

# A47 North Tuddenham to Easton Dualling

**Scheme Number: TR010038**

**Volume 6**

## **6.3 Environmental Statement Appendices** **Appendix 8.1 - Botanical Survey Report**

APFP Regulation 5(2)(a)

Planning Act 2008

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

March 2021

Infrastructure Planning

Planning Act 2008

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

The A47 North Tuddenham to Easton  
Development Consent Order 202[x]

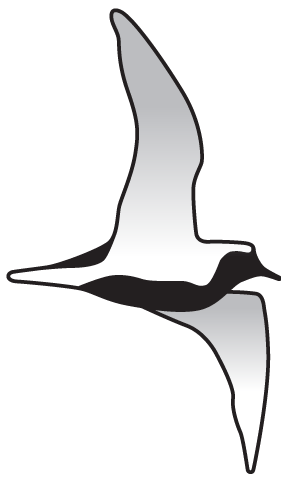
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**ENVIRONMENTAL STATEMENT APPENDICES**  
**Appendix 8.1 - Botanical Survey Report**

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# WILD FRONTIER ECOLOGY

A47 North Tuddenham to Easton



Botanical Survey Report

December 2019

Report produced by	Submitted to
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The data which we have prepared and provided is accurate, and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that any opinions expressed are our best and professional bona fide opinions.



This report conforms to the British Standard 42020:2013 Biodiversity - Code of practice for planning and development.



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## 1. Non-technical Summary

Wild Frontier Ecology was commissioned to undertake botanical surveys on a proposed re-routing and dualling of the A47 trunk road between North Tuddenham and Easton. Previous studies have been carried out in 2017 and 2016.

The entire route was walked over, with the survey covering 49 separate habitat units and 26 Hedgerows.

In total six of these units are valued at a county level, two of these units will be directly bisected by the route. This will constitute a major impact for an area of floodplain grassland and intermediate impact for an area of potential ancient woodland. Other county level habitats will not be directly affected.

14 units were valued at district level and of these units two are directly bisected by the route. This will constitute a major impact for an area of grassland and scrub and intermediate-major impact for an area of grassland. Other units would not be affected.

Avoidance of valued habitats is advised in the first instance, and in the case of ancient woodland is compelled. If avoidance cannot be achieved mitigation including replacement habitat is advised. For the floodplain grassland; offsite compensation may be required.

Nine potentially important hedgerows will be bisected. Where impact on hedgerows is unavoidable, compensatory planting of replacement hedgerow will be necessary in the surrounding landscape at a favourable ratio.

The scheme should be put through the Defra Metric<sup>1</sup> to produce a plan for measurable net gain at an early opportunity, to influence design going forward.

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<sup>1</sup>Natural England (2019) The Biodiversity Metric 2.0  
<http://publications.naturalengland.org.uk/publication/5850908674228224>

## 2. Background

Wild Frontier Ecology was commissioned to undertake botanical surveys on a proposed re-routing and dualling of the A47 trunk road between North Tuddenham and Easton. The route is shown in Figure 1.

There was a previous study completed in 2017<sup>2</sup> - this study achieved full coverage of the route. It was based on a Phase 1 Habitat Survey completed in 2016. The brief was as follows:

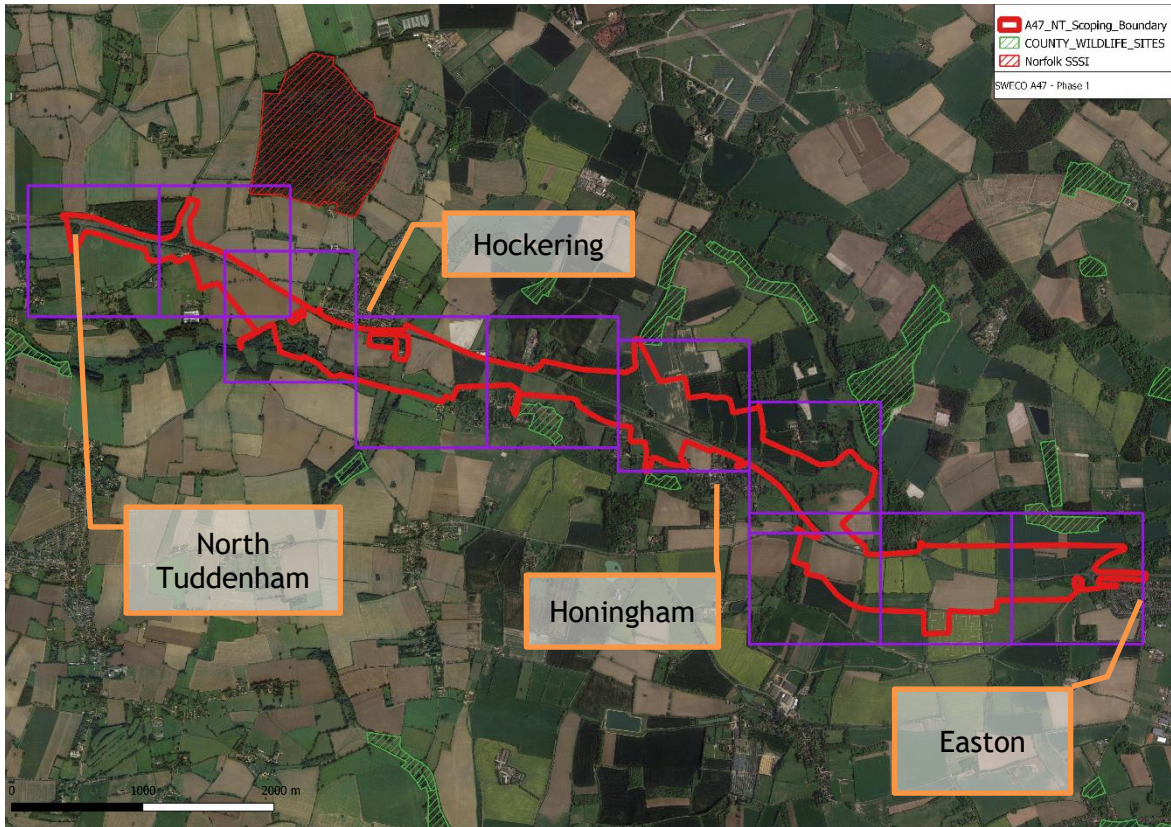
- Detailed walkover surveys of specific habitat types identified in the Phase 1 survey by Amey (2016) along the proposed road corridor, assessing dominant species communities and assigning habitats to National Vegetation Classification (NVC) habitat types wherever possible;
- Evaluation of species-rich hedgerows identified on the AMEY 2016 Phase 1 Habitat map under The Hedgerows Regulations for potential to be classed as 'Important'.
- A report containing an assessment of the value of these habitat units, and any constraints they pose to future development of the road scheme, with recommendations for any further surveys, avoidance, mitigation or enhancement measures that are required.

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<sup>2</sup> AMEY, (2017). A47 Tuddenham, Norfolk. Terrestrial Invertebrate Survey (interim).



Figure 1. Survey Area (red).





### 3. Relevant Legislation and Policy

#### 3.1 Statutory and Non-statutory Site Designations

##### 3.1.1 International (European) Site Designations

The European Council Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC) as amended directs the designation of important wildlife sites through the European Community as Special Areas of Conservation (SACs), and gives statutory protection to habitats and species listed in the Directive as being threatened or of community interest. Sites identified as candidate SAC (cSAC) are provided with the same level of protection as SAC.

Annex I of 92/43/EEC as amended lists habitat types which are regarded as being of European importance. Included within these are a number of 'priority habitat types' which are habitats regarded as being in danger of disappearance and whose natural range falls broadly within the European Union. This European law had been transposed into UK legislation by The Conservation (Natural Habitats) &c Regulations 1994, now replaced by The Conservation of Habitats and Species Regulations 2017.

Habitats of European-wide importance for birds are listed under the EC Wild Birds Directive (79/409/EEC) as amended. Habitats designated under this Directive are notified as Special Protection Areas (SPAs) and are identified for holding populations > 1% of the reference population as defined in Appendix 4 of the SPA review of bird species listed in Annex 1 of the same Council Directive. Sites identified as potential SPA (pSPA) are provided with the same level of protection as SPA.

Wetlands of International Importance are designated under the Ramsar Convention.

##### 3.1.2 National (UK) Site Designations

National ecological designations, such as Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs) are also afforded statutory protection. SSSIs are notified and protected under the jurisdiction of the Wildlife and Countryside Act 1981 (WCA 1981) as amended. SSSIs are notified based on specific criteria, including the general condition and rarity of the site and of the species or habitats supported by it.

##### 3.1.3 Non-Statutory County Site Designations

Local authorities may designate certain areas as being of local conservation interest. The criteria for inclusion may vary between areas. Most individual counties have a similar scheme, within Norfolk such sites are designated as County Wildlife Sites (CWS). Designation of such sites does not itself confer statutory protection, but they are a material consideration when planning applications are being determined.

#### 3.2 Species Designation and Protection

##### 3.2.1 Plants

Schedule 8 of the WCA 1981 lists plant species which are afforded special protection. It is an offence to pick, uproot or destroy any species listed on Schedule 8 without prior authorisation, and all plants are protected from unauthorised uprooting (i.e. without the landowner's permission) under Schedule 13 of the WCA 1981.



A Vascular Plant Red List for England<sup>3</sup> provides a measure of the current state of England's flora measured against standardised IUCN criteria. Any taxon that is threatened - Critically Endangered (CR), Endangered (EN), Vulnerable (VU) - or Near Threatened (NT) does not have statutory protection but should be regarded as a priority for conservation in England. It should be noted that 'threat' is not synonymous with 'rarity', some of the species concerned are still relatively common and widespread.

It is an offence to plant or cause to spread in the wild of certain plant species under Schedule 9 of the Wildlife and Countryside Act 1981. Plant species relevant to the East of England are as follows:

Himalayan Balsam *Impatiens glandulifera*  
 Variegated yellow archangel *Lamiastrum galeobdolon* ssp *argentatum*  
 Virginia creeper *Parthenocissus quinquefolia*  
 False acacia *Robinia pseudoacacia*  
 Water fern *Azolla filiculoides*  
 Giant Hogweed *Heracleum mantegazzianum*  
 Knotweed species including Japanese knotweed *Fallopia japonica*  
 Parrot's feather *Myriophyllum aquaticum*  
 Floating pennywort *Hydrocotyle ranunculoides*  
 Rhododendron *Rhododendron ponticum*  
 Giant rhubarb *Gunnera tinctoria*  
 New Zealand Pigmyweed *Crassula helmsii*  
 Waterweeds *Elodea* spp.

All waste containing Japanese knotweed comes under the control of Part II of the Environmental Protection Act 1990 and is classified as controlled waste.

### 3.3 Priority Species and Habitats

Other priority species and habitats which are a consideration under the National Planning Policy Framework (NPPF) 2019, placing responsibility on Local Planning Authorities to aim to conserve and enhance biodiversity and to encourage biodiversity in and around developments. There is a general biodiversity duty in the Natural Environment and Rural Communities (NERC) Act 2006 (Section 40) which requires every public body in the exercising of its functions to 'have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'. Biodiversity, as covered by the Section 40 duty, includes all biodiversity, not just the Habitats and Species of Principal Importance.

Section 41 of the NERC Act lists a number of species and habitats as being Species/Habitats of Principal Importance. These are species/habitats in England (also known as Priority Habitats/ Species) which had been identified as requiring action under the UK BAP, and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework. The protection of either Priority Species or Habitats is not statutory, but "specific consideration"<sup>4</sup> should be afforded by Local Planning Authorities when dealing with them in relation to planning and development control.

<sup>3</sup> Stroh, P.A., Leach, S.J., August, T.A., Walker, K.J., Pearman, D.A., Rumsey, F.J., Harrower, C.A., Fay, M.F., Martin, J.P., Pankhurst, T., Preston, C.D. & Taylor, I. 2014. A Vascular Plant Red List for England. Botanical Society of Britain and Ireland, Bristol.

<sup>4</sup> JNCC (2015) UK BAP priority species and habitats

<http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx>

Also, there is an expectation that public bodies would refer to the Section 41 list when complying with the Section 40 duty.

Widespread Priority Habitats in East Anglia include:

Arable field margins  
 Traditional orchards  
 Hedgerows  
 Eutrophic standing waters  
 Ponds  
 Rivers  
 Lowland calcareous grassland  
 Lowland dry acid grassland  
 Lowland meadows  
 Lowland fen  
 Coastal and floodplain grazing marsh  
 Reedbeds  
 Lowland mixed deciduous woodland  
 Wet woodland  
 Wood-pasture and parkland

Priority Species of higher plant in East Anglia (which have no specific legal protection) include:

<i>Arabis glabra</i>	Tower Mustard
<i>Artemisia campestris</i>	Field Wormwood
<i>Astragalus danicus</i>	Purple Milk-vetch
<i>Blysmus compressus</i>	Flat-sedge
<i>Bupleurum tenuissimum</i>	Slender Hare`s-ear
<i>Calamagrostis stricta</i>	Narrow Small-reed
<i>Carex divisa</i>	Divided Sedge
<i>Carex ericetorum</i>	Rare Spring-sedge
<i>Clinopodium acinos</i>	Basil Thyme
<i>Dryopteris cristata</i>	Crested Buckler-fern
<i>Euphrasia pseudokerneri</i>	Chalk Eyebright
<i>Filago lutescens</i>	Red-tipped Cudweed
<i>Filago pyramidata</i>	Broad-leaved Cudweed
<i>Galeopsis angustifolia</i>	Red Hemp-nettle
<i>Hordeum marinum</i>	Sea Barley
<i>Liparis loeselii</i>	Fen Orchid
<i>Lycopodiella inundata</i>	Marsh Clubmoss
<i>Melampyrum cristatum</i>	Crested Cow-wheat
<i>Muscari neglectum</i>	Grape-hyacinth
<i>Najas marina</i>	Holly-leaved Naiad
<i>Oenanthe fistulosa</i>	Tubular Water-dropwort
<i>Platanthera bifolia</i>	Lesser Butterfly-orchid
<i>Potamogeton acutifolius</i>	Sharp-leaved Pondweed
<i>Potamogeton compressus</i>	Grass-wrack Pondweed
<i>Puccinellia fasciculata</i>	Borrer`s Saltmarsh-grass
<i>Scandix pecten-veneris</i>	Shepherd`s Needle
<i>Scleranthus annuus</i>	Annual Knawel
<i>Silene gallica</i>	Small-flowered Catchfly
<i>Silene otites</i>	Spanish Catchfly

*Sium latifolium*  
*Stellaria palustris*  
*Veronica triphyllos*  
*Veronica verna*

Greater Water Parsnip  
Marsh Stitchwort  
Fingered Speedwell  
Spring Speedwell

Many of these Priority Species are very restricted in range, and are unlikely to occur within the surveyed area.

### 3.4 Policy

The overarching policy guidance for biodiversity is included within the National Planning Policy Framework (NPPF<sup>5</sup>). Section 15 of this document (Conserving and Enhancing the Natural Environment) outlines the approach that Local Authorities should adopt when considering ecological issues within the planning framework, including the principles of the Mitigation Hierarchy. This espouses that in addressing impacts on valued features, avoidance should be the first option considered, followed by mitigation (minimising negative impacts). Where avoidance and mitigation are not possible, compensation for loss of features can be used as a last resort. Paragraphs 170, 174 and 175 of the NPPF give policy support to the provision of measurable **net gains** in biodiversity. Paragraph 174 specifies that plans should identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including locally designated sites (such as CWS); and promote the conservation, restoration and enhancement of priority habitats and ecological networks and the protection and recovery of priority species.

There is also policy guidance outlined in the National Networks National Policy Statement (NN NPS<sup>6</sup>). Section 5 of this document (Generic Impacts) outlines guidance on biodiversity and ecological conservation relating specifically to the construction of highways and railways in the UK. As a general principle the development of these transport links should avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives.

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<sup>5</sup> MHCLG (2019). National Planning Policy Framework. UK Government.

<sup>6</sup> Department for Transport (2015). NN NPS

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/387223/npsnn-web.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/387223/npsnn-web.pdf)

## 4. Methods

### 4.1 Report Objectives

The report sets out the field survey results, and compares it with those found in 2017, updating the assessment where necessary.

### 4.2 Desk Study

No desk study was undertaken for this report, because it was considered that desk data used in 2017 would be sufficient to inform the report. In analysing the habitats and field data, extensive use has been made of aerial imagery<sup>7</sup>, of which there is an intermittent record from 1946 to present.

### 4.3 Field Survey

The site was walked over on 16 - 17 July 2019 by Robert Yaxley BSc CEcol CEnv MCIEEM and Adam Stickler BSc MSc. Priority was given to areas which had previously been covered in 2017, but other areas were also surveyed where the habitat was considered to be of interest or value.

During the botanical survey, each of the individual habitat units has been subject to walkover survey of vegetation cover and the dominant plant species noted, using the DAFOR scale (D = dominant, A= abundant, F= frequent, O= occasional and R= rare, with L=local often used as a prefix to moderate abundance categories). Photographs were taken of habitats and species. Where rare or scarce species of plant were encountered, the location was recorded and the species photographed.

Hedgerows were surveyed for species richness, gathering sufficient information to judge whether the hedgerow was likely to be an important hedgerow under the Hedgerow Regulations 1997. Hedges were not subject to a full assessment under the Regs, but an estimate of species richness was made in order to screen hedgerows for likely importance.

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<sup>7</sup> <http://www.historic-maps.norfolk.gov.uk/mapexplorer/>; Google Earth Pro.



## 5. Results

### 5.2 Site Survey

The site was divided into a number of distinct vegetation units. Where possible, the labelling of these units has followed the previous report for consistency. Units have been given unique new names where they have not previously been surveyed.

There was coverage of the whole site by the survey, with the exception of Unit H, Unit I and Unit J due to access restrictions during the survey. Unit Y and Z were not visited. Unit b was not located and it is unclear from mapping and previous reports what the unit assignment consist of however, considering the location, it is considered unlikely to be ecologically valued.

Figure 2 (a-l). Location of Units and hedgerows

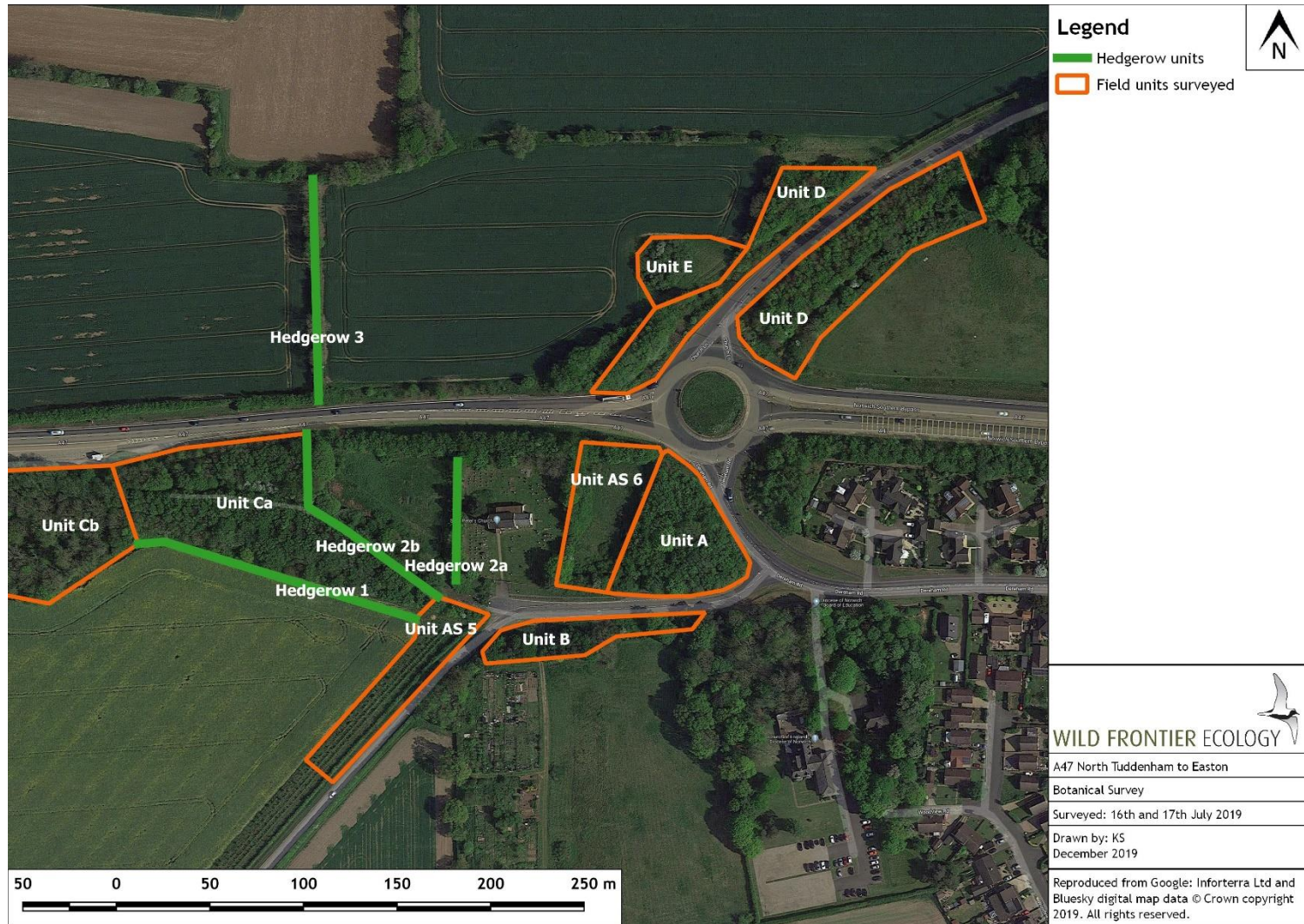


Figure 2b





Figure 2c



Figure 2d

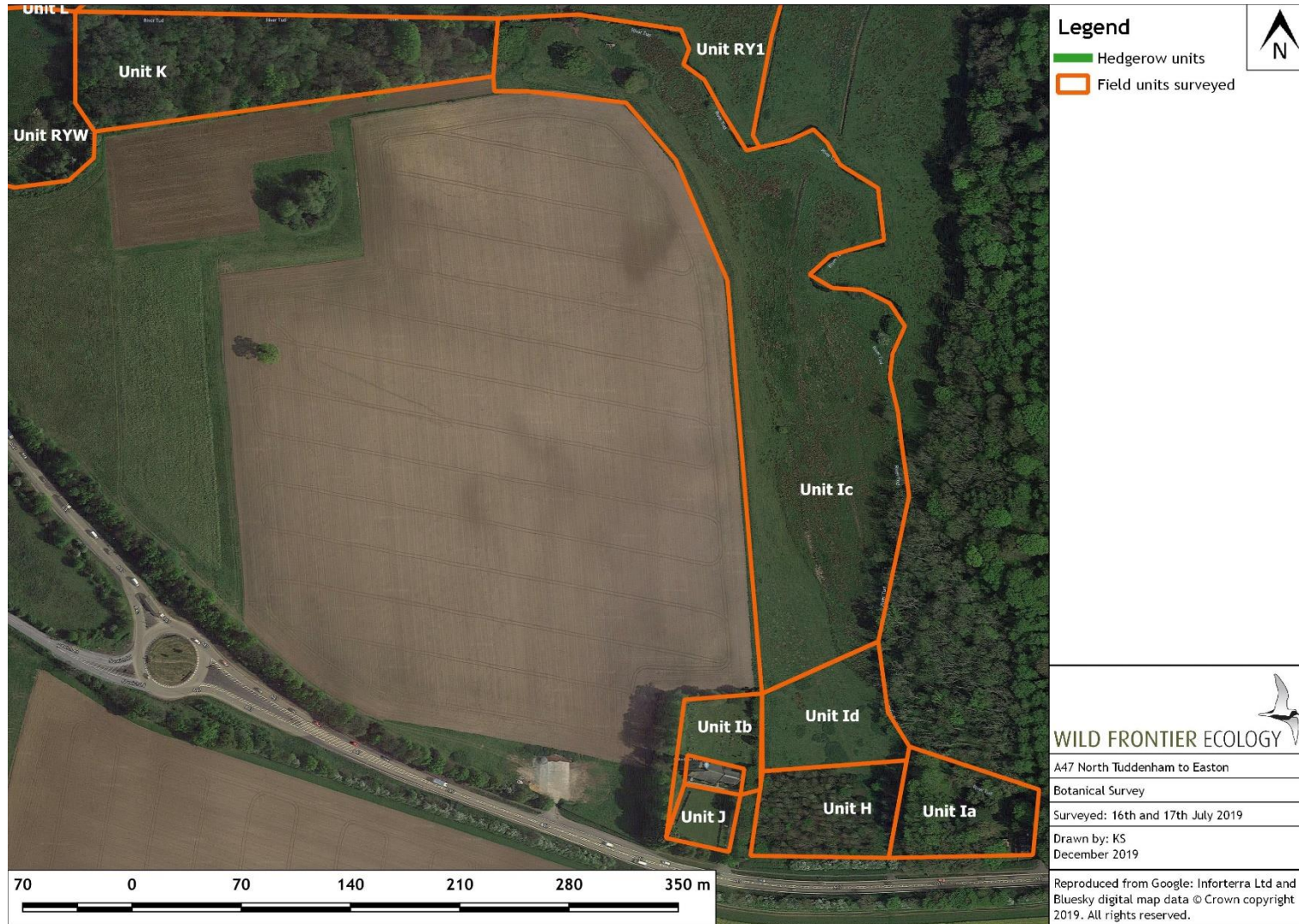


Figure 2e

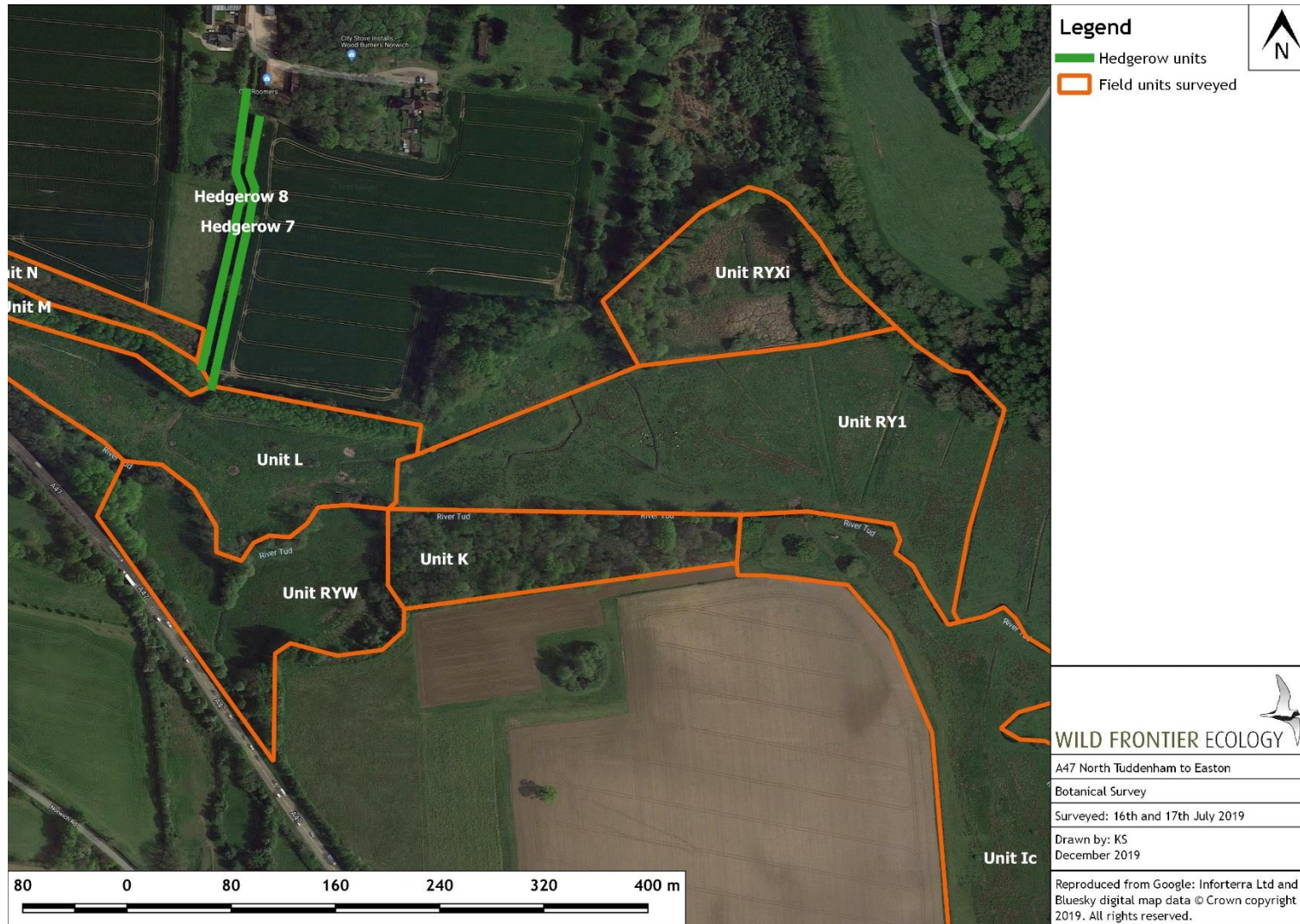
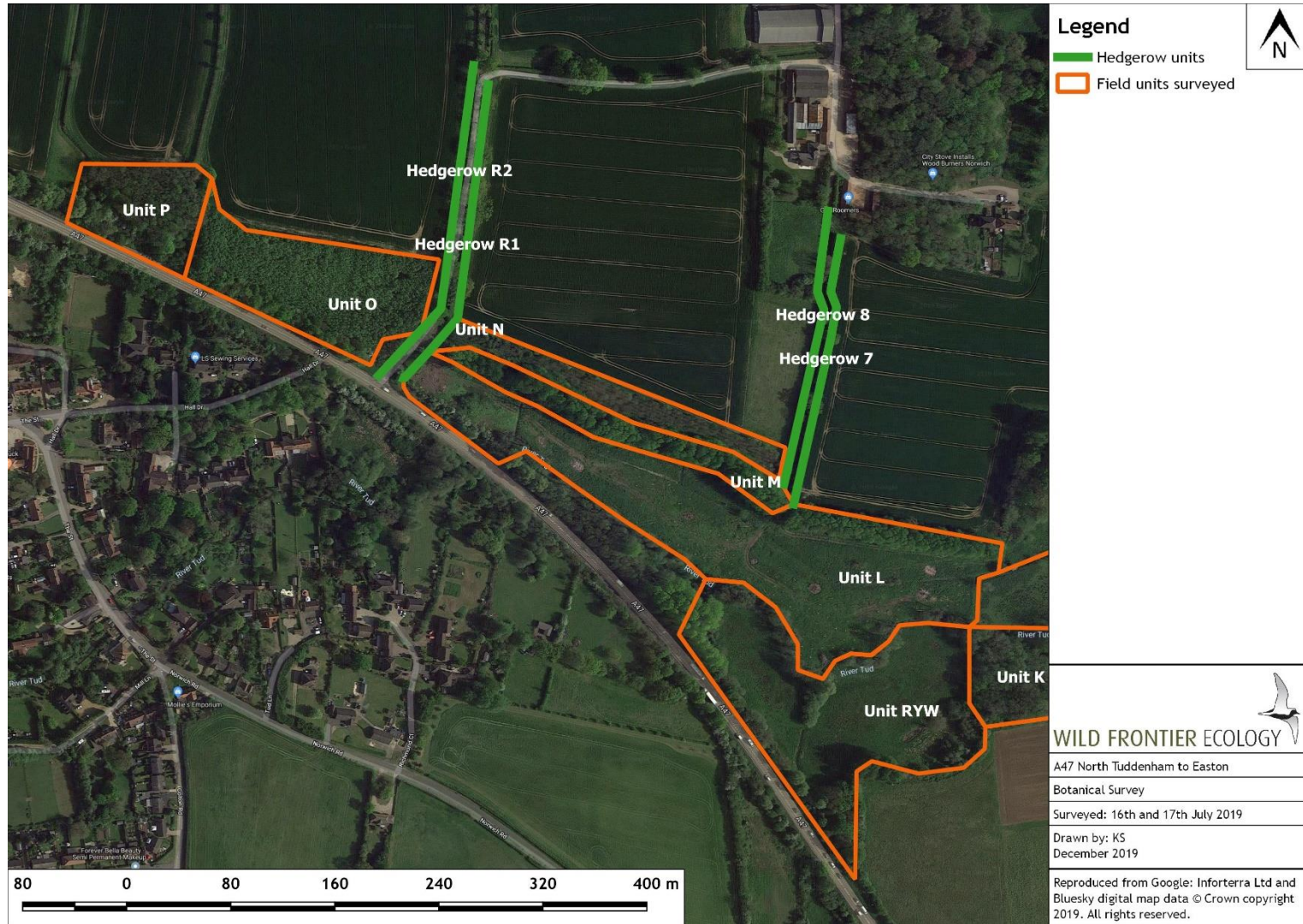


Figure 2f




  
**WILD FRONTIER ECOLOGY**  
 A47 North Tuddenham to Easton  
 Botanical Survey  
 Surveyed: 16th and 17th July 2019  
 Drawn by: KS  
 December 2019  
 Reproduced from Google: Inforterra Ltd and Bluesky digital map data © Crown copyright 2019. All rights reserved.

Figure 2g

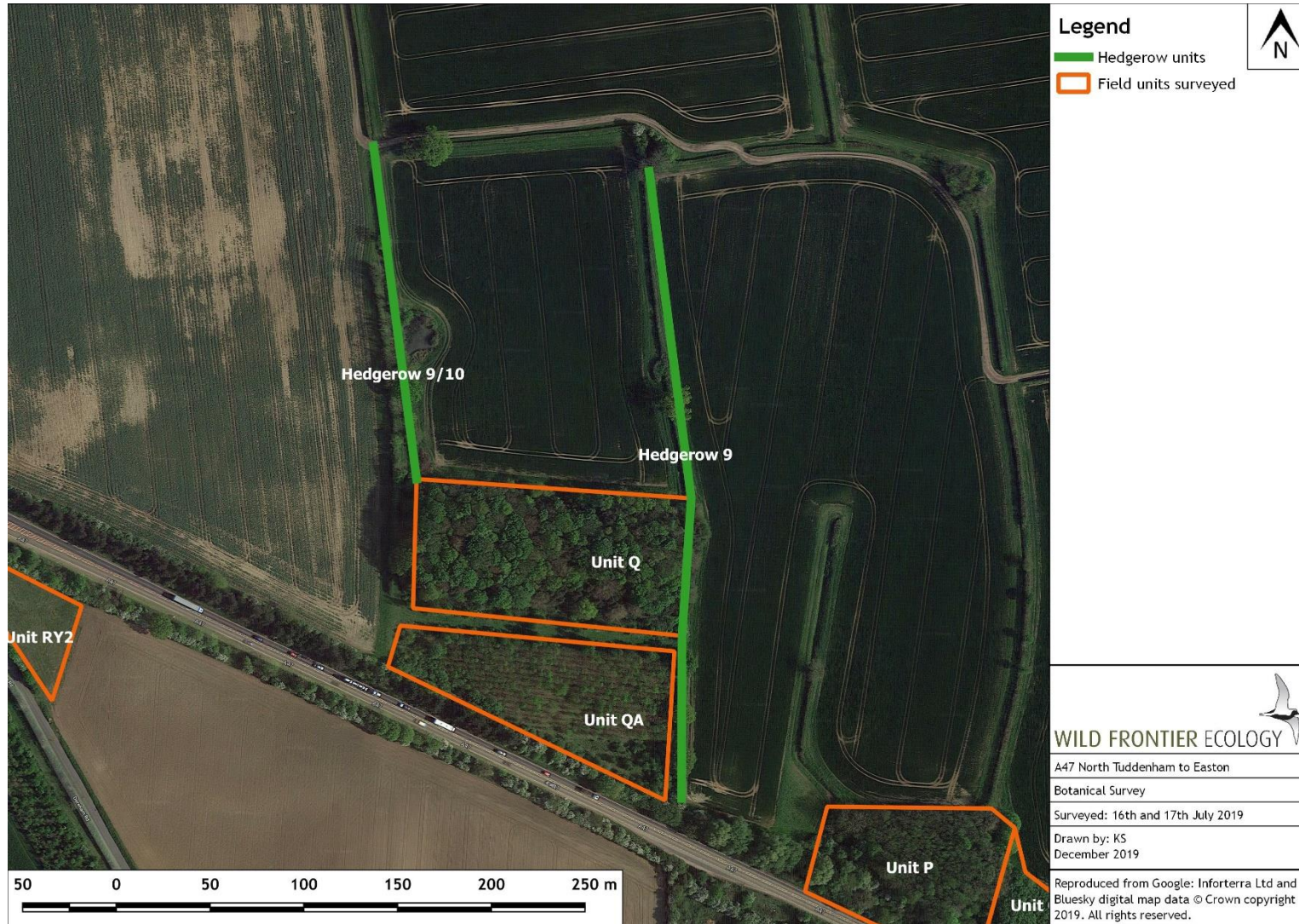


Figure 2h

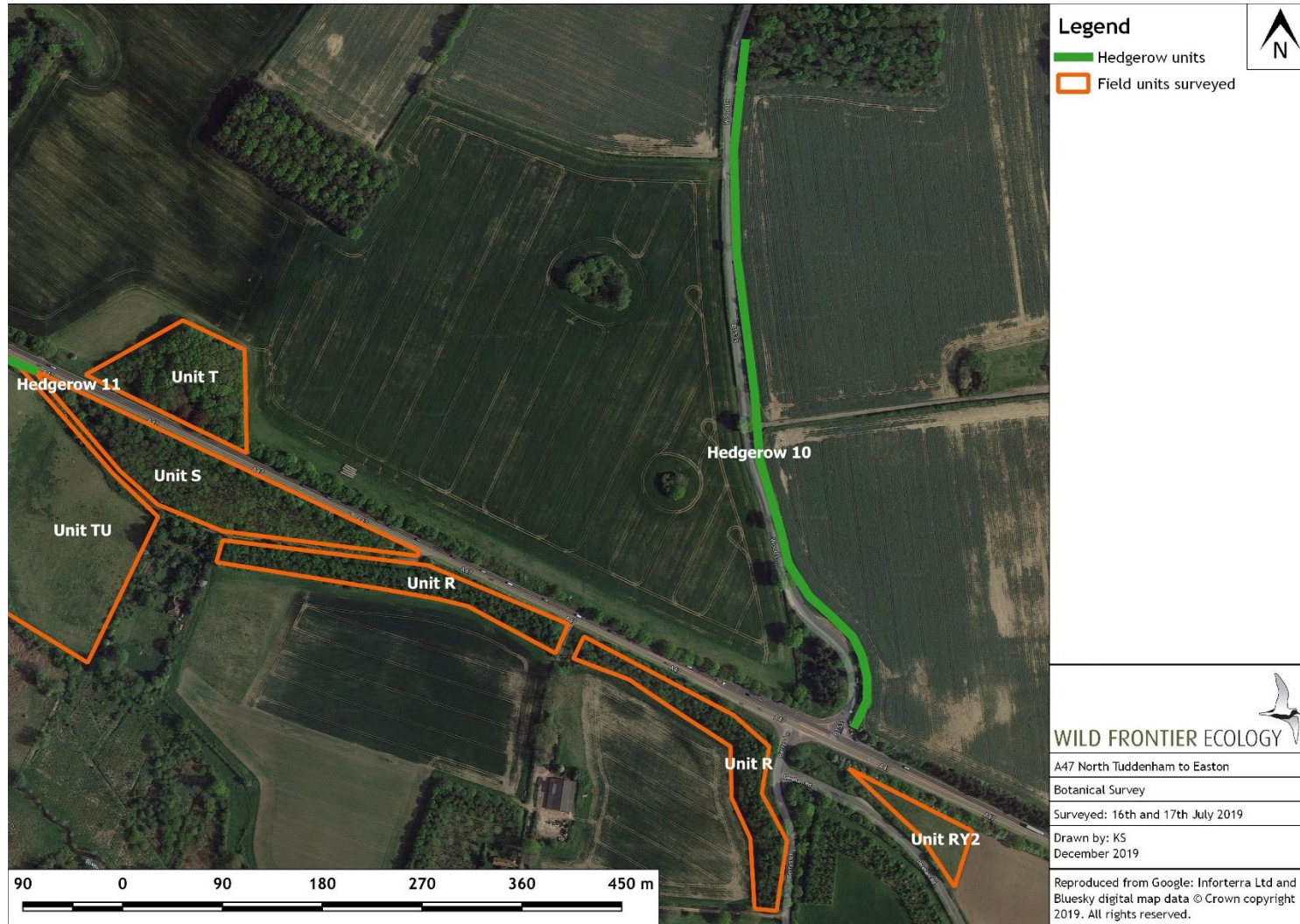


Figure 2i

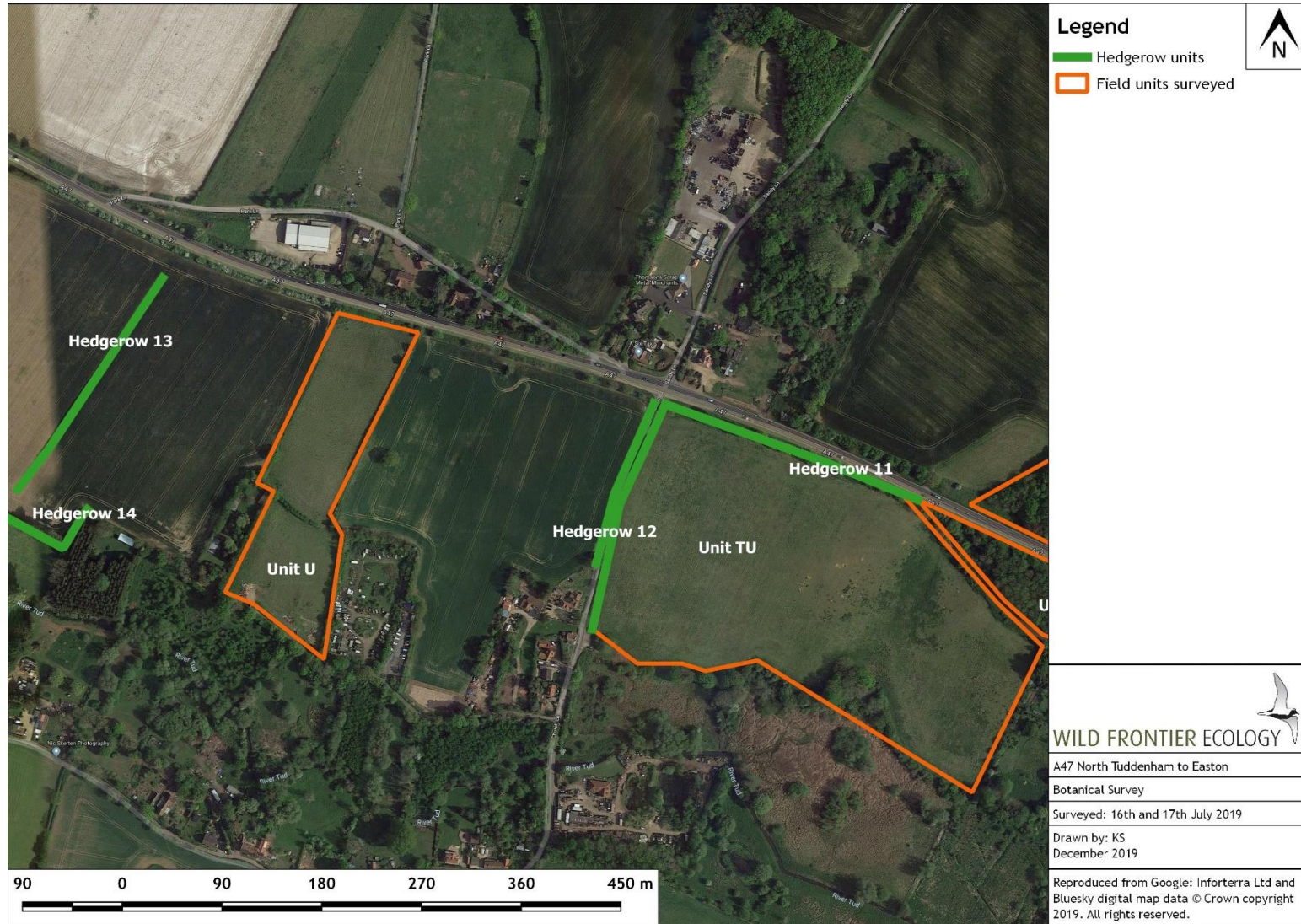


Figure 2j

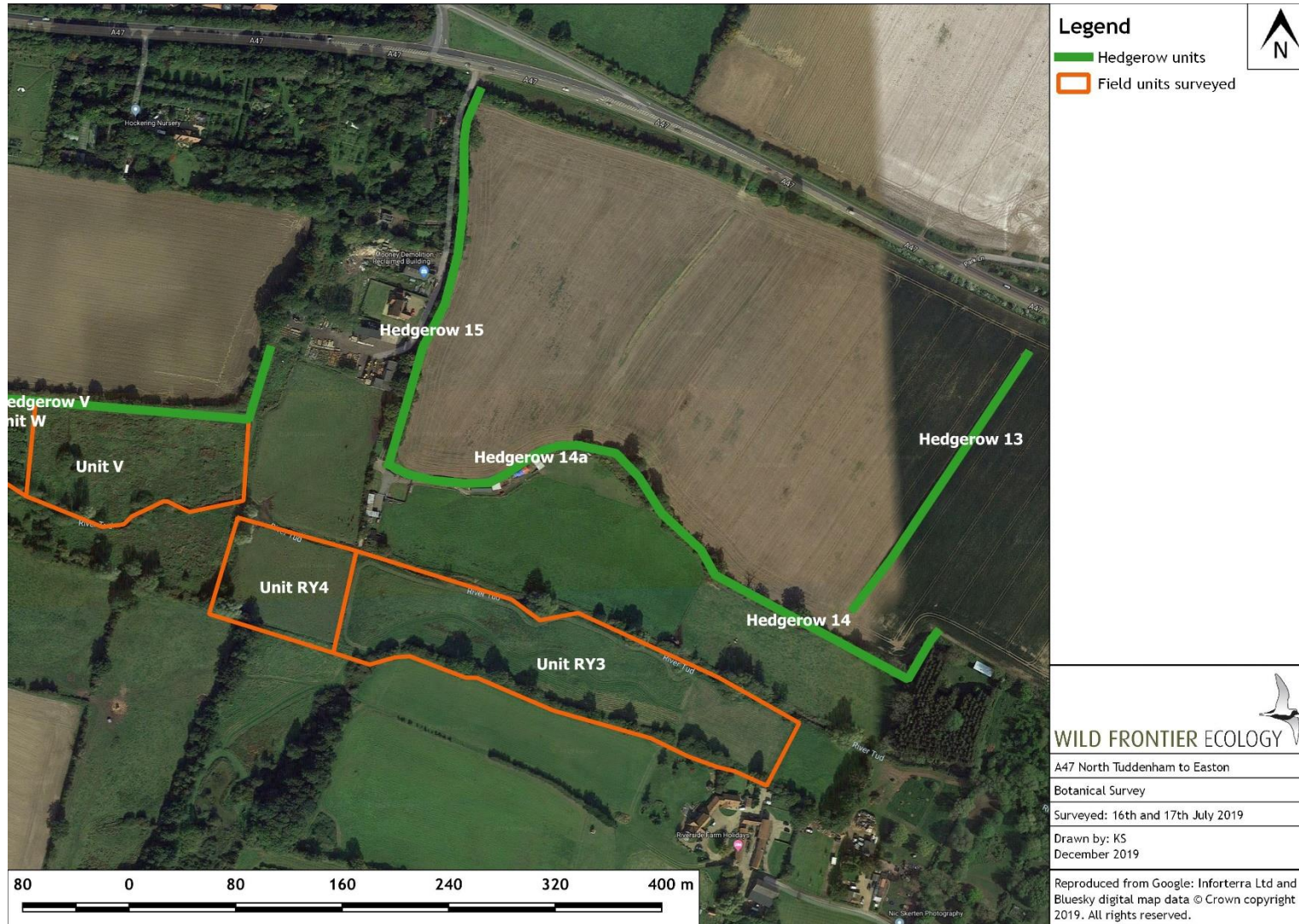




Figure 2k

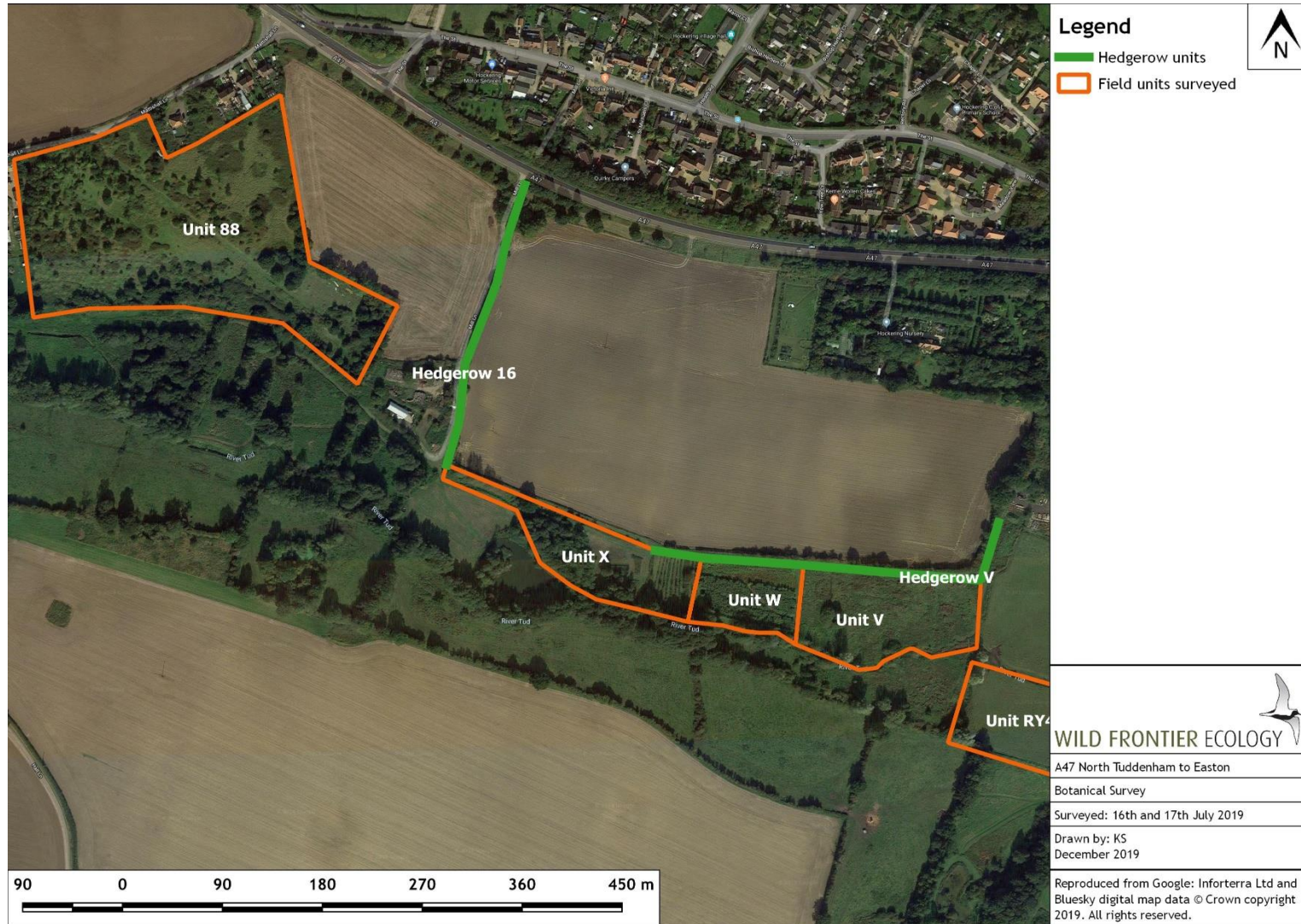
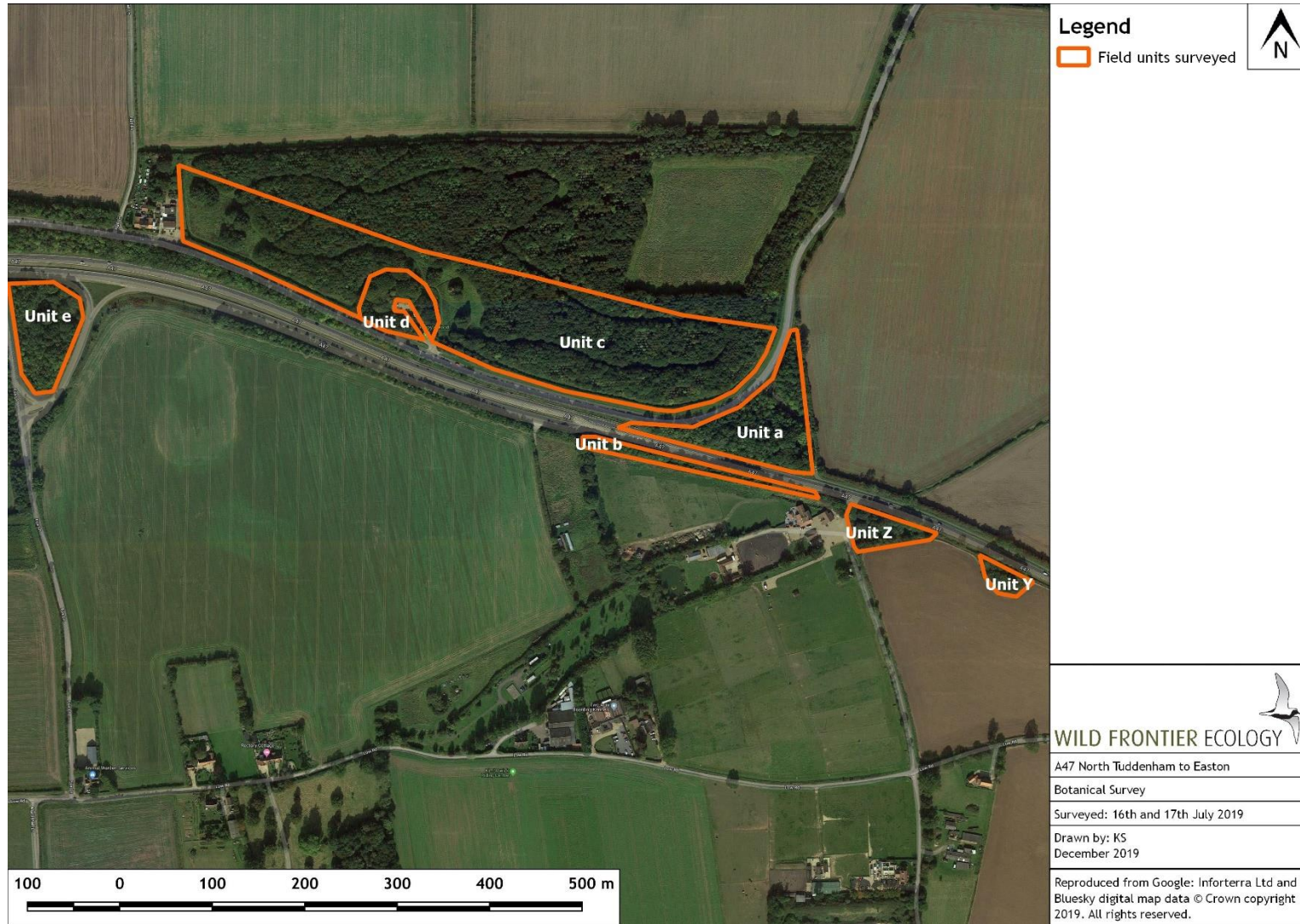


Figure 21



**Unit A (photo 1)**

A small triangle of immature planted woodland with a closed canopy and an understorey characterised by patchy dominance of stinging nettle. The more open verge to the south and east supports a few more plant species. Landscape planting associated with the construction of the southern bypass in 1992.

Common name	Latin name	DAFOR rating	Notes
Common Hawthorn	<i>Crataegus monogyna</i>	O	Understorey
Sycamore	<i>Acer pseudoplatanus</i>	F	Canopy
Pedunculate Oak	<i>Quercus robur</i>	O	Canopy
Ash	<i>Fraxinus excelsior</i>	F	Canopy
Hazel	<i>Corylus avellana</i>	O	Canopy
Hornbeam	<i>Carpinus betulus</i>	O	Canopy
Field Maple	<i>Acer campestre</i>	O	Canopy
Bramble	<i>Rubus agg.</i>	LD	Road verge
Dog Rose	<i>Rosa canina</i>	O	Understorey
Willow Sp.	<i>Salix sp.</i>	O	Canopy
Aspen	<i>Populus tremula</i>	R	Ground layer
Alder	<i>Alnus glutinosa</i>	O	Canopy
Wild Cherry	<i>Prunus avium</i>	O	Canopy
Common Nettle	<i>Urtica dioica</i>	LD	Understorey
Rough Meadow Grass	<i>Poa trivialis</i>	F	Road verge
Ground Ivy	<i>Glechoma hederacea</i>	F	Road verge
White Deadnettle	<i>Lamium album</i>	O	Road verge
Rough Chervil	<i>Chaerophyllum temulentum</i>	F	Road verge
False Oat	<i>Arrhenatherum elatius</i>	LA	Road verge
Common Vetch	<i>Vicia sativa</i>	O	Road verge
Common Mouse Ear	<i>Cerastium fontanum</i>	O	Road verge
Wild Mignonette	<i>Reseda lutea</i>	O	Road verge
Ladies bedstraw	<i>Galium verum</i>	LA	Road verge
Yarrow	<i>Achillea millefolium</i>	LA	Road verge
Cocks-foot	<i>Dactylis glomerata</i>	LA	Road verge
Ragwort	<i>Jacobaea vulgaris</i>	O	Road verge
Creeping Thistle	<i>Cirsium arvense</i>	LA	Road verge
Cleavers	<i>Galium aparine</i>	LA	Road verge



### AS6 Grassland to the west of Unit A (photo 2)

Semi-improved neutral grassland, enclosed by hedges and scrub with some mature trees. The grassland is moderately species rich, and has been present for at least 20 years. However the mix of species suggests there may have been some scattering of wildflower seed mix. There is an open gap in the hedgerow which leads through to Easton churchyard. This grassland does not closely resemble any NVC community - MG1 might be the closest fit, but it is not similar to any of the subcommunities in Rodwell.

Common name	Latin name	DAFOR rating	Notes
Cocks-foot	<i>Dactylis glomerata</i>	A	SI to the west of Unit A
Perforate St John's-wort	<i>Hypericum perforatum</i>	F	SI to the west of Unit A
Common Couch Grass	<i>Elytrigia repens</i>	F	SI to the west of Unit A
Oxeye Daisy	<i>Leucanthemum vulgare</i>	F	SI to the west of Unit A
Meadow Cranesbill	<i>Geranium pratense</i>	F	SI to the west of Unit A
Yorkshire Fog	<i>Holcus lanatus</i>	F	SI to the west of Unit A
Great Mullein	<i>Verbascum thapsus</i>	F	SI to the west of Unit A
Knapweed	<i>Centaurea nigra</i>	O	SI to the west of Unit A
Common Agrimony	<i>Agrimonia eupatoria</i>	O	SI to the west of Unit A
Field Scabious	<i>Knautia arvensis</i>	O	SI to the west of Unit A
Musk Mallow	<i>Malva moschata</i>	O	SI to the west of Unit A
White Campion	<i>Silene latifolia</i>	O	SI to the west of Unit A
Hemlock	<i>Conium maculatum</i>	R	SI to the west of Unit A
Dog Rose	<i>Rosa canina</i>	O	Surrounding hedgerow
Common Nettle	<i>Urtica dioica</i>	R	Surrounding hedgerow
Field Maple	<i>Acer campestre</i>	O	Surrounding hedgerow
Common Hawthorn	<i>Crataegus monogyna</i>	A	Surrounding hedgerow
Sycamore	<i>Acer pseudoplatanus</i>	A	Surrounding hedgerow
Blackthorn	<i>Prunus spinosa</i>	F	Surrounding hedgerow
Sweet Chestnut	<i>Castanea sativa</i>	O	Surrounding hedgerow
Hazel	<i>Corylus avellana</i>	A	Surrounding hedgerow
Ash	<i>Fraxinus excelsior</i>	O	Surrounding hedgerow
European Beech	<i>Fagus sylvatica</i>	O	Surrounding hedgerow
Pedunculate Oak	<i>Quercus robur</i>	O	Surrounding hedgerow
Silver Birch	<i>Betula pendula</i>	R	Surrounding hedgerow

### Unit B (photo 3)

Early-mature planted woodland - closed canopy with no understorey and sparse ground vegetation. Landscape planting associated with the construction of the southern bypass in 1992. It is not possible to assign this unit to any NVC community.

Common name	Latin name	DAFOR rating	Notes
Pedunculate Oak	<i>Quercus robur</i>	A	Canopy
Sycamore	<i>Acer pseudoplatanus</i>	A	Canopy
Field Maple	<i>Acer campestre</i>	O	Canopy
Norway Maple	<i>Acer Platanoides</i>	O	Canopy
Common Hawthorn	<i>Crataegus monogyna</i>	O	Canopy
Hazel	<i>Corylus avellana</i>	O	Canopy
Ash	<i>Fraxinus excelsior</i>	O	Canopy
Pine Sp.	<i>Pinus sp.</i>	O	Canopy
Sweet Chestnut	<i>Castanea sativa</i>	O	Canopy



Common Lime	<i>Tilia x europaea</i>	R	Canopy
Ivy	<i>Hedera helix</i>	LD	Ground Layer
Bramble	<i>Rubus agg.</i>	LD	Ground Layer

#### AS 5 (South of unit B) Planted strip with young trees (photo 4).

Young trees planted over a species poor neutral grassland along a field margin.

Common name	Latin name	DAFOR rating	Notes
Blackthorn	<i>Prunus spinosa</i>	O	Young Planted
Common Hawthorn	<i>Crataegus monogyna</i>	O	Young Planted
Field Maple	<i>Acer campestre</i>	O	Young Planted
Hazel	<i>Corylus avellana</i>	O	Young Planted
Guelder Rose	<i>Viburnum opulus</i>	O	Young Planted
European Beech	<i>Fagus sylvatica</i>	O	Young Planted
Dogwood	<i>Cornus sanguinea</i>	O	Young Planted
Alder	<i>Alnus glutinosa</i>	O	Young Planted
Hornbeam	<i>Carpinus betulus</i>	O	Young Planted
Cocks-foot	<i>Dactylis glomerata</i>	D	Ground Layer
Ragwort	<i>Jacobaea vulgaris</i>	A	Ground Layer
Creeping Thistle	<i>Cirsium arvense</i>	A	Ground Layer
False Oat Grass	<i>Arrhenatherum elatius</i>	A	Ground Layer
Common Couch	<i>Elytrigia repens</i>	A	Ground Layer
Herb Robert	<i>Geranium robertianum</i>	O	Ground Layer
Red Fescue	<i>Festuca rubra</i>	O	Ground Layer
Catsear	<i>Hypochaeris radicata</i>	R	Ground Layer
Bramble	<i>Rubus agg.</i>	LD	Ground Layer

#### Unit C

Unit Ca (photo 5) - an early-mature woodland over route of old road and land to the north adjacent to A47. Landscape planting associated with the construction of the southern bypass in 1992. No understorey or ground vegetation to speak of, other than occasional stinging nettle. There is an older hawthorn hedge bank in the centre of the woodland parallel with the northern edge of the former road.

Common name	Latin name	DAFOR rating	Notes
Field Maple	<i>Acer campestre</i>	A	Canopy
Common Hawthorn	<i>Crataegus monogyna</i>	F	Older hedgerow within wood
Willow	<i>Salix sp.</i>	F	Canopy
Blackthorn	<i>Prunus spinosa</i>	F	Understorey
Hazel	<i>Corylus avellana</i>	O	Canopy
Ash	<i>Fraxinus excelsior</i>	O	Canopy
Common Nettle	<i>Urtica dioica</i>	O	Ground layer
Bramble	<i>Rubus agg.</i>	O	Ground layer

Unit Cb (photo 6) - a small area of semi-natural broad-leaved woodland which has evidently with the canopy dominated by ash, and abundant ground ivy and stinging nettle



in the ground layer. A dry ditch runs east to west, mainly bare of vegetation but with some ivy. This area is a fragment of W8 woodland.

Common name	Latin name	DAFOR rating	Notes
Ash	<i>Fraxinus excelsior</i>	D	Canopy and as regular saplings
Crack willow	<i>Salix fragilis</i>	LA	Canopy
Sycamore	<i>Acer pseudoplatanus</i>	F	Canopy
Blackthorn	<i>Prunus spinosa</i>	F	Understorey
Field Maple	<i>Acer campestre</i>	O	Canopy
Pedunculate Oak	<i>Quercus robur</i>	O	Canopy
European Beech	<i>Fagus sylvatica</i>	O	Canopy
Grey Willow	<i>Salix cinerea</i>	O	Canopy
Goat Willow	<i>Salix caprea</i>	O	Canopy
Hazel	<i>Corylus avellana</i>	O	Understorey
Elder	<i>Sambucus nigra</i>	O	Understorey
Bramble	<i>Rubus agg.</i>	LA	Understorey
Common Nettle	<i>Urtica dioica</i>	D	Ground layer
Ground Ivy	<i>Glechoma hederacea</i>	A	Ground layer
Cleavers	<i>Galium aparine</i>	A	Ground layer
Smooth Meadow Grass	<i>Poa pratensis</i>	LA	Ground layer
Red Campion	<i>Silene dioica</i>	F	Ground layer
White Dead Nettle	<i>Lamium album</i>	F	Ground layer
Cow Parsley	<i>Anthriscus sylvestris</i>	F	Ground layer
Ivy	<i>Hedera helix</i>	O	Ground layer
Common Nipplewort	<i>Lapsana communis</i>	O	Ground layer
Cuckoo-pint	<i>Arum maculatum</i>	O	Ground layer
Wood Avens	<i>Geum urbanum</i>	O	Ground layer
Broad Leaved Willowherb	<i>Epilobium montanum</i>	O	Ground layer
Broad-leaved Dock	<i>Rumex obtusifolius</i>	O	Ground layer
Hedge Woundwort	<i>Stachys sylvatica</i>	O	Ground layer
Bittersweet	<i>Solanum dulcamara</i>	O	Ground layer

### Unit D (photo 7)

Young plantation woodland. Landscape planting associated with the construction of the southern bypass in 1992. Closed canopy, with all of the ground flora restricted to the edges of the woodland.

Common name	Latin name	DAFOR rating	Notes
Cocks-foot	<i>Dactylis glomerata</i>	LA	Northern boundary
Ribwort Plantain	<i>Plantago lanceolata</i>	LA	Northern boundary
Common Couch	<i>Elytrigia repens</i>	LA	Northern boundary
Yarrow	<i>Achillea millefolium</i>	LA	Northern boundary
Perforate St John's-wort	<i>Hypericum perforatum</i>	F	Northern boundary
Nipplewort	<i>Lapsana communis</i>	O	Northern boundary
Hop Trefoil	<i>Trifolium campestre</i>	O	Northern boundary
Self-heal	<i>Prunella vulgaris</i>	O	Northern boundary
Field Maple	<i>Acer campestre</i>	F	Canopy
Pedunculate Oak	<i>Quercus robur</i>	F	Canopy
Hazel	<i>Corylus avellana</i>	F	Canopy



Wild Cherry	<i>Prunus avium</i>	F	Canopy
Holly	<i>Ilex aquifolium</i>	F	Canopy
Rowan	<i>Sorbus aucuparia</i>	F	Canopy

### Unit E (photo 8)

Willow scrub over a dry pond basin with some species poor grassland to the east. This grassland has been left uncultivated between the scrub and landscape planting for the southern bypass since at least 2006.

Common name	Latin name	DAFOR rating	Notes
Crack Willow	<i>Salix fragilis</i>	D	Scrub
Common Hawthorn	<i>Crataegus monogyna</i>	R	Scrub
Common Nettle	<i>Urtica dioica</i>	D	Ground Layer under scrub
False Oat Grass	<i>Arrhenatherum elatius</i>	D	Grassland
Yorkshire Fog	<i>Holcus lanatus</i>	A	Grassland
Ragwort	<i>Jacobaea vulgaris</i>	O	Grassland
Creeping thistle	<i>Cirsium arvense</i>	O	Grassland
Cocksfoot	<i>Dactylis glomerata</i>	O	Grassland

### Unit F (photo 9)

Small pocket of semi-natural broad-leaved woodland around a dry pond basin. The sparse ground flora gives no indication of older woodland. The pond and surrounding trees are visible on the 1946 aerial image.

Common name	Latin name	DAFOR rating	Notes
Ash	<i>Fraxinus excelsior</i>	A	Canopy
Crack willow	<i>Salix fragilis</i>	F	Canopy
Pedunculate Oak	<i>Quercus robur</i>	F	Canopy
Common sallow	<i>Salix caprea</i>	O	Canopy
Blackthorn	<i>Prunus spinosa</i>	F	Understorey
Field Maple	<i>Acer campestre</i>	F	Understorey
Hazel	<i>Corylus avellana</i>	O	Understorey
Bramble	<i>Rubus agg.</i>	LA	Ground Layer
Ground Ivy	<i>Glechoma hederacea</i>	F	Ground Layer
Red Campion	<i>Silene dioica</i>	F	Ground Layer
Ivy	<i>Hedera helix</i>	O	Ground Layer
Wood Avens	<i>Geum urbanum</i>	O	Ground Layer
Barren Brome	<i>Anisantha sterilis</i>	O	Ground Layer

### Unit G

Unit G has been split between the eastern side and western side of unit F as it runs along the southern border of the A47.

Eastern side (photo 10) - A strip of hedgerow and species poor grassland to the south, assignable to MG1 *Arrhenatherum elatius* grassland.



Common name	Latin name	DAFOR rating	Notes
Common Hawthorn	<i>Crataegus monogyna</i>	A	Hedgerow
Blackthorn	<i>Prunus spinosa</i>	A	Hedgerow
Bramble	<i>Rubus agg.</i>	A	Hedgerow
Dog Rose	<i>Rosa canina</i>	O	Hedgerow
Dogwood	<i>Cornus sanguinea</i>	O	Hedgerow
Field Maple	<i>Acer campestre</i>	O	Hedgerow
Willow	<i>Salix sp.</i>	O	Hedgerow
Pedunculate Oak	<i>Quercus robur</i>	O	Hedgerow
Ash	<i>Fraxinus excelsior</i>	R	Hedgerow
False Oat Grass	<i>Arrhenatherum elatius</i>	D	Grassland
Creeping Buttercup	<i>Ranunculus repens</i>	A	Grassland
Red Clover	<i>Trifolium pratense</i>	A	Grassland
Field Horsetail	<i>Equisetum arvense</i>	F	Grassland
Hogweed	<i>Heracleum sphondylium</i>	F	Grassland
Bristly Oxtongue	<i>Helminthotheca echinoides</i>	F	Grassland
Ribwort Plantain	<i>Plantago lanceolata</i>	F	Grassland
Yorkshire Fog	<i>Holcus lanatus</i>	O	Grassland
Cocks-foot	<i>Dactylis glomerata</i>	O	Grassland
Ragwort	<i>Jacobaea vulgaris</i>	O	Grassland
Goats Beard	<i>Tragopogon pratensis</i>	O	Grassland
Creeping Thistle	<i>Cirsium arvense</i>	O	Grassland

## Western side (photo 11) - Hedgerow along the A47 with thin field margin

Common name	Latin name	DAFOR rating	Notes
Common Hawthorn	<i>Crataegus monogyna</i>	A	Hedgerow
Blackthorn	<i>Prunus spinosa</i>	F	Hedgerow
White Bryony	<i>Bryonia alba</i>	F	Hedgerow
Pedunculate Oak	<i>Quercus robur</i>	O	Hedgerow
Ash	<i>Fraxinus excelsior</i>	O	Hedgerow
Field Maple	<i>Acer campestre</i>	O	Hedgerow
Dog Rose	<i>Rosa canina</i>	O	Hedgerow
Elder	<i>Sambucus nigra</i>	O	Hedgerow
Horse Chestnut	<i>Aesculus hippocastanum</i>	R	Hedgerow Tree
False Oat Grass	<i>Arrhenatherum elatius</i>	A	Margin
Bracken	<i>Pteridium aquilinum</i>	LA	Margin
Scentless mayweed	<i>Tripleurospermum inodorum</i>	F	Margin
Spear Thistle	<i>Cirsium vulgare</i>	F	Margin
Broad Leaved Dock	<i>Rumex obtusifolius</i>	F	Margin
Spear Thistle	<i>Cirsium vulgare</i>	F	Margin
Groundsel	<i>Senecio vulgaris</i>	F	Margin
White Campion	<i>Silene alba</i>	O	Margin
Mugwort	<i>Artemisia vulgaris</i>	O	Margin
Common Poppy	<i>Papaver rhoeas</i>	O	Margin
Nipplewort	<i>Lapsana communis</i>	O	Margin
Common Mallow	<i>Malva sylvestris</i>	O	Margin
Oxeye Daisy	<i>Leucanthemum vulgare</i>	O	Margin
Catsear	<i>Hypochaeris radicata</i>	O	Margin





Creeping Thistle	<i>Cirsium arvense</i>	O	Margin
Red Campion	<i>Silene dioica</i>	O	Margin
Ivy	<i>Hedera helix</i>	O	Margin

### Unit AS1 (photo 12)

A small area to the south west of Unit G in the corner of an arable field to the south-east of Hedgerow 4. Herbs and grasses present are those typical of recently disturbed ground.

Common name	Latin name	DAFOR rating	Notes
Broad Leaved Dock	<i>Rumex obtusifolius</i>	A	
Ribwort Plantain	<i>Plantago lanceolata</i>	A	
Perennial Rye Grass	<i>Lolium perenne</i>	A	
Common Nettle	<i>Urtica dioica</i>	A	
Perennial Sow Thistle	<i>Sonchus arvensis</i>	A	
Groundsel	<i>Senecio vulgaris</i>	F	
Hogweed	<i>Heracleum sphondylium</i>	F	
Common Mugwort	<i>Artemisia vulgaris</i>	F	
Black Horehound	<i>Ballota nigra</i>	O	

### Unit AS 2

Woodland to the south-west of Hedgerow 6 is formed in two distinct parts. The main area is a plantation woodland strip with a mix of native and non-native semi-mature trees (approx. 20 years old). To the north of this woodland are three depressions surrounded by woodland. The woodland was present pre-1946, although there has been some more recent planting, and the ponds are present on earlier mapping. Areas of this habitat can be classed as W8 *Fraxinus excelsior*-*Acer campestre* - *Mercurialis perennis* woodland. There is a hedge bank running to the north of these ponds within the woodland with large hazel coppice stools and pollard oak. This hedgerow (also labelled AS1, photo 12,15) is likely to qualify as an important hedgerow under the Hedgerow Regulations.

#### Main Section of AS 2 - Plantation woodland (photo 13)

Common name	Latin name	DAFOR rating	Notes
Ash	<i>Fraxinus excelsior</i>	F	Plantation tree
Pedunculate Oak	<i>Quercus robur</i>	F	Plantation tree
Cherry	<i>Prunus Sp.</i>	F	Plantation tree
Sweet Chestnut	<i>Castanea sativa</i>	F	Plantation tree
Scots Pine	<i>Pinus sylvestris</i>	F	Plantation tree
Common Nettle	<i>Urtica dioica</i>	LD	Ground layer
Hawthorn	<i>Crataegus monogyna</i>	LD	In hedgerow to east
Common Nettle	<i>Urtica dioica</i>	D	Ground layer
Cleavers	<i>Galium aparine</i>	A	Ground layer
Broad Leaved Dock	<i>Rumex obtusifolius</i>	A	Ground layer
Herb Robert	<i>Geranium robertianum</i>	A	Ground layer
Hemlock	<i>Conium maculatum</i>	LA	Ground layer
Snowberry	<i>Symphoricarpos albus</i>	LA	Ground layer
Wood False Brome	<i>Brachypodium sylvaticum</i>	LA	Ground layer
Wood Avens	<i>Geum urbanum</i>	O	Ground layer
Bramble	<i>Rubus agg.</i>	O	Ground layer



Ivy	<i>Hedera helix</i>	O	Ground layer
Rough Chervil	<i>Chaerophyllum temulentum</i>	O	Ground layer
Creeping Cinquefoil	<i>Potentilla reptans</i>	O	Ground layer
Dog's mercury	<i>Mercurialis perennis</i>	O	Ground layer

#### Northern section of AS 2 (photo 14)

Common name	Latin name	DAFOR rating	Notes
Sycamore	<i>Acer pseudoplatanus</i>	A	Canopy
Ash	<i>Fraxinus</i>	F	Canopy
Pine	<i>Pinus sp.</i>	O	Canopy
Beech	<i>Fagus sylvatica</i>	O	Canopy
Field Maple	<i>Acer campestre</i>	LA	Around ponds, some large trees
Pedunculate Oak	<i>Quercus robur</i>	O	In hedge bank and around ponds
Hazel	<i>Corylus avellana</i>	F	In hedge bank
Blackthorn	<i>Prunus spinosa</i>	A	Understorey
Goat Willow	<i>Salix caprea</i>	O	Plantation tree
Bramble	<i>Rubus sp.</i>	LA	Ground layer
Hogweed	<i>Heracleum sphodylium</i>	O	Ground layer
Ivy	<i>Hedera helix</i>	D	Ground layer
Wood False Brome	<i>Brachypodium sylvaticum</i>	A	Ground layer
Rough Chervil	<i>Chaerophyllum temulentum</i>	O	Ground layer
Garlic mustard	<i>Alliaria petiolata</i>	R	Ground layer
Dog's mercury	<i>Mercurialis perennis</i>	O	Ground layer and local
Hedge Woundwort	<i>Stachys sylvatica</i>	O	Ground layer
Reedmace	<i>Typha latifolia</i>	D	Within pond

#### Unit H

There was no access to this area, but the previous report describes the area as follows: "Unit H is a small stand of mature semi-natural broad-leaved woodland associated with the Lodge House and estate located next door. This private woodland was situated behind a wall along the north side of the A47 and was not directly accessed. The older plantation trees include hybrid black poplar to 30m height, ash, pedunculate oak, sweet chestnut, small-leaved lime, with silver birch and hazel in the understorey. Many of the trees are ivy-clad. Ground flora species noted from outside the woodland include dog's mercury, ground elder, violet, and stinging nettle." This description fits well with a species-poor W8 woodland. The 1946 aerial shows clearly that the area had no woodland at that time.

#### Unit I

There was no access to Unit Ia, Ib or Id, but Unit Ic was viewed from Unit RY1 and partially walked over.

Unit Ia is currently woodland, and has been since the 1836-50 Tithe Map. Unit Ib is the churchyard of Honingham church. Unit Id is dry grassland to the north of the churchyard,

and has been so since 1946 or earlier, but from the description in the 2017 report may have been enriched.

Unit Ic (photo 17) is floodplain grassland very similar to Unit RY1. It also has a substantial length of river bank which is dominated largely by reed canary grass *Phalaris arundinacea*. There are widespread patches of rushes, mostly Compact Rush and Hard Rush. The river itself has abundant common water crowfoot *Ranunculus aquatilis* and some patches of branched bur-reed.

### Unit J

There was no access to Unit J. It is noted in the 2017 report as a plantation woodland of local value only. It was planted between 1999 and 2003 over what appears to be improved grassland.

### Unit K (photo 18)

Woodland on a shoulder of the Tud valley, which has continuously occupied the site since the Tithe map of 1836-1850. In this map and the subsequent first series OS map it is denoted as mixed woodland, although now it is characterised by sweet chestnut and ash, with an abundant understorey of hazel, some of which appears to have been coppiced in the past. Although there has obviously been much replanting of the canopy trees, the presence of bluebell, dog's mercury and three-nerved sandwort and possibly other species are suggestive of an ancient origin. The NVC community is most likely W8a *Fraxinus - Acer - Mercurialis* woodland, *Primula* sub-community.

Common name	Latin name	DAFOR rating	Notes
Sweet Chestnut	<i>Castanea sativa</i>	F	Canopy
Ash	<i>Fraxinus excelsior</i>	F	Canopy
European Beech	<i>Fagus sylvatica</i>	O	Canopy
Field Maple	<i>Acer campestre</i>	O	Canopy
Pedunculate Oak	<i>Quercus robur</i>	O	Canopy
False Acacia	<i>Robinia pseudoacacia</i>	R	Canopy
Hazel	<i>Corylus avellana</i>	A	Canopy/understorey
Common Hawthorn	<i>Crataegus monogyna</i>	O	Understorey
Elder	<i>Sambucus nigra</i>	O	Understorey
Holly	<i>Ilex aquifolium</i>	O	Understorey
Cherry Plum	<i>Prunus cerasifera</i>	O	Understorey
Elm	<i>Ulmus sp.</i>	O	Understorey
Box	<i>Buxus sempervirens</i>	R	Understorey
Common Nettle	<i>Urtica dioica</i>	A	Ground layer
Dog's Mercury	<i>Mercurialis perennis</i>	LA	Ground layer
Common Bluebell	<i>Hyacinthoides non-scripta</i>	LA	Ground layer
Swan's Neck Thyme Moss	<i>Mnium hornum</i>	LA	Ground layer
Red Campion	<i>Silene dioica</i>	F	Ground layer
Hedge Woundwort	<i>Stachys sylvatica</i>	F	Ground layer
Yorkshire Fog	<i>Holcus lanatus</i>	F	Ground layer
Black Horehound	<i>Ballota nigra</i>	LF	Ground layer
Ground Ivy	<i>Glechoma hederacea</i>	LF	Ground layer
Three Nerved Sandwort	<i>Moehringia trinervia</i>	LF	Ground layer
Garlic Mustard	<i>Alliaria petiolata</i>	O-F	Ground layer
Spear Thistle	<i>Cirsium vulgare</i>	O	Ground layer



Hemlock	<i>Conium maculatum</i>	O	Ground layer
Common Nipplewort	<i>Lapsana communis</i>	O	Ground layer
Male Fern	<i>Dryopteris filix-mas</i>	O	Ground layer
Cleavers	<i>Galium aparine</i>	O	Ground layer
Wood Avens	<i>Geum urbanum</i>	O	Ground layer
Rough Chervil	<i>Chaerophyllum temulentum</i>	R-O	Ground layer
Red Currant	<i>Ribes rubrum</i>	R	Ground layer
Soft Rush	<i>Juncus effusus</i>	R	Ground layer
Foxglove	<i>Digitalis purpurea</i>	R	Ground layer
Wood False Brome	<i>Brachypodium sylvaticum</i>	R	

### Unit L (photo 19)

A former Poplar *Populus* plantation, with frequent large stumps, which was felled between 2006 and 2017. Replanted with Cricket Bat Willow *Salix alba caerulea*. The vegetation is a mixture of dry grassland species and wetland plants, and is not easily assignable to any NVC community, although it may have affinities with both MG1 *Arrhenatherum* grassland and S28 *Phalaris* swamp. There is a central drainage ditch which is damp or with some standing water year-round. It supports wetland plant species typical of such ditches. The local species, small teasel, was found here.

Common name	Latin name	DAFOR rating	Notes
Field Bindweed	<i>Convolvulus arvensis</i>	A	
False oat grass	<i>Arrhenatherum elatius</i>	A	
Marsh Marigold	<i>Caltha palustris</i>	A	
Reed Canary Grass	<i>Phalaris arundinacea</i>	LA	
Yorkshire Fog	<i>Holcus lanatus</i>	F	
Wild Angelica	<i>Angelica sylvestris</i>	F	
Hogweed	<i>Heracleum sphondylium</i>	F	
Common Nettle	<i>Urtica dioica</i>	O-F	
Cricket Bat Willow	<i>Salix alba caerulea</i>		Planted
Creeping Buttercup	<i>Ranunculus repens</i>	O	
Curled Dock	<i>Rumex crispus</i>	O	
Small Teasel	<i>Dipsacus pilosus</i>	O	
Greater Burdock	<i>Arctium lappa</i>	O	
Red Campion	<i>Silene dioica</i>	O	
Cocks-foot	<i>Dactylis glomerata</i>	O	
Meadow Foxtail	<i>Alopecurus pratensis</i>	O	
Alder	<i>Alnus glutinosa</i>	O	
Autumnal Hawkbit	<i>Leontodon autumnalis</i>	R	
Common Spotted Orchid	<i>Dactylorhiza fuchsii</i>	R	
Ash	<i>Fraxinus excelsior</i>	R	
Self-heal	<i>Prunella vulgaris</i>	LF	Mown area
Fleabane	<i>Pulicaria dysenterica</i>	LF	Mown area
White Clover	<i>Trifolium repens</i>	LF	Mown area
Fools Watercress	<i>Apium nodiflorum</i>	LA	Ditch
Branched Bur-reed	<i>Sparganium erectum</i>	F	Ditch
Greater Horsetail	<i>Equisetum telmateia</i>	A	Ditch
Meadowsweet	<i>Filipendula ulmaria</i>	F	Ditch



Himalayan Balsam	<i>Impatiens glandulifera</i>	O	River Bank
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### Unit M (photo 20)

Belt of mature plantation woodland with sparse or no understorey and sparse ground layer. There are small amounts of Dog's mercury and wood false brome which may indicate replanting on a former woodland site. However, these two species are known to have colonised woodland of recent origin elsewhere in the survey corridor. Overall the planting does not support any significant assemblage of ancient woodland species.

Common name	Latin name	DAFOR rating	Notes
Sycamore	<i>Acer pseudoplatanus</i>		Canopy
European Beech	<i>Fagus sylvatica</i>		Canopy
Cypress	<i>Cupressus sp.</i>		Canopy
Yorkshire Fog	<i>Holcus lanatus</i>	O	Ground layer
Ivy	<i>Hedera helix</i>	O	Ground layer
Wood False Brome	<i>Brachypodium sylvaticum</i>	O	Ground layer
Ground Ivy	<i>Glechoma hederacea</i>	O	Ground layer
Dog's Mercury	<i>Mercurialis perennis</i>	R	Ground layer
Garlic Mustard	<i>Alliaria petiolata</i>	R	Ground layer

### Unit N (Photo 21)

Fairly recent (2003-2005) broad-leaved plantation over species poor grassland dominated by false oat and stinging nettle. A defunct hedgerow runs along the northern edge of the planting, although this too appears to be of recent origin. Sharp-leaved fluellin, a scarce plant of arable land, was found in the field margin to the north (grid reference location of plant: TG10761187).

Common name	Latin name	DAFOR rating	Notes
Pedunculate Oak	<i>Quercus robur</i>	A	Planted
Field Maple	<i>Acer campestre</i>	F	Planted
Sweet Chestnut	<i>Castanea sativa</i>	O	Planted
Common Hawthorn	<i>Crataegus monogyna</i>	O	In hedge
Dog Rose	<i>Rosa canina agg.</i>	R	In hedge
Privet	<i>Ligustrum vulgare</i>	O	Self-seeded
Blackthorn	<i>Prunus spinosa</i>	LF	Self-seeded
Sycamore	<i>Acer pseudoplatanus</i>	O	Self-seeded
Common Nettle	<i>Urtica dioica</i>	A	Ground layer
False Oat Grass	<i>Arrhenatherum elatius</i>	A	Ground layer
Broad-leaved Dock	<i>Rumex obtusifolius</i>	F	Ground layer
Cocks-foot	<i>Dactylis glomerata</i>	F	Ground layer
Curled Dock	<i>Rumex crispus</i>	O	Ground layer
Sharp-leaved Fluellen	<i>Kickxia elatine</i>	R	Arable margin to north
Black Bindweed	<i>Fallopia convolvulus</i>	R	Arable margin to north

### Unit O (photo 22)



A dense stand of secondary growth of common willow and ash. In 1999 this area was cultivated land. Sometime in the early 2000s some tree planting occurred in the south of the unit alongside the A47. This planting has been neglected, and self-seeded ash and willow have become dominant. There are still some remnant grassland plants in the ground layer from a period in the 2000s when the unit was predominantly grassy. The growth of the two species is mainly at the sapling stage, and lets in considerable light to the ground. Note the abundance of wood false brome, and the presence of one or two other woodland plants (e.g. wood dock and spurge laurel) in this former arable area. It is assumed these have colonised from the green lane to the east and the woodland to the west. The peculiar mix of species means this is not assignable to NVC community.

Common name	Latin name	DAFOR rating	Notes
Common willow	<i>Salix caprea</i>	A	
Ash	<i>Fraxinus excelsior</i>	A	
Wood False Brome	<i>Brachypodium sylvaticum</i>	A	
Wild Strawberry	<i>Fragaria vesca</i>	LF	
Wood sedge	<i>Carex sylvatica</i>	O-F	
Wood Dock	<i>Rumex sanguineum</i>	O	
Fleabane	<i>Pulicaria dysenterica</i>	O	
Self-Heal	<i>Prunella vulgaris</i>	O	
Water Mint	<i>Mentha aquatica</i>	O	
Orange Hawkweed	<i>Pilosella aurantiaca</i>	O	
Hoary Ragwort	<i>Senecio erucifolius</i>	O	
Oxeye Daisy	<i>Leucanthemum vulgare</i>	R-O	
Coltsfoot	<i>Tussilago farfara</i>	R	
Lesser Pond Sedge	<i>Carex acutiformis</i>	R	
Spurge Laurel	<i>Daphne laureola</i>	R	

### Unit P (photo 23)

Mature woodland, with a number of indicator species and at least one over-mature or veteran oak tree in the east. The 1946 aerial photograph of the area shows most of Unit P to be cultivated land, with only the hedge banks and green lane in the east of the unit being present. There is a small colony of naturalised martagon lily (grid reference location of plant: TG10371202), which is rare in the county, and the localised spurge laurel, and other woodland indicators are abundant especially in the east of the unit. This is assignable to W8 woodland despite its recent origin.

Common name	Latin name	DAFOR rating	Notes
Ash	<i>Fraxinus excelsior</i>	A	Canopy
Field Maple	<i>Acer campestre</i>	F	Canopy
Oak	<i>Quercus robur</i>	O	Canopy
Blackthorn	<i>Prunus spinosa</i>	F	Understorey
Hazel	<i>Corylus avellana</i>	F	Understorey
Common Hawthorn	<i>Crataegus monogyna</i>	F	Understorey
Privet	<i>Ligustrum vulgare</i>	F	Understorey
Elder	<i>Sambucus nigra</i>	F	Understorey
Wild Cherry	<i>Prunus avium</i>	O	Understorey
Dog's Mercury	<i>Mercurialis perennis</i>	A	Ground layer
Ivy	<i>Hedera helix</i>	A	Ground layer
Wood False Brome	<i>Brachypodium sylvaticum</i>	A	Ground layer



Martagon Lily	<i>Lilium martagon</i>	LF	Ground layer
Primrose	<i>Primula vulgaris</i>	LF	Ground layer
Wood Sedge	<i>Carex sylvatica</i>	F	Ground layer
Hedge Woundwort	<i>Stachys sylvatica</i>	F	Ground layer
Garlic Mustard	<i>Alliaria petiolata</i>	F	Ground layer
Spurge Laurel	<i>Daphne laureola</i>	O	Ground layer
Common Dog Violet	<i>Viola riviniana</i>	O	Ground layer

### Unit Q (photo 24)

Mature mixed plantation with a very open understorey and almost no ground layer apart from sycamore seedlings. Probably planted soon after World War 2 (it is not present in the 1946 aerial, but shows as mature in a 1999 aerial).

Common name	Latin name	DAFOR rating	Notes
Beech	<i>Fagus sylvatica</i>	F	Canopy
Pedunculate Oak	<i>Quercus robur</i>	F	Canopy
Sycamore	<i>Acer pseudoplatanus</i>	F	Canopy
Scots Pine	<i>Pinus sylvestris</i>	F	Canopy
Holly	<i>Ilex aquifolium</i>	R	Understorey
Common Nettle	<i>Urtica dioica</i>	R	Ground layer
Wood False Brome	<i>Brachypodium sylvaticum</i>	O	Ground layer
Garlic Mustard	<i>Alliaria petiolata</i>	O	Ground layer
Broad Buckler Fern	<i>Dryopteris dilatata</i>	R	Ground layer

Unit QA (photo 26) and adjoining ride (photo 25) - planted in late 2000s. Densely planted with closed canopy, no definable understorey and very poorly developed ground layer.

Ride with abundant false oat, and frequent crested dogstail and knapweed. Although the latter two species could well have been sown as part of a seed mix, this ride can be classified as a neutral grassland along the lines of MG1/MG5 *Arrhenatherum/ Centaurea* grassland.

Common name	Latin name	DAFOR rating	Notes
Grey Willow	<i>Salix cinerea</i>		Self-seeded
Goat Willow	<i>Salix caprea</i>		Self-seeded
Pedunculate Oak	<i>Quercus robur</i>		Planted
Silver Birch	<i>Betula pendula</i>		Planted
Sweet Chestnut	<i>Castanea sativa</i>		Planted
Holly	<i>Ilex aquifolium</i>		Planted
<b>Ride</b>			
False Oat Grass	<i>Arrhenatherum elatius</i>	A	
Cats Ear	<i>Hypochaeris radicata</i>	LA	
Crested Dogs Tail	<i>Cynosurus cristatus</i>	F	
Knapweed	<i>Centaurea nigra</i>	F	
Fleabane	<i>Pulicaria dysenterica</i>	F	
Perforate St John's-wort	<i>Hypericum perforatum</i>	LF	
Common Agrimony	<i>Agrimonia eupatoria</i>	O	
Oxeye Daisy	<i>Leucanthemum vulgare</i>	O	
Hoary Ragwort	<i>Senecio erucifolius</i>	O	
Lesser Trefoil	<i>Trifolium dubium</i>	O	



Broad-leaved Dock	<i>Rumex obtusifolius</i>	0	
Red Fescue	<i>Festuca rubra</i>	0	
Perennial Rye Grass	<i>Lolium perenne</i>	0	
Ribwort Plantain	<i>Plantago lanceolata</i>	0	
Common Vetch	<i>Vicia sativa</i>	0	
Yarrow	<i>Achillea millefolium</i>	0	
Marsh Thistle	<i>Cirsium palustre</i>	0	
White Clover	<i>Trifolium repens</i>	0	
Common Centaury	<i>Centaureum erythraea</i>	0	
Goatsbeard	<i>Tragopogon pratensis</i>	0	
Wood Dock	<i>Rumex sanguineus</i>	0	
Red Campion	<i>Silene dioica</i>	0	
Common Nettle	<i>Urtica dioica</i>	0	
Field Forget-me-not	<i>Myosotis arvensis</i>	0	

### Unit R (photo 28)

Mixed plantation, planted between 1999 and 2003. A species rich hedge runs along the eastern and northern edge with a narrow ride separating it from the rest of the plantation.

Common name	Latin name	DAFOR rating	Notes
Pedunculate Oak	<i>Quercus robur</i>		Canopy
Ash	<i>Fraxinus excelsior</i>		Canopy. Also present in hedge
Sweet Chestnut	<i>Castanea sativa</i>		Canopy. Also present in hedge
Sycamore	<i>Acer pseudoplatanus</i>		Canopy
Scots Pine	<i>Pinus sylvestris</i>		Canopy
Field Maple	<i>Acer campestre</i>		Canopy. Also present in hedge
Larch	<i>Larix decidua</i>		Canopy
Blackthorn	<i>Prunus spinosa</i>		In hedge
Hazel	<i>Corylus avellana</i>		In hedge
Hawthorn	<i>Crataegus monogyna</i>		In hedge
Goat Willow	<i>Salix caprea</i>		Edges
Cypress	<i>Cupressus sp.</i>		Edges
Nipplewort	<i>Lapsana communis</i>		Ground layer
Ground Ivy	<i>Glechoma hederacea</i>		Ground layer
False Oat grass	<i>Arrhenatherum elatius</i>		Ground layer
Common Nettle	<i>Urtica dioica</i>		Ground layer
Rough Chervil	<i>Chaerophyllum temulentum</i>		Ground layer
Wood Avens	<i>Geum urbanum</i>		Ground layer

### Unit S (photos 32-33)

An area of planted woodland, showing up as young plantation on the 1988 aerial photo, and not present on the 1946 aerial. There are mature, neglected hedges along the old route of the A47 which runs along the southern boundary of the woodland. The ground flora, including bee orchid (grid reference location of plant: TG09241237), indicates that the area was probably dry grassland prior to being planted.

Common name	Latin name	DAFOR rating	Notes
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Pedunculate Oak	<i>Quercus robur</i>		Planted - canopy
Ash	<i>Fraxinus excelsior</i>		Planted - canopy
Sycamore	<i>Acer pseudoplatanus</i>		
European Beech	<i>Fagus sylvatica</i>		Planted - canopy
Elder	<i>Sambucus nigra</i>		
Red Oak	<i>Quercus rubra</i>		Planted - canopy
Cypress	<i>Cupressus sp</i>		Planted - understorey
Ground Ivy	<i>Glechoma hederacea</i>	A	Ground layer
Common Nettle	<i>Urtica dioica</i>	F-A	Ground layer
Bracken	<i>Pteridium aquilinum</i>	LA	Ground layer
Rough Meadow Grass	<i>Poa trivialis</i>	LA	Ground layer
Creeping Cinquefoil	<i>Potentilla reptans</i>	F	Ground layer
Field Forget me not	<i>Myosotis arvensis</i>	O	Ground layer
Creeping Buttercup	<i>Ranunculus repens</i>	O	Ground layer
Perforate St John's-wort	<i>Hypericum perforatum</i>	O	Ground layer
Lesser Burdock	<i>Arctium minus</i>	O	Ground layer
Hemlock	<i>Conium maculatum</i>	O	Ground layer
Spear Thistle	<i>Cirsium vulgare</i>	O	Ground layer
Bee Orchid	<i>Ophrys apifera</i>	R(1)	Ground layer

### Unit T (photos 33-34)

Woodland with a mature section and a more recent planted section. The more recent section, which is the western half of the unit, has a mixture of broad-leaved species. The mature section has developed between 1946 (where it may be within the grounds of a demolished property) and 1988. It may have developed from secondary growth as opposed to planting. The presence of bluebell and red campion may result from the previous status as a garden. The older section is assigned to W8. Surrounding the unit is an arable field to the north, the A47 to the south, a planted field margin to the east and set aside to the west.

Common name	Latin name	DAFOR rating	Notes
Common Hawthorn	<i>Crataegus monogyna</i>	F	Recent planting (Also in planted understorey)
Pedunculate Oak	<i>Quercus robur</i>	F	Recent planting (Also in older section)
Ash	<i>Fraxinus excelsior</i>	F	Recent planting (Also in older section and planted understorey)
Common Hazel	<i>Corylus avellana</i>	F	Recent planting
Silver Birch	<i>Betula pendula</i>	F	Recent planting
Holly	<i>Ilex aquifolium</i>	F	Recent planting
Rowan	<i>Sorbus aucuparia</i>	O	Recent planting
Copper Beech	<i>Fagus sylvatica</i> f. <i>Purpurea</i>	O	Older section
Common Nettle	<i>Urtica dioica</i>	LD	Ground layer
Wood False Brome	<i>Brachypodium sylvaticum</i>	O	Ground layer
Common Bluebell	<i>Hyacinthoides non-scripta</i>	O	Ground layer



American Willowherb	<i>Epilobium ciliatum</i>	R	Ground layer
Rough Meadow Grass	<i>Poa trivialis</i>	O	Ground layer
Red Campion	<i>Silene dioica</i>	O	Ground layer
Common Mouse Ear	<i>Cerastium fontanum</i>	O	Ground layer
Cleavers	<i>Galium aparine</i>	F	Ground layer
Dog's Mercury	<i>Mercurialis perennis</i>	F	Older section
Wild Cherry	<i>Prunus avium</i>	F	Older section and planted understorey
Field Forget-me-not	<i>Myosotis arvensis</i>	A	Ground layer
Blackthorn	<i>Prunus spinosa</i>	F	Planted understorey
Bracken	<i>Pteridium aquilinum</i>	LD	Western corner along A47

### Unit U

Two small fields divided by a rough hedge. The northern field (photo 36) has been planted with saplings, and otherwise supports a flora typical of ex-cultivated land on the sandy soils of the area. The southern field is more species rich, but is subject to some disturbance in the southern part of the field. It is assigned to MG1 grassland.

Common name	Latin name	DAFOR rating	Notes
Pedunculate Oak	<i>Quercus robur</i>		Planted
Wild Cherry	<i>Prunus avium</i>		Planted
Silver Birch	<i>Betula pendula</i>		Planted
Field Bindweed	<i>Convolvulus arvensis</i>	A	
Bristly Oxtongue	<i>Helminthotheca echioides</i>	A	
Creeping Bent	<i>Agrostis stolonifera</i>	A	
Yorkshire Fog	<i>Holcus lanatus</i>	LA	
Creeping Thistle	<i>Cirsium arvense</i>	F	
Common Centaury	<i>Centaurium erythraea</i>	F	
Ragwort	<i>Jacobaea vulgaris</i>	F	
Wall Speedwell	<i>Veronica arvensis</i>	O	
Self-heal	<i>Prunella vulgaris</i>	O	
Fleabane	<i>Pulicaria dysenterica</i>	O	
Oxeye Daisy	<i>Leucanthemum vulgare</i>	R	
American Willowherb	<i>Epilobium ciliatum</i>	R	
Scarlet Pimpernel	<i>Anagallis arvensis</i>	R	
Wood False Brome	<i>Brachypodium sylvaticum</i>	R	

### Unit U Southern Field (photo 37)

Common name	Latin name	DAFOR rating	Notes
Ragwort	<i>Jacobaea vulgaris</i>	A	
Yorkshire Fog	<i>Holcus lanatus</i>	A	
False Oat Grass	<i>Arrhenatherum elatius</i>	LA	
Bracken	<i>Pteridium aquilinum</i>	LA	
Perforate St John's-wort	<i>Hypericum perforatum</i>	LA	
Meadow Buttercup	<i>Ranunculus acris</i>	LA	
Grey Willow	<i>Salix cinerea</i>	LA	Hedge



Bristly Oxtongue	<i>Helminthotheca echioides</i>	F	
Self-heal	<i>Prunella vulgaris</i>	F	
Common Centaury	<i>Centaureum erythraea</i>	F	
Fleabane	<i>Pulicaria dysenterica</i>	O-F	
Blackthorn	<i>Prunus spinosa</i>		Hedge
Ash	<i>Fraxinus excelsior</i>		Hedge
Hazel	<i>Corylus avellana</i>		Hedge
Elm	<i>Ulmus sp.</i>		Hedge
Creeping Thistle	<i>Cirsium arvense</i>	O	
Wood False Brome	<i>Brachypodium sylvaticum</i>	O	
Hoary Willowherb	<i>Epilobium parviflorum</i>	O	
White Clover	<i>Trifolium repens</i>	O	
Creeping Buttercup	<i>Ranunculus repens</i>	O	
Ribwort Plantain	<i>Plantago lanceolata</i>	O	
Purple Loosestrife	<i>Lythrum salicaria</i>	R	
Hoary Ragwort	<i>Senecio erucifolius</i>	R	

### Hedges around unit U north

Common name	Latin name	DAFOR rating	Notes
Sycamore	<i>Acer pseudoplatanus</i>		Hedgerow
Dogwood	<i>Cornus sanguinea</i>		Hedgerow
Field Maple	<i>Acer campestre</i>		Hedgerow
Blackthorn	<i>Prunus spinosa</i>		Hedgerow
Elder	<i>Sambucus nigra</i>		Hedgerow
Common Hawthorn	<i>Crataegus monogyna</i>		Hedgerow
Hazel	<i>Corylus avellana</i>		Hedgerow
Dog Rose	<i>Rosa canina</i>		Hedgerow
Barren Brome	<i>Anisantha sterilis</i>		Margin
Creeping Thistle	<i>Cirsium arvense</i>		Margin
Hedge Woundwort	<i>Stachys sylvatica</i>		Margin
Garlic Mustard	<i>Alliaria petiolata</i>		Margin

### Unit V (photo 38)

Tall, rank wet grassland in River Tud floodplain - has the appearance of being enriched by fertiliser. Appears to have a continuous history of grassland since 1946.

Common name	Latin name	DAFOR rating	Notes
Hogweed	<i>Heracleum sphondylium</i>	A	
Creeping Thistle	<i>Cirsium arvense</i>	A	
Common Nettle	<i>Urtica dioica</i>	A	
Cleavers	<i>Galium aparine</i>	A	
Field Bindweed	<i>Convolvulus arvensis</i>	A	
Great Willowherb	<i>Epilobium hirsutum</i>	A	
Silverweed	<i>Potentilla anserina</i>	O	
Meadowsweet	<i>Filipendula ulmaria</i>	O-LA	
Mugwort	<i>Artemisia vulgaris</i>	F	
Cut leaved cranesbill	<i>Geranium dissectum</i>	O	



False oat grass	<i>Arrhenatherum elatius</i>	F	
Cocks-foot	<i>Dactylis glomerata</i>	F	
Yorkshire Fog	<i>Holcus lanatus</i>	F	
Common Mallow	<i>Geranium Sylvestris</i>	O	
False Oat	<i>Arrhenatherum elatus</i>	O	
Ragwort	<i>Senecio jacobaea</i>	O	
Common mallow	<i>Malva sylvestris</i>	O	
Purple Loosestrife	<i>Lythrum salicaria</i>	R	
Burdock	<i>Arctium sp.</i>	R	
Hemlock	<i>Conium maculatum</i>	R	
Soft Rush	<i>Juncus effusus</i>	LA	Ditches and near river
Fat Hen	<i>Chenopodium album</i>	O	
Angelica	<i>Angelica archangelica</i>	R	
Field Bindweed	<i>Convolvulus arvensis</i>	O	
Reed Canary grass	<i>Phalaris arundinacea</i>	A	Ditches and near river
Branched bur-reed	<i>Sparganium erectum</i>		In river
Alder	<i>Alnus glutinosa</i>		Trees near river
Willow Sp.	<i>Salix sp.</i>		Trees near river and around ditches

### Unit W (photos 39-40)

Planted with *Miscanthus* with some tall ruderal vegetation in the northern half. Some seedling alder and other common species (stinging nettle, creeping thistle, cleavers, broad-leaved dock) have grown up within the *Miscanthus*, which was established prior to 2017. There is a narrow strip of species poor grassland between the *Miscanthus* and the river, and the river bank has some semi-natural vegetation - alder, ash, hogweed, stinging nettle, burdock, and elder. The ruderal vegetation in the north has abundant creeping thistle, nettle and broad-leaved dock, but also frequent Canadian fleabane, common figwort, hemlock, ragwort and perforate St. John's wort.

A small area of woodland to the west (known as Grumpy's Wood) has the following:

Common name	Latin name	DAFOR rating	Notes
Hazel	<i>Corylus avellana</i>	F	Canopy
Field maple	<i>Acer campestre</i>	F	Canopy
Ash	<i>Fraxinus excelsior</i>	F	Canopy
Silver birch	<i>Betula pendula</i>	F	Canopy
Sycamore	<i>Acer pseudoplatanus</i>	F	Canopy
Hawthorn	<i>Crataegus monogyna</i>	F	Canopy
Beech	<i>Fagus sylvatica</i>	F	Canopy
Goat willow	<i>Salix caprea</i>	F	Canopy
Pedunculate oak	<i>Quercus robur</i>	F	Canopy
Stinging nettle	<i>Urtica dioica</i>	D	Ground Layer
Cleavers	<i>Galium aparine</i>	D	Ground Layer
Burdock	<i>Arctium sp</i>	O	Ground Layer
Great Willowherb	<i>Epilobium hirsutum</i>	F	Ground Layer
Mugwort	<i>Artemisia vulgaris</i>	F	Ground Layer
Hogweed	<i>Heracleum sphondylium</i>	F	Ground Layer
Creeping thistle	<i>Cirsium arvense</i>	F	Ground Layer

This woodland has been planted within the last 5-10 years.



### Unit X (photo 41)

Planted willow woodland. An open canopy with a well developed understorey dominated by stinging nettle, with more open patches having abundant lesser pond sedge. The aerial record shows the site is wooded in 1946, then clear of trees in 1988 to the early 2000s, before planting of willow between 2006 and 2017.

Common name	Latin name	DAFOR rating	Notes
White Willow	<i>Salix alba</i>	D	Plantation trees
Silver birch	<i>Betula pendula</i>	O	To north-western end
Alder	<i>Alnus glutinosa</i>	O	To north-western end
Ash	<i>Fraxinus excelsior</i>	O	To north-western end
Sycamore	<i>Acer pseudoplatanus</i>	O	To north-western end
Common Nettle	<i>Urtica dioica</i>	D	Ground Layer
Pedunculate oak	<i>Quercus robur</i>		Mature specimen at western end
Cleavers	<i>Galium aparine</i>	A	Ground Layer
Lesser pond sedge	<i>Carex acutiformis</i>	F-A	Ground Layer
Red Campion	<i>Silene dioica</i>	F	Ground Layer
Creeping thistle	<i>Cirsium arvense</i>	F	Ground Layer
Hogweed	<i>Heracleum sphondylium</i>	O	Ground Layer
False oat	<i>Arrhenatherum elatius</i>	O	Ground Layer
Bracken	<i>Pteridium aquilinum</i>	O	Ground Layer

### Unit Y

Unit Y is a small fragment of woodland surrounding two ponds. It was not visited for this survey, or for the previous 2017 survey. It is present as woodland or scrub in both 1946 and 1988, and also on the first edition OS maps (1879-1886) and therefore may be of considerable age, but its ecological value is somewhat limited by its size.

### Unit Z

A small pocket of woodland directly off the current A47. It was not visited for this survey, or for the previous 2017 survey. This shows up as scrub in 1988, and is not present at all in 1946, and therefore is likely to be of lower botanical value than Unit Y.

### Unit TU (photos 30, 31)

A large field with diverse grassland of varied structure. The field was under arable cultivation in 1999, but by 2003 the eastern half of the field was left fallow, and has apparently been since then. The field is apparently cut or topped, perhaps annually. The soils have given rise to a grassland with sandy calcareous characteristics, although its recent origins and consequently recently established plant community make it problematic to assign NVC community. The grassland is tentatively assigned to MG1d *Arrhenatherum* grassland, *Pastinaca sativa* sub-community. It contains the RDB species common cudweed (grid reference location of plant: TG08891245), as well as the local wild basil (grid reference location of plant: TG08881250) and marjoram (grid reference location of plant: TG09081233), and pyramidal orchid (grid reference location of plant: TG08891245).



Common name	Latin name	DAFOR rating	Notes
Ragwort	<i>Jacobaea vulgaris</i>	A	
False Oat Grass	<i>Arrhenatherum elatius</i>	A	
Soft Brome	<i>Bromus hordeaceus</i>	A	
Autumn Hawkbit	<i>Leontodon autumnalis</i>	A	
Yorkshire Fog	<i>Holcus lanatus</i>	A	
Creeping thistle	<i>Cirsium arvense</i>	F-A	
Orange Hawkweed	<i>Pilosella aurantiaca</i>	LA	
Wood Small-reed	<i>Calamagrostis epigejos</i>	LA	
Hard Rush	<i>Juncus inflexus</i>	LA	
Common Broomrape	<i>Orobanche minor</i>	LA	
Squirreltail Fescue	<i>Vulpia bromoides</i>	LA	
Bracken	<i>Pteridium aquilinum</i>	LA	Edges
Wild Marjoram	<i>Origanum vulgare</i>	LA	
Cocks-foot	<i>Dactylis glomerata</i>	F	
Hop Trefoil	<i>Trifolium campestre</i>	F	
Broad-leaved Dock	<i>Rumex obtusifolius</i>	F	
Catsear	<i>Hypochaeris radicata</i>	F	
Hairy sedge	<i>Carex hirta</i>	LF	
Creeping Cinquefoil	<i>Potentilla reptans</i>	LF	
Rosebay Willowherb	<i>Chamaerion angustifolium</i>	O-F	
Self-heal	<i>Prunella vulgaris</i>	O-F	
Common Centaury	<i>Centaurium erythraea</i>	O-F	
Hogweed	<i>Heracleum sphondylium</i>	O	
White Clover	<i>Trifolium repens</i>	O	
Crested Dogs Tail	<i>Cynosurus cristatus</i>	O	
Wild Basil	<i>Clinopodium vulgare</i>	O	
Goats Beard	<i>Tragopogon pratensis</i>	O	
Fleabane	<i>Pulicaria dysenterica</i>	O	
Ribwort Plantain	<i>Plantago lanceolata</i>	O	
Common Nettle	<i>Urtica dioica</i>	O	
Soft Rush	<i>Juncus effusus</i>	O	
Field Forget-me-not	<i>Myosotis arvensis</i>	O	
Common Mouse Ear	<i>Cerastium fontanum</i>	O	
Wild Strawberry	<i>Fragaria vesca</i>	O	
Dark Mullein	<i>Verbascum nigrum</i>	O	
Common Cudweed	<i>Filago vulgaris</i>	O	
Scarlet Pimpernel	<i>Anagallis arvensis</i>	O	
Vipers Bugloss	<i>Echium vulgare</i>	O	
White Champion	<i>Silene latifolia</i>	R-O	
Common Storksbill	<i>Erodium cicutarium</i>	R-O	
Weld	<i>Reseda luteola</i>	R-O	
Hairy Tare	<i>Vicia hirsuta</i>	R	
Buddleia	<i>Buddleja davidii</i>	R	
American Willowherb	<i>Epilobium ciliatum</i>	R	
Yarrow	<i>Achillea millefolium</i>	R	
Cleavers	<i>Galium aparine</i>	R	
Common Poppy	<i>Papaver rhoeas</i>	R	
Red Clover	<i>Trifolium pratense</i>	R	
Red Champion	<i>Silene dioica</i>	R	
Pyramidal Orchid	<i>Anacamptis pyramidalis</i>	R	
Perforate St John's-wort	<i>Hypericum perforatum</i>	R	
Mouse Ear Hawkweed	<i>Hieracium pilosella</i>	R	
Common Bent	<i>Agrostis capillaris</i>	R	



Canadian Fleabane	<i>Conyza canadensis</i>	R	
Common Fiddleneck	<i>Amsinckia micrantha</i>	R	
Smooth Sow thistle	<i>Sonchus oleraceus</i>	R	
Cats Ear	<i>Hypochaeris radicata</i>	R	
Doves foot Cranesbill	<i>Geranium molle</i>	R	
Tufted Vetch	<i>Vicia cracca</i>	R	
Figwort	<i>Scrophularia nodosa</i>	R	
Barren Brome	<i>Anisantha sterilis</i>	R	

### Unit a (photo 46)

This unit was visited for this survey to check its integrity and continued existence. The 2017 survey described it as “a patch of mature woodland with veteran pedunculate oak and ash, and an understorey of hazel, blackthorn, hawthorn, field maple, dogwood, wild cherry and willow. There is a large dry pond or excavation at one end. Ground flora includes dog’s mercury, herb robert, ground ivy, wood melick *Melica uniflora*, and stinging nettles, with much bare earth under the tree canopy.” The woodland also had an amount of white willow, otherwise the survey concurs with the previous description.

The aerial photography sequence shows the existence of a pond with wooded banks in 1946 and 1988, followed by evidence of planting on formerly cultivated land in the area to the north and west in 1999. Most of the woodland is therefore of recent origin. The very small area of woodland around the pond is W8.

### Unit b

This unit was not surveyed, and it is unclear from the previous survey as to what habitat the unit consists of. It is either a hedgerow, or a margin of grassland beside the hedgerow. It is considered unlikely to be ecologically valued.

### Unit c

This unit was visited for this survey to check its integrity and continued existence. Woodland planted shortly before 1999, prior to which it was arable cultivation. A car park indicates a degree of public access. The 1946 aerial shows a small scrub area (Unit d) next to the current car park, which could help to explain the presence of older trees found in 2017. The 2017 description is as follows: “Unit c woodland is similar to Unit a around the edges but supports mixed plantation trees, up to 20m in height and densely planted. The wood is dominated by tall spindly ash, with understorey of hazel, field maple, hornbeam, beech, oak, small leaved lime, crab apple, willow, sweet chestnut, wild cherry and Scots pine. The ground flora includes dog’s mercury but there is mainly bare earth, particularly where tree growth is dense. There are more mature trees within the plantation indicating that this may have been planted to reinforce existing semi-natural woodland, possibly on an ancient woodland site.” However the evidence clearly points to the whole unit being of recent origin, so the more mature trees must just be fast-growing individuals.

### Unit d

This unit was visited for this survey to check its integrity and continued existence. The 2017 report says “Unit d surrounds the car park for the woodland and comprises a fringe of mature pedunculate oak trees, field maple and wild cherry, with a shrub layer of rowan, elder, dog rose and holly. The ground flora is sparse but supports woodland indicator species such as ground ivy, bugle, selfheal and wood avens.” The 1879-1886 OS



first series map indicates this was an old marl pit, thus supporting the opinion of the previous report that this unit is older than the surrounding planted woodland. Assigning NVC community to such a small area is, however, problematic.

### Unit e

Landscape planting with closed canopy and no understorey or ground layer. The 1946 and 1988 aerials indicate a small copse prior to the current planting, and possibly an old pit - however there was no evidence of these from the survey. However the planting is dense and difficult to push through, so a small pocket of older woodland may still exist.

Common name	Latin name	DAFOR rating	Notes
Hazel	<i>Corylus avellana</i>		Canopy
Field Maple	<i>Acer campestre</i>		Canopy
Pedunculate Oak	<i>Quercus robur</i>		Canopy
Ash	<i>Fraxinus excelsior</i>		Canopy
Guelder Rose	<i>Viburnum opulus</i>		edges
Common Hawthorn	<i>Crataegus monogyna</i>		edges

### Unit 88 (photo 47)

This unit was not considered in the previous survey. It is a heterogeneous area of grassland and scrub, which in 1946 was under arable cultivation. In 1988 it appears to have been homogeneous dry grassland, perhaps not long established. By 1999 there is some evidence of earthworking on the site, with a straight track cut across from east to west, and an area of hardstanding in the east, as well as numerous piles of earth in the south. These features have been retained until the present, but are now covered in vegetation typical of disturbed light soils. The unit supports the nationally scarce hoary mullein, and RDB common cudweed. The grassland is mainly MG1 *Arrhenatherum* grassland, with some invading W21 Hawthorn scrub and W24 *Rubus/ Holcus* underscrub.

Common name	Latin name	DAFOR rating	Notes
Ragwort	<i>Jacobaea vulgaris</i>	A	
Ground Ivy	<i>Glechoma hederacea</i>	A	
False Oat Grass	<i>Arrhenatherum elatius</i>	A	
Autumn Hawkbit	<i>Leontodon autumnalis</i>	A	
Common Hawthorn	<i>Crataegus monogyna</i>	A	
Bramble	<i>Rubus agg.</i>	A	
Common Cudweed	<i>Filago vulgaris</i>	LA	RDB NT
Thyme Leaved Sandwort	<i>Arenaria serpyllifolia</i>	LA	
Early forget-me-not	<i>Myosotis ramosissima</i>	LA	
Common Centaury	<i>Centaurium erythraea</i>	F	
Yorkshire Fog	<i>Holcus lanatus</i>	F	
Wild Teasel	<i>Dipsacus fullonum</i>	F	
Field Forget-me-not	<i>Myosotis arvensis</i>	F	
Pedunculate Oak	<i>Quercus robur</i>	F	
Hoary Mullein	<i>Verbascum pulverulentum</i>	LF	Nationally scarce
Germander Speedwell	<i>Veronica chamaedrys</i>	LF	
Common Bent	<i>Agrostis capillaris</i>	O-F	
Creeping Buttercup	<i>Ranunculus repens</i>	O-F	
Yarrow	<i>Achillea millefolium</i>	O	
Common Poppy	<i>Papaver rhoeas</i>	O	
Oxeye Daisy	<i>Leucanthemum vulgare</i>	O	



Rosebay Willowherb	<i>Chamaerion angustifolium</i>	O	
Spear Thistle	<i>Cirsium vulgare</i>	O	
Creeping Cinquefoil	<i>Potentilla reptans</i>	O	
Daisy	<i>Bellis perennis</i>	O	
Broad-leaved Dock	<i>Rumex obtusifolius</i>	O	
Self-heal	<i>Prunella vulgaris</i>	O	
Lesser Stitchwort	<i>Stellaria graminea</i>	O	
Cocks-foot	<i>Dactylis glomerata</i>	O	
Meadow Buttercup	<i>Ranunculus acris</i>	O	
Perforate St John's-wort	<i>Hypericum perforatum</i>	O	
Wild Angelica	<i>Angelica sylvestris</i>	O	
Common Mouse Ear	<i>Cerastium fontanum</i>	O	
Doves-foot cranesbill	<i>Geranium molle</i>	O	
Silverweed	<i>Potentilla anserina</i>	O	
Musk Mallow	<i>Malva moschata</i>	O	
Sycamore	<i>Acer pseudoplatanus</i>	O	
Wild Cherry	<i>Prunus avium</i>	O	
Ash	<i>Fraxinus excelsior</i>	O	
Black Medick	<i>Medicago lupulina</i>	R	
Black Horehound	<i>Ballota nigra</i>	R	
Weld	<i>Reseda luteola</i>	R	
Stinking Iris	<i>Iris foetidissima</i>	R	
Dog Lichen	<i>Peltigera sp.</i>	R	
Vipers Bugloss	<i>Echium vulgare</i>	R	
Lady's Mantle	<i>Alchemilla mollis</i>	R	
Common Agrimony	<i>Agrimonia eupatoria</i>	R	
Scarlet Pimpernel	<i>Anagallis arvensis</i>	R	

### Unit RY1 (photo 42)

Damp grazing marsh with wet ditches, which looks to be relatively unchanged since the Tithe map in 1836-1850. This vegetation matches well with MG9 *Holcus-Deschampsia* grassland. The ditch vegetation is not a close match with any NVC community, but given the abundance of lesser pond sedge, S7 *Carex acutiformis* swamp would be the best fit.

Common name	Latin name	DAFOR rating	Notes
Yorkshire Fog	<i>Holcus lanatus</i>	A	
Red Fescue	<i>Festuca rubra</i>	F	
Creeping Bent	<i>Agrostis stolonifera</i>	F	
Field Bindweed	<i>Convolvulus arvensis</i>	F	
Water Mint	<i>Mentha aquatica</i>	F	
Tufted Hair-grass	<i>Deschampsia caespitosa</i>	F	
Hard Rush	<i>Juncus inflexus</i>	F	
False Oat Grass	<i>Arrhenatherum elatius</i>	LF	
Soft Rush	<i>Juncus effusus</i>	LF	
Lesser pond sedge	<i>Carex acutiformis</i>	LF	Also in ditches
Greater Bird's-foot Trefoil	<i>Lotus uliginosus</i>	O	
Meadowsweet	<i>Filipendula ulmaria</i>	O	
Clustered Dock	<i>Rumex conglomeratus</i>	O	
Small Timothy	<i>Phleum bertolonii</i>	O	
Marsh Horsetail	<i>Equisetum palustre</i>	O	



Common Nettle	<i>Urtica dioica</i>	O	
Curled Dock	<i>Rumex crispus</i>	O	
Common Reed	<i>Phragmites australis</i>	O	
Fleabane	<i>Pulicaria dysenterica</i>	O	
Lesser Stitchwort	<i>Stellaria graminea</i>	R	
Creeping Buttercup	<i>Ranunculus repens</i>	R	
Common Sorrel	<i>Rumex acetosa</i>	R	
Cut-leaved cranesbill	<i>Geranium dissectum</i>	R	
Spear Thistle	<i>Cirsium vulgare</i>	R	
Teasel	<i>Dipsacus fullonum</i>	R	
Reed Canary Grass	<i>Phalaris arundinacea</i>	R	
Lesser Pond Sedge	<i>Carex acutiformis</i>	A	Ditches only
Common Duckweed	<i>Lemna minor</i>	A	Ditches only
Watercress	<i>Nasturtium officinale</i>	LA	Ditches only
Creeping Bent	<i>Agrostis stolonifera</i>	F	Ditches only
Grey Willow	<i>Salix cinerea</i>	F	Ditches only
Common Water Crowfoot	<i>Ranunculus aquatilis</i>	LF	Ditches only
Clustered Dock	<i>Rumex conglomeratus</i>	O-F	Ditches only
Greater Bird's-foot Trefoil	<i>Lotus uliginosus</i>	O	Ditches only
Common Figwort	<i>Scrophularia nodosa</i>	O	Ditches only
Water Forget-me-not	<i>Myosotis scorpioides</i>	O	Ditches only
Water Horsetail	<i>Equisetum fluviatile</i>	O	Ditches only
Valerian	<i>Valeriana officinalis</i>	O	Ditches only
Branched Bur-reed	<i>Sparganium erectum</i>	O	Ditches only
Woody Nightshade	<i>Solanum dulcamara</i>	O	Ditches only
Lesser Water-parsnip	<i>Berula erecta</i>	R	Ditches only
Marsh Marigold	<i>Caltha palustris</i>	R	Ditches only

### Unit RY2 (photo 29)

A corner of an arable field with tall herb vegetation. Recently established.

Common name	Latin name	DAFOR rating	Notes
Ragwort	<i>Senecio jacobaea</i>	A	
Creeping Thistle	<i>Cirsium arvense</i>	A	
Spear Thistle	<i>Cirsium vulgare</i>	A	
Common Mugwort	<i>Artemisia vulgaris</i>	F	
Perforate St John's-wort	<i>Hypericum perforatum</i>	F	
Hoary Ragwort	<i>Senecio erucifolius</i>	O	
Black Medick	<i>Medicago lupulina</i>	O	
Stone Parsley	<i>Sison amomum</i>	R	In hedge to south
Rest Harrow	<i>Ononis repens</i>	R	In hedge to south

### Unit RY3 (photo 43)

Grassland adjacent to the River Tud, recently mown at the time of survey. There is no obvious change in habitat since 1946, although it is suspected that enrichment has occurred at some point. This grassland most closely resembles MG9.

Common name	Latin name	DAFOR rating	Notes
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Creeping Bent	<i>Agrostis stolonifera</i>	A	
Yorkshire Fog	<i>Holcus lanatus</i>	A	
Perennial Rye Grass	<i>Lolium perenne</i>	A	
Common Bent	<i>Agrostis capillaris</i>	F	
White Clover	<i>Trifolium repens</i>	F	
Creeping Thistle	<i>Cirsium arvense</i>	F	
Cocks-foot	<i>Dactylis glomerata</i>	F	
Creeping Buttercup	<i>Ranunculus repens</i>	F	
Hogweed	<i>Heracleum sphondylium</i>	O	
Common Mouse Ear	<i>Cerastium fontanum</i>	O	
Ribwort Plantain	<i>Plantago lanceolata</i>	O	
Reed Canary Grass	<i>Phalaris arundinacea</i>	O	
Upright Hedge Parsley	<i>Torilis japonica</i>	R	
Marsh Marigold	<i>Caltha palustris</i>	R	
Perennial Sow Thistle	<i>Sonchus arvensis</i>		Ditch at west end
Meadowsweet	<i>Filipendula ulmaria</i>		Ditch at west end
Hedge Bindweed	<i>Calystegia sepium</i>		Ditch at west end
Great Willowherb	<i>Epilobium hirsutum</i>		Ditch at west end
Guelder-rose	<i>Viburnum opulus</i>		Hedge to south
Sweet Chestnut	<i>Castanea sativa</i>		Hedge to south
Hazel	<i>Corylus avellana</i>		Hedge to south
Grey Willow	<i>Salix cinerea</i>		Hedge to south
Elder	<i>Sambucus nigra</i>		Hedge to south
Almond Willow	<i>Salix triandra</i>		River
Branched Bur-reed	<i>Sparganium erectum</i>		River
Common Nettle	<i>Urtica dioica</i>		River
Crack Willow	<i>Salix fragilis</i>		River
Alder	<i>Alnus glutinosa</i>		River
Watercress	<i>Nasturtium officinale</i>		River

### Unit RY4 (photo 44)

A grazed field within the floodplain grassland, quite species poor and probably a poor example of MG9 *Holcus-Deschampsia* grassland. Had the appearance of being overgrazed.

Common name	Latin name	DAFOR rating	Notes
Yorkshire Fog	<i>Holcus lanatus</i>		
Cocks-foot	<i>Dactylis glomerata</i>		
Broad-leaved Dock	<i>Rumex obtusifolius</i>		
Creeping Thistle	<i>Cirsium arvense</i>		
Red Fescue	<i>Festuca rubra</i>		
Self-heal	<i>Prunella vulgaris</i>		
Creeping Buttercup	<i>Ranunculus repens</i>		
Perennial Rye Grass	<i>Lolium perenne</i>		
Perennial Sow Thistle	<i>Sonchus arvensis</i>		
Spear Thistle	<i>Cirsium vulgare</i>		

### Unit RYXi

An area of reedswamp with some wooded drier ground in the south-west corner. Until recently there was a lake to the north of this unit, which now appears to have dried up and become colonised by young tree growth. The unit itself shows no evidence of management over the last 20 or so years, and has become colonised by thickets of grey



willow. The dry woodland is quite old and shows on the Tithe map of 1836-50. The NVC community is closest to S26 *Phragmites/ Urtica* fen.

Common name	Latin name	DAFOR rating	Notes
Reed	<i>Phragmites australis</i>	A	
Common Nettle	<i>Urtica dioica</i>	A	
Hedge Bindweed	<i>Calystegia sepium</i>	F	
Great Willowherb	<i>Epilobium hirsutum</i>	F	
Hemp Agrimony	<i>Eupatorium cannabinum</i>	LF	
Grey Willow	<i>Salix cinerea</i>	O-F	
Hop	<i>Humulus lupulus</i>	O	
European Beech	<i>Fagus sylvatica</i>		Copse
Hazel	<i>Corylus avellana</i>		Copse
Common Hawthorn	<i>Crataegus monogyna</i>		Copse
White Poplar	<i>Populus alba</i>		Copse
Blackthorn	<i>Prunus spinosa</i>		Copse
Ash	<i>Fraxinus excelsior</i>		Copse
Sycamore	<i>Acer pseudoplatanus</i>		Copse
Alder	<i>Alnus glutinosa</i>		Copse
Fool's Water-cress	<i>Apium nodiflorum</i>	A	Ditch
Water Forget-me-not	<i>Myosotis scorpioides</i>	O	Ditch
Great Willowherb	<i>Epilobium hirsutum</i>	O	Ditch

#### Unit RYW (photo 45)

A small field with some scrub on higher ground at the southern valley edge, and some damp grassland within the floodplain. There is also a drier area of grassland which holds species such as sweet vernal grass and lesser stitchwort. Unlike Unit L, to the north of the river, this area has never been planted with poplars, and retains a much more natural vegetation cover. The area appears basically unchanged since 1946. The small areas of diverse vegetation make this unit difficult to assign to NVC community, but an MG9 community is the closest fit. Unbranched bur-reed in the river is a scarce species locally.

Common name	Latin name	DAFOR rating	Notes
Red Fescue	<i>Festuca rubra</i>	A	
Soft Rush	<i>Juncus effusus</i>	LA	
Lesser Pond Sedge	<i>Carex acutiformis</i>	LA	
Bracken	<i>Pteridium aquilinum</i>	LA	
Water Mint	<i>Mentha aquatica</i>	LA	
Yorkshire Fog	<i>Holcus lanatus</i>	F-LA	
False Oat Grass	<i>Arrhenatherum elatius</i>	F-LA	
Silverweed	<i>Potentilla anserina</i>	F	
Marsh Marigold	<i>Caltha palustris</i>	F	
Common Nettle	<i>Urtica dioica</i>	F	
Sweet Vernal grass	<i>Anthoxanthum odoratum</i>	F	
Lesser Stitchwort	<i>Stellaria graminea</i>	F	
Tufted Hair-grass	<i>Deschampsia caespitosa</i>	F	
Hairy Sedge	<i>Carex hirta</i>	LF	
Compact Rush	<i>Juncus conglomeratus</i>	O-LF	
Hoary Willowherb	<i>Epilobium parviflorum</i>	O	



Marsh Horsetail	<i>Equisetum palustre</i>	O	
Meadowsweet	<i>Filipendula ulmaria</i>	O	
Greater Bird's-foot Trefoil	<i>Lotus uliginosus</i>	O	
Clustered Dock	<i>Rumex conglomeratus</i>	O	
Germander Speedwell	<i>Veronica chamaedrys</i>	O	
Himalayan Balsam	<i>Impatiens glandulifera</i>	O	River bank
Hoary Ragwort	<i>Senecio erucifolius</i>	R	
Unbranched Bur-reed	<i>Sparganium emersum</i>	R	In river - locally scarce
Meadow Vetchling	<i>Lathyrus pratensis</i>	R	

### Hedgerow AS1

As described under Unit AS2.

### Hedgerow R1 (photo 69)

Species rich hedge and the eastern side of a lane with a diverse and valued bank, including sanicle, primrose and hairy brome. The track is part of an old green lane leading to Star Covert to the north from Honingham. This is likely to qualify as an important hedgerow under the Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Crab Apple	<i>Malus sylvestris</i>		Hedge
Ash	<i>Fraxinus excelsior</i>		Hedge
Horse Chestnut	<i>Aesculus hippocastanum</i>		Hedge
Pedunculate Oak	<i>Quercus robur</i>		Hedge
Field Maple	<i>Acer campestre</i>		Hedge
Hazel	<i>Corylus avellana</i>		Hedge
Wild Plum	<i>Prunus domestica</i>		Hedge
Dog's Mercury	<i>Mercurialis perennis</i>		Bank
Wood False Brome	<i>Brachypodium sylvaticum</i>		Bank
Hedge Woundwort	<i>Stachys sylvatica</i>		Bank
Dogwood	<i>Cornus sanguinea</i>		Bank
Ivy	<i>Hedera helix</i>		Bank
Primrose	<i>Primula vulgaris</i>		Bank
Black Bryony	<i>Tamus communis</i>		Bank
Cocks-foot	<i>Dactylis glomerata</i>		Bank
Hogweed	<i>Heracleum sphondylium</i>		Bank
Sanicle	<i>Sanicula europaea</i>		Bank
Hairy Brome	<i>Zerna ramosa</i>		Bank

### Hedgerow R2 (photo 70)

The hedgerow on the west side opposite R1. More species poor, but the presence of spurge laurel is of interest. Spurge laurel is a species of local distribution in Norfolk. It may qualify as an important hedge as it is part of a green lane feature and may have historical significance.

Common name	Latin name	DAFOR rating	Notes
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Common Hawthorn	<i>Crataegus monogyna</i>	A	
European Horse Chestnut	<i>Aesculus hippocastanum</i>	F	
Field Maple	<i>Acer campestre</i>	O	
Common Lime	<i>Tilia x vulgaris</i>	O	
Spurge Laurel	<i>Daphne laureola</i>	R	
Dog's Mercury	<i>Mercurialis perennis</i>	A	Bank/ verge
Wood False Brome	<i>Brachypodium sylvaticum</i>	F	Bank/ verge
Ivy	<i>Hedera helix</i>	F	Bank/ verge
Hedge Woundwort	<i>Stachys sylvatica</i>	O	Bank/ verge
Bristly Oxtongue	<i>Helminthotheca echioides</i>	R	Bank/ verge

### Hedgerow 1

Lies to the south of Unit Ca woodland; a relatively recent hedgerow which follows the line of the re-routed A47 built between 1946 and 1988. The hedgerow is gappy and with a wire fence running along its length. It is considered unlikely to qualify based on ecological characteristics as an 'Important' hedgerow under The Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Blackthorn	<i>Prunus spinosa</i>		
Elder	<i>Sambucus nigra</i>		
Field Maple	<i>Acer campestre</i>		
Ash	<i>Fraxinus excelsior</i>		
Hazel	<i>Corylus avellana</i>		
Dog Rose	<i>Rosa canina</i>		Margin to south
Hedge Woundwort	<i>Stachys sylvatica</i>		Margin to south
Common Nettle	<i>Urtica dioica</i>		Margin to south
Creeping Thistle	<i>Cirsium arvense</i>		Margin to south
Hogweed	<i>Heracleum sphondylium</i>		Margin to south

### Hedgerow 2

Hedgerow 2a (photo 48) - Dense, wide species-rich hedgerow separating churchyard from overgrown field to the west. This is likely to qualify as an important hedgerow under the Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Blackthorn	<i>Prunus spinosa</i>	A	
Common Hawthorn	<i>Crataegus monogyna</i>	F	
Hazel	<i>Corylus avellana</i>	F	
Lime sp	<i>Tilia sp</i>	O	
Ash	<i>Fraxinus excelsior</i>	O	
Horse Chestnut	<i>Aesculus hippocastanum</i>	O	
Dog Rose	<i>Rosa canina agg.</i>	O	
Pedunculate Oak	<i>Quercus robur</i>	O	
Elm	<i>Ulmus sp.</i>	A	
Crab apple	<i>Malus sylvestris</i>	R	



Hedgerow 2b (photo 49) - Hedgerow to the south of overgrown field, merging with planted woodland of Unit C to the west, with a distinct hedge bank. This is likely to qualify as an important hedgerow under the Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Wild Cherry	<i>Prunus avium</i>	O	
Pedunculate Oak	<i>Quercus robur</i>	O	
Field Maple	<i>Acer campestre</i>	O	
Common Hawthorn	<i>Crataegus monogyna</i>	F	
Blackthorn	<i>Prunus spinosa</i>	F	
Ash	<i>Fraxinus excelsior</i>	O	

### Hedgerow 3 (photo 50)

Species rich hedge with oak and ash standards. As noted in the previous report, although there are 6+ locally native woody species over the entire length of the hedgerow, these do not all occur within any 30m section so it is considered unlikely to qualify based on ecological characteristics as an 'Important' hedgerow under The Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Field Maple	<i>Acer campestre</i>	F	Hedgerow
Blackthorn	<i>Prunus spinosa</i>	F	Hedgerow
Elder	<i>Sambucus nigra</i>	F	Hedgerow
Common Hawthorn	<i>Crataegus monogyna</i>	F	Hedgerow
Hazel	<i>Corylus avellana</i>	F	Hedgerow
Dog Rose	<i>Rosa canina</i>	F	Hedgerow
Pedunculate Oak	<i>Quercus robur</i>	O	Standard tree
Ash	<i>Fraxinus excelsior</i>	O	Standard trees
Plum	<i>Prunus Sp.</i>	O	Hedgerow

### Hedgerow 4 (photo 51)

Species rich hedgerows with species rich steep hedge banks along the road, forming a holloway in places. This is likely to qualify as an important hedgerow under the Hedgerow Regulations. The hedge is gappy in places.

Common name	Latin name	DAFOR rating	Notes
Dogwood	<i>Cornus sanguinea</i>	O	Hedgerow
Pedunculate Oak	<i>Quercus robur</i>	F	Some standard trees
Field Maple	<i>Acer campestre</i>	F	Hedgerow
Hazel	<i>Corylus avellana</i>	F	Hedgerow
Blackthorn	<i>Prunus spinosa</i>	F	Hedgerow
Ash	<i>Fraxinus excelsior</i>	F	Hedgerow
Elm	<i>Ulmus minor</i>	O	Hedgerow
Holly	<i>Ilex aquifolium</i>	O	Hedgerow
Bramble	<i>Rubus agg.</i>	F	Hedge bank
Catsear	<i>Hypochaeris radicata</i>	A	Hedge bank
Goatsbeard	<i>Tragopogon pratensis</i>	O	Hedge bank
Tufted Vetch	<i>Vicia cracca</i>	O	Hedge bank
Perforate St John's-wort	<i>Hypericum perforatum</i>	F	Hedge bank
Wild strawberry	<i>Fragaria vesca</i>	F	Hedge bank



Bracken	<i>Pteridium aquilinum</i>	LA	Hedge bank
Hogweed	<i>Heracleum sphondylium</i>	F	Hedge bank
Ribwort Plantain	<i>Plantago lanceolata</i>	A	Hedge bank
Field Scabious	<i>Knautia arvensis</i>	LA	Hedge bank
Field Bindweed	<i>Convolvulus arvensis</i>	O	Hedge bank
Curled dock	<i>Rumex crispus</i>	O	Hedge bank
Common Nettle	<i>Urtica dioica</i>	LA	Hedge bank
Knapweed	<i>Centaurea nigra</i>	F	Hedge bank
Ragwort	<i>Jacobaea vulgaris</i>	O	Hedge bank
Herb Robert	<i>Geranium robertianum</i>	O	Hedge bank
Yarrow	<i>Achillea millefolium</i>	F	Hedge bank
Creeping cinquefoil	<i>Potentilla reptans</i>	F	Hedge bank
Nipplewort	<i>Lapsana communis</i>	F	Hedge bank
Smooth sowthistle	<i>Sonchus oleraceus</i>	F	Hedge bank
Bladder campion	<i>Silene vulgaris</i>	R	Hedge bank

### Hedgerow 5 (photo 52)

A predominantly blackthorn species poor hedge with a species poor base/ margin. It is considered unlikely to qualify based on ecological characteristics as an 'Important' hedgerow under The Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Blackthorn	<i>Prunus spinosa</i>	D	Hedgerow
Common Hawthorn	<i>Crataegus monogyna</i>	F	Hedgerow
Hazel	<i>Corylus avellana</i>	F	Hedgerow
Pedunculate Oak	<i>Quercus robur</i>	F	Standard trees
White Bryony	<i>Bryonia alba</i>	F	Hedgerow
Dog Rose	<i>Rosa canina</i>	O	Hedgerow
Common Couch	<i>Elytrigia repens</i>	A	Margin
Cocksfoot	<i>Dactylis glomerata</i>	A	Margin
False Oat	<i>Arrhenatherum elatius</i>	A	Margin
Ragwort	<i>Senecio jacobaea</i>	F	Margin
Nipplewort	<i>Lapsana communis</i>	F	Margin
Common Nettle	<i>Urtica dioica</i>	A	Margin
Bracken	<i>Pteridium aquilinum</i>	F	Margin
Creeping Thistle	<i>Cirsium arvense</i>	F	Margin
Hedge Woundwort	<i>Stachys sylvatica</i>	R	Margin
Spear Thistle	<i>Cirsium vulgare</i>	O	Margin

### Hedgerow 6 (photo 53)

A species rich hedgerow with a species poor margin. This is likely to qualify as an important hedgerow under the Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Common Hawthorn	<i>Crataegus monogyna</i>	A	Hedgerow
Hazel	<i>Corylus avellana</i>	A	Hedgerow
Blackthorn	<i>Prunus spinosa</i>	A	Hedgerow
Elm	<i>Ulmus sp.</i>	F	Hedgerow
Dogwood	<i>Cornus sanguinea</i>	F	Hedgerow
Buckthorn	<i>Rhamnus catharticus</i>	O	Hedgerow





Pedunculate Oak	<i>Quercus robur</i>	R	Standard trees
Dog Rose	<i>Rosa canina</i>	O	Hedgerow
Spear Thistle	<i>Cirsium vulgare</i>	O	Margin
False oat grass	<i>Arrhenatherum elatius</i>	A	Margin
Cocks foot	<i>Dactylis glomerata</i>	A	Margin
Ragwort	<i>Jacobaea vulgaris</i>	F	Margin
Common Nipplewort	<i>Lapsana communis</i>	F	Margin
Common Couch	<i>Elytrigia repens</i>	F	Margin
White Bryony	<i>Bryonia dioica</i>	F	Hedgerow
Creeping Thistle	<i>Cirsium arvense</i>	A	Margin
Bracken	<i>Pteridium aquilinum</i>	LA	Margin

### Hedgerow AS2 (photo 54)

Species poor gappy hedgerow with a species poor bank/ margin to the south of hedgerows 5 and 6. It is considered unlikely to qualify based on ecological characteristics as an 'Important' hedgerow under The Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Common Hawthorn	<i>Crataegus monogyna</i>	A	Hedgerow
Hazel	<i>Corylus avellana</i>	O	Hedgerow
Pedunculate Oak	<i>Quercus robur</i>	A	Standard trees
Field Maple	<i>Acer campestre</i>	F	Hedgerow
Garlic Mustard	<i>Alliaria petiolata</i>	O	Margin
Burdock	<i>Arctium sp</i>	O	Margin
Spear Thistle	<i>Cirsium vulgare</i>	A	Margin
Bramble	<i>Rubus agg.</i>	LA	Margin
Cleavers	<i>Galium aparine</i>	A	Margin
Creeping Thistle	<i>Cirsium arvense</i>	A	Margin
Nipplewort	<i>Lapsana communis</i>	F	Margin
Common fumitory	<i>Fumaria officinalis</i>	F	Margin
Mugwort	<i>Artemisia vulgaris</i>	F	Margin

### Hedgerow AS3 (photo 55)

A species rich hedgerow with species poor margins. it is considered unlikely to qualify based on ecological characteristics as an 'Important' hedgerow under The Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Blackthorn	<i>Prunus spinosa</i>	D (north)	Hedgerow
Elder	<i>Sambucus nigra</i>		Hedgerow
Field Maple	<i>Acer campestre</i>		Hedgerow
Ash	<i>Fraxinus excelsior</i>	D (south)	Hedgerow
Hazel	<i>Corylus avellana</i>		Hedgerow
Spindle	<i>Euonymus europaeus</i>		Hedgerow
Dog Rose	<i>Rosa canina</i>		Hedgerow
Hedge Woundwort	<i>Stachys sylvatica</i>		Margin
Common Nettle	<i>Urtica dioica</i>		Margin
Creeping Thistle	<i>Cirsium arvense</i>		Margin
Hogweed	<i>Heracleum sphondylium</i>		Margin

### Hedgerow 7 (photo 56)



On the eastern side of a green lane track. This, together with Hedgerow 8, is likely to qualify as an important hedgerow under the Hedgerow Regulations. The ground flora suggests an older origin to the green lane.

Common name	Latin name	DAFOR rating	Notes
Common Hawthorn	<i>Crataegus monogyna</i>		Hedgerow
Pedunculate Oak	<i>Quercus robur</i>		Hedgerow
Spindle	<i>Euonymus europaeus</i>		Hedgerow
Privet	<i>Ligustrum vulgare</i>		Hedgerow
Dog Rose	<i>Rosa canina</i> agg.		Hedgerow
Elder	<i>Sambucus nigra</i>		Hedgerow
Hedge Woundwort	<i>Stachys sylvatica</i>		Verge
Common Nettle	<i>Urtica dioica</i>		Verge
Rough Chervil	<i>Chaerophyllum temulentum</i>		Verge
Field Bindweed	<i>Convolvulus arvensis</i>		Verge
Ivy	<i>Hedera helix</i>		Verge
Wood False Brome	<i>Brachypodium sylvaticum</i>	F	Verge
Common Agrimony	<i>Agrimonia eupatoria</i>	O	Verge
Dog's Mercury	<i>Mercurialis perennis</i>		Verge

### Hedgerow 8

On the west side of a green lane track, opposite hedgerow 7. This is likely to qualify as an important hedgerow under the Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Common Hawthorn	<i>Crataegus monogyna</i>		Hedgerow
Blackthorn	<i>Prunus spinosa</i>		Hedgerow
Pedunculate Oak	<i>Quercus robur</i>		Hedgerow
Horse chestnut	<i>Aesculus hippocastanum</i>		Hedgerow
Field Maple	<i>Acer campestre</i>		Hedgerow
Wood False Brome	<i>Brachypodium sylvaticum</i>	A	Verge
Common Nettle	<i>Urtica dioica</i>	F	Verge
Ivy	<i>Hedera helix</i>	F	Verge
Dog's Mercury	<i>Mercurialis perennis</i>	F	Verge
Knapweed	<i>Centaurea nigra</i>	O	Verge
Hedge Woundwort	<i>Stachys sylvatica</i>	O	Verge
Rough Chervil	<i>Chaerophyllum temulentum</i>	O	Verge
Field Bindweed	<i>Convolvulus arvensis</i>	O	Verge
Common Agrimony	<i>Agrimonia eupatoria</i>	O	Verge

### Hedgerow 9

Hedgerow with a grassy field margin. Dwarf spurge in the adjacent field margin (photo 27), a local species in Norfolk. This is likely to qualify as an important hedgerow under the Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Field Maple	<i>Acer campestre</i>		Hedgerow



Hazel	<i>Corylus avellana</i>		Hedgerow
Pedunculate oak	<i>Quercus robur</i>		Hedgerow
Common Hawthorn	<i>Crataegus monogyna</i>		Hedgerow
Dog Rose	<i>Rosa canina</i>		Hedgerow
Bramble	<i>Rubus agg.</i>		Hedgerow
Dwarf Spurge	<i>Euphorbia exigua</i>		RDB VU (England)
False Oat Grass	<i>Arrhenatherum elatius</i>		
Oxeye Daisy	<i>Leucanthemum vulgare</i>		
Creeping Bent	<i>Agrostis stolonifera</i>		
Goats Beard	<i>Tragopogon pratensis</i>		
Cocks-foot	<i>Dactylis glomerata</i>		
Creeping Thistle	<i>Cirsium arvense</i>		
Red Fescue	<i>Festuca rubra</i>		
Field Bindweed	<i>Convolvulus arvensis</i>		

### Hedgerow 9/10 (Photo 59)

Species rich hedged green lane with an adjoining pond to the east. The pond is especially well vegetated. This is likely to qualify as an important hedgerow under the Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Ash	<i>Fraxinus excelsior</i>		Hedgerow
Common Hawthorn	<i>Crataegus monogyna</i>		Hedgerow
Crab Apple	<i>Malus sylvestris</i>		Hedgerow
Blackthorn	<i>Prunus spinosa</i>		Hedgerow
Elm	<i>Ulmus sp.</i>		Hedgerow
Hazel	<i>Corylus avellana</i>		Hedgerow
Grey willow	<i>Salix cinerea</i>		Hedgerow
False Oat Grass	<i>Arrhenatherum elatius</i>	A	
Oxeye Daisy	<i>Leucanthemum vulgare</i>	F	
Bramble	<i>Rubus agg.</i>	LF	
Knapweed	<i>Centaurea nigra</i>	F	
Yorkshire Fog	<i>Holcus lanatus</i>	F	
Creeping Bent	<i>Agrostis stolonifera</i>	F	
Hogweed	<i>Heracleum sphondylium</i>	O	
Curled dock	<i>Rumex crispus</i>	O	
Wood False Brome	<i>Brachypodium sylvaticum</i>	O	
Self-Heal	<i>Prunella vulgaris</i>	O	
Black Bryony	<i>Tamus communis</i>	O	
Cocks-foot	<i>Dactylis glomerata</i>	O	
Small Timothy	<i>Phleum bertolonii</i>	O	
Lesser Pond Sedge	<i>Carex acutiformis</i>		Pond
Hard Rush	<i>Juncus inflexus</i>		Pond
Gypsywort	<i>Lycopus europaeus</i>		Pond
Bulrush	<i>Typha latifolia</i>		Pond
Branched Bur Reed	<i>Sparganium erectum</i>		Pond
Clustered Dock	<i>Rumex conglomeratus</i>		Pond
Water Forget-me-not	<i>Myosotis scorpioides</i>		Pond
Celery-leaved buttercup	<i>Ranunculus sceleratus</i>		Pond
Woody Nightshade	<i>Solanum dulcamara</i>		Pond
Hairy Willowherb	<i>Epilobium hirsutum</i>		Pond



### Hedgerow 10 (photo 60)

Species rich hedge alongside busy road, with a species poor road verge. This is likely to qualify as an important hedgerow under the Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Field Maple	<i>Acer campestre</i>		Hedgerow
Common Hawthorn	<i>Crataegus monogyna</i>		Hedgerow
Elm	<i>Ulmus sp.</i>		Hedgerow
Pedunculate Oak	<i>Quercus robur</i>		Hedgerow
Sycamore	<i>Acer pseudoplatanus</i>		Hedgerow
Blackthorn	<i>Prunus spinosa</i>		Hedgerow
False Oat Grass	<i>Arrhenatherum elatius</i>		Verge
Mugwort	<i>Artemisia vulgaris</i>		Verge
Bramble	<i>Rubus agg.</i>		Verge
Yarrow	<i>Achillea millefolium</i>		Verge
Hogweed	<i>Heracleum sphondylium</i>		Verge
Field Bindweed	<i>Convolvulus arvensis</i>		Verge
Creeping Thistle	<i>Cirsium arvense</i>		Verge

### Hedgerow 11

Hedgerow along the northern edge of Unit TU. Not surveyed in detail for this report, but the previous 2017 survey described it as “*This comprises a gappy hedgerow alongside the A47 with a line of roadside trees up to 25m rather than an intact species-rich hedgerow. Tree and shrub species present comprise willow, silver birch, sycamore, hawthorn, ash and dogwood*”. The hedgerow was noted in 2019 as still being present much as described. It is considered unlikely to qualify based on ecological characteristics as an ‘Important’ hedgerow under The Hedgerow Regulations.

### Hedgerow 12 (photo 61)

Species rich hedge with a species rich road verge/ bank on the opposite side of the narrow unclassified road. Some of the species also occur on the hedge side of the road. The RDB species common cudweed was found on this verge, along with other species indicative of neutral grassland on sandy soils. This is likely to qualify as an important hedgerow under the Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Sycamore	<i>Acer pseudoplatanus</i>		Hedgerow
Elm	<i>Ulmus sp.</i>		Hedgerow
Field Maple	<i>Acer campestre</i>		Hedgerow
Hazel	<i>Corylus avellana</i>		Hedgerow
Sweet Chestnut	<i>Castanea sativa</i>		Hedgerow
Blackthorn	<i>Prunus spinosa</i>		Hedgerow
Wild Privet	<i>Ligustrum vulgare</i>		Hedgerow
Ash	<i>Fraxinus excelsior</i>		Hedgerow
Hawthorn	<i>Crataegus monogyna</i>		Hedgerow
Dog Rose	<i>Rosa canina agg.</i>		Hedgerow
Perforate St John's-wort	<i>Hypericum perforatum</i>		Verge/ bank opposite
Herb Robert	<i>Geranium robertianum</i>		Verge/ bank opposite
Wild Angelica	<i>Angelica sylvestris</i>		Verge/ bank opposite
Creeping Cinquefoil	<i>Potentilla reptans</i>		Verge/ bank opposite
Bracken	<i>Pteridium aquilinum</i>		Verge/ bank opposite



Common Mugwort	<i>Artemisia vulgaris</i>		Verge/ bank opposite
Bramble	<i>Rubus agg.</i>		Verge/ bank opposite
Wild Strawberry	<i>Fragaria vesca</i>		Verge/ bank opposite
Dog's Mercury	<i>Mercurialis perennis</i>		Verge/ bank opposite
White Campion	<i>Silene latifolia</i>		Verge/ bank opposite
Nipplewort	<i>Lapsana communis</i>		Verge/ bank opposite
Common Toadflax	<i>Linaria vulgaris</i>		Verge/ bank opposite
Lesser Calamint	<i>Clinopodium calamintha</i>		Verge/ bank opposite
Field Scabious	<i>Knautia arvensis</i>		Verge/ bank opposite
Common Cudweed	<i>Filago vulgaris</i>		RDB NT Verge/ bank opposite
Red Fescue	<i>Festuca rubra</i>		Verge/ bank opposite
Ground Ivy	<i>Glechoma hederacea</i>		Verge/ bank opposite
White Bryony	<i>Bryonia dioica</i>		Verge/ bank opposite
Rosebay Willowherb	<i>Chamaerion angustifolium</i>		Verge/ bank opposite
Soft Rush	<i>Juncus effusus</i>		Verge/ bank opposite
Field Horsetail	<i>Equisetum arvense</i>		Verge/ bank opposite

### Hedgerow 13 (photo 62)

Intact hedge, but species poor, with species poor margin/ base. it is considered unlikely to qualify based on ecological characteristics as an 'Important' hedgerow under The Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Common Hawthorn	<i>Crataegus monogyna</i>	D	Hedgerow
Blackthorn	<i>Prunus spinosa</i>	O	Hedgerow
Elder	<i>Sambucus nigra</i>	O	Hedgerow
Common Nettle	<i>Urtica dioica</i>	D	Margin
White Clover	<i>Trifolium repens</i>	A	Margin
White Bryony	<i>Bryonia dioica</i>	F	Margin
Barren Brome	<i>Anisantha sterilis</i>	A	Margin
Hedge Mustard	<i>Sisymbrium officinale</i>	F	Margin
Cut-leaved Cranesbill	<i>Geranium dissectum</i>	F	Margin
Cleavers	<i>Galium aparine</i>	A	Margin

### Hedgerow 14 (photo 63)

Gappy hedge with mature trees and dead wood. This is likely to qualify as an important hedgerow under the Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Alder	<i>Alnus glutinosa</i>		Standard trees
Pedunculate Oak	<i>Quercus robur</i>		Standard trees
Ash	<i>Fraxinus excelsior</i>		Standard trees
Common Hawthorn	<i>Crataegus monogyna</i>	A	Hedgerow
Hazel	<i>Corylus avellana</i>	A	Hedgerow
Field Maple	<i>Acer campestre</i>	F	Hedgerow
Elder	<i>Sambucus nigra</i>	F	Hedgerow
Dog Rose	<i>Rosa canina</i>	O	Hedgerow



Cleavers	<i>Galium aparine</i>	A	Hedge base
Common Nettle	<i>Urtica dioica</i>	R	Hedge base
Nipplewort	<i>Lapsana communis</i>	O	Hedge base
Field Forget-me-not	<i>Myosotis arvensis</i>	O	Hedge base
Field Horsetail	<i>Equisetum arvense</i>	LA	Hedge base
Hogweed	<i>Heracleum sphondylium</i>	O	Hedge base
Cocks-foot	<i>Dactylis glomerata</i>	A	Hedge base
Hedge Woundwort	<i>Stachys sylvatica</i>	R	Hedge base

### Hedgerow 14a (Continues on from 14), more recently planted (photo 64)

A more recently planted section of hedge. it is considered unlikely to qualify based on ecological characteristics as an 'Important' hedgerow under The Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Dog Rose	<i>Rosa canina agg</i>	F	
Common Hawthorn	<i>Crataegus monogyna</i>	F	
Hazel	<i>Corylus avellana</i>	F	
Elder	<i>Sambucus nigra</i>	F	
Spindle	<i>Euonymus europaeus</i>	F	
Cocks-foot	<i>Dactylis glomerata</i>	A	Hedge base
Common Couch	<i>Elytrigia repens</i>	A	Hedge base
False Oat	<i>Arrhenatherum elatius</i>	A	Hedge base
Hogweed	<i>Heracleum sphondylium</i>	O	Hedge base
Rough Meadow grass	<i>Poa trivialis</i>	A	Hedge base

### Hedgerow 15 (photo 65)

More a line of trees than a hedgerow, Species rich with a shaded understorey and species poor base. This is likely to qualify as an important hedgerow under the Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Hazel	<i>Corylus avellana</i>	A	Trees
Field Maple	<i>Acer campestre</i>	A	Trees
Pedunculate Oak	<i>Quercus robur</i>	O	Trees
Crab Apple	<i>Malus sylvestris</i>	O	Trees
Ash	<i>Fraxinus excelsior</i>	O	Trees
Hornbeam	<i>Carpinus betulus</i>	R	Trees
Holly	<i>Ilex aquifolium</i>	R	Trees
Dog's Mercury	<i>Mercurialis perennis</i>	R	Ground Layer
Hedge Woundwort	<i>Stachys sylvatica</i>	O	Ground Layer
Herb Robert	<i>Geranium robertianum</i>	O	Ground Layer
Bramble	<i>Rubus Agg.</i>	LA	Ground Layer

### Hedgerow 16 (photo 66)

Gappy hedgerow with trees, species poor hedge base. it is considered unlikely to qualify based on ecological characteristics as an 'Important' hedgerow under The Hedgerow Regulations.



Common name	Latin name	DAFOR rating	Notes
Field Maple	<i>Acer campestre</i>	O	Hedgerow
Pedunculate Oak	<i>Quercus robur</i>	F	Hedgerow
Blackthorn	<i>Prunus spinosa</i>	F	Hedgerow
Elder	<i>Sambucus nigra</i>	F	Hedgerow
Common Hawthorn	<i>Crataegus monogyna</i>	O	Hedgerow
Ash	<i>Fraxinus excelsior</i>	O	Hedgerow
Common Nettle	<i>Urtica dioica</i>	LD	Margin
Hogweed	<i>Heracleum sphondylium</i>	A	Margin
Ivy	<i>Hedera helix</i>	F	Margin
Wood Avens	<i>Geum urbanum</i>	R	Margin
Hedge Woundwort	<i>Stachys sylvatica</i>	F	Margin
Burdock	<i>Arctium sp.</i>	F	Margin
Mugwort	<i>Artemisia vulgaris</i>	F	Margin
Spear Thistle	<i>Cirsium vulgare</i>	O	Margin
False oat grass	<i>Arrhenatherum elatius</i>	A	Margin
Cocks foot	<i>Dactylis glomerata</i>	A	Margin
Broad Leaved Dock	<i>Rumex obtusifolius</i>	LA	Margin
Field Bindweed	<i>Convolvulus arvensis</i>	O	Margin

#### Hedgerow V (photo 67)

Gappy - line of scrubby trees with field maple and oak standards. it is considered unlikely to qualify based on ecological characteristics as an 'Important' hedgerow under The Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Field Maple	<i>Acer campestre</i>	A	Standards
Pedunculate Oak	<i>Quercus robur</i>	O	Standards
Blackthorn	<i>Prunus spinosa</i>	D	Hedgerow
Elder	<i>Sambucus nigra</i>	O	Hedgerow
Common Hawthorn	<i>Crataegus monogyna</i>	A	Hedgerow

#### Hedgerow AS4 (SW of Unit F)(photo 68)

A species rich hedgerow with species poor margins. it is considered unlikely to qualify based on ecological characteristics as an 'Important' hedgerow under The Hedgerow Regulations.

Common name	Latin name	DAFOR rating	Notes
Blackthorn	<i>Prunus spinosa</i>	D	Hedgerow
Buckthorn	<i>Rhamnus cathartica</i>	O	Hedgerow
Hazel	<i>Corylus avellana</i>	F	Hedgerow
Dog Rose	<i>Rosa canina agg.</i>	O	Hedgerow
Ivy	<i>Hedera helix</i>	O	Hedgerow
Common Hawthorn	<i>Crataegus monogyna</i>	F	Hedgerow
Elder	<i>Sambucus nigra</i>	F	Hedgerow
Pedunculate Oak	<i>Quercus robur</i>	F	Tree
White Bryony	<i>Bryonia dioica</i>	F	Hedgerow
Common Nettle	<i>Urtica dioica</i>	A	Margin
Creeping Thistle	<i>Cirsium arvense</i>	A	Margin



Common Mallow	<i>Malva sylvestris</i>	A	Margin
Red Campion	<i>Silene dioica</i>	F	Margin
Broad-leaved Dock	<i>Rumex obtusifolius</i>	F	Margin
White Campion	<i>Silene latifolia</i>	F	Margin
Spear Thistle	<i>Cirsium vulgare</i>	O	Margin
Common Poppy	<i>Papaver rhoeas</i>	F	Margin
Groundsel	<i>Senecio vulgaris</i>	F	Margin
Bracken	<i>Pteridium aquilinum</i>	LA	Margin
Common Dog Violet	<i>Viola riviniana</i>	O	Margin

### 5.3 Constraints and Limitations of Survey

The optimal period to undertake botanical survey including identification of plant species is between April and September. The botanical survey was completed in mid-July which is within the optimal survey window for a Phase 1 habitat survey. Therefore this is not considered to be a limitation to the accurate assessment of the habitats and the dominant species of the respective vegetation types were visible and identifiable.

The survey did not involve detailed NVC quadrat work within each habitat unit and hence this report cannot be considered a comprehensive assessment of the botanical composition of each unit. However, it is considered that additional quadrat survey would be unlikely to affect the overall ecological evaluation of each of the habitats.

Access was generally available across the survey area except for Units H, I, J and b; apart from this there were no known limitations in areas where access was required.

Identification of habitat units to survey relied on the baseline information provided on the previous botanical survey report (AMEY, 2017), with additions in areas further identified as being of potential value. At times during the field survey there were habitat units which were not as mapped. As far as possible any additional habitats located were added to this survey, but there may be others which have been missed.

Please note that the A47 itself has a band of roadside trees/mature overgrown hedgerow which has not been picked up on the Phase 1 Habitat map and has largely not been assessed in this report.



## 6. Evaluation of Features

### 6.1 Habitat Units

Unit	NVC type	Ecological value
A	Plantation - n/a	Local
AS6	Closest to MG1	District
B	Plantation - n/a	Local
AS5	Plantation (n/a)	Local
Ca	Plantation - n/a	Priority Habitat - local
Cb	W8	Priority Habitat - local
D	Plantation - n/a	Priority Habitat - local
E	Not assignable	Local
F	Fragment - n/a	Local
G	Hedge, W8 and MG1	Local
AS1	Not assignable	
AS2	Hedge W8, and plantation	Priority Habitat - local
H	W8	District
Ia	Not assignable	District
Ib	Not assignable	County
Ic	MG9	Priority Habitat - County
Id	Not assignable	Local (- district)
J	Plantation - n/a	Local
K	W8a	Priority Habitat - County
L	MG1/ S28	District
M	Plantation - n/a	Local
N	Plantation over MG1	Local
O	Not assignable	Local (- district)
P	W8	Priority Habitat - District/ county
Q	Not assignable	Local
QA	Plantation - n/a	Local
R	Plantation - n/a	Local
S	Plantation - n/a	Priority Habitat - local
T	W8/ n/a	Priority Habitat - local
U	South part - MG1, north n/a	Local (- district)
V	Not assignable	Priority Habitat - district
W	Not assignable	Priority Habitat - district
X	Not assignable	Priority Habitat - district
Y	Not assignable	Local
Z	Not assignable	Local
TU	MG1d	District
a	Fragment of W8 around pond, otherwise plantation	Priority Habitat - local
b	Not assignable	
c	Plantation (n/a)	District
d	Not assignable	District
e	Plantation (n/a)	Priority Habitat - local
Unit 88	MG1/W21/W24	District
RY1	MG9	District
RY2	Not assignable	Local
RY3	MG9	District



Unit	NVC type	Ecological value
RY4	MG9	District
RYW	MG9	Priority Habitat - County
RYXi	S26	Priority Habitat - County

## 6.2 Hedgerows

Hedgerow	Likely to be important?
AS1	Yes
R1	Yes
R2	May qualify on historical grounds
1	No
2a	Yes
2b	Yes
3	No
4	Yes
5	No
6	Yes
AS2	No
AS3	No
7	Yes
8	Yes
9	Yes
9/10	Yes
10	Yes
11	No
12	Yes
13	No
14	Yes
14a	No
15	Yes
16	No
V	No
AS4	No

## 7. Impact Assessment

### 7.1. Potential impacts on ecological receptors

*Note - definitions: Impact - Actions resulting in changes to an ecological feature. For example, the construction activities of a development removing a hedgerow.*

*Effect - Outcome to an ecological feature from an impact. For example, the effects on a dormouse population from loss of a hedgerow.*

Impact assessment is made with reference to the CIEEM EclA Guidelines<sup>8</sup>.

Throughout, italicised words are used in the technical sense defined within the CIEEM guidance. This refers to the geographical context of the impact or effect. Hence, the following geographical frame of reference will be used to describe the ecological impacts and effects, or adapted to suit local circumstances:

- International and European
- National
- Regional
- County
- District\*
- Local

\*District level is not listed in the EclA guidance, but is included within WFE reports as it is a useful and readily identifiable geographic unit.

The local/parish geographical context for the proposal site is defined here as the collective civil parishes of North Tuddenham, Hockering, Honingham and Easton. The district context is problematic to define, since the corridor is partly in three LPA districts, but it is all included in the mid-Norfolk National Character Area<sup>9</sup>, in which the site is situated. The county context is Norfolk, and the region is East Anglia.

The EclA guidelines espouse a quantification of impact/effect magnitude where possible. Where this is not available or uncertain, impact magnitude categories and criteria are defined based on Byron (2000)<sup>10</sup>. These categories are often also used as shorthand to summarise magnitude.

- *Major negative* - that which has a harmful effect on the integrity of a conservation site or the conservation status of a population of a species within a defined geographical area; e.g., fundamentally reduces the capacity to support wildlife for the entirety of a conservation site, or compromises the persistence of a species' population at a defined locality.
- *Intermediate negative* - that which has no adverse effect on the integrity of a conservation site or the conservation status of a species' population, but does have an important adverse effect in terms of achieving certain ecological objectives; e.g.,

<sup>8</sup> CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester

<sup>9</sup> <http://publications.naturalengland.org.uk/publication/4560839075954688>

<sup>10</sup> Byron H. (2000) Biodiversity Impact - Biodiversity and environmental impact assessment: a good practice guide for road schemes. The RSPB, WWF-UK, English Nature and the Wildlife Trusts, Sandy

sustaining target habitat conditions and levels of wildlife for a conservation site, or maintaining population growth for a species.

- *Minor negative* - some minor detrimental effect is evident, but not to the extent of the above.
- *Neutral* - that which has no predictable effect.

### 7.1.2 Positive or Negative Impacts/ Effects

The nature of a predicted impact is as per CIEEM definition:

*“Positive impact - a change that improves the quality of the environment e.g. by increasing species diversity, extending habitat or improving water quality. Positive impacts may also include halting or slowing an existing decline in the quality of the environment.”*

*Negative impact - a change which reduces the quality of the environment e.g. destruction of habitat, removal of species foraging habitat, habitat fragmentation, pollution.”*

## 7.2 Duration of Impact/ Effect

Impacts/ effects are described as short, medium or long-term, and as either permanent or temporary.

## 7.3 Impact/ Effect Reversibility

Reversibility is judged per the CIEEM Guidelines for Ecological Impact Assessment description: *“An irreversible effect is one from which recovery is not possible within a reasonable timescale or there is no reasonable chance of action being taken to reverse it. A reversible effect is one from which spontaneous recovery is possible or which may be counteracted by mitigation.”*

## 7.4 Impact/ Effect Significance

The CIEEM Guidelines for Ecological Impact Assessment provide a working definition of ‘significant effects’ which includes the statements:

*“For the purpose of EclA, ‘significant effect’ is an effect that either supports or undermines biodiversity conservation objectives for ‘important ecological features’ or for biodiversity in general.” and “In broad terms, significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution).”*

In this assessment, a significant impact is not attributed to any effect on a receptor which is predicted to occur at no greater than minor negative magnitude. Similarly any impact, regardless of magnitude, is not regarded as significant if its geographic scale of importance is lower than a local/ parish level.

## 7.5 Description of Impacts/ Effects

A number of impacts/ effects on ecological receptors may result from the proposed development.

### 7.5.1. Change of land use



This impact will be the most important for valued habitats. A new route will permanently alter existing habitats. Some will have capacity to be recreated elsewhere, others can be regarded as irreplaceable (for example ancient woodland, or old species rich meadows). A new road can also cause fragmentation and severance of existing habitats. There are also opportunities for new cuttings or embankments to create new corridors of habitat, or for cut-off sections of land to be managed for biodiversity.

### 7.5.2. Construction activities

The land required for construction may be greater than the final footprint of the road. Construction vehicles, materials storage and other activities may destroy or devalue existing habitats.

### 7.5.3. Operational activities

A new road will have similar in-use impacts to the existing road, although an increase in vehicle use may increase non-direct effects such as diffuse pollution.

## 7.6 Habitats

Assessment is based on drawing dated 7/11/2017 supplied by Sweco and drawn by Amey.

Of the six units valued at County level (Ib, Ic, K, P, RYW, RYXi), RYW and K are directly affected by the proposed road route. This would have a **major** impact on Unit RYW, bisecting it, and an **intermediate** impact on Unit K, clipping the SW corner. Other county level habitats will not be directly affected.

Of the 14 units valued at district level (AS6, H, Ia, L, V, W, X, 88, TU, RY1, RY3, RY4, c, and d), only Units 88 and TU will be directly impacted. Unit 88 would be bisected, resulting in a **major** habitat impact. Unit TU would be partially affected in the north-west corner, resulting in an **intermediate-major** impact on the integrity of the unit. Other units would not be affected.

Of the 14 potentially important hedgerows, 10 will be bisected. These are R1, R2, 6, 7, 8, 9, 10, 12, 14, and 15. It is unlikely that all of these hedgerows can be avoided. Further detailed assessment using the scoring system in the Hedgerow Regulations may rule out some of those affected. Impacts on these hedges are rated as **intermediate** or **major** at a local level.

## 8. Mitigation

### 8.1 General Principles

The Mitigation Hierarchy is a key principle, with the sequential strategies given in order. This is interpreted by WFE, as it applies to built development, in the table below.

#### Mitigation Hierarchy

Action and sequential number	Description
1. Avoidance	Seek options that avoid impacts/ effects on ecological features, for example through design of development or seasonal timing of works.
2. Mitigation	Adverse impacts/ effects should be minimised through mitigation measures, either through the design of the project or subsequent measures that can be guaranteed - for example, through a condition or planning obligation.
3. Compensation	Where there are significant residual adverse ecological effects despite the mitigation proposed, these should be offset by appropriate compensatory measures. A common example is the replanting of a removed section of hedge elsewhere on the site.
Enhancement	Seek to provide net benefits for biodiversity over and above requirements for avoidance, mitigation or compensation.

Impacts on valued habitats of both county and district level should, in the first instance, aim to be avoided by adjustments in the route.

Where this cannot be achieved, the replaceability of the habitat needs to be considered. Units 88 and TU are both habitats of recent origin, and should be straightforwardly replicable, accepting some temporary loss during and in the few years after construction, until replacement habitat matures. There would be some land between the old and new routes which would be ideal for new habitat creation.

Unit K, and to an extent Unit RYW are harder to replicate. Unit K in particular is old, possibly ancient woodland and could be completely avoided by a relatively minor southward shift in the route.

Unit RYW will be harder to avoid, and the replacement of floodplain grassland will be harder to achieve. This may be a case where offsite compensation is required, in terms of a contribution to habitat creation elsewhere.

Where impact on hedgerows is unavoidable, compensatory planting of replacement hedgerow will be necessary in the surrounding landscape at a favourable ratio.



## 9. Conclusions

There are habitats of county value along the surveyed corridor. These can be largely avoided by the new road route, but some adjustment may be necessary particularly with regard to Unit K and Unit RYW. Mitigation by habitat creation is feasible for some valued areas to be lost, but offsite compensation may be required for Unit RYW.

It is likely that some important hedgerow may be lost, and compensation should aim to replace lost hedgerow by a favourable ratio.

The scheme should be put through the Defra Metric<sup>11</sup> to produce a plan for measurable net gain at an early opportunity, to influence design going forward.

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<sup>11</sup> Natural England (2019) The Biodiversity Metric 2.0  
<http://publications.naturalengland.org.uk/publication/5850908674228224>



## Appendix 1. Site Photographs



Photo 1. Unit A





Photo 2. AS6 grassland to the west of Unit A



Photo 3. Unit B



Photo 4. Unit AS 5 (south of unit B) planted strip with young trees

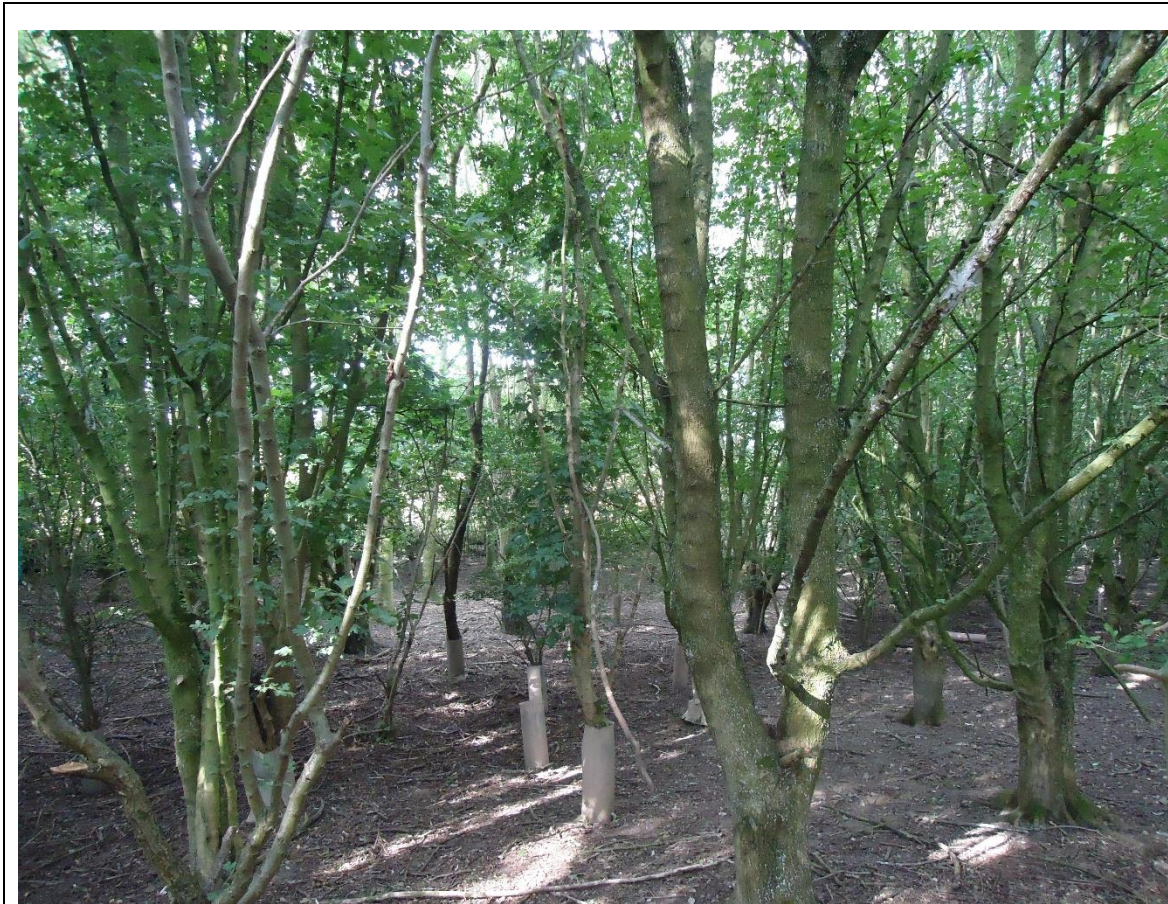


Photo 5. Unit Ca



Photo 6. Unit Cb



Photo 7. Unit D



Photo 8. Unit E



Photo 9. Unit F





Photo 10. Unit G eastern side



Photo 11. Unit G western side



Photo 12. Unit AS 1



Photo 13. Unit AS 2 main section



Photo 14. Unit AS 2 western section



Photo 15. Unit AS 2 hedge bank within woodland



Photo 16. Unit AS 2 pond within woodland



Photo 17. Unit Ic on far side of river





Photo 18. Unit K woodland - hazel stool and dog's mercury visible



Photo 19. Unit L - planted cricket bat willow



Photo 20. Unit M mature beech and sycamore



Photo 21. Unit N sparse plantation over false oat and nettle grassland



Photo 22. Unit O with sapling willow and ash growth



Photo 23. Unit P - eastern end near old green lane feature



Photo 24. Unit Q showing ground layer composed almost entirely of sycamore seedlings



Photo 25. Grassy ride between Units Q and QA





Photo 26. Unit QA - dense plantation



Photo 27. Dwarf spurge north of Unit Q



Photo 28. Unit R plantation



Photo 29. Unit RY2

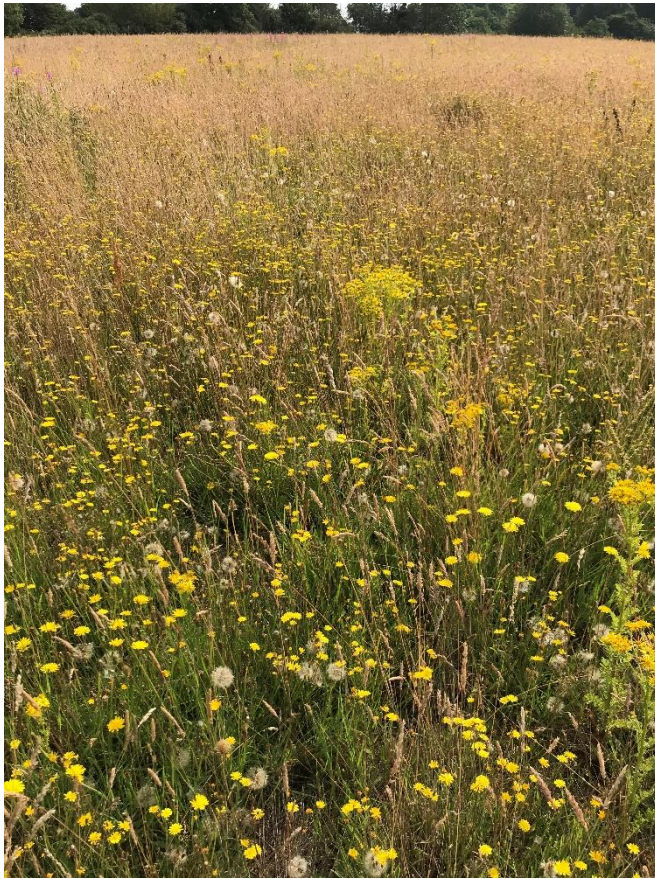


Photo 30. Unit TU example



Photo 31. Unit TU - pyramidal orchid



Photo 32. Unit S - ground flora



Photo 33. Unit S southern edge along route of old highway





Photo 34. Unit T recently planted woodland



Photo 35. Unit T mature woodland



Photo 36. Unit U north field; planted ex-cultivated field



Photo 37. Unit U south field



Photo 38. Unit V



Photo 39. Unit W



Photo 40. Unit W (woodland in west of)



Photo 41. Unit X





Photo 42. Unit RY1 - floodplain grassland MG9



Photo 43. Unit RY3



Photo 44. Unit RY4 boundary



Photo 45: Unit RYW



Photo 46: Unit a, planted section



Photo 47. Unit 88



Photo 48. Hedgerow 2a



Photo 49. Hedgerow 2b





Photo 50. Hedgerow 3 north of the existing A47



Photo 51. Hedgerow 4



Photo 52. Hedgerow 5 (in distance)



Photo 53. Hedgerow 6



Photo 54. Hedgerow AS2



Photo 55. Hedgerow AS3



Photo 56. Hedgerow 7



Photo 57. Hedgerow 8





Photo 58. Hedgerow AS3



Photo 59. Hedgerow 9/10



Photo 60. Hedgerow 10



Photo 61. Hedgerow 12



Photo 62. Hedgerow 13



Photo 63. Hedgerow 14



Photo 64. Hedgerow 14a



Photo 65. Hedgerow 15





Photo 66. Hedgerow 16



Photo 67. Hedgerow V



Photo 68. Hedgerow AS4 (SW of Unit F)



Photo 69. Hedgerow R1



Photo 70. Hedgerow R2 with spurge laurel