

M3 Junction 9 Improvement

Scheme Number: TR010055

6.3 Environmental Statement Appendix 8.1z - UK Hab Survey Report 2022

APFP Regulation 5(2)(a)

Planning Act 2008

**Infrastructure Planning (Applications: Prescribed Forms and
Procedure) Regulations 2009**

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Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

M3 Junction 9 Improvement
Development Consent Order 202[x]

6.3 ENVIRONMENTAL STATEMENT- APPENDIX 8.1z: UK HAB SURVEY REPORT 2022
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Author:	M3 Junction 9 Improvement Project Team, Highways England

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Rev 0	November 2022	Application Submission

TECHNICAL NOTE

Job Name: M3 Junction 9 Improvement
Job No: 330610074
Note No: HE551511-VFK-EBD-X_XXXX_XX-TN-LE-0011
Date: 02 September 2022
Prepared By: Ed Austin
Subject: **UK Habitat Classification Survey Report**

1. Introduction

- 1.1. Stantec UK is working with Volker Fitzpatrick and National Highways to undertake design and assessment of the M3 Junction 9 Improvement Scheme (the Scheme). National Highways is planning to submit an application for a Development Consent Order for the Scheme.
- 1.2. This UK Habitat Classification Survey Report has been prepared to inform the Environmental Impact Assessment process; principally the Biodiversity chapter of the Environmental Statement (ES).
- 1.3. As part of a wider ecological assessment of the area potentially affected by the Scheme, Jacobs (on behalf of Highways England) undertook a habitat survey in June 2020 (Highways England, 2020) using the UK Habitat Classification system. This recorded a diversity of habitats, with many of the habitats of increased ecological value being associated with land around the River Itchen. Elsewhere, large sections of the survey area contained 'other neutral grassland' including verges of the M3 and A34 and 'other broadleaved woodland types' including planted woodland and secondary woodland of recent origin along the road corridors (shelter belt and screen planting), sometimes in association with scrub. The land to the east of the M3 was dominated by arable farmland.
- 1.4. The results of the 2022 survey are set out in **Section 3** and **Appendix 1**. Habitats are presented on the Habitats Plan in **Section 7**. Photographs are presented in **Section 6**, with locations shown on the **Habitats Plan in Section 7**.

2. Method

- 2.1. A survey area was defined including all land within the Application Boundary as shown on **Figure 8.5** of the ES (**Document Reference 6.2**). This area is hereafter referred to as the 'Site'.

TECHNICAL NOTE

- 2.2. A walkover survey was completed across all accessible areas within the Site in order to identify and gather information on the habitat types present. Habitat types were classified using the UK Habitat Classification (“UKHab”) system. This is a habitat mapping system which is the basis for the input format for the Defra Biodiversity Metric. Primary habitat types were identified to at least level 3, with effort made to classify them to level 4 or 5 where possible to do so (i.e. if where sufficient characteristics or plant species could be identified to meet the relevant definitions) (UK Habitat Classification Working Group, 2018).
- 2.3. Information on any dominant or characteristic plant species (where present) was also recorded. The survey recorded all habitats present but particular consideration was given to any changes since the 2020 survey.
- 2.4. In addition to classifying habitat types, information was gathered to enable the condition of each individual habitat area to be assessed using the Natural England Biodiversity Metric 3.1 condition assessment sheets (see **Appendix 2**). Note that some habitats do not have a relevant condition assessment sheet as they are highly modified or artificial. This for example includes cropland (which dominated the area east of the M3 corridor) and urban developed areas with a sealed surface, including the roads themselves which covered a large part of the survey area.
- 2.5. The habitat survey was completed over three days between 30th May 2022 and 1st June 2022. Weather conditions were generally dry with some short but heavy showers on 31st May. Air temperatures were mild (14°C to 16°C) with partially cloudy to overcast skies (5/8 to 8/8 cloud cover) and a light breeze (Beaufort scale force 3).
- 2.6. Due to the risks associated with fast moving traffic some parts of the survey area could not be accessed safely. This mainly included the carriageways and some sections of verges in the north and south of the Site. These areas were viewed from safe vantage points such as adjacent safe areas of verges (e.g. where footways or safety barriers occurred), from adjacent land holdings (e.g. farmland beyond highways fencing), from embankments giving views across areas, or from bridges crossing the carriageways. In the more extensive inaccessible areas (northern and southern parts of the Site along the M3 corridor and parts of the A34 corridor) binoculars were used to aid views of habitats on the verges and central reservations, as the nearest safe vantage points (typically bridges crossing the carriageway) were often high up or some distance from parts of the Site. Despite these access limitations, it was still possible to gain sufficient views and information to classify broad habitat types in line with the method by using this approach.
- 2.7. The survey was undertaken by a suitably qualified and experienced ecologist who is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). The surveyor has worked as a professional ecologist for more than 18 years and has extensive experience of undertaking habitat surveys and protected species surveys in a range of habitats across the UK.

TECHNICAL NOTE

3. Results

- 3.1. A summary of the habitat types recorded across the Site is provided in **Table 1** below, with locations shown on the **Habitats Plan in Section 7**. A full list of all individual habitat parcels, condition and description is provided in **Appendix 1**.

TECHNICAL NOTE

Table 1: Summary of Habitat Types Recorded

Habitat Type	Summary Description
Cropland	Arable farmland
Arable field margins cultivated annually	Larger areas of field margin not being used for crop production at time of survey but with evidence of regular cultivation (disturbed ground).
Cereal crops	Areas of arable farmland dominated the Site to the east of the M3 corridor. Crops included wheat, barley and potato with some bare, tilled areas also present.
Grassland	Grassland verges and pasture
Lowland calcareous grassland	Small sections of calcareous (chalk) grassland were recorded on road verges where species indicative of base-rich soils were present. However, these areas were typically species-poor overall with a mixture of calcareous and neutral grassland species. These habitats were classified as calcareous grassland due to the presence of indicator species such as wild marjoram (<i>Origanum vulgare</i>), perforate St John's-wort (<i>Hypericum perforatum</i>), ploughman's spikenard (<i>Inula conyzae</i>), wild carrot (<i>Daucus carota</i>) and (adjacent to Tesco) white helleborine. Areas of exposed soil in these locations also confirmed chalk substrate. However, they were generally not good examples of these habitat types being subject to management such as indiscriminate mowing, covering small areas of verge likely subject to reduced air quality and deposition of chemicals, and having a notable component of widespread and more typically neutral grassland species such as false oat-grass.
Modified grassland	This habitat type comprised typical heavily managed (mown) roadside verges that are generally species-poor and characterised by seeded species such as perennial rye-grass (<i>Lolium perenne</i>) plus a limited number of self-seeded plants.

TECHNICAL NOTE

Habitat Type	Summary Description
Other neutral grassland	Other neutral grassland was widespread across the Site as generally species-poor roadside verges often characterised by coarse grasses such as false oat-grass (<i>Arrhenatherum elatius</i>). Some verge areas were more diverse and included a variety of grasses such as tall fescue (<i>Festuca arundinacea</i>), red fescue (<i>Festuca rubra</i>) and soft brome (<i>Bromus hordeaceus</i>) with herbs such as oxeye daisy (<i>Leucanthemum vulgare</i>) and wild carrot (<i>Daucus carota</i>). More extensive areas of pasture were also present between the A34 and M3 carriageways toward the north of the Site. These were former cattle-grazed pasture but had not been grazed during or prior to the survey. These areas had developed a more diverse (albeit still limited) sward, with a mixture of species including false oat-grass, Yorkshire fog (<i>Holcus lanatus</i>), cock's-foot (<i>Dactylis glomerata</i>), oxeye daisy, hemp agrimony (<i>Eupatorium cannabinum</i>), black knapweed (<i>Centaurea nigra</i>), wild carrot and wild clematis (<i>Clematis vitalba</i>) among others.
Heathland and shrub	Areas of scrub
Bramble scrub	Areas dominated by bramble (<i>Rubus fruticosus</i>) scrub.
Hawthorn scrub	Areas of scrub dominated by hawthorn (<i>Crataegus monogyna</i>) scrub with other species including hazel (<i>Corylus avellana</i>) and buckthorn (<i>Rhamnus cathartica</i>).
Mixed scrub	Mixed scrub was present along some roadside embankments, often blending into more discreet hedgerow features on field margins. However, the bands of scrub extended down the verges in places with dense growth of species such as wild privet (<i>Ligustrum vulgare</i>), hawthorn, buckthorn and elder (<i>Sambucus nigra</i>).
River Area	Sections of River Itchen
River	Parts of the River Itchen channel flowing through the Site (with the river being multi-channel in this area). Rivers are a Habitat of Principal Importance (HPI).
Sparsely vegetated land	Areas dominated by ruderal species
Ruderal/Ephemeral	Ruderal species such as common nettle (<i>Urtica dioica</i>) growing on central reservation in north of Site.
Urban	Artificial habitats/hard-surfaces
Developed land; sealed surface	This included the road carriageways themselves dominating much of the Site plus areas of pavement and other hard-standing such as yards and car parks.

TECHNICAL NOTE

Habitat Type	Summary Description
Introduced shrub	Areas of planted shrubs including cotoneaster around the National Highways/Kier compound.
Open Mosaic Habitats on Previously Developed Land (OMH)	Areas of land disturbed by human activity such as around the recycling facility with colonising vegetation. Species recorded are often associated with disturbed land such as bristly oxtongue (<i>Helminthotheca echioides</i>) and hemlock (<i>Conium maculatum</i>). OMH is a Habitat of Principal Importance (HPI).
Woodland and forest	Areas of woodland and predominant tree cover
Lowland Mixed Deciduous Woodland	An area of woodland in the northern part of the survey area located on the northern edge of the larger area of pasture between the A34 and M3 corridors appeared semi-natural meets the description of HPI lowland mixed deciduous woodland. This woodland was characterised by largely ash and hazel woodland, with yew also scattered throughout.
Other woodland; broadleaved	Areas of planted and secondary woodland were widespread around the Site, typically as screen planting or at least partially self-seeded woodland on the margins of the road carriageways or between the A34 and M3 around parts of the River Itchen corridor. Tree species often included extensive field maple (<i>Acer campestre</i>) in planted areas often with ash (<i>Fraxinus excelsior</i>). In secondary woodland areas, species often comprised sycamore (<i>Acer pseudoplatanus</i>) and alder (<i>Alnus glutinosa</i>) with a mixture of other trees and shrubs in places such as beech (<i>Fagus sylvatica</i>), hawthorn and poplar (<i>Populus</i> sp.).
Other woodland; mixed	Area of recently planted woodland with a mixture of trees and shrubs including hawthorn, yew (<i>Taxus baccata</i>), hornbeam (<i>Carpinus betulus</i>), apple (<i>Malus</i> sp.), ash, hazel, beech, cherry (<i>Prunus</i> sp.) and lime (<i>Tilia</i> sp.). Ground flora included white and broad-leaved helleborine (<i>Epipactis helleborine</i>) along with bramble, cock's-foot and cow parsley (<i>Anthriscus sylvestris</i>).
Hedgerows	Linear hedgerows (All the hedgerows recorded within the Site met the criteria for HPI hedgerows being comprised of native species of shrubs.)

TECHNICAL NOTE

Habitat Type	Summary Description
Native hedgerow	Hedgerows comprised of 80% or more native species of shrubs were present as field boundaries around the areas of arable farmland north-east of junction 9 and the pasture to the north of junction 9. The majority of these were species-poor (having less than 5 woody species in an average 30m length) and contained a mixture of shrubs such as hawthorn, blackthorn (<i>Prunus spinosa</i>), dogwood, hazel, buckthorn and wild privet.
Native species-rich hedgerow	Limited to two small sections east of the M3 corridor. These were hedgerows without trees but with more than 5 woody species in an average 30m length. Species present included a similar range to the species-poor hedgerows above, but with greater diversity within each section of hedgerow.
Native species-rich hedgerow with trees	Three hedgerows were species-rich and also contained larger trees such as sycamore.

TECHNICAL NOTE

4. Comparison with 2020 Survey

- 4.1. The UK Habitat survey completed in 2022 revealed that the Site overall is in largely similar condition to the 2020 survey with the mixture of habitats being broadly the same. Large arable farmland still dominated the area east of the M3 with more extensive grassland (pasture) toward the north of the Site between the A34 and M3 carriageways.
- 4.2. The larger areas of pasture were described as ‘species-poor’ in 2020 and dominated by coarse grasses such as false oat-grass. In 2022, the grassland was noted to not be subject to grazing but evidence of past grazing by cattle was evident (drinking troughs and some old areas of poached ground were present). It is not known when grazing ceased, but the sward in 2022 had a diversity of species including a number of herbs such as common knapweed, oxeye daisy, wild carrot and meadow buttercup (*Ranunculus acris*) among others. This was particularly the case in the more southern area of pasture north of the Kier compound, with the grassland being increasingly less diverse and still dominated by grasses moving north and north-east. While the grassland overall was still not particularly species-rich and evidently not unimproved (hence not meeting criteria for lowland meadows), it is possible that overall species diversity has increased in some areas since 2020, possibly linked to a cessation of grazing depending on timeframes.
- 4.3. Grassland verges in 2022 also appeared to be very similar to the 2020 survey with no significant changes in classification or extent. It was noted that the 2020 survey recorded large numbers of pyramidal orchids (*Anacamptis pyramidalis*), with the majority growing on the Winnall gyratory and associated verges itself. Small numbers of chalk fragrant-orchid (*Gymnadenia conopsea*) and common twayblade (*Neottia ovata*) were also present here in 2020. None of these species were seen in 2022 in this location. However, pyramidal orchids were incidentally noted by the surveyor later in the 2022 summer from verges just south of the Site (outside the 2022 survey area) on the M3 corridor. Orchid populations can be very variable year to year, so may occur in other summers. However, the Winnall gyratory had fairly tall grass verges at the time of the 2022 survey. In addition, there was evidence of recent clearance of the scrub on parts of the gyratory (i.e. within a few years) that had extensively grown back with dense young dogwood growth. Clearance for ground investigations is noted in the 2020 report. It may be that the scrub regrowth had expanded outwards onto the verges, as only fairly narrow sections of grassland were present in 2022. White helleborine (also noted in 2020) was still present within the survey area in 2022 and was very abundant in some areas, particularly around the Tesco car park and nearby verge at the entrance, the woodland north of the Kier compound and in other areas such as parts of the planted woodland in the arable area to the east of the M3 and under secondary woodland on the west of the A34 corridor north of junction 9 and the Winnall industrial estate.

TECHNICAL NOTE

- 4.4. The areas of woodland appeared to largely be in a similar condition to the 2020 survey. However, an area of woodland appearing to be identified as 'wet woodland' by the 2020 survey in the north of the Site between the two A34 carriageways was classified as 'other broadleaved woodland' in 2022. This area comprised secondary woodland with sycamore being the predominant species. Alder (*Alnus glutinosa*) was frequent with willows (*Salix* sp.) being rare in the canopy. However, the woodland in this area occurs on a mixture of sloped and low-lying ground, with only limited areas of wet ground. Much of the woodland is situated on a bank up to the A34 with very freely draining ground conditions. However, it is possible that the 2020 survey (based on locations of target notes) referred to woodland further east on the edge of the wider survey area used at that time. It is very unlikely the woodland between the A34 carriageways has changed significantly since 2020.
- 4.5. It is noted that the 2020 survey covered a greater area than the 2022 survey, with many of the more ecologically valuable habitats recorded in 2020 being outside the 2022 survey area, such as in the Winnall Moors Nature Reserve to the west.

TECHNICAL NOTE

5. References

- 5.1. Highways England (2020). M3 Junction 9 Improvements. Habitat Verification and Orchid Survey.
- 5.2. UK Habitat Classification Working Group (2018). UK Habitat Classification User Manual at [REDACTED]

TECHNICAL NOTE

6. Photographs (Photograph Location figure in Section 7)

Photograph 1: Pasture between A34 and M3 with mixture of grasses and herbs



Photograph 2: Pasture between A34 and M3 further north showing predominance of grasses



TECHNICAL NOTE

Photograph 3: Scrub in north of survey area beyond pasture between A34 and M3



Photograph 4: Arable farmland and hedgerows typical of area east of M3 corridor



TECHNICAL NOTE

Photograph 5: Recent plantation woodland in arable farmland east of M3 corridor



Photograph 6: Typical narrow grass verges and adjacent scrub and planted woodland around junction 9

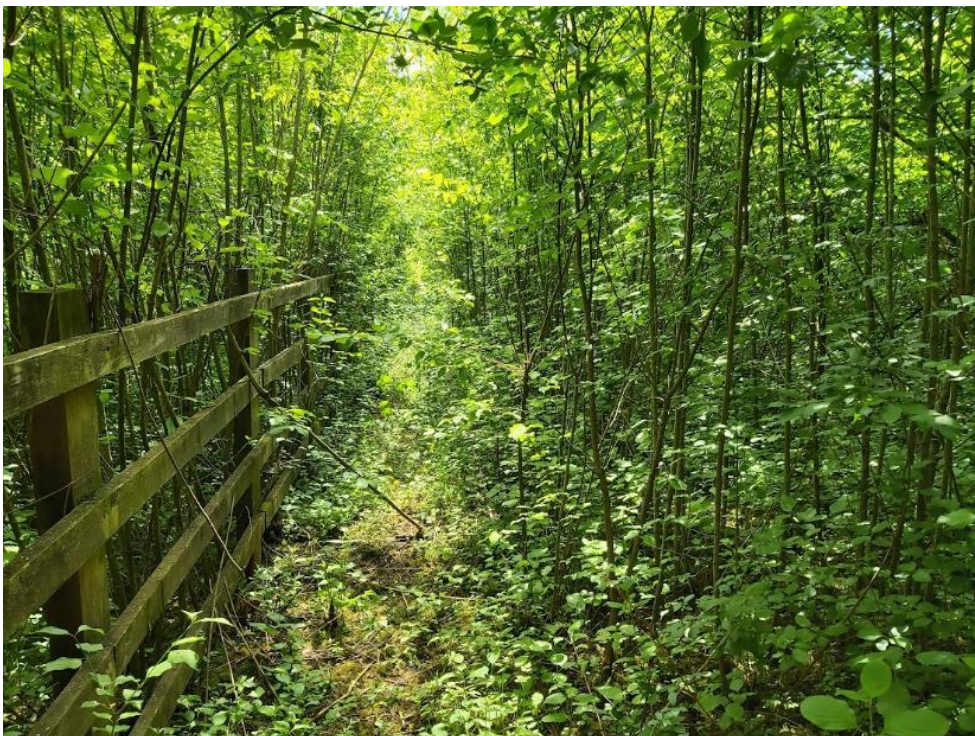


TECHNICAL NOTE

Photograph 7: Small area of grassland with chalk indicator species (e.g. white helleborine) outside Tesco on verge



Photograph 8: Interior of Winnall gyratory at junction 9 showing extensive dogwood regrowth



TECHNICAL NOTE

Photograph 9: Example grassland verge on Winnall gyratory showing mixture of herbs and grasses



Photograph 10: Planted woodland and scrub on slopes of Winnall gyratory (eastern side of M3)

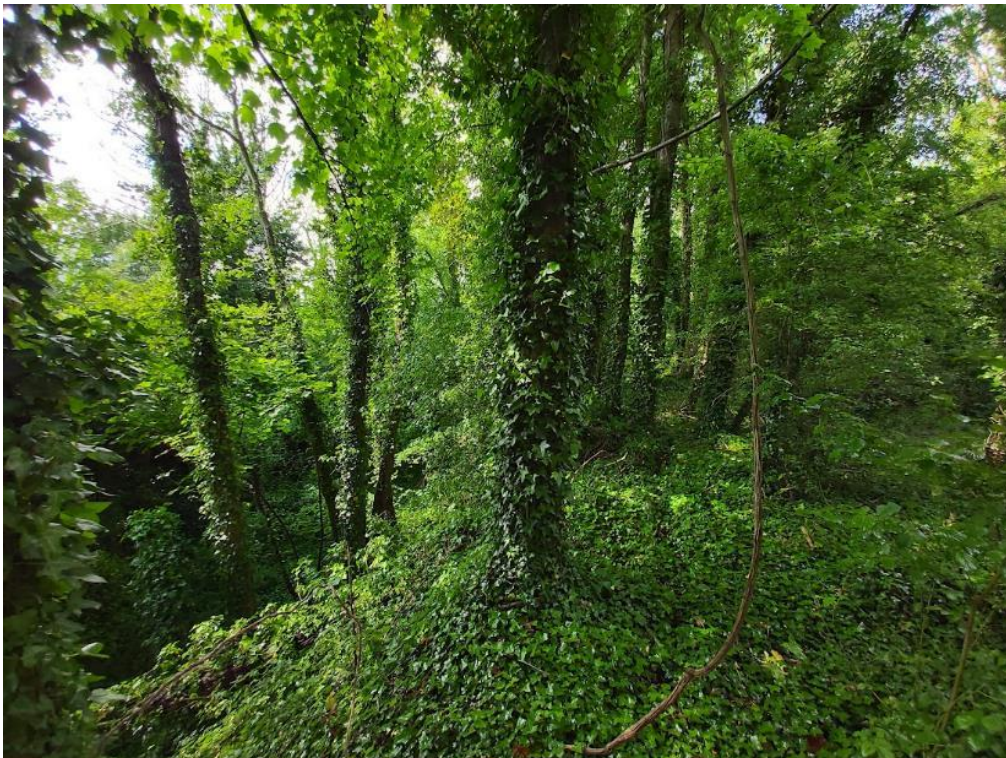


TECHNICAL NOTE

Photograph 11: River Itchen at A34 crossing



Photograph 12: Example of secondary woodland in north of survey area between A34 carriageways



TECHNICAL NOTE

Photograph 13: Neutral grassland verges in north of survey area with some ruderal vegetation on central reservation



TECHNICAL NOTE

Photograph 14: Interior of typical planted woodland along road margins with abundant field maple



TECHNICAL NOTE

Photograph 15: Overview of M3 corridor away from junction 9 showing planted woodland on margins with narrow neutral grassland verges in places and some fringing scrub



Photograph 16: Recycling facility in south of survey area



TECHNICAL NOTE

Photograph 17: Area of ruderal vegetation in north of recycling facility



TECHNICAL NOTE

Photograph 18: M3 corridor south of junction 9 showing planted woodland on edges and neutral grassland verges and central reservation



7. Figures

- Habitats Plan (UK Hab)
- Photograph Locations



NOTES
 1. This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.

- Legend**
- Application Boundary
 - Native Hedgerow
 - c1a - Arable field margins cultivated annually
 - c1c - Cereal crops
 - u1b - Developed land; sealed surface
 - w1f - Lowland mixed deciduous woodland
 - h3h - Mixed scrub
 - g4 - Modified grassland
 - u1a - Open Mosaic Habitats on Previously Developed Land
 - g3c - Other neutral grassland
 - w1g7 - Other woodland; broadleaved
 - River
 - Ruderal/Ephemeral

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REV	DATE	REVISION NOTE	ORIG	CHK'D	APP'D
0	November 2022	APPLICATION SUBMISSION	TL	DM	AS

DESIGNER

CONTRACTOR

CLIENT

PROJECT TITLE
M3 JUNCTION 9 IMPROVEMENT SCHEME

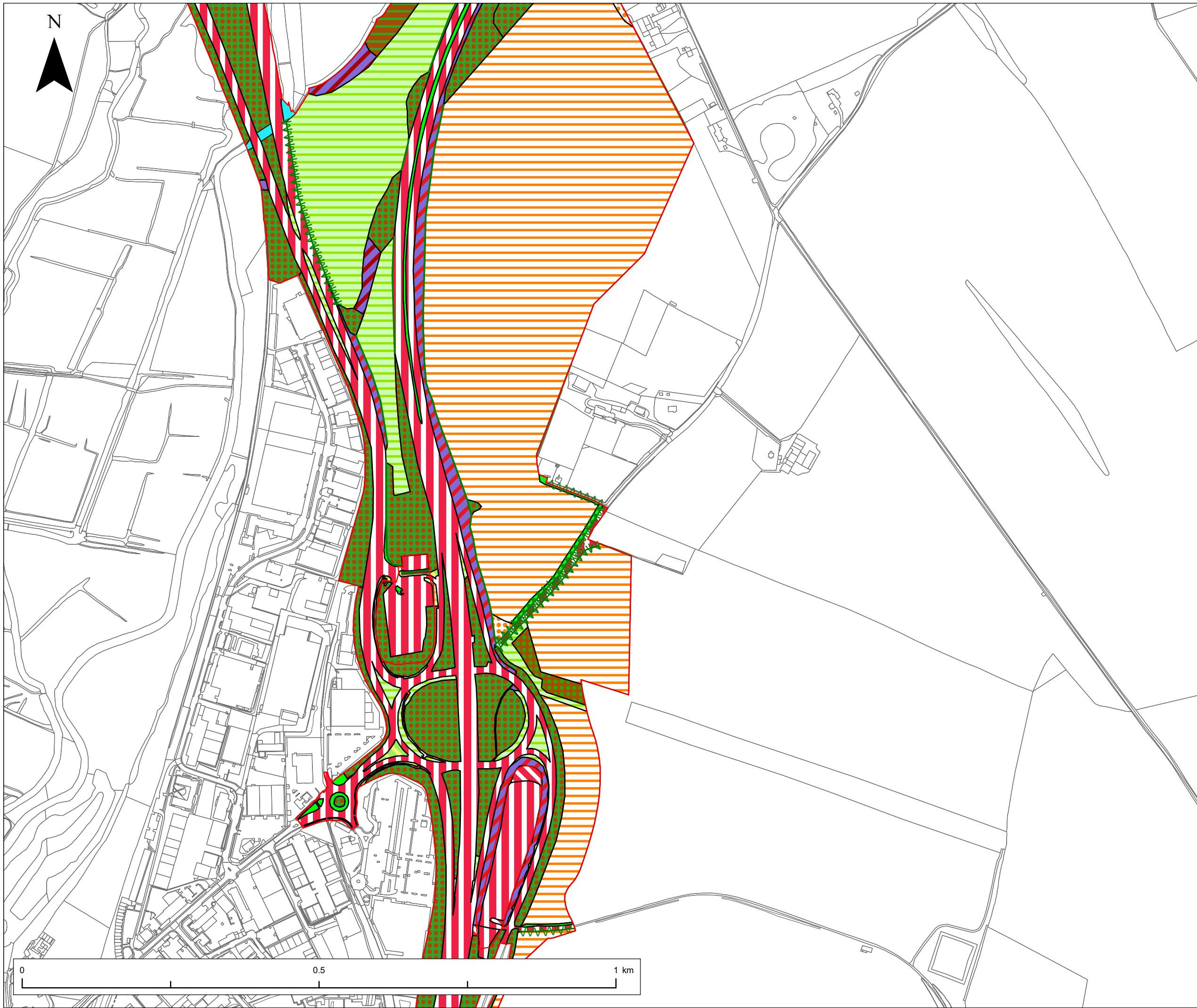
PROJECT STAGE
PCF STAGE 3

DRAWING TITLE
FIGURE 1A - PRE-DEVELOPMENT HABITATS PLAN
 APPFP REGULATION 5(2)(I)(II)
 DOCUMENT REFERENCE 6.2

SUITABILITY
APPLICATION SUBMISSION

SHEET SIZE: A3 SCALE: 1:8,000 STATUS: REV 0

DRAWING NUMBER
 HE551511-VFK-EBD-X_XXXX_XX_DR_LE_0106



NOTES
 1. This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.

- Legend**
- Application Boundary
 - Native Hedgerow
 - Native Species Rich Hedgerow
 - Native Species Rich Hedgerow with trees
 - c1a - Arable field margins cultivated annually
 - h3d - Bramble scrub
 - c1c - Cereal crops
 - u1b - Developed land; sealed surface
 - h3h - Hawthorn scrub
 - Introduced shrub
 - g2a - Lowland calcareous grassland
 - w1f - Lowland mixed deciduous woodland
 - h3h - Mixed scrub
 - g4 - Modified grassland
 - u1a - Open Mosaic Habitats on Previously Developed Land
 - g3c - Other neutral grassland
 - w1g7 - Other woodland; broadleaved
 - w1h - Other woodland; mixed
 - River

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0	November 2022	APPLICATION SUBMISSION	TL	DM	AS

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PROJECT TITLE
M3 JUNCTION 9 IMPROVEMENT SCHEME

PROJECT STAGE
PCF STAGE 3

DRAWING TITLE
 FIGURE 1A - PRE-DEVELOPMENT HABITATS PLAN
 APPF REGULATION 5(2)(I)(II)
 DOCUMENT REFERENCE 6.2






SUITABILITY
APPLICATION SUBMISSION

SHEET SIZE: A3 | SCALE: 1:6,000 | STATUS: REV 0

DRAWING NUMBER
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NOTES
 1. This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.

- Legend**
-  Application Boundary
 -  c1c - Cereal crops
 -  u1b - Developed land; sealed surface
 -  g3c - Other neutral grassland
 -  w1g7 - Other woodland; broadleaved

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PROJECT STAGE
PCF STAGE 3

DRAWING TITLE
 FIGURE 1A - PRE-DEVELOPMENT HABITATS PLAN
 APPF REGULATION 5(2)(I)(II)
 DOCUMENT REFERENCE 6.2

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SHEET SIZE: A3 SCALE: 1:8,000 STATUS: REV 0

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NOTES
 1. This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.

- Legend**
- Application Boundary
 - Photograph Location
 - Photograph Direction

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PROJECT TITLE
M3 JUNCTION 9 IMPROVEMENT SCHEME

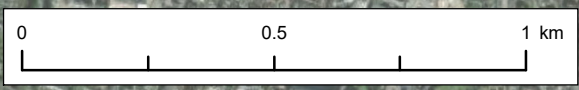
PROJECT STAGE
PCF STAGE 3

DRAWING TITLE
 FIGURE 1 - UK HABITAT SURVEY PHOTOGRAPH LOCATIONS
 APFP REGULATION 5(2)(1)(II)
 DOCUMENT REFERENCE 6.2

SUITABILITY
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SHEET SIZE: A3 | SCALE: 1:15,000 | STATUS: REV 0

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 HE551511-VFK-EBD-X_XXXX_XX_DR_LE_0109



TECHNICAL NOTE

Appendix 1 – Habitat Parcels Recorded and Descriptions

Table 2: Habitat Areas

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Cropland	Cereal crops	Condition Assessment N/A	c1c	Low	Area of arable farmland with wheat crop at time of survey.
Cropland	Arable field margins cultivated annually	Condition Assessment N/A	c1a7	Medium	Arable margin with pineappleweed, prostrate knotweed, barren brome, black grass and perennial rye-grass among others.
Woodland and forest	Other woodland; mixed	Moderate	w1h	Medium	Area of recently planted woodland with a mixture of trees and shrubs including hawthorn, yew, hornbeam, apple, ash, hazel, beech, cherry and lime. Ground flora included white and broad-leaved helleborine along with bramble, cock's-foot and cow parsley.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Grassland	Other neutral grassland	Moderate	g3c	Medium	Area of rank but fairly diverse grassland with a range of species including false oat-grass, cock's-foot, oxeye daisy, hemp agrimony, wild carrot, soft brome, wild clematis and red fescue among others. Evidence of former grazing by cattle but not at time of survey or recent years (1 year or more).
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Western side of Winnall gyratory dominated by dense dogwood with other species including field maple, ash, hawthorn, wild privet, buckthorn, cherry, Norway maple and guelder-rose.
Cropland	Cereal crops	Condition Assessment N/A	c1c	Low	Area of arable farmland with potato crop at time of survey.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Cropland	Arable field margins cultivated annually	Condition Assessment N/A	c1a7	Medium	Small area of field margin with bristly oxtongue, barren brome, soft brome, creeping thistle, hedge woundwort and butterfly-bush.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland along M3 corridor dominated by field maple with other species including ash, sycamore and wild privet.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland along M3 corridor dominated by field maple with other species including ash, sycamore and wild privet.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland along M3 corridor dominated by field maple with other species including ash, sycamore and wild privet.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland along M3 corridor dominated by field maple with other species including hawthorn, elder, ash and sycamore.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland along M3 corridor dominated by field maple with other species including hawthorn and dogwood.
Grassland	Other neutral grassland	Poor	g3c	Medium	Neutral grassland in central reservation dominated by coarse grasses particularly false oat-grass. Some ruderal species present such as common nettle.
Grassland	Other neutral grassland	Poor	g3c	Medium	Neutral grassland in central reservation dominated by coarse grasses particularly false oat-grass. Some ruderal species present such as common nettle.
Grassland	Other neutral grassland	Poor	g3c	Medium	Neutral grassland in central reservation dominated by coarse grasses particularly false oat-grass. Some ruderal species present such as common nettle.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland along M3 corridor with abundant sycamore along with ash, field maple, hawthorn and dogwood.
Cropland	Cereal crops	Condition Assessment N/A	c1c	Low	Area of arable farmland with wheat crop at time of survey.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland south of recycling facility yard along M3 slip road. Species include field maple, goat willow, ash and sycamore.
Grassland	Other neutral grassland	Poor	g3c	Medium	Neutral grassland in central reservation dominated by coarse grasses particularly false oat-grass. Some ruderal species present such as common nettle.
Grassland	Other neutral grassland	Poor	g3c	Medium	Neutral grassland at end of roundabout spur dominated by coarse grasses particularly false oat-grass.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Grassland	Other neutral grassland	Moderate	g3c	Medium	Verge on south edge of A272 at junction with Winnall gyratory.
Grassland	Other neutral grassland	Moderate	g3c	Medium	Verge at junction of A272 and Winnall gyratory. Species included tall fescue, false oat-grass, oxeye daisy, cock's-foot and soft brome.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland on spur of Winnall gyratory dominated by field maple along with ash, dogwood and hawthorn.
Grassland	Other neutral grassland	Poor	g3c	Medium	Neutral grassland at end of roundabout spur dominated by coarse grasses particularly false oat-grass.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland on spur of Winnall gyratory dominated by field maple along with ash, dogwood and hawthorn.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Heathland and shrub	Mixed scrub	Moderate	h3h	Medium	Scrub and small trees surrounding recycling facility. Species include hawthorn, buckthorn and dogwood with frequent ivy. Black walnut and young ash also present.
Urban	Open Mosaic Habitats on Previously Developed Land	Moderate	u1a	High	Ruderal species in disused area at north end of recycling facility. Species included hemlock, creeping thistle, common nettle, bristly oxtongue and mugwort among others. Young silver birch also present.
Grassland	Other neutral grassland	Moderate	g3c	Medium	Grassland on verge of Winnall gyratory. Mixture of species including false oat-grass, barren brome, bristly oxtongue, oxeye dairy, soft brome and yarrow among others.
Heathland and shrub	Bramble scrub	Condition Assessment N/A	h3d	Medium	Area of bramble scrub.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland on eastern side of Winnall gyratory. Frequent field maple along with dogwood and occasional other species such as cherry and hawthorn.
Grassland	Other neutral grassland	Poor	g3c	Medium	Neutral grassland at end of roundabout spur dominated by coarse grasses particularly false oat-grass.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland on eastern side of Winnall gyratory. Frequent ash, beech and dogwood with hawthorn, wild privet and young pedunculate oak. Snowberry frequent close to footpath.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Grassland	Other neutral grassland	Moderate	g3c	Medium	Neutral grassland around recently planted woodland to east of M3. Species include cock's-foot, oxeye daisy, false oat-grass, rough meadow-grass, ribwort plantain and greater knapweed.
Woodland and forest	Other woodland; broadleaved	Poor	w1g	Medium	Planted woodland along eastern edge of A272 dominated by field maple. Other species include hawthorn and dogwood with wild clematis and ivy.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland on spur of Winnall gyratory dominated by field maple along with ash, dogwood and hawthorn.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland on spur of Winnall gyratory dominated by field maple along with ash, dogwood and hawthorn.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Grassland	Other neutral grassland	Moderate	g3c	Medium	Small area of neutral grassland adjacent to Kier compound.
Urban	Introduced shrub	Condition Assessment N/A	1160	Low	Small area of planted cotoneaster.
Grassland	Other neutral grassland	Poor	g3c	Medium	Small area of dry species-poor neutral grassland on verge with species such as perennial rye-grass and false oat-grass.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted screening woodland around Kier compound including field maple, dogwood, hazel, cherry, hawthorn and butterfly-bush.
Grassland	Other neutral grassland	Moderate	g3c	Medium	Small area of neutral grassland verge south of Kier compound.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland east of A34 junction at Winnall gyratory. Dominated by field maple along with ivy, wild privet, ash and sycamore.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Grassland	Other neutral grassland	Poor	g3c	Medium	Dry species-poor neutral grassland on verge with species such as perennial rye-grass and false oat-grass.
Grassland	Other neutral grassland	Moderate	g3c	Medium	Grassland on central reservation at junction of A34 with Winnall gyratory. False oat-grass abundant.
Grassland	Other neutral grassland	Good	g3c	Medium	Small area of predominantly neutral grassland blending into more calcareous grassland at western end. Species include false oat-grass and wild carrot.
Grassland	Modified grassland	Poor	g4	Low	Mown grassland on verge dominated by perennial rye-grass.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Grassland	Lowland calcareous grassland	Moderate	g2a	High	Area of species-poor calcareous grassland on central reservation east of Winnall gyratory (Easton Lane). Mixture of species including wild carrot, perforate St John's-wort, daisy, false oat-grass, yarrow, wild marjoram and black medick.
Grassland	Other neutral grassland	Moderate	g3c	Medium	Verge on eastern side of Winnall gyratory. Range of grasses and ruderal vegetation including Canadian goldenrod, oxeye daisy, barren brome, false oat-grass, yarrow, wild parsnip, bristly oxtongue and rough hawkbit.
Grassland	Modified grassland	Poor	g4	Low	Mown grassland on verge dominated by perennial rye-grass.
Grassland	Modified grassland	Poor	g4	Low	Mown grassland on verge dominated by perennial rye-grass.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Grassland	Modified grassland	Poor	g4	Low	Mown grassland on verge dominated by perennial rye-grass.
Grassland	Modified grassland	Poor	g4	Low	Mown grassland on verge dominated by perennial rye-grass.
Grassland	Modified grassland	Poor	g4	Low	Mown grassland on verge dominated by perennial rye-grass.
Grassland	Modified grassland	Moderate	g4	Low	Mown grassland on verge dominated by perennial rye-grass.
Grassland	Modified grassland	Moderate	g4	Low	Mown grassland on roundabout dominated by perennial rye-grass.
Woodland and forest	Other woodland; broadleaved	Poor	w1g	Medium	Small area of planted birch trees on roundabout with ornamental hornbeam hedges below.
Grassland	Other neutral grassland	Moderate	g3c	Medium	Narrow neutral grassland verge to east of recycling facility.
Heathland and shrub	Mixed scrub	Moderate	h3h	Medium	Small area of scrub with wild privet and dogwood.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Urban	Open Mosaic Habitats on Previously Developed Land	Moderate	u1a	High	Disturbed ground on edge of recycling facility yard with some colonising vegetation such as bristly oxtongue and teasel.
Urban	Developed land; sealed surface	N/A - Other	u1b	V.Low	Yard/car-parking area.
Urban	Open Mosaic Habitats on Previously Developed Land	Moderate	u1a	High	Partially vegetated mound in recycling facility with hemlock and other species.
Grassland	Other neutral grassland	Poor	g3c	Medium	Small area of neutral grassland around road sign on M3 verge.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland on edge of M3. Field maple dominant plus other species including ash and sycamore with some wild privet on margins.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland on edge of M3. Field maple dominant plus other species including ash and sycamore with some wild privet on margins.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Urban	Open Mosaic Habitats on Previously Developed Land	Poor	u1a	High	Sparse vegetation on central reservation dominated by ruderal species such as common nettle. Some coarse grasses present.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland on edge of M3. Field maple dominant plus other species including ash and sycamore with some wild privet on margins.
Woodland and forest	Other woodland; broadleaved	Poor	w1g	Medium	Secondary woodland on edge of M3 corridor close to River Itchen. Dominated by ash with alder and dogwood also visible. Common nettle and bramble below.
Grassland	Other neutral grassland	Poor	g3c	Medium	Small area of neutral grassland around road sign on M3 verge.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland on edge of M3. Field maple dominant plus other species including ash and sycamore with some wild privet on margins.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Sparsely vegetated land	Ruderal/Ephemeral	Poor	17	Low	Sparse vegetation on central reservation dominated by ruderal species such as common nettle. Some coarse grasses present.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland on edge of M3. Field maple dominant plus other species including ash and sycamore with some wild privet on margins.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland on edge of M3. Field maple dominant plus other species including ash and sycamore with some wild privet on margins.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland on edge of M3. Field maple dominant plus other species including ash and sycamore with some wild privet on margins.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Woodland and forest	Other woodland; broadleaved	Poor	w1g	Medium	Secondary woodland on edge of M3 corridor close to River Itchen. Dominated by ash with alder and dogwood also visible. Common nettle and bramble below.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland on edge of M3. Field maple dominant plus other species including ash and sycamore with some wild privet on margins.
Grassland	Modified grassland	Moderate	g4	Low	Area of neutral grassland (pasture) with coarse grasses such as cock's-foot and false oat-grass along with Yorkshire fog, creeping thistle, spear thistle and broad-leaved dock.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Small area of sycamore dominated woodland with hawthorn, ash, field maple and elder. Common nettle and bramble ground flora.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Secondary woodland with some mature sycamore along with hawthorn and elder and common nettle dominating ground flora.
Heathland and shrub	Hawthorn scrub	Good	h3f	Medium	Area of hawthorn dominated scrub with dogwood and hazel.
Grassland	Other neutral grassland	Good	g3c	Medium	Area of neutral grassland pasture with cock's-foot, Yorkshire fog, tall fescue, false oat-grass, red fescue, perennial rye-grass, rough meadow-grass and, more rarely, oxeye daisy and goat's-beard.
Woodland and forest	Other woodland; broadleaved	Good	w1g	Medium	Woodland on slope with yew, ash, hazel, field maple and buckthorn with wild clematis.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Woodland and forest	Other woodland; broadleaved	Poor	w1g	Medium	Small area of planted woodland close to M3 dominated by ash with non-native alder (possibly Italian). Field maple and dog-rose below.
Woodland and forest	Other woodland; broadleaved	Poor	w1g	Medium	Small area of planted woodland close to M3 dominated by beech. Some conifer present including scots pine and an ornamental cypress species. Shrubby honeysuckle widespread beneath on woodland edge.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Small area of common lime, sycamore and poplar woodland.
Heathland and shrub	Hawthorn scrub	Moderate	h3f	Medium	Area of hawthorn scrub along bank with some sycamore, elder and buckthorn. Bramble and common nettle below.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland north of Kier compound with ash, field maple, dogwood, hazel and sycamore among other shrubs and trees. Some snowberry in places with Spanish bluebell and white helleborine toward southern end.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Area of secondary woodland to west of A34 with sycamore, alder, hawthorn, ash, hazel, dogwood and poplar. Pedunculate oak, field maple and crack willow also present but scarce. White helleborine in ground flora.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Secondary woodland with beech, silver birch, dogwood and occasional ash.
Heathland and shrub	Bramble scrub	Condition Assessment N/A	h3d	Medium	Area of bramble scrub.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Woodland and forest	Other woodland; broadleaved	Poor	w1g	Medium	Small strip of sycamore trees with bramble below.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Secondary woodland with sycamore, alder and ash with hawthorn, hazel and dogwood below.
Grassland	Other neutral grassland	Poor	g3c	Medium	Narrow strip of neutral grassland on verge of A34 at end of wooded area.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Secondary woodland with sycamore, alder and ash with hawthorn, hazel and dogwood below. Some steep dry wooded banks with wet ditch in lower lying area.
River Area	River	Condition Assessment N/A	NE0007	Low	Area of River Itchen channel.
River Area	River	Condition Assessment N/A	NE0007	Low	Area of River Itchen channel.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Secondary woodland with sycamore, alder and ash with hawthorn, hazel and dogwood below.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Grassland	Other neutral grassland	Poor	g3c	Medium	Narrow strip of neutral grassland on verge of A34 at end of wooded area.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Secondary woodland with sycamore, alder and ash. Some open areas with bramble growth.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Fairly open area of alder and poplar trees with reed swamp below. Situated between river channels and on edge of western A34 carriageway.
River Area	River	Condition Assessment N/A	NE0007	Low	Area of River Itchen channel.
Grassland	Other neutral grassland	Poor	g3c	Medium	Neutral grassland on central reservation. Coarse grasses such as false oat-grass evident.
River Area	River	Condition Assessment N/A	NE0007	Low	Area of River Itchen channel.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Grassland	Other neutral grassland	Moderate	g3c	Medium	Neutral grassland with species such as false oat-grass and oxeye daisy plus some taller herbs including comfrey and ground elder.
River Area	River	Condition Assessment N/A	NE0007	Low	Area of River Itchen channel.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Secondary woodland with sycamore and ash with hawthorn, dogwood and snowberry below. Lot of ivy present.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Secondary woodland with ash, sycamore and field maple.
Grassland	Modified grassland	Poor	g4	Low	Small area of mown verge with perennial ryegrass.
Woodland and forest	Other woodland; broadleaved	Poor	w1g	Medium	Narrow belt of secondary woodland with frequent sycamore, ash, hazel, goat willow and occasional London plane.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Grassland	Modified grassland	Poor	g4	Low	Neutral grassland in central reservation dominated by coarse grasses particularly false oat-grass. Some ruderal species present such as common nettle.
Grassland	Modified grassland	Poor	g4	Low	Neutral grassland in central reservation dominated by coarse grasses particularly false oat-grass.
Grassland	Lowland calcareous grassland	Poor	g2a	High	Small verge beside Kier compound with species-poor calcareous grassland present. Species included wild carrot, perforate St John's-wort, oxeye daisy and ploughman's spikenard. Other species included false oat-grass, hop trefoil, ribwort plantain and soft brome.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Grassland	Modified grassland	Poor	g4	Low	Neutral grassland on verge dominated by coarse grasses particularly false oat-grass. Some ruderal species present such as common nettle.
Grassland	Modified grassland	Poor	g4	Low	Neutral grassland on verge dominated by coarse grasses particularly false oat-grass. Some ruderal species present such as common nettle.
Cropland	Cereal crops	Condition Assessment N/A	c1c	Low	Large area of arable farmland with barley crop in majority of southern section and some bare (tilled) ground further north.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Heathland and shrub	Mixed scrub	Moderate	h3h	Medium	Linear area of scrub and some grassland mosaic on verge of M3. Characterised by wild privet, bramble and blackthorn with some buckthorn and clematis among other species. Grassland areas with false oat-grass and oxeye daisy.
Grassland	Modified grassland	Poor	g4	Low	Field margin with coarse grasses such as false oat-grass, barren brome and perennial rye-grass.
Woodland and forest	Other woodland; broadleaved	Poor	w1g	Medium	Small group of trees extending from adjacent woodland along M3 corridor.
Urban	Introduced shrub	Condition Assessment N/A	1160	Low	Area of tall cotoneaster shrubbery north of Kier compound.
Urban	Developed land; sealed surface	N/A - Other	u1b	V.Low	Field margin with coarse grasses such as false oat-grass and barren brome and herbs including cleavers.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Grassland	Modified grassland	Poor	g4	Low	Field margin with coarse grasses such as false oat-grass, barren brome and perennial rye-grass.
Grassland	Modified grassland	Poor	g4	Low	Species-poor neutral grassland on verge with species such as false oat-grass.
Heathland and shrub	Mixed scrub	Moderate	h3h	Medium	Area of scrub on verge with wild privet, dogwood, hawthorn and blackthorn. Upper section blends into hedgerow on field margin.
Grassland	Other neutral grassland	Poor	g3c	Medium	Species-poor neutral grassland on verge with species such as false oat-grass.
Grassland	Modified grassland	Poor	g4	Low	Species-poor neutral grassland field margin dominated by barren brome.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Secondary woodland with sycamore, alder, ash and rare pedunculate oak. Hawthorn, hazel, dogwood and field maple below.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Grassland	Modified grassland	Poor	g4	Low	Neutral grassland in central reservation dominated by coarse grasses particularly false oat-grass. Some ruderal species present such as common nettle.
Sparsely vegetated land	Ruderal/Ephemeral	Poor	17	Low	Neutral grassland in central reservation with ruderal species present such as common nettle and some coarse grasses.
Grassland	Other neutral grassland	Moderate	g3c	Medium	Verge on eastern side of Winnall gyratory. Range of grasses and ruderal vegetation including Canadian goldenrod, oxeye daisy, barren brome, false oat-grass, yarrow, wild parsnip, bristly oxtongue and rough hawkbit.
Grassland	Modified grassland	Poor	g4	Low	Small area of mown grassland within Kier compound.

TECHNICAL NOTE

Broad Habitat Type	Habitat Type	Condition	UKHAB Code	Distinctiveness	Description/Notes
Grassland	Lowland calcareous grassland	Moderate	g2a	High	Narrow verge near Tesco with mixture of calcareous and some neutral grassland species. Species include white helleborine, wild marjoram, common centaury, wild carrot, perforate St John's-wort, black medick, daisy, false oat-grass, ribwort plantain, oxeye daisy and ribwort plantain among others.
Urban	Developed land; sealed surface	N/A - Other	u1b	V.Low	Areas of hard-surfaced land. Predominantly the road surfaces themselves across the Site.
Woodland and forest	Other woodland; broadleaved	Moderate	w1g	Medium	Planted woodland along M3 corridor with field maple and ash.

TECHNICAL NOTE

Table 3: Hedgerows

Baseline Hedge Type	Baseline Condition	Length (m)	UKHAB Code	Distinctiveness	Description/Notes
Native Hedgerow	Good	45	h2NE5	Low	Hedgerow to north of Kier compound before introduced shrub containing hawthorn and hazel.
Native Hedgerow	Good	190	h2NE5	Low	Hedgerow along eastern side of A34 as field boundary (pasture). Comprised mainly of hawthorn and blackthorn with other species such as dogwood, wild privet and buckthorn.
Native Hedgerow	Good	195	h2NE5	Low	Field boundary (pasture) hedgerow on west of M3. Comprised of hazel with hawthorn, dogwood and dog-rose.
Native Hedgerow	Moderate	192	h2NE5	Low	Hedgerow on eastern edge of A34 between road and woodland. Largely comprised of field maple.
Native Species Rich Hedgerow with trees	Good	321	h2NE1	Medium	Tall hedgerow on edge of pasture to east of A34. Mixture of native shrubs including hawthorn, blackthorn, hazel, guelder-rose, wayfaring-tree, dog-rose, elder, buckthorn and spindle. Trees included sycamore with some ash and crack willow.
Native Hedgerow	Moderate	53	h2NE5	Low	Short section of hawthorn dominated hedgerow on west of M3 corridor.
Native Species Rich Hedgerow	Good	99	h2NE2	Medium	Hawthorn dominated hedgerow as arable field boundary in east of survey area. Other species included dogwood, blackthorn, dog-rose, wild privet and young sycamore.
Native Hedgerow	Good	167	h2NE5	Low	Hedgerow on eastern edge of arable field in east of survey area. Large component of dogwood along with hawthorn and blackthorn.

TECHNICAL NOTE

Baseline Hedge Type	Baseline Condition	Length (m)	UKHAB Code	Distinctiveness	Description/Notes
Native Hedgerow	Good	929	h2NE5	Low	Hedgerow on western boundary of large arable field in east of survey area with M3 corridor to west. This hedgerow was a discreet trimmed boundary extending into mixed scrub to the west down the slope of the M3 verge. Species included hawthorn, wild privet and dogwood.
Native Hedgerow	Good	124	h2NE5	Low	Hawthorn dominated hedgerow on eastern edge of large arable field in east of survey area.
Native Hedgerow	Good	50	h2NE5	Low	Short section of native hedgerow in north-eastern part of survey area adjacent to footpath.
Native Hedgerow	Moderate	506	h2NE5	Low	Long hedgerow on eastern edge of pasture close to western side of M3 corridor. This hedgerow was situated along a woodland edge for much of its length. Species included hawthorn, field maple and dogwood.
Native Species Rich Hedgerow with trees	Good	247	h2NE1	Medium	Blackthorn dominated hedgerow on edge of arable field east of M3. Other species included buckthorn, hawthorn, elm, dog-rose, dogwood and young sycamore.
Native Hedgerow	Good	57	h2NE5	Low	Short section of hawthorn dominated hedgerow.
Native Species Rich Hedgerow	Moderate	88	h2NE2	Medium	Short section of defunct ('gappy') hedgerow along track between arable fields east of M3. Mixture of species including hawthorn, dogwood, butterfly-bush, dogwood, young ash and elder.

TECHNICAL NOTE

Baseline Hedge Type	Baseline Condition	Length (m)	UKHAB Code	Distinctiveness	Description/Notes
Native Species Rich Hedgerow with trees	Good	288	h2NE1	Medium	Hedgerow on southern edge of large arable field east of M3. Initially with elm and some sycamore but with blackthorn and hawthorn dominating moving south-west.

TECHNICAL NOTE

Appendix 2 – Biodiversity Metric 3.1 Condition Assessment Criteria

Table 4: Grassland Low Distinctiveness

Condition Assessment Criteria		Condition Achieved (Y = 1, N = 0)
1	There must be 6-8 species per m2. If a grassland has 9 or more species per m2 it should be classified as a medium distinctiveness grassland habitat type. NB - this criterion is essential for achieving moderate condition.	
2	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 insects, birds and small mammals to live and breed.	
3	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	
4	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.	
5	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).	
6	Cover of bracken less than 20%.	
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	
Total met		0

TECHNICAL NOTE

Condition Assessment Criteria		Condition Achieved (Y = 1, N = 0)
Passes 6 or 7 of 7 criteria including passing essential criterion 1	Good (3)	Condition
Passes 4 or 5 of 7 criteria including passing essential criterion 1	Moderate (2)	
Passes 0, 1, 2 or 3 of 7 criteria; OR 4, 5 or 6 of criteria but failing criterion 1	Poor (1)	

TECHNICAL NOTE

Table 5: Grassland Medium/High Distinctiveness

Condition Assessment Criteria		Condition Achieved (Y/N)
1	The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward. NB - This criterion is essential for achieving moderate condition for non-acid grassland types only.	
2	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.	
3	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	
4	Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	
5	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of species indicative of sub-optimal condition ¹ 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.	
6	There are greater than 9 species per metre squared. NB - This criterion is essential for achieving good condition (non-acid grassland types only).	
Total met		0
Acid Grassland Types		
Passes 5 of 5 criteria		Good (3)

TECHNICAL NOTE

Condition Assessment Criteria		Condition Achieved (Y/N)
Passes 3 or 4 of 5 criteria		Moderate (2)
Passes 0, 1 or 2 of 5 criteria		Poor (1)
Non-acid grassland Types		
Passes 5 of 6 criteria, including essential criterion 1 and 6.		Good (3)
Passes 3 or 4 of 6 criteria, including essential criterion 1.		Moderate (2)
Passes 0, 1, 2 criteria of 6 criteria; OR Passes 3 or 4 criteria excluding criterion 1 and 6		Poor (1)

TECHNICAL NOTE

Table 6: Hedgerows

Attributes and functional groupings (A, B, C, D & E)		Criteria (the minimum requirements for 'favourable condition')	Description	Condition Achieved (Y = 1, N = 0)
Core groups - applicable to all hedgerow types				
A1.	Height	>1.5 m average along length	<p>The average height of woody growth estimated from base of stem to the top of shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees.</p> <p>Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).</p> <p>A newly planted hedgerow does not pass this criterion (unless it is > 1.5 m height).</p>	
A2.	Width	>1.5 m average along length	<p>The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees.</p> <p>Outgrowths (e.g. blackthorn suckers) are only included in the width estimate when they >0.5 m in height.</p> <p>Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice4).</p>	

TECHNICAL NOTE

Attributes and functional groupings (A, B, C, D & E)		Criteria (the minimum requirements for 'favourable condition')	Description	Condition Achieved (Y = 1, N = 0)
Core groups - applicable to all hedgerow types				
B1.	Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees')	<p>This is the vertical gappiness of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth.</p> <p>Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).</p>	
B2.	Gap - hedge canopy continuity	Gaps make up <10% of total length and No canopy gaps >5 m	<p>This is the horizontal gappiness of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small).</p> <p>Access points and gates contribute to the overall gappiness, but are not subject to the >5 m criterion (as this is the typical size of a gate).</p>	
C1.	Undisturbed ground and perennial vegetation	<p>>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length:</p> <ul style="list-style-type: none"> - measured from outer edge of hedgerow, and - is present on one side of the hedge (at least) 	<p>This is the level of disturbance (excluding wildlife disturbance) at the base of the hedge.</p> <p>Undisturbed ground should be present for at least 90% of the hedgerow length, greater than 1m in width and must be present along at least one side of the hedge.</p> <p>This criterion recognises the value of the hedge base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.</p>	

TECHNICAL NOTE

Attributes and functional groupings (A, B, C, D & E)		Criteria (the minimum requirements for 'favourable condition')	Description	Condition Achieved (Y = 1, N = 0)
Core groups - applicable to all hedgerow types				
C2.	Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	The indicator species used are nettles (<i>Urtica</i> spp.), cleavers (<i>Galium aparine</i>) and docks (<i>Rumex</i> spp.). Their presence, either singly or together, should not exceed the 20% cover threshold.	
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Neophytes are plants that have naturalised in the UK since AD 1500. For information on neophytes see the JNCC website and for information on invasive non-native species see the GB Non-Native Secretariat website.	
D2.	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g. excessive hedge cutting).	
Additional group - applicable to hedgerows with trees only				
E1.	Tree age	At least one mature tree per 30m stretch of hedgerow. A mature tree is one that is at least 2/3 expected fully mature height for the species.	This criterion addresses if there are sufficient mature trees (within the scope of planning timescales) which are of higher value to biodiversity.	

TECHNICAL NOTE

Attributes and functional groupings (A, B, C, D & E)		Criteria (the minimum requirements for 'favourable condition')	Description	Condition Achieved (Y = 1, N = 0)
Core groups - applicable to all hedgerow types				
E2.	Tree health	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.	This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens.	
			Total met	0
Category		Maximum number of attributes that can fail to meet 'favourable condition' criteria in Table TS1-2	Weighting (score)	Condition
Good		No more than 2 failures in total; AND No more than 1 in any functional group.	3	

TECHNICAL NOTE

Attributes and functional groupings (A, B, C, D & E)	Criteria (the minimum requirements for 'favourable condition')	Description		Condition Achieved (Y = 1, N = 0)
Core groups - applicable to all hedgerow types				
Moderate	No more than 4 failures in total; AND Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & C2 = Moderate condition).	2		
Poor	Fails a total of more than 4 attributes; OR Fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & B2 = Poor condition).	1		
Score achieved:				
Condition categories for hedgerows with trees				
Category	Maximum number of attributes that can fail to meet 'favourable condition' criteria in Table TS1-2	Weighting (score)		

TECHNICAL NOTE

Attributes and functional groupings (A, B, C, D & E)	Criteria (the minimum requirements for 'favourable condition')	Description		Condition Achieved (Y = 1, N = 0)
Core groups - applicable to all hedgerow types				
Good	No more than 2 failures in total; AND No more than 1 failure in any functional group.	3		
Moderate	No more than 5 failures in total; AND Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1, C2 & E1 = Moderate condition).	2		
Poor	Fails a total of more than 5 attributes; OR Fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & B2 = Poor condition).	1		

TECHNICAL NOTE

Table 7: Scrub

Condition Assessment Criteria		Condition Achieved (Y/N)
1	Habitat is representative of UKHab description (where in its natural range). There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be up to 100% cover).	
2	There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs.	
3	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and species indicative of sub-optimal condition make up less than 5% of ground cover.	
4	The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s).	
5	There are clearings, glades or rides present within the scrub, providing sheltered edges.	
Total met		0
Condition Assessment Result	Condition Assessment Score	Condition
Passes 5 of 5 criteria	Good (3)	
Passes 3 or 4 of 5 criteria	Moderate (2)	
Passes 0, 1 or 2 of 5 criteria	Poor (1)	

TECHNICAL NOTE

Table 8: Woodlands

Indicator		Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicator
1	Age distribution of trees	Three age classes present	Two age classes present	One age class present	
2	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland	Evidence of significant browsing pressure is present in 40% or less of whole woodland	Evidence of significant browsing pressure is present in 40% or more of whole woodland	
3	Invasive plant species	No invasive species present in woodland	Rhododendron or laurel not present, other invasive species < 10% cover	Rhododendron or laurel present, or other invasive species > 10% cover	
4	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	None to two native tree or shrub species across woodland parcel	
5	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	
6	Open space within woodland	10 – 20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower threshold of 10% does not apply	21- 40% of woodland has areas of temporary open space	More than 40% of woodland has areas of temporary open space	

TECHNICAL NOTE

Indicator		Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicator
7	Woodland regeneration	All three classes present in woodland; trees 4-7cm dbh, saplings and seedlings or advanced coppice regrowth	One or two classes only present in woodland	No classes or coppice regrowth present in woodland	
8	Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback	11% to 25% mortality and/or crown dieback or low risk pest or disease present	Greater than 25% tree mortality and or any high risk pest or disease present	
9	Vegetation and ground flora	Ancient woodland flora indicators present	Recognisable NVC plant community present	No recognisable NVC community	
10	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	
11	Veteran trees	Two or more veteran trees per hectare	One veteran tree per hectare	No veteran trees present in woodland	
12	Amount of deadwood	50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Between 25% and 50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Less than 25% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	
13	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	More than 1 hectare of nutrient enrichment and/or more than 20% of woodland area has damaged ground	
Total					0

TECHNICAL NOTE

Indicator	Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicator
Condition Assessment Result			Condition Assessment Score	
Total score >32 (33 to 39)			Good (3)	
Total score 26 to 32			Moderate (2)	
Total score <26 (13 to 25)			Poor (1)	

DOCUMENT ISSUE RECORD

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