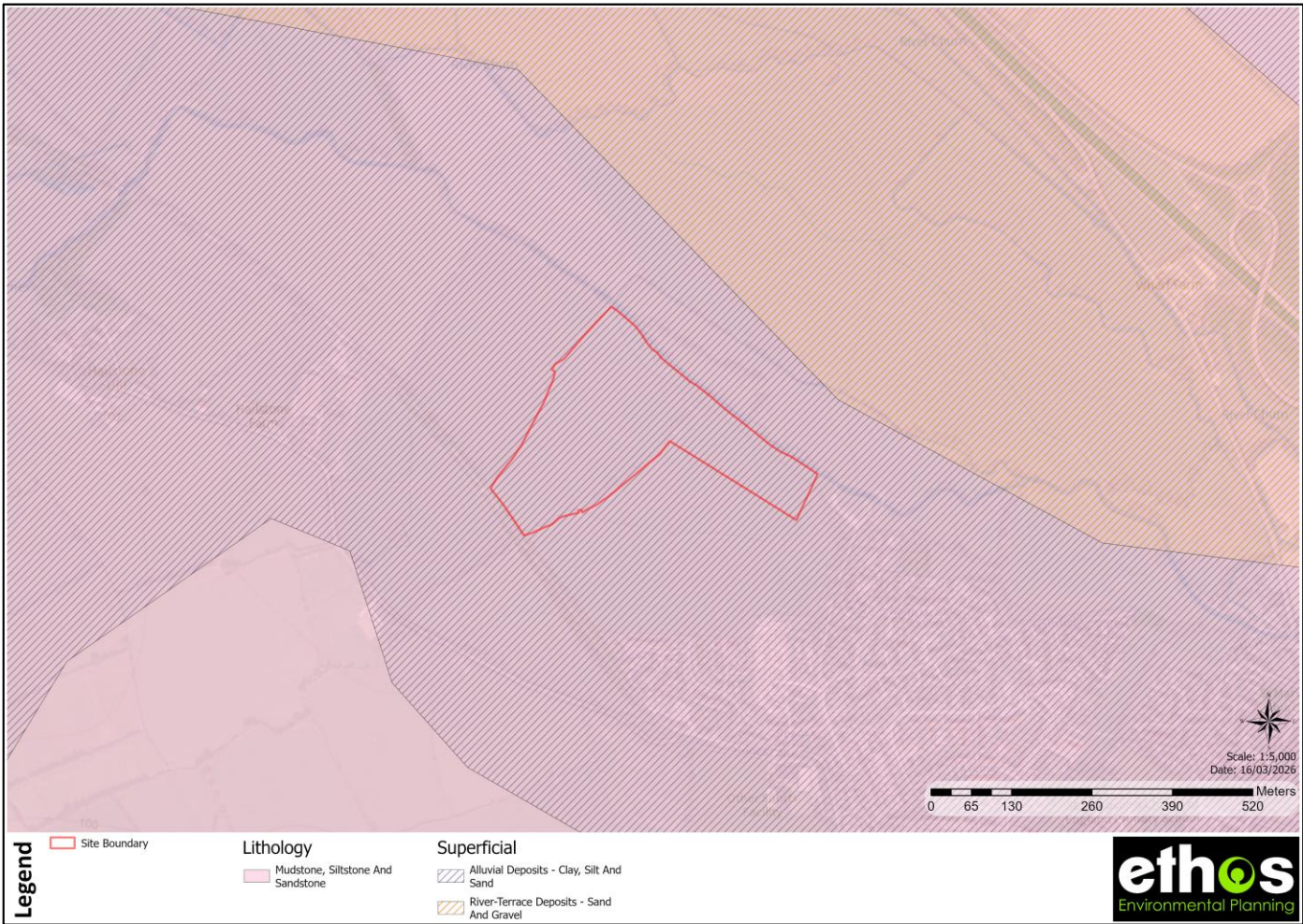


Figure 6 Underlying bedrock types on site

Topography (EI-B09)

Most of the site is relatively flat with an aspect of 0° to 1° being observed, however, there are some areas where the aspect increases to the class *gently level* and *gently sloping* (2° to 5°), specifically along the field boundaries. Additionally, along the southern boundary of the site there is an area which is far steeper compared to the rest of the site and classed as *strongly sloping* (6° to 10°) with patches of *gently steep* (11° to 15°) being observed within this area. Similar gradients can also be seen along the northeastern boundary which follows The River Thames.

Potential Impact to Scheme (EI-B10)

The relatively flat topography will benefit the establishment of lowland meadow in a few ways. Firstly, flatter topographies will often have a uniform hydrology which will create a more consistent meadow establishment due to even moisture distribution, fewer excessively dry upper slopes or waterlogged foot slopes, and provide more predicable soil conditions across the site. This stability can help create diverse swards as microclimates, soil fertility, and moisture remain stable over time allowing grasses to become established. Moreover, when it comes to management, flatter surfaces will make it easier for mechanical intervention as there is reduced risk of machinery slippage which would overall reduce the costs of such management.

However, some constraints flatter surfaces might cause are increased risk of waterlogging if soils are heavy, this can kill or stress meadow seedlings and favour competitive rushes and creeping species which will reduce species diversity. Furthermore, the limited natural variation in ecological niches could also pose a constraint on species diversity as conditions across the site are consistent.

Topography Plan (EI-F02b)

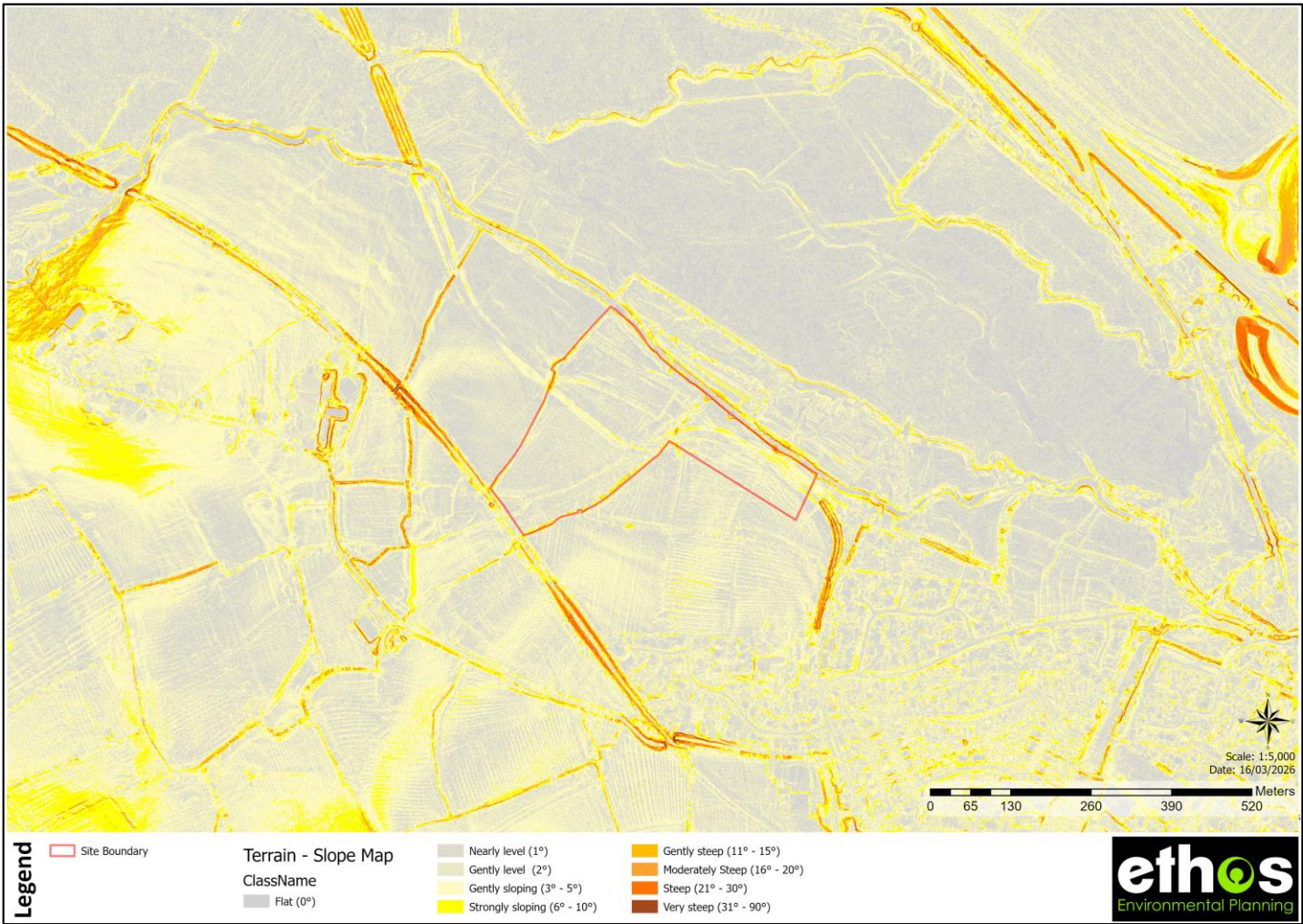


Figure 7 Topography of the site

Flood Risk Zones

Summary of Flood Risk Information (EI-B19)

The northern section of the site lies within Flood Zones 2 and 3 associated with The River Thames floodplain. While this indicates a higher probability of periodic inundation, this is not considered a constraint to the proposed habitat creation and management measures.

Potential Impact on Project (EI-B20)

The proposed habitats within this area primarily comprise lowland meadow, riparian buffer habitat and a series of ponds, all of which are naturally associated with floodplain environments. Seasonal flooding can provide ecological benefits by maintaining soil moisture levels, redistributing nutrients and sediments, and supporting the development of species-rich floodplain grassland communities similar to those present within the nearby North Meadow and Clattinger Farm SAC.

The ponds proposed within the northern section of the site will be designed to accommodate fluctuating water levels and occasional inundation, reflecting natural floodplain processes. These features are therefore expected to be resilient to periodic flooding and may benefit from hydrological connectivity with surrounding floodplain habitats, which can enhance aquatic biodiversity and habitat diversity.

Flood Risk Zone Plan (EI-F07)

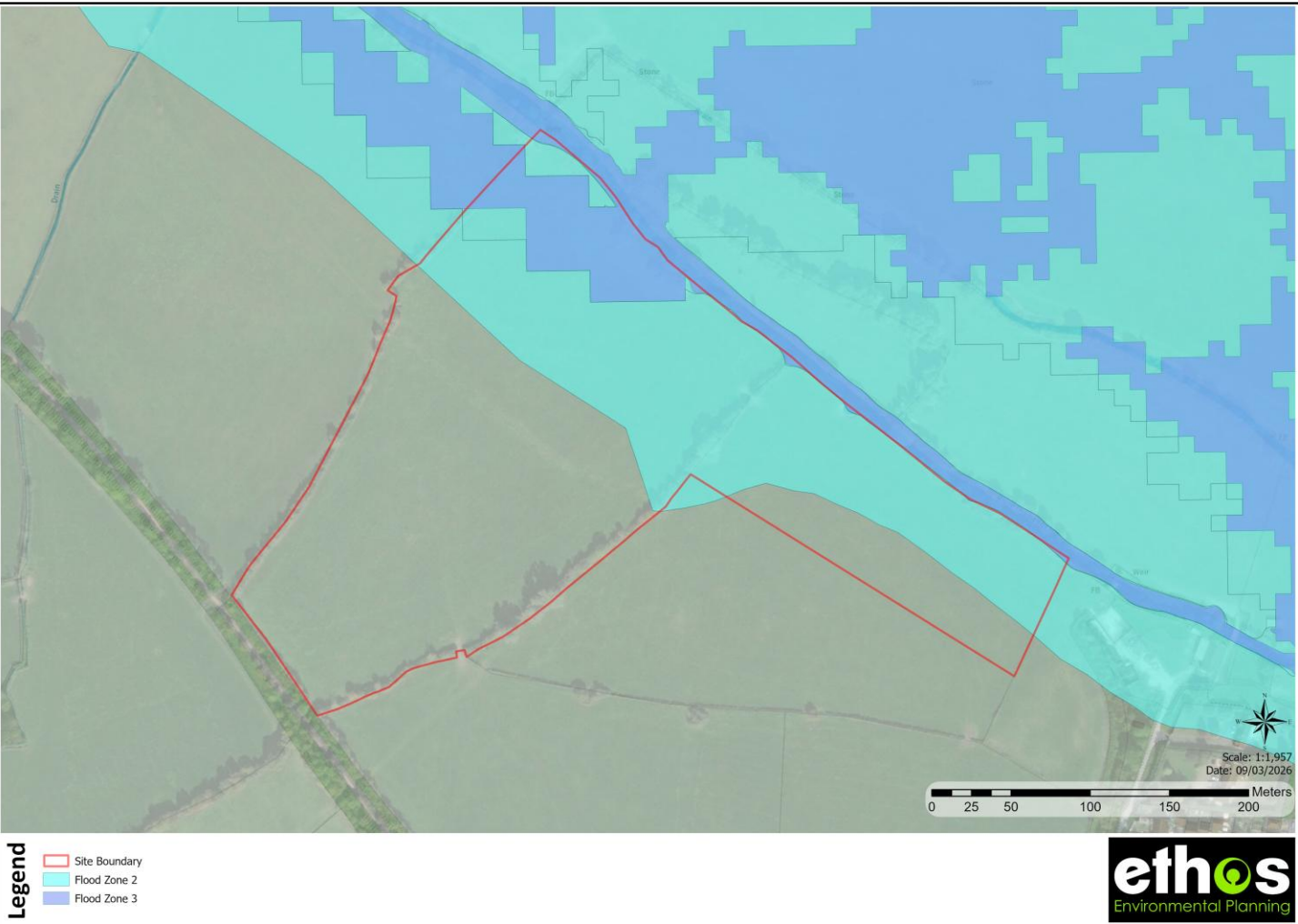


Figure 8 Flood zone risk map of the site

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	Magnesium (N)	Phosphorous (P)	Potassium (K)
South	6.4	4	0	1
North	7.1	4	0	2-

Summary of Soils Information (EI-B13)

Soil analysis was undertaken by NRM Laboratories on behalf of Ethos Environmental Planning in March 2023 (Appendix 3 of the Shadow Habitats Regulations Assessment and Habitat Support Area Strategy).

The soil sampling returned pH levels between 6.4 and 7.1, indicating soils with a neutral chemistry, with slightly higher pH values recorded toward the northern part of the site. Neutral soils are generally suitable for the restoration and establishment of species-rich neutral grassland communities.

Potential Impact on Project (EI-B14)

Analysis of soil nutrients returned phosphorus levels of approximately 7.6 mg/l, which are considered relatively low in an agricultural context. Low phosphorus levels are favourable for grassland restoration as they reduce the competitive advantage of nutrient-demanding grasses and allow a wider range of herbaceous species to establish.

Using the grassland restoration potential key (Blakesley et al., 2020), the site is assessed as having high potential for grassland restoration. The soils do not impose significant stress on plant establishment across most of the site, although areas within the floodplain to the north-west may experience periodic waterlogging which could influence species composition and management practices.

In addition, the site currently supports low levels of injurious or aggressive weed species, and livestock are available to support long-term management through conservation grazing. These factors, combined with the favourable soil chemistry and nutrient status, provide suitable conditions for the restoration of the existing modified grassland to species-rich lowland meadow through appropriate seeding and traditional hay meadow management.

The neutral clay soils present across the site are broadly comparable to the alluvial soils which support the lowland hay meadow communities within the nearby North Meadow and Clattinger Farm SAC. As such, the site has the potential to support a broadly similar neutral grassland plant community under appropriate management. However, unlike the SAC meadows, the grassland within the site is not subject to regular seasonal flooding and sediment deposition, which are key ecological processes that influence the species composition and long-term dynamics of the SAC floodplain meadow communities. As a result, while the restored grassland is expected to develop into species-rich neutral meadow, it is unlikely to replicate the full ecological character of the SAC meadows.

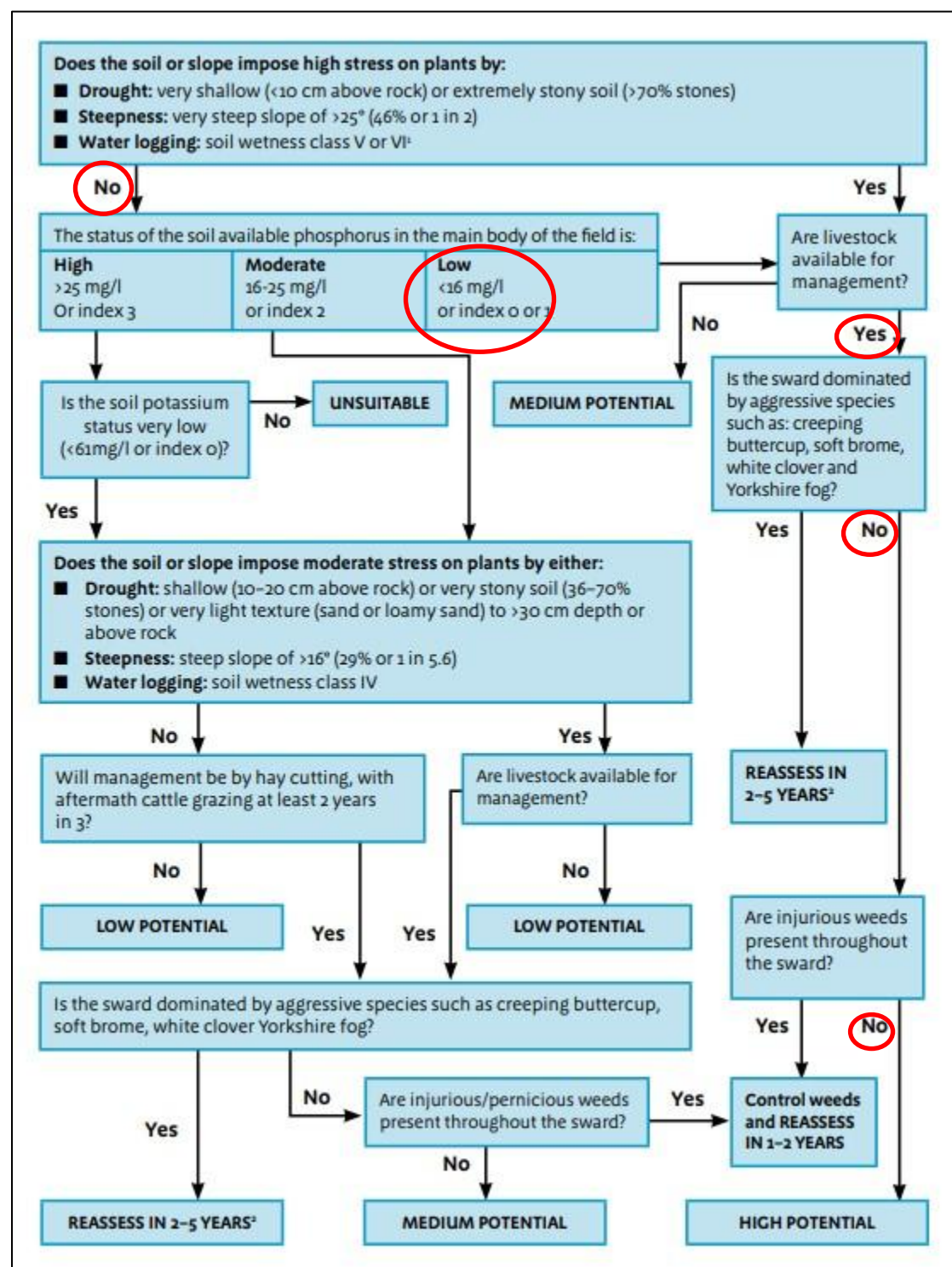


Figure 9 *Grassland restoration key*

Landscape Character and Designations

Summary of Landscape Character and Designations (EI-B21)

National Character Area

The site sites within the Upper Thames Clay Vales which is an extensive stretch of lowland farmland, primarily situated on the Jurassic and Cretaceous clays. The NCA contains three National Landscapes including the North Wessex Downs, Chilterns and Cotswolds. It also includes two Special Areas of Conservation (SAC) recognised for their lowland meadow vegetation. The landscape varies between enclosed pastures with wet valleys, mixed farming, hedgerows, hedge trees, and field trees, and more open, arable farmland.

Wiltshire Local Nature Recovery Strategy

The northern part of the site falls within Local Nature Recovery Strategy (LNRS) opportunity areas for Wiltshire and Swindon. These mapped priorities identify locations where habitat creation and enhancement could contribute to wider landscape-scale nature recovery.

The LNRS identifies opportunities for the creation and restoration of neutral grassland habitats, as well as the enhancement of rivers, streams and associated riparian corridors. These priorities align with the proposed habitat creation and management measures within the Habitat Support Area, including the restoration of species-rich grassland, establishment of riparian buffers along The River Thames and the creation of ponds and wetland features.

Potential Impact on Project (EI-B21)

The proposed habitat management within the Habitat Support Area is therefore consistent with the objectives of the LNRS. In particular, the restoration and long-term management of species-rich neutral grassland through traditional hay meadow management and conservation grazing will contribute to the LNRS objective of increasing the extent and quality of semi-natural grasslands within the local landscape.

In addition to habitat creation, the LNRS also highlights the importance of appropriate long-term management of grassland habitats, which is necessary to maintain botanical diversity and prevent the loss of species-rich grassland through agricultural improvement or scrub encroachment. The proposed management regime within the site, including seasonal grazing, hay cutting and removal of arisings, will therefore provide an opportunity to enhance the ecological value of the grassland while contributing to wider LNRS habitat recovery priorities.

Furthermore, the proposed riparian buffer and pond creation along The River Thames corridor will support LNRS objectives to improve river and stream habitats, strengthen ecological connectivity and enhance the resilience of floodplain ecosystems.

Landscape Character and Designations Plan (EI-F08)

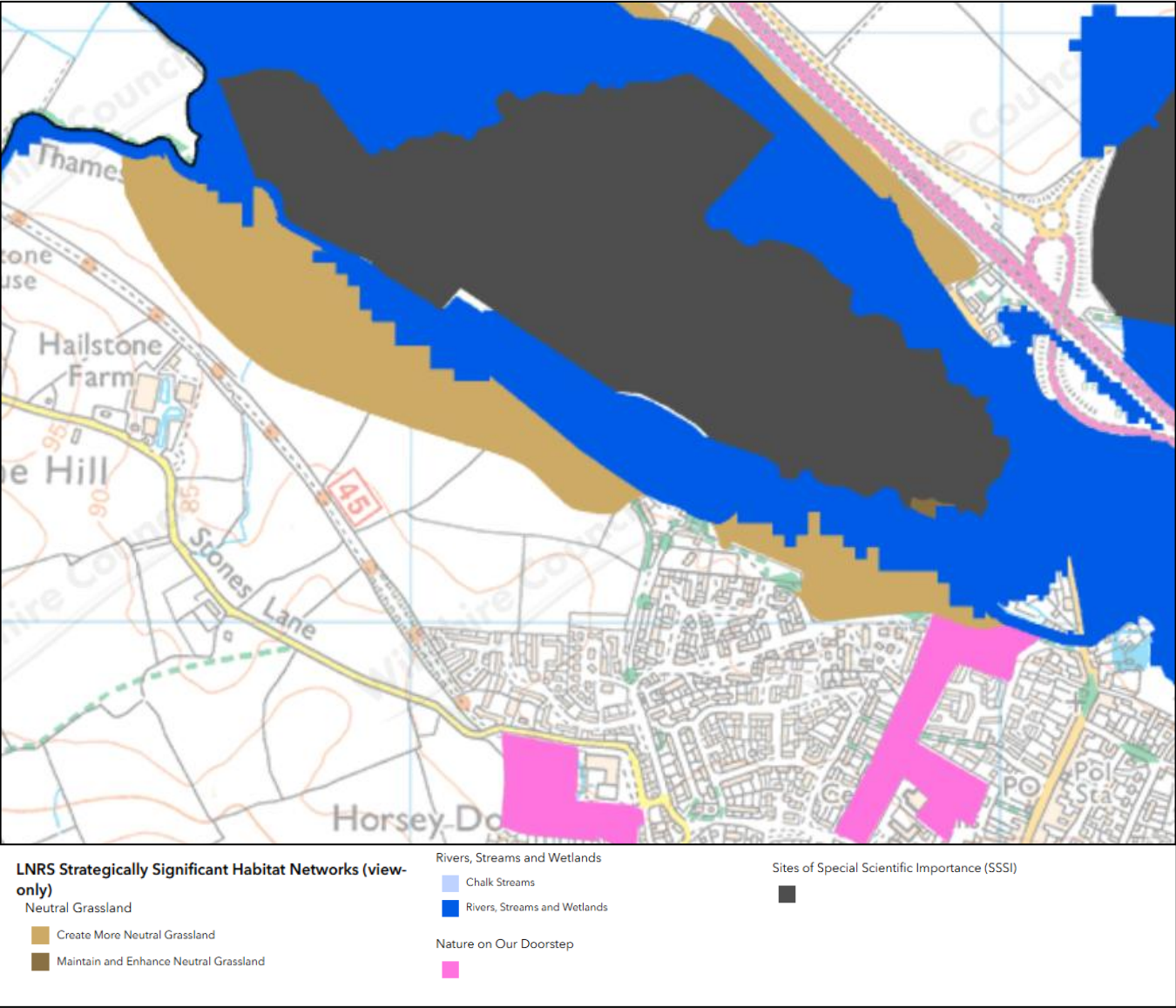


Figure 10 Outlined areas in the Wiltshire LNRS for nature opportunities

Historic Environment and Earth Heritage

Summary of Historic Environment and Earth Heritage (EI-B22)

Historic mapping and aerial imagery indicate that the site was previously intersected by the Wilts & Berks Canal, which historically connected Swindon with the wider canal network in Wiltshire and Berkshire. The canal was constructed in the early nineteenth century and was largely abandoned in the early twentieth century following a decline in commercial canal transport.

Evidence of the former canal alignment remains visible within the site. The canal historically entered the site from the tree-lined corridor along the western boundary, where an area of mature woodland remains today. From this point the canal appears to have followed the northern edge of the site before turning southwards and passing through the central part of the area now identified as Area A2.

Although the canal channel has since been infilled, its former route remains clearly identifiable on site and within aerial imagery, where subtle changes in topography and vegetation patterns reflect the historic alignment.

Historic records indicate that there were once several canal-related structures within the western section of Area A1, including a drawbridge and associated infrastructure serving the canal crossing. While these features are no longer present, they indicate the historic use of the site as part of the canal corridor.

Historic mapping also suggests that the surrounding agricultural fields were previously subdivided into smaller parcels. For example, Area A2 appears to have historically comprised two fields, while Area A4 was divided into approximately four smaller fields, separated by hedgerows which have likely been removed during later agricultural intensification.

The current public right of way crossing the site follows the former alignment of the canal towpath, reflecting the historic transport corridor through the landscape.

Potential Impact on Project (EI-B23)

The historic alignment of the former Wilts & Berks Canal passes through the site and remains visible within the landscape through subtle variations in topography and vegetation patterns. As the canal channel would have historically been excavated and subsequently infilled, it is possible that soils within this corridor differ slightly from the surrounding fields.

In particular, the former canal alignment may contain deeper or more organic soils, which could result in locally increased soil fertility and greater water retention compared with the surrounding agricultural land. These conditions may influence the development of vegetation within this narrow corridor and could favour the establishment of slightly more productive or wetter grassland communities.

However, these variations are not considered to present a constraint to the proposed habitat restoration. Any localised differences in soil fertility or moisture are likely to contribute to small-scale habitat variation within the grassland mosaic, which can be beneficial for overall ecological diversity.

The proposed habitat creation works have also been designed to avoid potential disturbance to any historic features associated with the canal corridor. In particular, the proposed ponds are located outside the known alignment of the former canal, and the management proposals primarily involve grassland restoration and low-intensity grazing which will not involve significant ground disturbance.

As a result, the proposed works are not expected to adversely affect any surviving archaeological features associated with the historic canal, and the legacy of the canal corridor will continue to be reflected in the structure of the landscape.



Figure 11 Historic landscape of the site

2. Planned Management Activities

In addition, the PRow which runs through the site has resulted in the landscape plans to include a strip of modified grassland in order to create access throughout this section of the HSA.

Management Plan Aims and Objectives PM-B01

The overall vision for this HMMP is to enhance biodiversity and support long-term ecological resilience by maintaining and improving the existing landscape and ecological features. This includes a particular focus on riverine habitats, grassland, scrub and hedgerows, ensuring their value for wildlife and ecosystem function is preserved and strengthened over time.

A key aim of this HMMP is to contribute to the Site Improvement Plan for the North Meadows and Clattinger Farm SAC, particularly by reducing the fragmentation of semi-natural grasslands on the surrounding areas.

The objectives for this HMMP are split into ecological and landscape objectives, and are as follows:

Landscape Objectives

- To maintain the existing species-rich hedgerows and mature trees to retain the sense of enclosure and intimacy.
- To maintain the existing field patterns and enclosures.
- To enhance the open nature of the grassland areas.
- To maintain and enhance the fringe habitats of scrub and riparian habitat along The River Thames.
- To maintain public access within the site along the existing PRow.
- To enhance the relationship between the site and the Upper Thames.

Ecological Objectives

- To bring the existing grassland into lowland meadow through traditional management.
- To monitor botanical diversity of the grassland to inform long-term grassland management prescriptions.
- Provide habitat to the benefit of riparian species such as water vole through the provision of a riparian buffer.
- Provide suitable terrestrial habitat for the benefit of a range of faunal species through the creation of areas of ponds.
- Strengthen the boundaries of the site as wildlife corridors through the maintenance of existing hedgerows.

Design Principles Informed by Baseline Information PM-B02

The designated SSSI and SAC which are found across The River Thames within close proximity to the site has informed the design of this HMMP by the creation of very high distinctiveness habitats adjacent to the proposed residential area. The creation of good quality green space is to act as a buffer for the areas with statutory designation in order to mitigate potential impacts from the likely increased human activity.

Habitat and Condition Targets PM-T01

Baseline Habitat Type	Target Habitat Type	Parcel / Feature Refs	Baseline Condition	Targeted Condition	Years to Targeted Condition	Condition Assessment Targets
Modified grassland	Lowland meadow	G1 and G2	Poor	Good	20 years	Good condition will be targeted by achieving a pass in all criteria.
Modified grassland	Modified grassland	G3 and G7	Poor	Poor	2 years	While the targeted habitat type of this area remains the same as the baseline habitat type, a new seed mix will be sown along this strip of grassland. However, poor condition will be targeted due to the purpose of this area acting as footpath, hence mowing activities are scheduled to occur regularly meaning no conditions will be targeted.
Modified grassland	Other neutral grassland	G4	Poor	Moderate	5 years	Moderate condition will be targeted by achieving a pass in criteria in all criteria apart from C and B due to the proximity of the created ponds.
Modified grassland	Pond (non-priority)	W1	Poor	Good	30 years	Good condition will be targeted by achieved a pass in all criteria.
N/A	Species-rich native hedgerow with trees	H6 and H7	N/A	Good	20 years	Good condition will be targeted by achieving a pass in all criteria with the exception of E1 as trees will be of the same age class.

Creation, Enhancement and Management Targets and Prescriptions

Habitat Creation, Enhancement and Management Plan EM-F01



Figure 12 Proposed habitats

Grassland (Medium, High, and Very High Distinctiveness)

Creation, Enhancement and Management Summary (GH-T01)

Target Habitat			Lowland meadow and other neutral grassland (G1N/S, G2, and A3/4)			
Condition Assessment Criteria		Targeted	Relevant Parcels	Creation Approach	Enhancement Approach	Management Approach
A	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. Note – this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.	Yes	G1N/S, G2, and G4	. Green hay will be spread onto the site. If this is not available an alternative species rich seed grassland seed mix (EM3 Special General Purpose Meadow Mixture by Emorsgate) will be sown across the habitat parcel.		The habitat will be grazed with cattle within the early spring (March – April) and again in the late summer – Autumn (July – September). The aim of the grazing will be to remove dominant grasses, reduce nutrients via the removal of vegetation and the provision of bare soil.
B	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.	Yes	G1N/S and G2			The management of the meadow will see a variation in sward height over time. This will include a variation in sward height during the aftermath grazing, but the grassland will be longer and of similar height during the summer months. This plan will include the provision of buffers when the grassland is cut during the late summer months which can be grazed out later in the year.
C	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Yes	G1N/S and G2			It is considered that the management regime with cattle will create patches of bare ground but less than 5% of the grassland sward.
D	Cover of bracken <i>Pteridium aquilinum</i> less than 20% and cover of scrub (including bramble) less than 5%.	Yes	G1N/S, G2, and G4			The use of livestock within this section will prevent scrub encroachment within the site. No bracken was recorded on site.
E	Combined cover of species indicative of suboptimal condition and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging activities) accounts for less than 5% of total area. If any invasive non-native species (as listed on Schedule 9 of WCA) are present, this criterion is automatically failed.	Yes	G1N/S, G2, and G4			It is expected that the long-term management will reduce the fertility within the soil and as such will not provide suitable habitats for species indicative of high nutrient loads. To control damage, the correct numbers of stock will be used when aftermath grazing, and stock will be removed from the field during wet conditions.

Target Habitat			Lowland meadow and other neutral grassland (G1N/S, G2, and A3/4)			
Condition Assessment Criteria		Targeted	Relevant Parcels	Creation Approach	Enhancement Approach	Management Approach
F	There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type. Note – this criterion is essential for achieving Good condition for non-acid grassland types only.	Yes	G1N/S, G2, and G4			The creation as well as the long-term management of the habitat will provide good conditions for species rich grassland.

Grassland (Medium, High, and Very High Distinctiveness)

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

Action	Relevant Parcels	Timing	Prescriptions
General infrastructure	All created grassland	Prior to establishment	• The majority of the existing field boundary fencing is expected to remain suitable for grazing management and will be retained where possible. Any damaged sections will be repaired or replaced where necessary to ensure livestock can be safely contained within the grazing compartments. • Additional stock fencing will be installed along The River Thames corridor to establish a riparian buffer and to control livestock access to the watercourse. The detailed design and management of this fencing is described further within the River Buffer management section of this plan. • Water supply for livestock will be provided through the installation of water troughs within each grazing compartment, likely supplied by a pumped abstraction from the adjacent watercourse. These will be positioned in suitable locations to allow stock access while avoiding sensitive habitats such as newly created ponds and riparian vegetation. • Limited additional infrastructure may also be required to support grazing management, including temporary cattle feeders and a small livestock handling area to allow stock to be gathered and managed safely when required. These features will be located in areas of lower ecological sensitivity and designed to minimise visual and ecological impacts.
Grazing Compartments	All created grassland	Throughout project	The site will be managed as two grazing compartments, broadly reflecting the existing field pattern. Maintaining two separate fields will allow grazing pressure to be managed more effectively and will provide flexibility in the timing of management operations. The use of two grazing compartments will allow: • The temporary removal of livestock from one field while the other is being grazed. • improved control of grazing pressure to avoid overgrazing, soil compaction or excessive poaching, particularly during wetter periods. • Greater variation in grassland height over the two compartments.
Preparation of the ground prior to re-seeding	G1S	Prior to grazing	• Livestock will initially be used to reduce the height and density of the grassland sward, with the aim of producing a short sward height of approximately 3–5 cm and exposing areas of bare soil. • The aim of this initial grazing period is to reduce the dominance of agricultural grasses and remove excess biomass, preparing the grassland for subsequent restoration works. • Grazing pressure will be managed carefully to avoid excessive poaching, particularly during periods of wet weather. Livestock will be removed from the fields where ground conditions become unsuitable. • Following grazing, the grassland will be mechanically scarified using a tractor-mounted chain or disc harrow to break up the thatch layer and create areas of exposed soil suitable for seed establishment. The aim will be to create approximately 30–50% disturbed ground across the sward, which will improve germination conditions for the introduced meadow seed mix. • Prior to mechanical works, the site will be checked for evidence of significant soil compaction. Where compaction is identified as a constraint to establishment, light mechanical loosening (e.g. shallow aeration) may be undertaken to

			improve soil structure and drainage. However, given the current grazing management of the site, significant compaction is not anticipated to be a major constraint.
Introduction of seed	G1S	Prior to grazing	<u>Green hay</u> - Given the large extent of grassland within the site, the introduction of meadow species will be undertaken through a combination of targeted green hay spreading and locally sourced seed introduction. - Where possible, green hay will be sourced from species-rich neutral grassland within the local area, subject to agreement with the landowner and site managers. A suitable potential donor site is Blakehill Farm Nature Reserve, managed by Wiltshire Wildlife Trust, which supports species-rich neutral grassland communities on soils of a broadly similar type. - Green hay will be cut from the donor meadow during the peak flowering period and spread across prepared areas of the restoration site shortly after cutting. This method allows the transfer of a diverse range of locally occurring plant species and maintains the local genetic character of meadow communities. - The green hay will be spread across prepared nucleus areas of the grassland, following initial grazing and mechanical scarification to create areas of exposed soil suitable for seed establishment. These seeded areas will act as source areas for natural colonisation, allowing meadow species to gradually spread into the surrounding grassland through natural dispersal processes, livestock movement and the annual hay cutting regime. <u>Timing of Collection</u> - Green hay will be collected during the peak flowering and seed-setting period, typically between late June and late July, depending on seasonal conditions. - The timing of the cut will be selected to ensure that the majority of desirable meadow species have developed mature seed. <u>Preparation of the Restoration Area</u> - Prior to green hay application, the grassland within the restoration areas will be grazed tightly to reduce the sward height. - Following grazing, the ground will be scarified using a tractor-mounted chain or disc harrow to break up the thatch layer and create exposed soil suitable for seed establishment. - The aim will be to achieve approximately 30–50% disturbed ground to maximise germination success. <u>Harvesting of Green Hay</u> - The donor meadow will be cut using a standard hay mower. - The cut material will then be collected immediately using a forage wagon or similar equipment to retain as much seed as possible. - The hay will be transported to the restoration site as soon as possible following cutting, ideally within 24 hours, to minimise seed loss. <u>Application of Green Hay</u> - The green hay will be evenly spread across the prepared restoration areas using a muck spreader or by manual spreading where appropriate. - The hay will be spread in a thin layer (approximately 5–10 cm) to ensure good contact between the seed and soil surface.

			- The hay will be left in place for approximately 1–2 weeks to allow seeds to fall into the soil. <u>Removal of Arisings</u> - After the seeds have dispersed, the remaining hay material may be lightly turned or removed, depending on the amount of material present and site conditions. - Where possible, livestock may be introduced later in the season to graze the remaining vegetation and assist with seed incorporation. <u>Follow-up Management</u> - The restored areas will be managed through traditional hay meadow management, including annual hay cutting, removal of arisings and conservation grazing. - Monitoring of the vegetation will be undertaken to assess the success of species establishment and spread into surrounding grassland areas.
Commercial Seed	G1S		- If a local doner site cannot be sourced, it is recommended to use a commercial seed mix (e.g. EM3 Special General Purpose Meadow Mixture) . The seed mix must be species rich and matched to the soil type and proposed management actions. - The seed mix must be approved by the appointed ecologists and the LPA ecologist - Seed will be slot sown in the autumn to the manufacturer's specification. - As the seed introduction will be over sown on the existing scarified grassland it is expected that a sowing rate of 20kg per hectare is appropriate.
Natural Regeneration and dispersal of seed	All created grassland	Throughout the project	It is expected that introduced species will gradually disperse throughout the wider grassland areas over time. Dispersal will occur through livestock movement, hay cutting and natural seed spread, supported by ongoing reductions in soil fertility, the creation of suitable areas of bare ground, and the implementation of traditional hay meadow management practices.
Annual management	All created grassland	Year 2 onwards	- If there has been suitable growth within the winter/early spring, cattle should be put into the field at a stocking rate of 0.5 livestock per hectare with the aim of reducing the vegetation growth of dominant plants and not to create bare ground. - The fields will be shut up (i.e., grazing excluded) between the months of April and July to allow the flowers to bloom and seed to shed. No grazing will take place during this time period. A certain level of flexibility is desirable so that management can be adjusted to the annual variation of weather conditions. - The grassland will be cut between mid-July/August and will be left on the ground to cure, turned with a tedder and then baled and removed from the field. This process will allow the seeds to drop into the grassland sward and will also provide quality fodder for livestock. The grassland will be cut from the inside of the field outwards to ensure that animals do not become trapped within the centre of the field during the hay making process. 5m grassland buffers will be left at the margins of the field to ensure that there is pollen/nectar retained for invertebrates. However, they may be cut bi-annually in the autumn where appropriate as a supplement to cattle grazing. - All hay will be removed from the site once bailed - Following the grass cut, cattle will be put back on the field to aftermath graze to control vigorous grasses and herbaceous species.

Grazing	All created grassland		<u>Grazing type</u> • It is recommended to graze the grassland with cattle using native stock which are suited to conservation grazing. Recommended breeds which could be used include Herefords, belted Galloway, shorthorn, longhorn, redpoll or Devon red, at a stocking rate of approximately 0.5 livestock units per hectare. • The grassland will be managed through a combination of spring grazing, annual hay cutting and aftermath grazing. As the hay cut will remove a substantial proportion of the annual biomass and nutrients from the site, the effective grazing requirement will be lower than for a grazed-only system. Stocking rates will therefore be reviewed according to sward height, species composition, and ground conditions, with the aim of maintaining an appropriate meadow structure and avoiding overgrazing or poaching. As the grazing window is restricted estimated numbers are: ○ 8 cattle for 2 months in spring ○ 12 cattle for 2 months in autumn <u>Objective led grazing</u> Stocking levels and grazing periods will be objective-led and responsive to site conditions. Although stocking rates are provided they are only a guide to meet the grassland objectives which are set out below: • Reduce excess biomass and limit the dominance of competitive grasses within the sward; • Maintain an appropriate sward height and structure to support the establishment and persistence of meadow species; • Provide structural variation within the grassland, including areas of shorter and slightly taller vegetation which are beneficial for invertebrates and other wildlife; • Prevent excessive grass growth following the hay cut, while avoiding overgrazing of the sward; and • Avoid soil compaction or poaching, particularly during periods of wet ground conditions. Livestock numbers and grazing duration will therefore be adjusted according to sward height, vegetation response, seasonal growth rates and ground conditions. This adaptive approach will ensure that grazing pressure remains appropriate to support the long-term condition targets for species-rich lowland meadow.
Grazing requirements	All created grassland	All year	• Water troughs or a bowser must be provided within the field when livestock are within the field. • To prevent harming insects and other invertebrates on site, it is recommended to only treat livestock with ivermectin if necessary. • No fertiliser or farmyard muck will be added to the fields as this would only benefit the fast-growing species such as the grasses, resulting in the herbaceous species being outcompeted. • Stock must be checked on a regular basis to ensure that they are in a good condition. • There will be no supplementary feedings within the fields.

Pond

Creation, Enhancement and Management Summary (PO-T01)

Target Habitat:		Ponds (non-priority habitat)				
Condition Assessment Criteria		Targeted	Relevant Parcels	Creation Approach	Enhancement Approach	Management Approach
A	The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.	Yes	W1	Ponds will be created in pre-existing areas of depressed land. Because of the sloped topography of the site, it is expected that the ponds will fill naturally from the ground and surface water, which should provide an ongoing good quality water source.		Vegetation will be removed through the grazing of ponds.
B	There is semi-natural habitat (moderate distinctiveness or above) completely surrounding the pond, for at least 10 m from the pond edge for its entire perimeter.	Yes	W1			The land surrounding the ponds will remain as lowland meadow away from the public right of way.
C	Less than 10% of the water surface is covered with duckweed <i>Lemna</i> spp. or filamentous algae.	Yes	W1			Light grazing pressure around the pond margins, combined with the presence of several ponds across the site, is expected to maintain open conditions and limit excessive vegetation encroachment. In addition, the ponds are likely to benefit from vertical hydrological connectivity with surrounding groundwater, which will support water movement and oxygenation within the water column. These conditions should reduce the likelihood of stagnant or nutrient-rich water developing and therefore limit the dominance of floating vegetation such as duckweed. The ponds are therefore expected to remain within the relevant condition assessment criteria, whereby duckweed should not dominate the water surface. Where necessary, marginal or aquatic vegetation may be removed on a cyclical basis to prevent excessive biomass accumulation. The removal of vegetation from the ponds will also export nutrients from the system over time, reducing fertility and helping to maintain suitable conditions

Target Habitat:		Ponds (non-priority habitat)				
Condition Assessment Criteria		Targeted	Relevant Parcels	Creation Approach	Enhancement Approach	Management Approach
						for a diverse assemblage of aquatic plants and aquatic invertebrates. .
D	The pond is not artificially connected to other waterbodies, such as agricultural ditches or artificial pipework.	Yes	W1	No artificial connections will be installed		
E	Pond water levels can fluctuate naturally throughout the year. No obvious artificial dams, pumps or pipework.	Yes	W1	The ponds will be created with naturally profiled margins and will be surrounded by areas of wetland grassland and marginal vegetation. This will create a gradual transition between aquatic and terrestrial habitats and support a diverse range of aquatic and riparian species. Due to the proximity of the site to The River Thames floodplain, it is expected that the ponds may receive occasional natural water ingress from surrounding groundwater or seasonal floodplain processes. However, this connectivity would occur through natural hydrological processes rather than through any artificial water supply or engineered connection to the river. As such, the ponds will function as naturally fed floodplain ponds, with water levels expected to fluctuate seasonally in response to rainfall, groundwater conditions and occasional floodplain inundation.		
F	There is an absence of listed non-native plant and animal species.	Yes	W1			The pond will be allowed to colonise naturally with vegetation. Monitoring will inform the removal of any invasive species
G	The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.	Yes	W1	No fish will be introduced to the ponds.		
I	The pond surface of non-woodland ponds is no more than 50% shaded by adjacent trees and scrub.	Yes	W1			Vegetation around the ponds will be allowed to colonise naturally, with aquatic and marginal plant species establishing from the

Target Habitat:		Ponds (non-priority habitat)				
Condition Assessment Criteria		Targeted	Relevant Parcels	Creation Approach	Enhancement Approach	Management Approach
	(only applicable to non-woodland ponds)					surrounding habitats and nearby watercourse corridor. It is anticipated that species such as willow (<i>Salix</i> spp.) may naturally establish around the pond margins from the adjacent riparian buffer. Where woody vegetation becomes established, it will be managed through periodic coppicing or selective removal to prevent excessive shading of the ponds. The aim will be to maintain approximately 30–50% shade across the pond margins, providing a balance between open water and shaded areas which can benefit a range of aquatic plants, amphibians and invertebrates. This approach will ensure that the ponds retain sufficient open water and emergent vegetation, while also allowing some scrub and tree cover to develop around the margins to enhance structural diversity and habitat value.

Pond

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

Action	Relevant Parcels	Timing	Prescriptions
Creation of ponds	W1	Any time of year	A series of ponds will be created to the south of the Upper Thames. The methodology for creation is outlined below: • The ponds will be created in good weather conditions. • It is recommended that the ponds have a central depth of 1.5m with varying depth levels. The banks will be shallow with slopes between 1.5 – 1.2m. • All topsoil will be removed from the site and disposed in line with waste law • The location of the ponds will have been marked out under supervision of the appointed ecologist to avoid any impacts on water vole burrows. • Ponds should be able to fluctuate seasonally and will be designed to achieve this. The extract drawings below show example illustrative sections for the profiling of the pond margins. 8a. Pond margins should be shallow and undulating to maximise the habitat for freshwater plants and invertebrates. The shallows 0-10cm This is the richest part of the pond. Many animal species are only found here, living amongst the low submerged grasses and wetland herbs at the water's edge. Mid-depth 10-30cm Tall marginal plants often dominate here, though submerged and floating plants are happy too. Deeper water 30cm+ Too deep for most emergent plants to root. Most animals live amongst the submerged plants, so it's important that the water is clean enough to let the submerged plants thrive. 8b. Design and create broad undulating drawdown zones – these will be poached by grazing livestock and provide one of the most important areas of the pond for wildlife. Even ponds with a ditch profile can include an area with an undulating micro-topography of small temporary pools. Wide drawdown zone Pond with ditch profile Spring high water level Autumn high water level

Action	Relevant Parcels	Timing	Prescriptions
Water vole	W1		- Due to the location of the proposed ponds within areas of currently species-poor grassland, it is considered unlikely that their creation will adversely affect protected species such as reptiles or nesting birds. As such, the timing of pond creation is not expected to be significantly constrained by seasonal ecological considerations. - However, water voles are known to occur within the adjacent watercourse, and care will therefore be taken to avoid impacts on bankside habitat and potential burrows. The locations of the ponds will be confirmed on site under the supervision of a suitably qualified ecologist to ensure that works do not affect water vole burrows or sensitive riparian habitat. - Where works are undertaken within proximity to the watercourse, a pre-commencement check for water vole activity will be undertaken, and appropriate buffers will be maintained around any burrows identified.
Temporary fencing	W1	First 2 years following creation	- Following creation, the ponds may be temporarily fenced during the establishment period to prevent excessive trampling and poaching of newly formed pond margins by livestock. - Temporary fencing will be installed where required when livestock are present on site and will typically remain in place for up to two years, allowing marginal and aquatic vegetation to establish and stabilise the pond edges. - Once vegetation has established and the pond margins have become stable, the temporary fencing may be removed to allow controlled grazing of the surrounding vegetation, which can help maintain open pond margins and create structural diversity beneficial to amphibians, invertebrates and other wildlife.
Management	W1	Annually	- Ponds will naturally recolonise with plants, therefore there is no requirement for additional planting. - Invasive species will be monitored and removed early to ensure they do not become established. - Temporary fencing could be installed around the ponds to limit grazing pressure to allow the ponds to establish. - It is expected that the surrounding land use will limit the encroachment of trees and scrub which could overshadow the ponds. - If ponds become silted up, it is recommended to retain the ponds instead of dredging and to create an adjacent pond as an alternative.
Grazing	W1	Annually	- The network of the ponds will be located to the north of the enhanced grassland on site. - The grazing density will be kept the same as the grazing within the grassland management section. It is expected that the number of ponds within the corridor will lower the impact of poaching and grazing pressure on the ponds. - The aim of the grazing will be to ensure the presence of aquatic vegetation adjacent to the ponds. - Monitoring of ponds will be undertaken to ensure grazing pressure is appropriate to create and maintain good quality ponds for wildlife.

Hedgerow

Creation, Enhancement and Management Summary (HD-T01)

Target Hedgerow Type:			Species rich native hedgerows with trees (H6, and H7) management will also be implemented for existing hedgerows (H1- H3)			
Condition Assessment Criteria		Targeted?	Relevant Features	Creation Approach	Enhancement Approach	Management Approach
A1	Height >1.5m average along length.	Yes	All hedgerows			Management of hedges will include rotational cutting that does not fall below 1.5m height.
A2	Width >1.5m average along length.	Yes	All hedgerows	Whips will be planted in a staggered line at 2-foot intervals. A fence will be erected 2m from each edge of planting to allow for the whips to be protected from grazing and scrubs to encroach and the hedgerow to widen naturally over time. The bank of the devon hedge will be created to a minimum 2.5m in width to ensure this criterion remains passed for perpetuity.		All hedges will be allowed to grow out with no intervention, with the exception of light grazing, and monitoring visits will ensure this criterion does not decrease in condition.
B3	Gap – hedge base Gap between ground and base of canopy <0.5m for >90% of length.	Yes	All hedgerows			The hedgerows will form scrub along their length which will improve the woody basal growth along the majority of hedgerows which fail this criterion. Monitoring visits will inform necessary changes to management plans to ensure this criterion is passed.
B2	Gap – hedgerow canopy continuity Gaps make up <10% of total length; and no canopy gaps >5m.	Yes	H6 and H7	Whips will be planted at 40cm intervals to ensure that the hedge is continuous. Any whips that fail will be replanted to ensure continuity.		Monitoring visits will inform necessary changes to management plans to ensure this criterion is passed.
C1	Undisturbed ground and perennial vegetation >1m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: - measured from outer edge of hedgerow, and - is present on one side of the hedge (at least)	No	All hedgerows			The grassland adjacent to the hedge will remain and will be lightly grazed to avoid disturbance. This should ensure this criterion remains in good condition.

Target Hedgerow Type:		Species rich native hedgerows with trees (H6, and H7) management will also be implemented for existing hedgerows (H1- H3)				
Condition Assessment Criteria		Targeted?	Relevant Features	Creation Approach	Enhancement Approach	Management Approach
C2	Nutrient-enriched perennial vegetation Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	Yes	H6 and H7	Vegetation will be removed prior to the hedge being planted to reduce fertility within the hedge length.		The cessation of intensive grazing with high nutrient inputs is likely to result in a reduction in the nutrient load adjacent to hedgerows over time.
D1	Invasive and neophyte species >90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA) and recently introduced species.	Yes	All hedgerows	Whips will be sourced from reputable suppliers and will comprise native species.		Monitoring will include checking the hedgerows for invasive species and informing any remedial action needed.
D2	Current damage >90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	Yes	All hedgerows			No damaging activities are expected.
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	H2			Monitoring will include checking the trees for a change to age classes e.g., veteranized by damage and will inform the adaptive management plan to ensure these are recorded and protected.
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	Standard root ball trees will be planted at 30m intervals along the hedgerow.		These trees will be marked to ensure they are not damaged within the hedgerow management.

Hedgerow

Creation, Enhancement and Management Methods (HD-T02)

Action	Relevant Features	Timing	Prescriptions
Creation of new hedges	H6 and H7	October – December (when trees are dormant and to allow time for trees to root prior spring).	The new hedgerow will be planted at 5 plants per metre in a double staggered row, totalling approximately 850 whips. Planting will prioritise a diverse native species mix to support wildlife, structural diversity, and local character. Detailed creation specification is provided below: • The vegetation at the ground level will be cleared before the hedgerow is planted. • Whips will be notch planted with a spade. • The hedgerow will be planted with bare root stock and the soil firmed in once planted. • Planting will be undertaken in good conditions (not too wet and when ground is not frozen). • The whips will be planted in zig zag lines at two-foot intervals. • The hedge will be left uncut for the first five years to aid establishment. • Selected individual trees (>2years oaks) will be planted and managed with the intention for them to become mature trees. These will be set back from the hedge line and fenced to distinguish them from the remainder of the hedge which will be cut regularly.
Provision of trees	H6 and H7	October – December (when trees are dormant and to allow time for trees to root prior spring)	<u>Planning</u> • Mark planting locations every ~30 m along the hedgerow line to ensure even distribution. • For a 170 m hedge, this will result in approximately 6 standard trees. • Adjust spacing slightly at ends or bends for best visual alignment and to avoid obstacles or gateways. <u>Planting</u> • Plant bare-root or cell-grown standards (1.5–2 m height recommended). • Excavate a suitably sized pit to fit roots without bending. • Backfill with topsoil, firming gently to eliminate air pockets. • Water thoroughly at time of planting. <u>Protection</u> • Fit each tree with a robust guard or shelter to prevent damage from browsing animals: • 1.2 m plastic-free, biodegradable tree shelter recommended where deer or livestock are present. • Spiral or mesh guards can be used where rabbit or vole protection is needed. • Secure guards with treated softwood stakes or canes. • Inspect guards annually, adjusting or removing as needed when trees are established.
Initial maintenance	H6 and H7	First five years following planting	<u>First year</u> • Weed Control: Maintain a 1 m weed-free strip along the base of the hedge to reduce competition. Weed control may include: ○ Mechanical weeding or hand-weeding. ○ Targeted herbicide spot treatment if permitted and appropriate. • Watering: Water newly planted whips in dry spells during the first 2 years, especially in spring and summer.

Action	Relevant Features	Timing	Prescriptions
			- Protection Maintenance: - Check and adjust guards and canes at least twice per year. - Replace or repair damaged guards to protect from browsing. - Gapping Up: Replace any failed plants in the following winter planting season to maintain a dense, continuous hedge line. Aim for >90% survival at the end of Year 3. <u>Years 2–5: Formative Pruning and Structure Development</u> - Formative Pruning: - Lightly clip side branches in winter (December–February) to encourage dense, bushy growth from the base. - Avoid cutting the leading stems to allow height to develop (unless planting is for a very low hedge). - Aim for a triangular profile—broad at the base, tapering towards the top. - No Severe Cutting: Avoid hard cutting or flailing in the first 5 years, which can damage young plants and reduce survival. - Encouraging Side Shoots: Light trimming of the sides encourages branching and helps close gaps.
Stock fence installation	H6 and H7	During good ground conditions	Stock fencing will be provided either side the created hedges as set out below. This will protect the hedgerow from grazing and will allow the hedgerow to develop given time, Fencing will be installed parallel to the hedgerow, set back at a minimum of 2 m from the base of the hedge on both sides (or at least on browsing-pressure side). This positioning will allow the following: - Hedgerow growth and branching. - Maintenance access (weed control, trimming). - Safe clearance from fence for machinery.
Management of hedgerows	All hedgerows	January – February (outside of breeding season, when trees are dormant, and to retain berries for birds during most of the autumn/winter).	<u>Long Term Management</u> Once the initial establishment of the hedges is completed the created hedgerows will be managed following the same methodology as set out below to ensure that they meet their target conditions. The hedgerows will be maintained with high basal density; this will be achieved by allowing bramble and other scrub species to grow at the base of the hedgerows. ‘Neat’ hedgerows will be avoided. This will provide foraging and nesting habitat for birds, hedgehogs, and invertebrates. Hedgerows will be cut on rotation once every three years on alternate sides (left/top/right) to ensure high fruit production. - The hedgerow will be cut with a tractor mounted hedge flail. - All of the non-boundary hedgerows must be maintained at a minimum height and width of 3m, except for coppiced or laid hedgerows. - This methodology will also be utilised for laid hedges after they have reestablished (after a minimum of 10 years).

Hedgerow Species Lists (HD-T03)

Common Name	Scientific Name	Number	Percentage
Blackthorn	<i>Prunus spinosa</i>	403	25%
Hawthorn	<i>Crataegus monogyna</i>	805	50%
Goat willow	<i>Salix caprea</i>	161	10%
Guelder Rose	<i>Viburnum opulus</i>	161	10%
Pedunculate oak	<i>Quercus petrea</i>	80	5%

What Does Success Look Like? (HD-F01)



Photo 7 Good condition hedgerow with trees

Riparian Zone Encroachment

Passive Regeneration

A riparian buffer zone of at least 10m will be established along The River Thames (A3 and A4) to protect and enhance the ecological function of the river corridor. Riparian zone encroachment can occur where land management practices reduce the quantity, quality or ecological function of riparian habitats. To avoid this, the buffer will be excluded from agricultural and intensive grassland management.

To achieve this, temporary fencing will be installed along the length of the watercourse, positioned approximately 10m from the riverbank. This fencing will prevent livestock access to the river and allow the riparian vegetation to develop naturally.

The riparian buffer will be managed primarily through passive natural regeneration, with minimal intervention. The area will not be subject to routine hay cutting or intensive grazing, allowing taller vegetation, wetland plants and riparian scrub to establish naturally.

Over time this approach will allow the development of a structurally diverse riparian habitat, including areas of tall grassland, wetland vegetation and scattered scrub. This will provide suitable habitat for a range of species associated with river corridors, including water vole, otter, birds, amphibians and invertebrates, while also helping to stabilise riverbanks and improve ecological connectivity along the Thames.

Management intervention within the buffer will be limited and will only occur where necessary, for example to control invasive species or to manage excessive scrub encroachment where it may adversely affect habitat diversity.

Tree management

Where riparian trees establish within the buffer, they will be managed to maintain an overall tree cover of approximately 20% along the watercourse corridor. This will ensure that the river channel remains largely open while retaining scattered trees and scrub which contribute to habitat diversity.

Existing mature willow trees will continue to be managed through periodic pollarding, reflecting the current management approach along the river corridor. This will help maintain tree health, prevent excessive canopy spread and retain structural diversity within the riparian habitat.

Where new trees naturally colonise within the buffer, they will be selectively coppiced where necessary to prevent the development of dense woodland and to maintain appropriate levels of light reaching the channel and bankside vegetation.

This management approach will maintain a mosaic of open bankside habitat, marginal vegetation and scattered trees, supporting the development of emergent vegetation and suitable habitat conditions for species such as water vole while preventing excessive shading of the watercourse.

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

Risk Identification Date	Habitat Type	Risk Factor	Trigger for Action	Remedial Measure
Annual from the onset of the project	Lowland meadow and other neutral grassland	Encroachment of scrub	Scrub encroachment exceeds 5% of the grassland area or forms dense patches >5m²	• Increase grazing pressure locally using temporary fencing. • Top or cut back scrub where required. • Use mineral licks to focus grazing pressure in targeted areas. • Review livestock breed selection and introduce more browsing breeds if required.
Annual from the onset of the project	Lowland meadow	Excessive bare ground	Bare ground exceeds the condition threshold for ‘good’ grassland condition (1–5%)	• Reduce stocking rates and/or remove livestock temporarily. • Rest affected areas to allow vegetation recovery • Review grazing timing and livestock numbers.
From project onset	Lowland meadow	Bovine TB	Positive TB test within the grazing herd	• Maintain a small closed herd where possible to reduce contact with other livestock. • Maintain rest areas to reduce pressure on restoration areas • Install wildlife-friendly mitigation such as raised troughs and avoid feed points near badger setts.
Annual from the onset of the project	Lowland meadow and other neutral grassland	Invasive species	Presence of Schedule 9 invasive species (e.g. Himalayan balsam, Japanese knotweed)	• Treat and remove invasive species using appropriate control methods. • Fence off affected areas if required to prevent spread.
Annual monitoring	Lowland meadow and other neutral grassland	Failure to establish species-rich grassland	Fewer than 60% of monitoring quadrats achieving ≥10 species per m² within 10 years	• Increase targeted grazing pressure using mineral licks or temporary fencing. • Introduce additional seed through green hay spreading or local provenance seed mixes • Review stocking rates and grazing timing. • Continue nutrient stripping through hay cutting and removal of arisings.
From project onset	Ponds (non-priority)	Hydrological or water quality issues (low water levels, nutrient enrichment, invasive species)	Ponds failing to retain water seasonally. • Presence of invasive species. >10% surface cover of duckweed or filamentous algae.	• Re-profile or re-dig sections of ponds if necessary • Create additional ponds if required to maintain pond network diversity • Remove invasive or excessive vegetation through manual or spot treatment methods.

Risk Identification Date	Habitat Type	Risk Factor	Trigger for Action	Remedial Measure
First 5 years post planting	Species-rich native hedgerow with trees	Newly planting trees failing to establish	10% of targeted number of newly planted trees found to be dead during years 1 – 10.	- Plant a larger number of trees 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.

3. Monitoring Schedule

Monitoring Strategy

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

Monitoring will be provided for the first 5 years and then every 5 years thereafter by the appointed ecologist for the lowland meadow, ponds and riparian buffer habitats. Photos will be collected by the relevant parties including the landowner, ecological management contractors and project ecologists when management works are undertaken across all years of the project to ensure that comparisons can be made between the existing and enhanced habitats. Fixed monitoring visits will include the completion of updated species lists and condition assessments of all habitats on site, and the production of a report detailing progress and future proposals to achieve condition targets and enhancements for biodiversity.

Monitoring Methods and Intervals MS-T01

Habitat Type	Monitoring Methods	Monitoring Interval and Timing
Lowland Meadow	Undertake quadrat sampling to identify the habitat type and number of species per m ² . This process must use a minimum of five fixed quadrats across habitat parcels, estimate percentage of bare ground, bramble and bracken cover.	Annually from years 1 – 5, then every five years for BNG targets. Surveys to be completed in June/July.
Ponds	Undertake a condition assessment of the ponds using the BNG condition assessment criteria to assess the success of the pond implementation and if there is a requirement for redesign.	Every five years for a minimum of 80 years and thereafter in accordance with successive reviewed management plans. Surveys to be completed between June – September.
Riparian Buffers	Undertake quadrat sampling to ensure that there is a 20% cover of scrub.	Every five years for a minimum of 80 years and thereafter in accordance with successive reviewed management plans. Surveys to be completed between June – September.
Otter	Survey the river corridor to determine otter presence/likely absence. Assess the riparian corridor in the same years to determine if the bankside vegetation has established and remains in a good condition using the BNG condition assessment.	Years 2, 5 and 10. Surveys to be completed between December – September for otter surveys. Surveys to be completed between April – September for riparian corridor surveys.
Water Vole	Undertake two water vole surveys in the specified years to monitor the population.	Years 2, 5 and 10. One visit between mid-April – end-June, one visit July – September.

Monitoring Reports

Monitoring Report Schedule MS-T02

Organisation Responsible for Submitting the Monitoring Reports	Organisation Receiving and Responsible for Reviewing Reports
Newland Homes	Newland Homes

Project Year	Month Report to be Submitted	Month Management Plan to be reviewed	Comments
Y1	September	September or October	Report on results of initial grassland and scrub creation measures.

Adaptive Management

Summary of Adaptive Management Approaches (MS-B02)

The habitats within the Stones Farm Habitat Support Area will be managed using an adaptive management approach, whereby monitoring results are used to inform ongoing management decisions and ensure that habitat condition targets are achieved over the lifetime of the project.

Monitoring surveys will be undertaken in accordance with the monitoring schedule set out within this HMMP, including botanical surveys of the grassland, condition assessments of the ponds and riparian habitats, and monitoring of key ecological features such as scrub extent and invasive species presence. The results of these surveys will be reviewed periodically by the project team.

Where monitoring indicates that habitats are not progressing towards their target condition, management prescriptions may be adjusted to address the identified issue. For example:

Adaptive management actions will be guided by the risk identification framework set out within this plan, which identifies potential risks to habitat establishment and long-term condition along with appropriate remedial measures.

Management decisions will be undertaken collaboratively between the landowner, site managers and ecological advisors (including Ethos Environmental Planning where appropriate) to ensure that habitat management remains consistent with the ecological objectives of the project.

This adaptive approach ensures that the management strategy remains flexible and responsive to site conditions, allowing the project to respond to environmental variation, climatic influences, and the natural development of habitats over time while continuing to meet the long-term ecological objectives of the Habitat Support Area.

Upon completion of the initial five-year management period, the responsible management body shall commission a formal review of the LEMP and HMMP, informed by the monitoring undertaken during that period. The review shall assess progress against the habitat and recreational objectives, identify any adaptive management measures required and set out any proposed amendments to the management programme. The findings and proposed amendments shall be presented to the Management Committee/Steering Group, including the Local Planning Authority’s representative, for review and agreement before implementation. Where management responsibility has not yet transferred, this obligation shall remain with the Owner. The process shall be repeated at appropriate intervals throughout the minimum 80-year management period, with management, maintenance and monitoring continuing thereafter in perpetuity for the lifetime of the development.