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Habitat Management and Monitoring Plan

Site Name

Land at Northlands Lane

Issue Date

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Client

Fairfax Acquisitions Ltd

Author

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Report Summary

Purpose	The Ecology Co-operation was commissioned by Fairfax Acquisitions Ltd. to provide a Habitat Management and Monitoring Plan (HMMP) with respect to a proposed development on Land at Northlands Lane. This document outlines the proposed strategy to retain h3d – bramble scrub (N/A condition), gc3 - other neutral grassland (moderate condition), w1f - lowland mixed deciduous woodland (moderate condition), rural trees (moderate and good condition) and line of trees (moderate condition), enhance g - bracken to other neutral grassland (moderate condition), h3d - bramble scrub to mixed native scrub (moderate condition), w1g - other broadleaved woodland (poor to moderate condition), and w22 line of trees (poor to moderate condition) as well as creating g4 - modified grassland (poor condition), g3c - other neutral grassland (poor condition), w1g - other broadleaved woodland (moderate condition), urban trees (poor condition), and sustainable urban drainage system (SuDS) (moderate condition) over a 30-year period. In accordance with the Biodiversity Impact Calculations for the site, carried out in April 2026 by The Ecology Co-op, these retained and created habitats will provide a net gain in hedgerow units for the proposed project. This report should be read in combination with these calculations and their associated report which demonstrate the potential uplift/loss in credits on the site in line with its existing baseline value.
Context	This site measures approximately 4.7ha and comprises a singular field (Field 1). It is located to the northeast of the town of Storrington, West Sussex. The site is bounded by woodland parcels to the south with hedgerows and scrub parcels bordering the site to the northern and western aspects. A Phase 1 survey and Preliminary Ecological Appraisal (PEA) was undertaken in 2017 by The Ecology Co-op. Phase 2 surveys were also undertaken between 2017 and 2018, with results collated into an Ecological Impact Assessment (EclA) in 2019. Following this, an updated walkover with detailed botanical survey and UKHab mapping was undertaken in December 2023 by The Ecology Co-op. All Phase 2 surveys were also repeated, in addition to breeding bird surveys. These identified: multiple bat species (commuting and foraging), multiple breeding bird species on site, including three 'red' listed and three eight 'amber' listed (BoCC), hazel dormouse, smooth newt, palmate newt, common frog and common toad, a low grass snake population and good slow worm population, suitable habitat for [REDACTED] west European hedgehog, stag beetles, and brown hare as well as invasive rhododendron within onsite woodland. The biodiversity net gain calculation identified the potential for net loss of 2.08 habitat units (-7.77%) and net gain of 0.05 hedgerow units (+16.09%).
Proposed enhancements and habitat creation	The proposed development scheme at this site will retain: On-site • 0.142ha of bramble scrub (condition N/A) • 0.972ha of lowland mixed deciduous woodland in moderate condition



	• 0.0529ha individual trees – rural (moderate condition) • 0.0557km of line of trees (moderate condition) The proposed development scheme at this site will enhance: On-site • 0.081ha of bracken (condition N/A) to other neutral grassland in moderate condition • 0.344ha of bramble scrub (condition N/A) to native mixed scrub in moderate condition • 0.042ha of bramble scrub (condition N/A) to native mixed scrub in moderate condition • 0.225ha other woodland, broadleaved in poor condition to moderate condition • 0.132ha of other neutral grassland in poor condition to moderate condition • 0.0544km of line of trees in poor condition to moderate condition Post-intervention the following habitats will be created: On-site • 0.461ha of modified grassland in poor condition • 0.08ha of sustainable drainage system (SUDs) in moderate condition • 0.036ha of developed land; sealed surface (play area) • 0.263ha of developed land; sealed surface (buildings) • 1.012ha of vegetated garden • 0.409ha of developed land; sealed surface (roads/paths) • 0.094ha of other woodland; broadleaved in moderate condition • 0.416ha of other neutral grassland in poor condition • 0.57ha of individual trees – urban in poor condition
Management and monitoring	Management is outlined within section 9. Regular botanical monitoring surveys will take place throughout the 30-year project period, carried out by a qualified ecologist with appropriate botanical survey experience. A plan for this is detailed in section 10. Monitoring of other habitats for their condition will also be required and is outlined in section 11.



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1 INTRODUCTION

1.1 Purpose of the Report

The Ecology Co-operation was commissioned by Fairfax Acquisitions Ltd. to provide a Habitat Management and Monitoring Plan (HMMP) with respect to a proposed development on Land at Northlands Lane. This document outlines the proposed strategy to retain h3d – bramble scrub (N/A condition), gc3 - other neutral grassland (moderate condition), w1f - lowland mixed deciduous woodland (moderate condition), rural trees (moderate and good condition) and line of trees (moderate condition), enhance g - bracken to other neutral grassland (moderate condition), h3d - bramble scrub to mixed native scrub (moderate condition), w1g - other broadleaved woodland (poor to moderate condition), and w22 line of trees (poor to moderate condition) as well as creating g4 - modified grassland (poor condition), g3c - other neutral grassland (poor condition), w1g - other broadleaved woodland (moderate condition), urban trees (poor condition), and sustainable urban drainage system (SuDS) (moderate condition) over a 30-year period. In accordance with the Biodiversity Impact Calculations¹ for the site, carried out in April 2026 by The Ecology Co-op.

These retained, created and enhanced habitats will provide a likely net loss of -2.08 habitat units (-7.77%) and a likely net gain of 0.05 hedgerow units (+16.09%) on the site through the proposed development on Land at Northlands Lane. This report should be read in combination with the calculation^{Error! Bookmark not defined.} which demonstrates the potential loss/uplift in credits on the site in line with its existing baseline value. Alongside this habitat creation and enhancement, this report outlines the monitoring surveys planned for the site during the project lifespan to ensure that the habitat and condition assessment criteria of the Statutory Biodiversity Metric² will be met by the end of the 30-year period.

Implementation of all habitat management and monitoring will be overseen by a suitable ecological consultancy, and the client will be given contact details for an ecologist so that any issues can be resolved promptly.

Whilst this Habitat Management and Monitoring Plan details the best options currently seen to reach target habitats and habitat conditions, the management plan will evolve and can be adjusted as the project progresses through the 30-year period. All changes to the management plan will be carried out in consultation with the landowner, advising ecologist(s) and any other relevant bodies/stakeholders, where necessary.

1.2 Background

This site measures approximately 4.7ha and comprises a singular field (Field 1) located to the northeast of the town of Storrington, West Sussex. The surveys were undertaken for a wider application site of 5.8ha, comprising of two separate field parcels referred to as “Field 1” and “Field 2” within this report. The current planning application refers to a proposed development specifically within the boundaries of Field 1. At present, Field 1 is currently unoccupied, though clear evidence of usage has been noted by dogwalkers from the local vicinity. It is bounded by a further field to the east, woodland parcels to the south and hedgerows and scrub parcels bordering the site to the northern and western aspects. Figure 1 shows the boundary of the site and local context

¹ The Ecology Co-op (2026). P2400. Land at Northlands Lane Statutory Metric Calculation.

² Natural England (2024). The Statutory Biodiversity Metric – Calculation Tool. Available online at: <https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides>.



and the central grid reference for the site is TQ 0926 1530.

The proposed development comprises up to 56 residential dwellings with associated hard and soft landscaping, including a sustainable drainage system (SuDS) and a village green area (see



Figure 1. An aerial image showing the location of the site. The approximate site boundary is outlined in red with the adjacent field included within the surveys illustrated in blue. Images produced courtesy of Google maps (map data ©2026 Google).



Figure 2. Illustrative masterplan produced courtesy of Paul Hewett Architects. Drawing number 2505/SK.04, REV L dated April 2026.

1.3 Summary of Previous Survey Work

A Phase 1 survey and Preliminary Ecological Appraisal (PEA) was undertaken in 2017 by The Ecology Co-op. Phase 2 surveys were also undertaken between 2017 and 2018 for [REDACTED] bats (scoping assessment and activity surveys), dormice *Muscardinus avellanarius*, great crested newts *Triturus cristatus* and reptiles. These indicated that the site supported a 'low' population of slow worm *Anguis fragilis* and grass snake *Natrix helvetica*, dormice, [REDACTED] moderate bat species diversity and four trees with bat roosting potential. These results were collated into an Ecological Impact Assessment (EcIA) in 2019.

Following this, due to the age of the report and previous survey data, an updated walkover with detailed botanical survey and UKHab mapping was undertaken in December 2023. All Phase 2 surveys were also repeated, in addition to breeding bird surveys. These identified:

- multiple bat species (commuting and foraging);
- multiple breeding bird species on site, including three 'red' listed and three eight 'amber' listed (BoCC);
- hazel dormouse;
- smooth newt *Lissotriton vulgaris*, palmate newt *Lissotriton helveticus*, common frog *Rana temporaria* and common toad *Bufo bufo*;
- a low grass snake population and good slow worm population;



- suitable habitat for [REDACTED] west European hedgehog *Erinaceus europaeus*, stag beetles *Lucanus cervus*, and brown hare *Lepus europeaus*;
- invasive rhododendron within on-site woodland.

The BNG calculation identified the potential for net loss of 2.08 habitat units (-7.77%) and a likely net gain of 0.05 hedgerow units (+16.09%) through the retention/creation/enhancement of the following habitats:

The proposed development scheme at this site will **retain**:

On-site

- 0.142ha of bramble scrub (condition N/A)
- 0.972ha of lowland mixed deciduous woodland in moderate condition
- 0.0529ha individual trees – rural (moderate condition)
- 0.0557km of line of trees (moderate condition)

The proposed development scheme at this site will **enhance**:

On-site

- 0.081ha of bracken (condition N/A) to other neutral grassland in moderate condition
- 0.344ha of bramble scrub (condition N/A) to native mixed scrub in moderate condition
- 0.042ha of bramble scrub (condition N/A) to native mixed scrub in moderate condition
- 0.225ha other woodland, broadleaved in poor condition to moderate condition
- 0.132ha of other neutral grassland in poor condition to moderate condition
- 0.0544km of line of trees in poor condition to moderate condition

Post-intervention the following habitats will be **created**:

On-site

- 0.461ha of modified grassland in poor condition
- 0.08ha of sustainable drainage system (SUDs) in moderate condition
- 0.036ha of developed land; sealed surface (play area)
- 0.263ha of developed land; sealed surface (buildings)
- 1.012ha of vegetated garden
- 0.409ha of developed land; sealed surface (roads/paths)
- 0.094ha of other woodland; broadleaved in moderate condition
- 0.416ha of other neutral grassland in poor condition
- 0.57ha of individual trees – urban in poor condition

2 RESPONSIBILITIES

2.1 Prior to Handover

Implementation of all habitat creation (see section 7) will be the responsibility of the relevant contractor appointed by Fairfax Acquisitions Ltd.



2.2 Post-handover

Implementation of all habitat management (see section 9) and contingency measures (see section 9) will be the responsibility of Fairfax Acquisitions Ltd. for the duration of the work schedule (see section 11).

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Figure 1. An aerial image showing the location of the site. The approximate site boundary is outlined in red with the adjacent field included within the surveys illustrated in blue. Images produced courtesy of Google maps (map data ©2026 Google).



Figure 2. Illustrative masterplan produced courtesy of Paul Hewett Architects. Drawing number 2505/SK.04, REV L dated April 2026.

2.3 Summary of Previous Survey Work

A Phase 1 survey and Preliminary Ecological Appraisal (PEA) was undertaken in 2017³ by The Ecology Co-op. Phase 2 surveys were also undertaken between 2017 and 2018 for [REDACTED] bats (scoping assessment and activity surveys), dormice *Muscardinus avellanarius*, great crested newts *Triturus cristatus* and reptiles. These indicated that the site supported a 'low' population of slow worm *Anguis fragilis* and grass snake *Natrix helvetica*, dormice, [REDACTED] moderate bat species diversity and four trees with bat roosting potential. These results were collated into an Ecological Impact Assessment (EcIA) in 2019⁴.

Following this, due to the age of the report and previous survey data, an updated walkover with detailed botanical survey and UKHab mapping was undertaken in December 2023. All Phase 2 surveys were also repeated, in addition to breeding bird surveys. These identified:

- multiple bat species (commuting and foraging);
- multiple breeding bird species on site, including three 'red' listed and three eight 'amber' listed (BoCC);

³The Ecology Co-op (2017). Preliminary Ecological Appraisal, Phase 1 Habitat Assessment - Land at Northlands Lane, Storrington, West Sussex

⁴ The Ecology Co-op (2021). Ecological Impact Assessment – Land at Northlands Lane, Storrington, West Sussex.



- hazel dormouse;
- smooth newt *Lissotriton vulgaris*, palmate newt *Lissotriton helveticus*, common frog *Rana temporaria* and common toad *Bufo bufo*;
- a low grass snake population and good slow worm population;
- suitable habitat for [REDACTED] west European hedgehog *Erinaceus europeus*, stag beetles *Lucanus cervus*, and brown hare *Lepus europeus*;
- invasive rhododendron within on-site woodland.

The BNG calculation identified the potential for net loss of 2.08 habitat units (-7.77%) and a likely net gain of 0.05 hedgerow units (+16.09%) through the retention/creation/enhancement of the following habitats:

The proposed development scheme at this site will **retain**:

On-site

- 0.142ha of bramble scrub (condition N/A)
- 0.972ha of lowland mixed deciduous woodland in moderate condition
- 0.0529ha individual trees – rural (moderate condition)
- 0.0557km of line of trees (moderate condition)

The proposed development scheme at this site will **enhance**:

On-site

- 0.081ha of bracken (condition N/A) to other neutral grassland in moderate condition
- 0.344ha of bramble scrub (condition N/A) to native mixed scrub in moderate condition
- 0.042ha of bramble scrub (condition N/A) to native mixed scrub in moderate condition
- 0.225ha other woodland, broadleaved in poor condition to moderate condition
- 0.132ha of other neutral grassland in poor condition to moderate condition
- 0.0544km of line of trees in poor condition to moderate condition

Post-intervention the following habitats will be **created**:

On-site

- 0.461ha of modified grassland in poor condition
- 0.08ha of sustainable drainage system (SUDs) in moderate condition
- 0.036ha of developed land; sealed surface (play area)
- 0.263ha of developed land; sealed surface (buildings)
- 1.012ha of vegetated garden
- 0.409ha of developed land; sealed surface (roads/paths)
- 0.094ha of other woodland; broadleaved in moderate condition
- 0.416ha of other neutral grassland in poor condition
- 0.57ha of individual trees – urban in poor condition



3 RESPONSIBILITIES

3.1 Prior to Handover

Implementation of all habitat creation (see section 7) will be the responsibility of the relevant contractor appointed by Fairfax Acquisitions Ltd.

3.2 Post-handover

Implementation of all habitat management (see section 9) and contingency measures (see section 9) will be the responsibility of Fairfax Acquisitions Ltd. for the duration of the work schedule (see section 11).

4 LEGAL PROTECTION

Legal protection applying to relevant bird, mammal and herpetofauna species is detailed in Appendix 1 of this report. This includes both national and European legislation that protects [REDACTED] bats, dormice, reptiles and breeding birds.

5 METHODOLOGY

In order to inform this report and the Biodiversity Impact Calculations, a UKHab survey and habitat condition assessments were undertaken on 7th December 2023, by Joshua Harwood and Libby Morris (FISC level 4, obtained June 2024) of The Ecology Co-op.

6 BASELINE CONDITIONS

6.1 Existing Habitats

Habitats (UKHAB) within the site at Northlands Lane are shown in Figure 2 below;

- 2.84ha of other neutral grassland (g3c) in poor condition
- 0.09ha of bracken (g) in N/A condition
- 0.573ha of bramble scrub (h3d) in N/A condition
- 0.225ha of other woodland (w1g) in poor condition
- 0.447ha of lowland mixed deciduous woodland (w1f) in moderate condition
- 0.0529ha individual trees – rural trees – (eight in moderate condition and five in good condition)
- 0.0544km line of trees (w22) in poor condition
- 0.0557km of line of trees (w22) in moderate condition



Figure 3. UKHAB map showing existing habitats within the site. The site boundary is indicated with a red line. Produced using QGIS software, version 4.06.3 – Hannover.

7 PROPOSED HABITAT RETENTION

The proposed habitat retention will see retention of bramble scrub (N/A condition), lowland mixed deciduous woodland (moderate condition), rural trees (moderate condition) and line of trees (moderate condition) designated under the Statutory Biodiversity Metric³ condition assessment criteria.

7.1 Bramble Scrub

0.142ha of other bramble scrub (h3d) will be retained and will need to be maintained at N/A condition throughout the duration of the 30 year's period.

There are no statutory metric condition criteria for bramble scrub, however, the extent of the bramble and species composition is to be retained throughout the 30-year period.

Regular biannual check for signs of encroachment of the scrub on to adjacent habitats and cutting back where required using hand tools. Cutting of bramble is to be undertaken outside of breeding bird season (1st March to 31st August) to ensure that nests are undisturbed.



7.2 Woodland

0.972ha of lowland mixed deciduous woodland will be retained and will need to be maintained at moderate condition.

Regular quarterly check for signs of disease. If disease is identified, advice should be sought from an arboricultural specialist regarding the appropriate method of treatment. Replacement planting will also be required where trees die or must be cut down for safety purposes. Replacement trees should be of native stock and ideally of local provenance. These should not be replanted immediately but during the next planting season (November to March).

Trees and shrubs should be allowed to grow unhindered where possible. However, it may be necessary to trim back trees and shrubs in some circumstances, such as where there is a risk to health and safety, or for maintenance of the ecological feature. Cutting of shrubs and trees must only be timed outside the bird nesting season (avoiding 1st March to 31st August). Where possible they shouldn't be cut until February, so that valuable winter food associated with fruiting shrubs/trees is retained for over-wintering birds.

Leaving a proportion of standing deadwood is important through creating deadwood 'standing monoliths' or 'totems' for more specialist saproxylic invertebrates, where safe to do so. Wind thrown trees, stumps and logs can also be retained *in situ* and these will be beneficial to invertebrates, especially stag beetles.

Checks for invasive species should be undertaken regularly and prompt action undertaken to prevent the spread throughout the woodland if identified.

7.2.1 Statutory Biodiversity Metric Aims

In order for the retained lowland mixed deciduous woodland to be maintained at moderate condition over the 30-year management period it will need to achieve an overall score of 26-32 out of a possible 39.

Table 1. Condition assessment table for woodland habitats.

Indicator		Good (3 points)	Moderate (2 points)	Poor (1 point)
A	Age distribution of trees	Three age-classes present.	Two age-classes present.	One age-class present.
B	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland.	Evidence of significant browsing pressure is present in less than 40% of whole woodland.	Evidence of significant browsing pressure is present in 40% or more of whole woodland.
C	Invasive plant species	No invasive species present in woodland.	Rhododendron <i>Rhododendron ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, and other invasive species <10% cover.	Rhododendron or cherry laurel present, or other invasive species ≥10% cover.



D	Number of native tree species	Five or more native tree or shrub species found across woodland parcel.	Three to four native tree or shrub species found across woodland parcel.	Two or less native tree or shrub species across woodland parcel.
E	Cover of native tree and shrub species	>80% of canopy trees and >80% of understory shrubs are native.	50 - 80% of canopy trees and 50 - 80% of understory shrubs are native.	<50% of canopy trees and <50% of understory shrubs are native.
F	Open space within woodland	10 - 20% of woodland has areas of temporary open space. Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted.	21 - 40% of woodland has areas of temporary open space ⁶ .	<10% or >40% of woodland has areas of temporary open space. But if woodland <10ha has <10% temporary open space, please see Good category.
G	Woodland regeneration	All three classes present in woodland; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth.	One or two classes only present in woodland.	No classes or coppice regrowth present in woodland.
H	Tree health	Tree mortality 10% or less, no pests or diseases and no crown dieback.	11% to 25% tree mortality and or crown dieback or low-risk pest or disease present.	Greater than 25% tree mortality and or any high-risk pest or disease present.
I	Vegetation and ground flora	Recognisable NVC plant community at ground layer present, strongly characterised by ancient woodland flora specialists.	Recognisable woodland NVC plant community at ground layer present.	No recognisable woodland NVC plant community at ground layer present.
J	Woodland vertical structure	Three or more storeys across all survey plots, or a complex woodland.	Two storeys across all survey plots.	One or less storey across all survey plots.
K	Veteran trees	Two or more veteran trees per hectare.	One veteran tree per hectare.	No veteran trees present in woodland.
L	Amount of deadwood	50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, branch stubs and stumps, or an abundance of small cavities.	Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities.	Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities.



M	Woodland disturbance	No nutrient enrichment or damaged ground evident.	Less than 1 hectare in total of nutrient enrichment across woodland area, and or less than 20% of woodland area has damaged ground.	1 hectare or more of nutrient enrichment, and or 20% or more of woodland area has damaged ground.
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7.3 Rural Trees

Eight rural trees will need to be maintained at a moderate condition throughout the 30-year period.

Five rural trees will need to be maintained at a good condition throughout the 30-year period.

This will be achieved through the following methods:

- trees checked annually for signs of damage and disease. If disease is identified, advice should be sought from an arboriculturist regarding the appropriate method of treatment;
- any trees which fail within the 30-year period must be replaced;
- where trees are cut, ensure more than 20% of the tree canopy is oversailing vegetation beneath; and
- retain of any dead or fallen trees *in situ* as deadwood habitat.

7.3.1 Statutory Metric Aims

In order to maintain the rural trees in moderate condition under the Statutory Biodiversity Metric, the trees will need to pass three or four condition assessment criteria throughout the 30-year period and in order to maintain the rural trees in good condition under the Statutory Biodiversity Metric, they must pass five or six criteria throughout the 30-year period:

- **Criteria A:** The tree is a native species (or at least 70% within the block are native species).
- **Criteria B:** The tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5m wide – note all of the trees to be planted on-site will be individual trees and so will automatically pass Criteria B.
- **Criteria C:** The tree is mature (or more than 50% within the block are mature).
- **Criteria D:** There is little or no evidence of an adverse impact on tree health by human activities such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime so the trees retain >75% of expected canopy for their age and height).
- **Criteria E:** Natural ecological niches for vertebrates. And invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.
- **Criteria F:** More than 20% of the tree canopy is oversailing vegetation beneath.

7.4 Line of Trees

0.0557km of line of trees must be maintained at a moderate condition under the Statutory Biodiversity Metric, throughout the 30-year period.



7.4.1 Statutory Biodiversity Metric Aims

In order to for the line of trees to retain moderate condition at the end of the 30-year project period, it will need to pass three or four criteria throughout the 30-year period.

- **Condition A:** At least 70% of trees are native species.
- **Condition B:** Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.
- **Condition C:** One or more trees has veteran features and or natural ecological niches for vertebrates and invertebrates, such as presence of standing and attached deadwood, cavities, ivy or loose bark.
- **Condition D:** There is an undisturbed naturally vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other human activities (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice².
- **Condition E:** At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this). 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.

8 PROPOSED HABITAT ENHANCEMENT

The proposed habitat enhancements will see the enhancement of approximately 0.081ha of bracken (g) to other neutral grassland (g3c) in moderate condition, 0.344ha of bramble scrub (h3d) to mixed scrub (h3h) in moderate condition, 0.042ha of bramble scrub (h3d) to native mixed scrub in moderate condition, 0.225ha other broadleaved woodland (w1g) poor to moderate condition, 0.132ha of other neutral grassland in poor condition to moderate condition and 0.0544km line of trees in poor condition to moderate condition.



Figure 4. UKHAB map showing proposed habitats within the site. The site boundary is indicated with a red line. Produced using QGIS software, version 3.40.5 – Bratislava.

8.1 Bracken to Other Neutral Grassland

0.081ha of bracken (g) will be enhanced to other neutral grassland (g3c) moderate condition and then will need to be maintained at this condition throughout the 30-year period.

8.1.1 Creation

Ground preparation

Bracken (g1c) is to be removed through cutting or rolling to weaken its rhizomes and through regular cutting twice a year in June and July to avoid invertebrate disturbance. Herbicides can also be used with caution; a combination being most effective. The removal of bracken in a long-term process over many yearly cycles and removal efforts need to be applied consistently to prevent this habitat reappearing.

Seed mix and sowing

In order ensure this habitat establishes properly, baseline soil testing will be required to choose the correct seed mix and method of sowing. This can also identify the soil phosphorous, magnesium, potassium and pH. However, the following methods below are generally used to establish this habitat.

Once bracken has been removed, the area is to be seeded to match the seed mix in the created other neutral



grassland areas. Mixture EM3 - Special general purpose Meadow Mixture (see Table 2) is considered to be a suitable mix. The seed will be sown in spring at a rate of 40kg/ha. The seed can be distributed by machine, or hand, and will require rolling or treading.

Table 2. Mixture EM3 – Special Purpose Meadow Mixture.

Percentage	Scientific name	Common name
Wildflowers 20%		
0.8	<i>Achillea Millefolium</i>	Yarrow
0.2	<i>Agrimonia eupatoria</i>	Agrimony
1.2	<i>Betonica officinalis</i>	Betony
2.0	<i>Centaurea nigra</i>	Common knapweed
0.4	<i>Centaurea scabiosa</i>	Greater knapweed
1.0	<i>Daucus carota</i>	Wild carrot
0.6	<i>Echium vulgare</i>	Vipers bugloss
0.2	<i>Filipendula ulmaria</i>	Meadowsweet
0.8	<i>Galium album</i>	Hedge bedstraw
1.2	<i>Galium verum</i>	Lady's bedstraw
0.6	<i>Geranium pratense</i>	Meadow crane's-bill
0.2	<i>Knautia arvensis</i>	Field scabious
1.0	<i>Leucanthemum vulgare</i>	Oxeye daisy
0.2	<i>Malva moschata</i>	Musk mallow
0.4	<i>Medicago lupulina</i>	Black medick
0.2	<i>Onobrychis viciifolia</i>	Sainfoin
0.2	<i>Pastinaca sativa</i>	Wild parsnip
0.6	<i>Poterium sanguisorba</i>	Salad burnet
1.0	<i>Primula versis</i>	Cowslip
1.6	<i>Prunella vulgaris</i>	Selfheal
1.6	<i>Ranunculus acris</i>	Meadow buttercup
0.6	<i>Ranunculus bulbosus</i>	Bulbous buttercup
0.4	<i>Rhinanthus minor</i>	Yellow rattle
0.4	<i>Rumex acetosa</i>	Common sorrel
0.8	<i>Silene dioica</i>	Red campion
0.2	<i>Silene flos-cuculi</i>	Ragged robin
1.0	<i>Silene vulgaris</i>	Bladder campion
0.6	<i>Taraxacum officinale</i>	Dandelion
0.4	<i>Vicia caracca</i>	Tufted vetch
Grasses 80%		
8.0	<i>Agrostis capillaris</i>	Common bent
28.0	<i>Cynosurus cristatus</i>	Crested dogstail
24.0	<i>Festuca rubra</i>	Red fescue
4.0	<i>Phleum bertolonii</i>	Smaller cat's-tail (w)
16.0	<i>Poa pratensis</i>	Smooth-stalked meadow-grass

As part of on-going management, the grassland should be cut and gathered each year to a height of approximately 40mm after flowering in July and August. This process can be carried out through strimming or tractor mowing. This is important to ensure that species diversity of the area is maintained, and grass species do not become dominant. Where necessary, a second cut could be taken in March each year if the sward is growing too coarsely. The grassland should not be cut between the 1st of April and mid-August so that plants are given the opportunity to flower. Grass cuttings should be collected and removed to prevent nutrient



enrichment of the soil. Aim for the sward height to be varied so that at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm.

Check for cover of bracken which should be less than 20%. Any areas of bare ground should be resown. Care should be taken to make sure the adjacent scrub doesn't encroach into the grassland.

8.1.2 Statutory Biodiversity Metric Aims

In order for the other neutral grassland to be maintained at moderate condition over the 30-year management period, it will need to pass three to five criteria, including essential criterion A:

- **Condition A (essential):** 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.
- **Condition B:** Sward height is varied (at least 20% of the sward is less than 7cm and at least 20% is more than 7cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed
- **Condition C:** Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens.
- **Condition D:** Cover of bracken *Pteridium aquilinum* is less than 20% and cover of scrub (including bramble *Rubus fruticosus* agg.) is less than 5%.
- **Condition 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 management activities) accounts for less than 5% of total area. If any invasive non-native plant species (as listed on Schedule 9 of WCA) are present, this criterion is automatically failed.
- **Condition F:** There are 10 or more vascular plant species per m² present, including forbs that are characteristic of the habitat type.

8.1.3 Ecological Value at Point of Handover

At the point of handover, the new other neutral grassland will have been seeded. The metric contains a built-in temporal multiplier, and it is expected that the new other neutral grassland will reach its moderate target condition in ten years.

8.2 Other Neutral Grassland

0.132ha of other neutral grassland is to be enhanced from poor condition to moderate condition and then will need to be maintained at moderate condition throughout the 30-year period.

8.2.1 Creation

Ground preparation

In order ensure this habitat establishes properly, baseline soil testing will be required to choose the correct seed mix and method of sowing. This can also identify the soil, magnesium, potassium and pH. However, the following methods below are generally used to establish this habitat.

The other neutral grassland habitat is currently classified as poor condition and the aim is to enhance the



condition to moderate condition. The grassland will be cut to an approximate height of 4cm and then scarified to create an approximate 50% coverage of bare earth patches.

Seed mix and sowing

The area is to be seeded to match the seed mix in the created other neutral grassland areas. Mixture EM3 - Special general purpose Meadow Mixture (see Table 2) is considered to be a suitable mix. The seed will be sown in spring at a rate of 40kg/ha. The seed can be distributed by machine, or hand, and will require rolling or treading.

As part of on-going management, the grassland should be cut and gathered each year to a height of approximately 40mm after flowering in July and August. This process can be carried out through strimming or tractor mowing. This is important to ensure that species diversity of the area is maintained, and grass species do not become dominant. Where necessary, a second cut could be taken in March each year if the sward is growing too coarsely. The grassland should not be cut between the 1st of April and mid-August so that plants are given the opportunity to flower. Grass cuttings should be collected and removed to prevent nutrient enrichment of the soil. Aim for the sward height to be varied at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm.

8.2.1 Statutory Biodiversity Metric Aims

In order for the other neutral grassland to be maintained in moderate condition over the 30-year management period, it will need to pass three to five criteria, including essential criterion A, as shown in section 7.1.2.

8.2.2 Ecological Value at Point of Handover

At the point of handover, the new native scrub will have been planted. The metric contains a built-in temporal multiplier, and it is expected that the new native scrub will reach its moderate target condition in ten years.

8.3 Bramble Scrub to Native Mixed Scrub

0.344ha of bramble scrub (h3d) and 0.042ha of bramble scrub (h3d) will be enhanced to native mixed scrub (h3h) in moderate condition and then will need to be maintained at moderate condition throughout the 30-year period.

8.3.1 Planting

Native scrub will be planted around or within the bramble scrub areas, with an aim for a minimum of 35% coverage of other species. This will help to meet condition A. Areas of native scrub will be planted in and around the existing mature scrub to provide a varied structure.

New mixed scrub is to be planted along the edges of the existing bramble scrub where it meets the other neutral grassland. This is to provide a varied edge habitat and contain the existing bramble scrub, therefore reducing encroachment onto the other neutral grassland areas.

All mixed scrub areas are to have a minimum of five species which will be chosen from the recommended list below:



Table 3. Native scrub species.

Scientific name	Common name
<i>Rosa canina</i>	Dog rose
<i>Rosa arvensis</i>	Field rose
<i>Acer campestre</i>	Field maple
<i>Cornus sanguinea</i>	Dogwood
<i>Prunus spinosa</i>	Blackthorn
<i>Corylus avellana</i>	Hazel
<i>Crataegus monogyna</i>	Hawthorn
<i>Sambucus nigra</i>	Elder
<i>Salix caprea</i>	Goat willow

Planting will include whips in clumps with areas of bare ground in-between, and the recommended planting density is 1 shrub per 1 metre squared. All shrubs must be planted as bare root stock between late November and late February to avoid the need for watering, stress on the roots and an increased risk of failure.

8.3.2 Statutory Biodiversity Metric Aims

In order to enhance the 0.344ha of bramble scrub (h3d) and 0.042ha of bramble scrub (h3d) to mixed scrub (h3h) in moderate condition under the Statutory Biodiversity Metric, a minimum of three condition assessment criteria shall need to be met at the end of the 30-year project.

- **Condition A:** The parcel represents a good example of its habitat type it has been identified as, based on its UKHab description (where in its natural range). The appearance and composition of the vegetation closely match the characteristics of the specific scrub type. At least 80% of the scrub is native, there are at least three woody species, no single species comprises more than 75% of the cover (except hazel, *Corylus avellana*, common juniper *Juniperus communis*, or box *Buxus sempervirens* which can be up to 100% cover).
- **Condition B:** Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.
- **Condition C:** there is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA) and species indicative of suboptimal condition make up less than 5% of ground cover.
- **Condition D:** The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between scrub and adjacent habitat.
- **Condition E:** There are clearings, glades or rides present within the scrub, providing sheltered edges.

8.3.3 Ecological Value at Point of Handover

At the point of handover, the new native scrub will have been planted. The metric contains a built-in temporal multiplier, and it is expected that the native scrub will reach its moderate target condition in two years.

8.4 Woodland

0.225ha of other woodland broadleaved (w1g) will be enhanced from poor condition to moderate condition and will reach moderate condition over the 30-year period.



8.4.1 Selective Felling

In order to improve the structural heterogeneity of the woodland canopy, some selective felling of trees across the woodland will be beneficial. Trees should not be thinned around the woodland edges, as these trees help to prevent wind damage and create sheltered areas deeper within the woodland. Note that a maximum of 30% of the total number of trees should be thinned out. The aim is to thin approximately 20% of the trees within the woodland every eight years. Trees should be a minimum of 7m tall before thinning is undertaken. Note that this should only be undertaken outside of the nesting bird season (avoiding, 1st March to 31st August) to prevent harm to nesting birds and their young.

8.4.2 Deadwood Retention

Leaving a proportion of standing deadwood is important through creating dead-wood 'standing monoliths' or 'totems' for more specialist saproxylic invertebrates, where safe to do so. Wind thrown trees, stumps and logs can also be retained *in situ* and these will be beneficial to invertebrates, especially stag beetles.

8.4.3 Invasive Species

Invasive species can be hard to eradicate fully, and so the woodland should be checked annually for regrowth so this can be removed.

It is imperative that the landscaping for the scheme does not include any invasive/non-native species and that an agreement is produced for the new homeowners that prevents the planting of any non-native species during the operational period.

8.4.4 Statutory Biodiversity Metric Aims

In order for the created other woodland broadleaved to meet 'moderate' condition over the 30-year management period it will need to achieve an overall score of 26-32 out of a possible 39 (see Table 1 for details on the required conditions).

8.4.5 Ecological Value at Point of Handover

The metric contains a built-in temporal multiplier, and it is expected that the woodland will reach its moderate target condition in ten years.

8.5 Line of Trees

0.0544km line of trees (w22) will be enhanced from poor condition to moderate condition and will reach moderate condition over the 30-year period.

8.5.1 Planting

A variety of native trees will be planted from November to March before they come into leaf. Planting is to be undertaken where gaps exist within the line of trees to ensure that no gap is over 5m in length. A minimum of six woody species are to be used and interspersed along the length of the tree line, species are to be selected from the table below in Table 4.

Planting should be avoided during droughts, hard frosts (most likely in January and February) or particularly



cold, windy periods. These will be planted as bare root whips.

All grass and weeds will be removed in a 1m diameter circle around each tree station prior to planting, by physical stripping. This planting will include a minimum of 50% thorny species such as blackthorn *Prunus spinosa* and hawthorn *Crataegus monogyna* as well as at least five of the following species:

Table 4. Native tree species

Common Name	Scientific Name
Hornbeam	<i>Carpinus betulus</i> ;
Sweet chestnut	<i>Castanea sativa</i> ;
Beech	<i>Fagus sylvatica</i> ;
Hazel	<i>Corylus avellana</i> ;
Elder	<i>Sambucus nigra</i> ;
Silver birch	<i>Betula pendula</i> ;
Wild cherry	<i>Prunus avium</i> ;
Bird cherry	<i>Prunus padus</i> ;
Pedunculate oak	<i>Quercus robur</i> ;
Small leaved lime	<i>Tilia cordata</i> ; and
Crab apple	<i>Malus sylvestris</i> .

8.5.2 Statutory Biodiversity Metric Aims

In order for the enhanced line of trees to meet 'moderate' condition over the 30-year management period it will need to achieve a pass three to four criteria from the list below;

- **Condition A:** At least 70% of trees are native species.
- **Condition B:** The canopy is predominantly continuous with gaps in the canopy cover making up <10% of the total area and no individual gap being >5m wide.
- **Condition C:** One or more trees has veteran features and or natural niches for vertebrates and invertebrates, such as presence of standing and attached deadwood, cavities, ivy or loose bark.
- **Condition D:** There is undisturbed naturally-vegetated strip of at least 6m on both sides to protect the line of trees from farming and other human activities (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice.
- **Condition E:** At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this) 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.

8.5.1 Ecological Value at Point of Handover

At the point of handover, the line of trees will have been enhanced with infill planting. The metric contains a built-in temporal multiplier, and it is expected that the line of trees will reach moderate condition in twenty years.



9 PROPOSED HABITAT CREATION

The proposed habitat creation will see the creation of approximately 0.461ha of modified grassland in poor condition, 0.416ha of other neutral grassland in poor condition, 0.08ha sustainable urban drainage system in moderate condition, 0.094ha of other broadleaved woodland in moderate condition and 0.57ha of urban trees in poor condition designated under the Statutory Biodiversity Metric³ condition assessment criteria (see Figure 3).

9.1 Modified Grassland

0.461ha of modified grassland will need to be created and maintained at poor condition during the 30-year period.

9.1.1 Creation

Ground preparation

To prepare a seed bed first remove weeds and any remaining bramble scrub or bracken using repeated cultivation, then plough or dig to bury the surface vegetation, harrow or rake to create a fine tilth and roll or tread to produce a firm surface. Soils can usually be prepared in winter, autumn or spring during dry weather conditions.

Seed mix and sowing

In order ensure this habitat establishes properly, baseline soil testing will be required to choose the correct seed mix and method of sowing. It can also identify the levels of soil phosphorous, magnesium, potassium and pH. However, the following methods below are generally used to establish this habitat.

The area is to be seeded to match the seed mix in the created other neutral grassland areas. Mixture EM3 - Special General Purpose Meadow Mixture (see Table 2) is considered to be a suitable mix. The seed will be sown in spring at a rate of 40kg/ha. The seed can be distributed by machine, or hand, and will require rolling or treading.

The growth and establishment of wild grasses may be slow initially especially at low sowing rates, and there will be flush of annual weeds in the first growing season that can be easily controlled by topping and mowing. Any perennial weeds, scrub or bracken is to be dug out when they appear.

Mow all plant growth (sown grasses and weeds) regularly to 40-60mm throughout the first drawing season to prevent weed smothering the emerging grasses. Remove cuttings if dense.

The second and subsequent years can be managed through regular mowing to form a neat edge to the access routes around the site.

Particularly at the early stages of the project, it may be necessary to control species that are potentially injurious (e.g. ragwort, St John's wort *Hypericum perforatum*, creeping thistle *Cirsium arvense*, broad-leaved dock *Rumex obtusifolius*, spear thistle *Cirsium vulgare* and curled dock *Rumex crispus*) if they become over-dominant within the sward. This control will be very localised and use minimal chemical intervention, with cutting and hand pulling techniques utilised where possible. If larger patches of these species establish, localised application of herbicide will be used through hand-operated knapsack sprayers or weed wipers to eliminate individual plants. If possible,



citronella-based sprays could be used, which is sometimes termed as a more 'environmentally friendly' option. These sprays are best applied when plants are at seedling or rosette stage using knapsack or weed wipers.

Where invasive species have become dominant, scalping of the sward through low cutting can be used to create bare patches of soil. Any areas of bare ground should be resown.

9.1.2 Statutory Biodiversity Metric Aims

In order for the new modified grassland to reach poor condition over the 30-year management period, it will need to pass three or fewer criteria, including essential criterion A or four to six criteria excluding criterion A;

- **Criteria A:** There are 6-8 vascular plant species per m² present, including at least 2 forbs. Note - this criterion is essential for achieving Moderate or Good condition. Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m², please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet.
- **Criteria B:** Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.
- **Criteria C:** Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble *Rubus fruticosus* agg. may be present). Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.
- **Criteria D:** Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.
- **Criteria E:** Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).
- **Criteria F:** Cover of bracken *Pteridium aquilinum* is less than 20%.
- **Criteria G:** There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA)

9.2 Other Neutral Grassland

0.416ha of other neutral grassland will need to be created and maintained at poor condition throughout the 30-year period.

9.2.1 Creation

The measures outlined above in section 8.2.1 can be followed.

As part of on-going management, the grassland should be cut and gathered each year to a height of approximately 40mm after flowering in July and August. This process can be carried out through strimming or tractor mowing. This is important to ensure that species diversity of the area is maintained, and grass species do not become dominant. Where necessary, a second cut could be taken in March each year if the sward is



growing too coarsely. The grassland should not be cut between the 1st of April and mid-August so that plants are given the opportunity to flower. Grass cuttings should be collected and removed to prevent nutrient enrichment of the soil. Aim for the sward height to be varied so at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm.

Check for cover of bracken which should be less than 20%. Any areas of bare ground should be resown. Care should be taken to make sure the adjacent scrub doesn't encroach into the grassland.

9.2.2 Statutory Biodiversity Metric Aims

In order for the other neutral grassland to reach poor condition over the 30-year management period, it will need to pass two or fewer criteria or pass three of four criteria excluding criterion A and F, as shown in section 7.1.2.

9.2.3 Ecological Value at Point of Handover

At the point of handover, the other neutral grassland will have been seeded. The metric contains a built-in temporal multiplier, and it is expected that the new other neutral grassland will reach its poor target condition in two years.

9.3 Woodland

0.094ha of other woodland broadleaved (w1g) will be created, and will reach moderate condition over the 30-year period.

9.3.1 Planting

Woodland will be created using a combination of planting and natural colonisation with aims to create a grove with a predominately dense canopy plus small areas of glades. Saplings from a mixed-species native nursery stock will be planted in clusters of trees (spaced between 1.25m-2.5m) in irregular formats of with approximately 5-10m between clusters. These clusters will be interspaced with open ground to enable natural colonisation in-between and provide genetic diversity through selection pressures within the early-establishing woodland. These trees will preferably be sourced from local nurseries. It is best to plant bare root stock while the trees are dormant between November and March in the absence of heavy frost.

As the woodland will be established on ex-pasture, ground preparation will be important to ensure successful establishment. Trees will be planted in clusters will be protected by a staked mesh guard with an area of bark and/or wood chip mulch present at least 1.2m around the tree clusters. For the areas where natural recolonisation is to occur, land will be left where possible, but regularly monitored and tactics will be changed if needed to ensure competitive plants aren't over-dominating.

9.3.2 Ecological Value at Point of Handover

At the point of handover, the new woodland will have been planted. The metric contains a built-in temporal multiplier, and it is expected that the woodland will reach its moderate target condition in fifteen years.

9.3.3 Statutory Biodiversity Metric Aims

In order for the created other woodland broadleaved to meet 'moderate' condition over the 30-year management period it will need to achieve an overall score of 26-32 out of a possible 39 (see Table 1 for details on the required conditions).



9.4 Urban Trees

0.57ha of small sized urban trees will be planted across the site with the aim to meet poor condition over the 30-year period.

These will be planted as bareroot stock 'whips' in scattered locations at the landowner's discretion around the site. Suitable tree species to qualify as small trees include:

Table 5. Native urban tree species.

Common Name	Scientific Name
Holly	<i>Ilex aquifolium</i>
Rowan	<i>Sorbus acuparia</i>
Oak	<i>Quercus robur</i>
Field maple	<i>Acer campestre</i>
Silver birch	<i>Betula pendula</i>
Hazel	<i>Corylus avellana</i>
Hawthorn	<i>Crataegus monogyna</i>

These trees must be protected with tree guards and supported with stakes to ensure they are able to grow to maturity. Any trees that are lost to damage or disease must be replaced like for like.

9.4.1 Statutory Metric Aims

In order to create rural trees in poor condition under the Statutory Biodiversity Metric, the trees will need to pass two or fewer condition assessment criteria at the end of the 30-year project period:

- **Criteria A:** The tree is a native species (or at least 70% within the block are native species).
- **Criteria B:** The tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5m wide – note all of the trees to be planted on-site will be individual trees and so will automatically pass criteria B.
- **Criteria C:** The tree is mature (or more than 50% within the block are mature).
- **Criteria D:** There is little or no evidence of an adverse impact on tree health by human activities such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime so the trees retain >75% of expected canopy for their age and height).
- **Criteria E:** Natural ecological niches for vertebrates. And invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.
- **Criteria F:** More than 20% of the tree canopy is oversailing vegetation beneath.

9.4.2 Ecological Value at Point of Handover

At the point of handover, the new trees will have been planted. The metric contains a built-in temporal multiplier, and it is expected that the new trees will reach their poor target condition in ten years.

9.5 Sustainable Urban Drainage System (SuDS)

0.08ha of Sustainable Urban Drainage System (SuDS) will be created on site. This will aim to meet moderate condition over the 30-year period.



9.5.1 Creation of Sustainable Urban Drainage Swales

The swales will have gently sloped, graded sides and an irregular shape. The gradients and depths should be varied to allow for a range of habitats for wildlife. Swales are designed to dry out in the summer months, but consideration should be given to creating some areas that retain moisture to encourage a wider range of habitat.

The sloping banks of the swale should support a diverse, species-rich sward which is made up of at least 20 plant species supporting a variety of flowering plant species to provide colour, texture, and ecological value. Therefore, increased wildflower content is recommended wherever possible. The example of the mix that has been specified is EM8 Meadow mixture for Wetlands, by Emorsgate EM8. Soil preparation is to be as recommended by the seed supplier; however, this usually requires raking or disturbance of existing grassland to show 50% of bare earth then seed is sown by hand or machine and treaded in to form contact with the soil. Seeding is best in the Autumn when the soil has a higher moisture content.

Grassland management requirements are included in section 8.1 and 8.2.

Table 6. EM8 Meadow Mixture for Wetlands.

	Common Name	Scientific Name
	Wildflowers 20%	
1.00	Yarrow	<i>Achillea Millefolium</i>
0.40	Agrimony	<i>Agrimonia eupatoria</i>
0.10	Wild Angelica	<i>Angelica sylvestris</i>
2.00	Betony	<i>Betonica officinalis</i>
3.00	Common Knapweed	<i>Centaurea nigra</i>
0.80	Meadowsweet	<i>Filipendula ularia</i>
1.60	Lady's Bedstraw	<i>Galium verum</i>
0.40	Meadow Vetchling	<i>Lathyrus pratensis</i>
0.20	Rough Hawkbit	<i>Leontodon hispidus</i>
1.60	Oxeye Daisy (Moon Daisy)-	<i>Leucanthemum vulgare</i>
0.20	Birdsfoot Trefoil	<i>Lotus corniculatus</i>
0.10	Greater Birdsfoot Trefoil	<i>Lotus pedunculatus</i>
0.40	Ribwort Plantain	<i>Plantago lanceolata</i>
2.00	Cowslip	<i>Primula veris</i>
2.00	Selfheal	<i>Prunella vulgaris</i>
2.00	Meadow Buttercup	<i>Ranunculus acris</i>
0.60	Common Sorrel	<i>Rumex acetosa</i>
1.00	Ragged Robin	<i>Silene flos-cuculi</i>
0.40	Dandelion	<i>Taraxacum officinale</i>
1.00	Tufted Vetch	<i>Vicia cracca</i>
	Grasses 80%	
8.00	Common Bent (w)	<i>Agrostis capillaris</i>
4.80	Star Sedge (w)-	<i>Carex echinata</i>
36.00	Crested Dogtail	<i>Cynosurus cristatus</i>
20.00	Red Fescue	<i>Festuca rubra</i>
1.60	Smaller Cat's-tail (w)-	<i>Phleum bertolonii</i>
6.40	Smooth-stalked Meadow-grass	<i>Poa pratensis</i>

Planting for Wet Swales



Only native species of aquatic plants should be introduced and must include a combination of marginal aquatic plants and oxygenating plants. The following species are recommended:

Table 7. Native wetland plant species.

Common Name	Scientific Name
Emergent	
Yellow iris	<i>Iris pseudacorus</i>
Meadowsweet	<i>Filipendula ulmaria</i>
Purple loosestrife	<i>Lythrum salicaria</i>
Rushes	<i>Juncus</i> spp.
Sedges	<i>Carex</i> spp.
Greater spearwort	<i>Ranunculus lingua</i>
Water mint	<i>Mentha aquatica</i>
Water forget-me-not	<i>Myosotis scorpioides</i>
Floating:	
White water lily	<i>Nymphaea alba</i>
Ivy-leaved duckweed	<i>Lemna trisulca</i>
Frogbit	<i>Hydrocharis morsus ranae</i>
Water soldier	<i>Stratiotes aloides</i>
Submerged:	
Spiked water-milfoil	Spiked water-milfoil <i>Myriophyllum spicatum</i>
Whorled water-milfoil	<i>M. verticillatum</i>
Curled pondweed	<i>Potamogeton crispus</i>
Hornwort	<i>Ceratophyllum demersum</i>
Water starwort	<i>Allitriche stagnalis</i>
Common spike-rush	<i>Eleocharis palustris</i>
Willow moss	<i>Fontinalis antipyretica</i>
Marestail	<i>Hippuris vulgaris</i>
Water violet	<i>Hottonia palustris</i>
Water crowfoot	<i>Ranunculus aquatilis</i>

The plants listed above are available in early autumn and spring, dependent upon species, and should be planted as soon as possible.

To create high quality habitat, in this instance it is recommended to sow a specialised pond edge seed mix along the margins. To prepare a seed bed, first remove weeds using repeated cultivation. Then cultivate to bury the surface vegetation and harrow or rake to produce a medium tilth.

Sowing should take place in late summer or early spring. If in late summer, spot watering may be required if the weather is particularly dry. In the first year, annual weed growth may be cut back to encourage the development of a good perennial ground cover. The mix used should contain native wildflowers suitable for wet and damp ground, as well as having a good proportion of grasses. The freshwater habitats trust cites common bent *Agrostis capillaris* as an often underappreciated but extremely important grass species for edges. Common bent will form carpets near the edge and provide excellent habitat for amphibians and water beetles.

EP1 from Emorsgate Seeds (<https://wildseed.co.uk/>) is recommended. EP1 is a complete mix composed of 20% native wildflowers and 80% slow growing grasses that contains common bent (full species composition below). Full methodology for preparation, sowing and management can also be found on their website.



Table 8. Emorsgate EP1 Pond Edge Mixture composition.

%	Common name	Scientific name
Wildflowers		
1.00	Wild angelica	<i>Angelica sylvestris</i>
1.00	Grey sedge	<i>Carex divulsa ssp divulsa</i>
2.40	Common knapweed	<i>Centaurea nigra</i>
0.80	Crossword	<i>Cruciate laevipes</i>
0.60	Wild teasel	<i>Dipascus fullonum</i>
0.10	Hemp agrimony	<i>Eupatorium cannabinum</i>
1.70	Meadowsweet	<i>Filipendula ulmaria</i>
1.00	Hedge bedstraw	<i>Galium album</i>
0.60	Water avens	<i>Geum rivale</i>
0.20	Hedgerow cranesbill	<i>Geranium pyrenaicum</i>
4.00	Yellow iris	<i>Iris pseudacorus</i>
0.80	Meadow vetchling	<i>Lathyrus pratensis</i>
0.50	Purple loosestrife	<i>Lythrum salicaria</i>
0.20	Gypsywort	<i>Lycopus europeus</i>
0.20	Corky-fruited water dropwort	<i>Oenanthe pimpinelloides</i>
0.60	Ribwort plantain	<i>Plantago lanceolata</i>
0.20	Selfheal	<i>Prunella vulgaris</i>
1.00	Meadow buttercup	<i>Ranunculus acris</i>
2.80	Red campion	<i>Silene dioica</i>
0.70	Ragged robin	<i>Silene flos-cuculi</i>
Grasses		
4.00	Common bent	<i>Agrostis capillaris</i>
4.00	Sweet vernal grass	<i>Anthoxanthum odoratum</i>
1.60	Grey sedge	<i>Carex divulsa spp. Divulsa</i>
34.40	Crested dog's-tail	<i>Cynosurus cristatus</i>
1.60	Tufted hair grass	<i>Deschampsia cespitosa</i>
20.00	Red fescue	<i>Festuca rubra</i>
4.00	Meadow barley	<i>Hordeum secalinum</i>
8.00	Rough stalked meadow grass	<i>Poa trivialis</i>
2.40	Tall fescue	<i>Schedonorus arundinaceus</i>

9.5.2 Statutory Metric Aims

In order to create a SuDS in moderate condition under the Statutory Biodiversity Metric, the SuDS will need to pass three or four of five criteria OR pass five of five criteria but does not meet the requirements for Good condition within criterion C at the end of the 30-year project period:

- **Criteria A:** Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structure habitat component or vegetation type does not account for more than 80% of the total habitat area.
- **Criteria B:** The habitat contains different plant species that are beneficial for wildlife for example flowering species providing nectar sources for a range of invertebrates at different times of the year.
- **Criteria C:** Invasive non-native plant species (listed on Schedule 9 of WCA) and others which are to the detriment of native wildlife (using professional judgement) cover less than 5% of the total



vegetated area.

- **Criteria D:** Open mosaic habitat on previously developed land only, N/A.
- **Criteria E1:** Plant species are mostly native. If non-native species are present, they should not be detrimental to the habitat or native wildlife.
- **Criteria E2:** The vegetation is comprised of plant species suited to wetland or riparian situations.
- **Criteria F:** Intensive green roofs only, N/A.
- **Criteria G:** Biodiverse green roofs only, N/A

9.5.3 Ecological Value at Point of Handover

At the point of handover, the new SuDS will have been created. The metric contains a built-in temporal multiplier, and it is expected that the new SuDS will reach its moderate target condition in three years.

10 ONGOING MANAGEMENT

10.1 Grassland

See management prescribed in Sections 8.1 and 8.2.

10.2 Scrub

The scrub habitat (h3h) should include a variety of species and maintain different stages of growth at all times from bare ground to vegetation and deadwood, to provide shelter in close proximity to available food sources and basking opportunities for reptiles.

Check for scrub composition annually. Where >75% of the scrub comprises a single species, this will need management. Use hand tools such as saws, chainsaws and brush cutters, to cut back scrub to be used to avoid harm to protected species including amphibians or reptiles. At least 20% of the area should be removed during the management period to facilitate growth of new species and increase species diversity. Where feasible, arisings will be left to decay in deadwood piles to provide habitats for invertebrates including stag beetles. Further guidance on scrub management is provided by Natural England⁵. This will help to meet Criterion A.

Annually, in summer a check for invasive shrubs should be carried out and if identified, immediate removal of these species will be scheduled and carried out. This will help to meet Criterion C.

Additionally, to prevent encroachment of scrub onto adjacent gardens, and existing lines of trees, the edges of the scrub will be maintained, to avoid smothering boundary features. Cutting in general will encourage re-growth, but it must be cut in rotation to maintain the age structure. As with hedgerows, this cutting must only be timed outside the bird nesting season (1st March to 31st August). Where possible shrubs shouldn't be cut until February, so that valuable winter food associated with fruiting shrubs/trees is retained for over-wintering birds. If individual shrubs within the scrub must be cut back, the stump should remain in-situ to increase deadwood

⁵ Natural England, 2011. *The Scrub Management Handbook*. Available at: <http://publications.naturalengland.org.uk/publication/72031>.



habitat. This will help to meet Criteria D and E.

10.3 Woodland

Tree guards should be inspected twice annually to remove weeds, and any soil build up inside the tubes for the first three years. These can be removed when planting is well established. Tree stakes and ties will be checked annually and after strong winds.

Tree saplings must be kept well-watered during establishment. Weeds must be controlled at the base of the trees. Tree guards with stakes to protect these hedge trees from rabbits and deer will be necessary for the first three years, especially as the site is connected to further woodland which may support deer. Plastic guards should be avoided given the negative long-term environmental impacts.

Regular quarterly check for signs of disease. If disease is identified, advice should be sought from an arboriculturist regarding the appropriate method of treatment. Replacement planting will also be required where trees fail to establish. Replacement trees should be of native stock and ideally of local provenance. These should not be replanted immediately but during the next planting season (November to March).

Trees and shrubs should be allowed to grow unhindered where possible. However, it may be necessary to trim back trees and shrubs in some circumstances, such as where there is a risk to health and safety, or for maintenance of the ecological feature. Cutting of shrubs and trees must only be timed outside the bird nesting season (avoiding 1st March to 31st August). Where possible they shouldn't be cut until February, so that valuable winter food associated with fruiting shrubs/trees is retained for over-wintering birds.

Leaving a proportion of standing deadwood is important through creating dead-wood 'standing monoliths' or 'totems' for more specialist saproxylic invertebrates, where safe to do so. Wind thrown trees, stumps and logs can also be retained *in situ* and these will be beneficial to invertebrates, especially stag beetles.

It is imperative that the landscaping does not include any invasive/non-native species and that an agreement is produced for the new homeowners that prevents the planting of any non-native species during the operational period.

10.4 Line of Trees

Year 1 to 5

Tree saplings kept well-watered during establishment. Weeds must be controlled at the base of the young trees.

Tree guards, to protect the new saplings from rabbits and deer, to be inspected yearly for the first five years and then removed if planting is well established.

Checks for signs of disease. If disease is identified, advice should be sought from an arboriculturist regarding the appropriate method of treatment.

Inspection for the presence of invasives. Invasives are more likely to colonise in the first five years after recent ground disturbance and bare ground cover.



Replacement planting will be required where any trees fail to establish and to close gaps within the tree line as it establishes.

Tree guards will be removed after three years and recycled.

Build-up of leaf litter from the proposed trees onto the enhanced grassland parcel will need to be prevented through the raking up of leaves in the autumn months.

Trimming trees where required should be carried out and should ideally take place in January/February to encourage fruiting and avoid nesting bird season.

10.1 Rural and Urban Trees

New trees will be watered appropriately (the Arboricultural Association recommends 50 litres/week) in the summer months for their first three years.

New trees will be checked annually for signs of damage and disease. If disease is identified, advice should be sought from an arboriculturist regarding the appropriate method of treatment.

Any trees which fail within the 30-year period must be replaced.

Tree guards will be removed after three years and recycled.

Build-up of leaf litter from the proposed trees onto the enhanced grassland parcel will need to be prevented through the raking up of leaves in the autumn months.

10.2 Sustainable Urban Drainage System (SuDS)

Year 1

The newly established SuDS pond will require careful monitoring in the first year after they have been established to check if the nutrient levels are too high. This is a common occurrence in new ponds due to the presence of exposed nutrients close to the pond bed. Should blanket weed establish this should be removed periodically to prevent it from choking the pond and should be lifted out with a rake.

Year 2 Onwards

Every year after establishment, where necessary, up to 20% of the aquatic vegetation in the pond may need to be removed in order to maintain some open areas in the waterbody. The pond should ideally have at least 20% of its surface area free from aquatic vegetation.

The pond will also need to be monitored to check that no invasive pond plants become established and also that no fish are introduced.

In the autumn, 75% of dead, dying and decaying vegetation is to be removed to prevent the decay of these and



the reduction in the water quality.

If any of the prescribed pond plants fail to establish, then new plants will also need to be introduced at the previously specified stocking rate.

11 BOTANICAL MONITORING REQUIREMENTS

Monitoring surveys will be required to ensure the modified grassland, other neutral grassland and wetland grassland in the swales are being maintained at the correct conditions over the 30-year period.

Quadrat sampling will be undertaken to identify the habitat type that is establishing and then number of species per m². The location of these quadrats will be recorded, and sampling will be carried out in the same location during each monitoring survey to ensure ease of comparison. Fixed-point contact photos will also be taken to measure the appearance and structure of the sward over time. Percentage of bare ground, scrub and bracken cover will be estimated for each parcel. A botanical species list will be collected across the grassland through a general walkover to check against target species list.

All surveys will be carried out by a qualified ecologist with appropriate botanical survey experience.

Table 9. Schedule for botanical monitoring surveys for other neutral grassland, modified grassland and wetland grassland on land at Northlands Lane.

Year	0	1	2	3	4	5	6	7	10	15	20	25	30
June		X	X	X	X	X	X		X		X		X
July								X		X		X	
August					X	X	X		X		X		X

12 GENERAL MONITORING REQUIREMENTS

12.1 Mixed Scrub

Scrub (h3h) encroachment will be monitored twice annually. Scrub will be checked at the end of the growing season and at the beginning of the growing season at which point areas that have encroached or are likely to encroach can be cut back. In addition, checks for species present against the expected species list will be carried out.

Monitoring will take place twice a year for the first five years. Depending on the rate at which scrub needs cutting back, this can be adjusted after the first five years to be done annually in September, if there is no management required in April/May. The species list of the scrub will then be assessed only once every five years, with cutting back and invasive checks built into the management plan rather than monitoring plan.

Monitoring checks for Years 25 and 30 will focus upon the condition assessment criteria to ensure that these match up with the HMMP goals.

Table 10. Schedule for scrub monitoring for land at Northlands Lane.



Year	0	1	2	3	4	5	6	7	10	15	20	25	30
April	X	X	X	X	X	X							
September	X	X	X	X	X	X	X	X	X	X	X	X	X

12.2 Woodland

Woodland condition assessment monitoring will be carried out in accordance with the English Woodland Biodiversity Group (EWBG) Woodland Condition Assessment for Biodiversity Metric (WCA6) note. The first monitoring check will involve fixing 10m radius survey plots throughout each woodland parcel, which will be marked using GPS and fixed-point photos. A standardised walking route (with planned detours as deemed necessary) will also be established for future visits. Monitoring surveys will be carried out twice a year for the first 5 years; once in early spring (prior to leaves emerging) and once in summer (when ground flora has fully established). Alternating spring and summer surveys will then be carried out for Year 6-9, returning to twice yearly checks from Year 10 every 5 years.

Table 11. Schedule for woodland condition monitoring on land at Northlands Lane.

Year	0	1	2	3	4	5	6	7	8	9	10	15	20	25	30
Early Spring	X	X	X	X	X	X	X		X		X	X	X	X	X
Summer	X	X	X	X	X	X		X		X	X	X	X	X	X

12.3 Line of Trees

Lines of trees will annually be checked for signs of disease and more frequently while new ones are establishing. If disease is identified advice will be sought from an arboriculturist regarding the appropriate method of treatment.

During the management of lines of trees, they will be inspected for the presence of invasives. This will follow the cutting/trimming schedule. Invasives are more likely to colonise in the first five years after recent ground disturbance and bare ground cover.

Monitoring checks for Years 25 and 30 will focus upon the condition assessment criteria to ensure that this aligns with the HMMP goals.

Table 12. Schedule for monitoring surveys for line of trees on land at Northlands Lane.

Year	0	1	2	3	4	5	6	7	10	15	20	25	30
January/February	X	X	X	X	X	X	X	X	X	X	X	X	X
August		X	X	X	X	X							



12.4 Rural and Urban Trees

Trees will be checked for disease annually for the first 5 years of establishment. In addition, tree guards will be checked twice annually, as well as checking for weed encroachment. One of these checks can be timed at the same time as checking the trees for disease.

Tree guards will be removed after 5 years, after which checks for disease can be reduced to one monitoring check a year with key monitoring checks in line with condition assessment sheets every 5 years.

Table 13. Schedule for rural and urban tree monitoring on land at Northlands Lane.

Year	0	1	2	3	4	5	6	7	10	15	20	25	30
Winter	X	X	X	X	X	X	X	X	X	X	X	X	X
Summer		X	X	X	X	X							

12.5 Sustainable Urban Drainage System (SuDS)

The condition of the wetland grassland is included in section 9.0 botanical surveys.

Wet swales or ponds are not included within the BNG requirements but if provided it is good practice to monitor nutrient levels. Nutrient levels will be checked four times in the first year of creation (one test each season for the first year) and then twice a year for years two and three. Subsequent years will be checked annually in late summer and will involve both nutrient testing and comparing pond success with condition assessment criteria.

During each water quality check, the ponds will be checked for any blanket weed, invasives and other undesirables.

Table 14. Schedule for pond monitoring on land at Northlands Lane.

Year	0	1	2	3	4	5	6	7	10	15	20	25	30
Winter		X											
Spring		X	X	X									
Summer		X			X	X	X	X	X	X	X	X	X
Autumn		X	X	X									

12.6 Adaptive Management

Yearly management and monitoring reports will drive annual management practices across the site.

The most important aspect to adaptive management is robust and regular monitoring by appropriately qualified practitioners who can identify emerging issues with the establishment of created habitats. Following annual reports written and reviewed by practitioners, management techniques and schedules can be reviewed and updated as necessary year on year. Monitoring reports can be bi-annually for habitats/parcels with a larger number of ecological constraints/ongoing issues. Changes in management/monitoring schedule will need to be recorded and this plan.



It is important that land managers are aware of potential issues and record anything during day-to-day management that can be fed back to project manager, the relevant authority and practitioners to ensure the relevant steps are taken before the annual monitoring checks.

The following measures will be implemented in order to trigger appropriate remedial actions to address previously unforeseen impacts:

- any newly planted trees/shrubs which fail within the first two years will be replaced, and
- in the event that the woodland fails to establish, specialist arboricultural advice will be sought.

Should you need any further advice on the information provided above, please do not hesitate to contact The Ecology Co-op.



APPENDIX 1 – Relevant Legislation and National Planning Policy

Natural Environment and Rural Communities (NERC) Act (2006)

The NERC Act (2006) created the statutory nature conservation body Natural England, and places a statutory duty on all public bodies, including planning authorities, under Section 40, to take, or promote the taking by others, steps to further the conservation of *habitats and species of principal importance for the conservation of biodiversity* in England (commonly referred to as the 'Biodiversity Duty'). This duty extends to all public bodies the biodiversity duty of Section 74 of the Countryside and Rights of Way (CROW) Act 2000, which placed a duty only on Government and Ministers. Section 41 of the NERC Act lists the habitats and species of principle importance. This includes a wide range of species from mosses, vascular plants, invertebrates through to mammals and birds. It originates from the priority species listed under the UK Biodiversity Action Plan (UK BAP) with some omissions and additions.

Environment Act (2021)

The Environment Act sets a target of halting the decline in species through the inclusion of a legally binding 2030 species abundance target. Aiming to restore natural habitats and enhance biodiversity, the Act requires new developments to improve or create habitats for nature (through mechanisms such as mandatory Biodiversity Net Gain), and tackle deforestation. Going forwards, UK businesses will need to look closely at their supply chains as amongst other measures they will be prohibited from using commodities associated with wide-scale deforestation. Woodland protection measures are also strengthened through the Act.

The Act enables the reform of the Habitats Regulations and further improves protection for nature through the establishment of Local Nature Recovery Strategies that support national Nature Recovery Networks. In addition, the Act provides for the production of Protected Site Strategies and Species Conservation Strategies, aimed at supporting the design and delivery of strategic approaches to deliver better outcomes for nature.

National Planning Policy Framework

The National Planning Policy Framework (NPPF 2024)⁶ sets out the Government's view on how planners should balance nature conservation with development and helps ensure that Government meets its biodiversity commitments with regard to the operation of the planning system.

Paragraph 179b, which states that council policies should "*promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.*" The Office of the Deputy Prime Minister (ODPM) Circular 06/2005, 2005)⁷. In accordance with the NPPF, it is important that developments should contribute to and enhance the natural and local environment by:

- minimising impacts on existing biodiversity and habitats;
- providing net gains in biodiversity and habitats, wherever possible;
- establishing coherent ecological networks that are more resilient to current and future pressures.

⁶ HM Government (2024). National Planning Policy Framework. Department for Communities and Local Government. Available online at: <https://assets.publishing.service.gov.uk/media/675abd214cbda57cacd3476e/NPPF-December-2024.pdf>.

⁷ HM Government (2005) ODPM Circular 06/05 Government Circular: *Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/147570.pdf.



UK Post-2010 Biodiversity Framework

The UK Biodiversity Action Plan (UK BAP), first published in 1994, was the UK's response to the commitments of the Rio Convention on Biological Diversity (1992) until 2010, when the UK BAP was replaced by the UK Post-2010 Biodiversity Framework. This framework covers the period 2011 to 2020 and forms the UK government's response to the new strategic plan of the United Nations Convention on Biodiversity (CBD) published in 2010. This promotes a focus on individual countries delivering target for protection for biodiversity through their own strategies.

The most recent biodiversity strategy for England, 'Biodiversity 2020: A strategy for England's wildlife and ecosystem services' was published by Defra (2011), and a progress update was provided in July 2013 (Defra 2013).

'Biodiversity 2020' builds on the Natural Environment White Paper for England – 'The Natural Choice', published on 7 June 2011, and sets out the strategic direction for biodiversity policy for the next decade.

Biodiversity 2020 deliberately avoids setting specific targets and actions for local areas and species because the Government believes that local people and organisations are best placed to decide how to implement the strategy in the most appropriate way for their local area or situation.

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