



Norwich Western Link

Environmental Statement

Chapter 10: Biodiversity

Appendix 10.31: UKHab Report 2022

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Glossary of Defined Terms

Habitat of Principal Importance (HPI) – A habitat which has been deemed to be of principal importance for the purpose of conserving biodiversity, currently adopted under Section 41 of the Natural Environment and Rural Communities Act 2006, formally listed in the UK Biodiversity Action Plan.

Sward – a defined area of grassland.

Forb – a herbaceous flowering plant which is not a grass, sedge, or rush.

Agriculturally improved grassland – A grassland usually displaying low plant species diversity due to the influence of agricultural fertilizers increasing its nutrient content favouring palatable grass species.

Broadleaved (tree/woodland) – Trees which do not have needles, most of which are deciduous (shed leaves annually).

DEFRA – Department for Environment, Food & Rural Affairs

JNCC – Joint Nature Conservation Committee

UKHab – UK Habitat Classification Survey



1 Introduction

1.1 Project background

1.1.1 The Norwich Western Link Road (the Proposed Scheme) is a highway scheme linking the A1270 Broadland Northway from its junction with the A1067 Fakenham Road to the A47 trunk road near Honingham.

1.1.2 The Proposed Scheme, will comprise the following listed below:

- Dualling the A1067 Fakenham Road westwards from its existing junction with the A1270 to a new roundabout located approximately 400m to the north west;
- Construction of a new roundabout; and
- Constructing a dual carriageway link from the new roundabout to a new junction with the A47 near Honingham.

1.1.3 As part of a separate planned scheme, Highways England proposes to realign and dual the A47 from the existing roundabout at Easton to join the existing dual carriageway section at North Tuddenham. The A47 Scheme received development consent in August 2022, and it is expected that Highways England will construct the Honingham junction, and the Norwich Western Link will connect to the north-eastern side of that junction.

1.1.4 The Scheme will cross the River Wensum and its floodplain by means of a viaduct. The Scheme will also cross four minor roads by means of overpass or underpass bridges. The Scheme will include ancillary works such as provision for non-motorised users, necessary realignment of the local road network and the provision of environmental mitigation measures.



1.2 Ecological background

- 1.2.1 A Desk Study (WSP UK Ltd., 2018a) and Phase 1 Habitat Survey (WSP UK Ltd., 2018b) of the Scheme was commissioned in 2018 to inform route options. The initial Phase 1 Habitat Survey was undertaken in 2018 when multiple route options were being considered. The survey area considered at this time therefore covered a wider extent than that relevant to the current Scheme. This survey identified broad habitat areas and types.
- 1.2.2 The 2018 Desk Study was updated in March 2020 (WSP UK Ltd., 2021b) to include recent data relevant to the current Scheme and so the 2018 report is not referenced further. The 2018 Phase 1 Habitat Survey was also updated between May and July 2020 to include recent data specific to the then newly defined route option and so the 2018 report is not referenced further.
- 1.2.3 A National Vegetation Classification (NVC) survey was undertaken in 2021 to provide a detailed botanical assessment of the current Scheme. The 2021 NVC report (WSP UK Ltd., 2021c) classified habitats based on NVC vegetation communities published in British Plant Communities (Rodwell, 1991a, 1991b, 1992, 1995 and 2000). This report also inferred the habitats relationship to Habitats of Principal Importance (HPI) referring to Farm Environment Plan (FEP) (Natural England, 2010). It should be acknowledged that discrepancies in habitat classification and HPI status occur between the differing methodologies of UK Habitat Classification Survey (UKHab) and NVC survey types. The WSP Biodiversity Net Gain (BNG) report will refer specifically to the habitat classifications made using the UKHab methodology and discuss where there are differences to the NVC reports conclusions.

1.3 Brief and objectives

- 1.3.1 WSP UK Ltd was commissioned by Norfolk County Council to complete a UKHab survey, to verify the findings of the previous habitat surveys.



- 1.3.2 The survey will also cover new areas in the northern extent of the Scheme following the alignment refinement as reported in the July 2022 Cabinet Report to Norfolk County Council ([July 2022 Cabinet Report](#)).
- 1.3.3 Habitats will be recorded following the UK Habitat Classification Definitions Version 1.1 document (2020) so that the data can be used to inform the Biodiversity Net Gain (BNG) assessment. Previously, habitat data has been collected in Phase 1 which requires converting in Metric 3.1. The update survey therefore provides the opportunity to collect UKHab and condition assessment data to ensure a robust baseline to inform the BNG assessment.
- 1.3.4 The fulfilment of these objectives will lead to data that will inform the biodiversity chapter of the Environmental Statement including proposed mitigation.

1.4 Survey area

- 1.4.1 The Survey Area comprised all areas within the Scheme boundary, including temporary areas for construction and access roads.

2 Relevant Legislation and Policy

- 2.1.1 The UKHab Survey has been compiled with reference to the following relevant nature conservation legislation, planning policy and the UK Biodiversity Framework from which the protection of sites, habitats and species is derived in England (Appendix A). Relevant legislation and policy include:

- The Conservation of Habitats and Species Regulations 2017 (as amended) (Habitats Regulations);
- The Wildlife and Countryside Act 1981 (as amended) (WCA);
- The Natural Environment and Rural Communities (NERC) Act 2006 (England);



- The UK Post-2010 Biodiversity Framework (2011-2020) (Joint Nature Conservation Committee (JNCC), 2012);
- Biodiversity 2020: A strategy for England’s wildlife and ecosystem services (Department for Environment, Food & Rural Affairs (DEFRA), 2011);
- UK Biodiversity Action Plan (UKBAP) - The UK BAP has now been replaced by the UK Post-2010 Biodiversity Framework, however, it contains useful information on how to characterise important species assemblages and habitats which is still relevant;
- The National Planning Policy Framework (NPPF) 2021 (Ministry of Housing Communities & Local Government, July 2021);
- Norfolk Biodiversity Action Plan (Norfolk Biodiversity Partnership); and
- Norwich Local Plan (adopted 2014).

3 Methods

3.1 Habitat survey

3.1.1 A habitat survey was carried out on 10 May 2022, 11 May 2022, 28 June 2022, 29 June 2022, and 30 June 2022. The survey covered the entire area within the Scheme boundary, including boundary features and immediate surrounds where accessible. Consideration was given to surrounding habitats using aerial photograph imagery.

3.1.2 Habitats were described and mapped following the Professional Version 1.1 of UKHab using the following documents:

- UK Habitat Classification User Manual (UK Habitat Classification Working Group, 2020a) (hereafter ‘UKHab User Manual’);
- UK Habitat Classification Field Key (UK Habitat Classification Working Group, 2020b);



- The UK Habitat Classification Habitat Descriptions Version 1.1 (UK Habitat Classification Working Group, 2020c); and,
- UK Habitat Classification Basic Edition: Suggested Symbolology for Maps (UK Habitat Classification Working Group, 2020).

3.1.3 The UK Habitat Classification Working Group describes UKHab as “...a unified and comprehensive approach to classifying habitats, designed to provide a robust technique for classifying and mapping British habitats.” The dominant plant species are recorded, and habitats are classified according to their vegetation types. UKHab system comprises a principal hierarchy (the Primary Habitats) and non-hierarchical Secondary Codes. Primary Habitats include ecosystems (level 1), broad habitat types (level 2 and 3); more defined habitats, including habitats of principle importance (level 4); and further defined habitats, including Annex I habitats (level 5). Levels therefore indicate an increasingly refined and detailed habitat definition where possible.

3.1.4 Secondary Codes are then used to provide more information on a habitat from the following categories:

- Mosaic habitats;
- Habitat complexities;
- Origin of habitat;
- Management;
- Land use;
- Environmental qualifiers;
- Hydrological regime; and
- Green infrastructure.

3.1.5 A single Primary Habitat is assigned to each polygon, line or point feature with generally a maximum of six Secondary Codes used. Habitats are described by the Primary Habitat first (e.g. w1h5 other woodland; mixed predominantly



broadleaved) with Secondary Codes following (e.g. w1h5 36 57 other woodland; mixed predominantly broadleaved that is plantation with young trees - self set). Lowercase letters are used, with the levels 2 to 5 shown by the alphanumeric code and no commas are used between secondary codes as per the UKHab User Manual. For habitats of interest that were too small to map point features were used with Primary Habitats and Secondary Codes where applicable. For this survey where possible, level 5 Primary Habitat codes were used for habitats.

3.1.6 A list of plant species was compiled with relative plant species abundance estimated using the DAFOR scale (Appendix B). The DAFOR scale has been used to estimate the frequency and cover of the different plant species as follows: Dominant (D) - >75% cover, Abundant (A) – 51-75% cover, Frequent (F) – 26-50% cover, Occasional (O) – 11-25% cover, Rare (R) – 1-10% cover. The term 'Locally' (L) is also used where the frequency and distribution of a species are patchy, and 'Edge' (E) is also used where a species only occurs on the edge of a habitat type. The scientific names for plant species follow those in the New Flora of the British Isles (Stace, 2019) and are also listed in Appendix B.

3.1.7 Habitats were sketched on a paper base map and were subsequently digitised using a Geographical Information System (GIS) as presented in Appendix C.

3.2 Notes and limitations

3.2.1 Every effort has been made to provide a comprehensive habitat description of the Scheme; however, the following specific limitations apply to this assessment:

- The field survey was carried out over the period of five days in May and June focussing on different sections of the Scheme each visit. Despite being undertaken in the optimal season for botanical survey, only a selection of all plant species diversity that occurs within the Scheme and identifiable in that season will have been recorded. However, for



the purpose of a UKHab assessment it is considered an accurate assessment of habitat types and potential of the Scheme to support important or notable plant communities;

- The UKHab map (Appendix C) has been reproduced from field notes and plans. Whilst this provides a sufficient level of detail to fulfil the requirements of a UKHab assessment, the maps are not intended to provide precise locations of key habitats; and
- The field surveys took place during a prolonged period of dry weather in 2022 which meant some species were not identifiable, particularly grassland species. This is not considered to be a significant limitation as a sufficient number of species were identified in order to categorise the habitats.

4 Results

4.1 UKHab classifications

4.1.1 A breakdown of habitat types identified, their calculated areas and percentage of total Scheme area can be found in Table 4-1. A selection of photographs are provided in Appendix D.

Table 4-1 UKHab areas

Habitat	Habitat code	Area (ha)	Percentage of total Scheme area
Cereal crops	c1c	104.73	68.63
Fen, marsh, and swamp	f2	0.85	0.56
Other neutral grassland	g3c	6.55	4.29
<i>Arrhenatherum</i> neutral grassland	g3c5	2.14	1.4



Habitat	Habitat code	Area (ha)	Percentage of total Scheme area
<i>Lolium-Cynosurus</i> neutral grassland	g3c6	0.14	0.09
<i>Deschampsia</i> neutral grassland	g3c7	0.70	0.46
<i>Deschampsia</i> neutral grassland – coastal and floodplain grazing marsh	g3c7 25	4.67	3.06
<i>Holcus-Juncus</i> neutral grassland	g3c8	1.01	0.66
Modified grassland	g4	16.43	10.77
Sparsely vegetated habitat – ruderal/ephemeral	s 17	0.80	0.52
Developed land; sealed surface	u1b	3.99	2.62
Artificial unvegetated, unsealed surface	u1c	0.50	0.33
Other lowland mixed deciduous woodland	w1f7	3.15	2.07
Other broadleaved woodland types	w1g7	0.33	0.22
Other woodland; mixed; mainly broadleaved	w1h5	2.28	1.49
Other woodland; mixed; mainly conifer	w1h6	1.76	1.15
Other coniferous woodland	w2c	2.57	1.68



Habitat	Habitat code	Area (ha)	Percentage of total Scheme area
Total	N/A	152.6	100

Cereal crops – c1c

4.1.2 This habitat type was the most abundant within the Scheme; covering a 104.73ha area it was encountered consistently throughout (Figure D-1). The dominant crop recorded was wheat *Triticum* sp., constituting the majority of the intensive arable land encountered. Other crops grown within in this habitat type included corn *Zea mays*, potato *Solanum tuberosum*, carrot *Daucus carota subsp. sativus* and cabbage *Brassica* sp.

Fen, marsh, and swamp – f2

Grassland south of Foxburrow Plantation

4.1.3 A 0.85ha area located within the south of the Scheme adjacent to the Foxburrow plantation with Foxburrow stream running through it was categorised as a fen, marsh, and swamp type habitat (Figure D-2). This UKHab category is the closest fit for this habitat, however the area was more accurately described as a wet grassland characterised by abundant rushes, grasses, and other species of wetland forbs. The sward was of moderate height, occasionally cattle grazed but not intensively and had been subject to agricultural improvement.

4.1.4 Cock’s-foot *Dactylis glomerata* was frequent within the sward, with other grass species including Yorkshire Fog *Holcus lanatus*, Sweet Vernal Grass *Anthoxanthum odoratum*, Crested Dog’s-Tail *Cynosurus cristatus* and Tall Fescue *Festuca arundinacea* occasional. Rushes were also present, with species consisting of Soft Rush *Juncus effusus*, Hard Rush *Juncus inflexus* and Jointed Rush *Juncus articulatus*. Accompanying forb species included occasional Ragged Robin *Silene flos-cuculi*, Water Mint *Mentha aquatica*, Lesser Spearwort *Ranunculus flammula* and Meadow Vetchling *Lathyrus pratensis*, with Marsh Thistle *Cirsium palustre* frequent. Bramble *Rubus fruticosus* agg. and Bracken *Pteridium aquilinum* had also begun to encroach.



Neutral grassland – g3

- 4.1.5 This habitat type consists of vegetation dominated by grasses and herbs of a range of neutral soil types, neutral grassland communities have few diagnostic indicator species but lack species characteristic of base-rich or acid soils. They differ from agriculturally improved grasslands (g4) by typically containing less than 25% cover of perennial rye grass.

Other neutral grassland – g3c

Fakenham roadside – north side of roundabout

- 4.1.6 The 2.12ha area at the side of Fakenham Road at the roundabout towards the north east of the Scheme was indicative of a sown grassland, on banks of recently disturbed ground that may have been translocated (Figure D-3). The grassland was in good condition and had good species diversity, containing a species considered notable due to its native distribution being confined to East Anglia, it is considered introduced elsewhere nationally, Hoary Mullein *Verbascum pulverulentum*. The species composition was high in forbs in relation to grass species suggestive of the use of a seed mix favouring wildflowers.

- 4.1.7 The most abundant grass was Fescue *Festuca sp.*, with Yorkshire Fog frequent and Cock's-Foot, Common Bent *Agrostis capillaris* and Timothy *Phleum pratense* occasional. Forbs present included frequent Common Ragwort *Jacobaea vulgaris*, Oxeye Daisy *Leucanthemum vulgare* and Ribwort Plantain *Plantago lanceolata* with occasional Common Knapweed *Centaurea nigra*, Musk Mallow *Malva moschata*, Weld *Reseda luteola*, Common Bird's Foot Trefoil *Lotus corniculatus* and Salad Burnet *Sanguisorba minor* alongside Pyramidal Orchid *Anacamptis pyramidalis* and Nodding Thistle *Carduus nutans*.

Grassland at Pump Farm and horse paddocks

- 4.1.8 A 4.43ha area of unmanaged neutral grassland south of Weston Road towards the centre of the Scheme. Part of this area used to be horse paddocks however it has recently been left unmanaged resulting in areas of



tall vegetation. The grassland primarily consisted of grass species with Common Bent and Yorkshire Fog abundant, False Oat-Grass *Arrhenatherum elatius* and Red Fescue *Festuca rubra* frequent and Sweet Vernal Grass, Perennial Rye-Grass *Lolium perenne*, Squirrel-Tail Fescue *Vulpia bromoides* occasional. There was a low species diversity and abundance of forbs including Creeping Thistle *Cirsium arvense* and Common Ragwort.

Arrhenatherum neutral grassland – g3c5

East of Rose Carr

- 4.1.9 A 1.31ha section of grassland east of Rose Carr which bordered an arable field and was mown infrequently to be managed as a buffer strip (Figure D-5). It is likely that the area was sown to act as a wildflower border. False Oat Grass was abundant, with accompanying species such as Tufted Vetch *Vicia cracca*, Yellow Mignonette *Reseda lutea*, Fescue, Common Bird's-Foot Trefoil, Common Knapweed, Musk Mallow, Hop Trefoil *Trifolium campestre*, Smooth Hawksbeard *Crepis capillaris*, Common Ragwort occasional and Wild Marjoram *Origanum vulgare* rare.

North of Weston Road

- 4.1.10 A 0.59ha section of grassland north of Weston Road which bordered an arable field and was mown infrequently to be managed as a buffer strip (Figure D-5). It is likely that the area was sown to act as a wildflower border. False Oat-Grass was abundant with Yorkshire Fog, Common Ragwort and Oxeye Daisy frequent. Accompanying species such as Common Bent, Yarrow *Achillea millefolium*, Mugwort *Artemisia vulgaris*, Creeping Thistle, Common Cudweed *Filago vulgaris* and Curled Dock *Rumex crispus* were present occasionally and Common Fiddleneck *Amsinckia micrantha*, Wild Carrot and Scarlet Pimpernel *Anagallis arvensis* rarely.

Grassland strip next to hedgerow

- 4.1.11 A 0.24ha strip of grassland approximately 10m wide bordering a hedgerow east of Wood Lane within the southern section of the Scheme. Half of this section was mown to a very short sward. False Oat-Grass was dominant with



Cock's-Foot, Yorkshire Fog, and Oxeye Daisy frequent, accompanied by occasional species such as Hogweed *Heracleum sphondylium*, Perennial Rye-Grass and Field Bindweed *Convolvulus arvensis*, with species including Creeping Buttercup *Ranunculus repens*, Soft Brome *Bromus hordeaceus* and Bramble rare.

Lolium-Cynosurus neutral grassland – g3c6

Grassland block at the southern end of Easton Estate

4.1.12 A 0.14ha pocket of unmanaged grassland towards the southernmost end of the Scheme in the corner of an arable field (Figure D-7). Grassland species abundant within this grassland included Yorkshire Fog and Perennial Rye-Grass, with Crested Dog's Tail and Red Fescue frequent and Common Bent occasional. Accompanying forb species included Pineappleweed *Matricaria discoidea*, White Clover *Trifolium repens*, Ribwort plantain, Creeping Buttercup, Spear Thistle *Cirsium vulgare*, Hop Trefoil, Curled Dock, and Bristly Oxtongue *Helminthotheca echioides*.

Deschampsia neutral grassland- g3c7

Rough grassland adjacent to Low Farm - G8

4.1.13 A 0.70ha area of rough grassland adjacent to Low Farm and south of a stream (Figure D-8). It consisted of a mosaic of areas dominated by either Tufted Hair Grass *Deschampsia cespitosa* or False Oat-Grass, with other grass species including frequent Yorkshire Fog, occasional Common Bent and Timothy and rarely Meadow Foxtail *Alopecurus pratensis*. Soft Rush was also present occasionally, with accompanying forbs including frequent Silverweed *Argentina anserina*, Creeping Buttercup and Creeping Thistle, occasional Common Sorrel *Rumex acetosa*, Lesser Stitchwort *Stellaria graminea* and Common Nettle *Urtica dioica* and rarely Water Forget-Me-Not *Myosotis scorpiodes*.

***Deschampsia* neutral grassland - coastal and floodplain grazing marsh – g3c7 25**



South of the River Wensum

4.1.14 A 4.67ha area of floodplain grazing marsh south of the River Wensum, comprising wet grassland and rushes which was grazed regularly and seasonally inundated (Figure D-9). Two scrub dominated ditches ran through the habitat with a stream bounding the south. A mixture of wet grassland areas, drier areas which had been tightly grazed with occasional tussocks of rushes and tall vegetation parallel to ditches/stream were present.

4.1.15 Frequent species included Soft Rush, Reed Sweet-Grass *Glyceria maxima*, Common Bent, White Clover, Tufted Hair Grass, and Creeping Buttercup, with species including Common Nettle, Creeping Cinquefoil *Potentilla reptans*, Silverweed, Marsh Foxtail *Alopecurus geniculatus*, Water Forget-Me-Knot, Water Mint and Hard Rush occasional. Additionally, species such as Floating Sweet-Grass *Glyceria fluitans*, Greater Bird's Foot Trefoil *Lotus pedunculatus*, Bullrush *Typha latifolia* and Sticky Mouse-ear *Cerastium glomeratum* were present rarely.

Holcus-Juncus neutral grassland - g3c8

North of the River Wensum

4.1.16 A 1.01ha area of *Holcus-Juncus* neutral grassland north of the River Wensum (Figure D-10) which seemed to be infrequently managed. A ditch bordered the north west edge of the area and also ran through it. The grassland was dominated by Yorkshire Fog with other grass species, including Creeping Bent *Agrostis stolonifera*, Reed Canary Grass *Phalaris arundinacea* and Floating Sweet-Grass frequent. Rush species were also present, with Hard Rush occasional and Soft Rush rare. There were very few forbs, which only consisted of Curled dock and Creeping thistle.



Modified grassland – g4

4.1.17 This habitat type consists of vegetation dominated by a few fast growing grasses on fertile, neutral soils. It is frequently characterised by an abundance of Rye-Grass *Lolium sp.* and White Clover. Grass cover is usually over 75% and is dominated by palatable species, accompanied by species which indicated high fertility. This habitat is also species poor, and less than nine species are present per m².

4.1.18 This habitat was present frequently across the Scheme, comprising a 16.43ha area in total (Figure D-11). This habitat was recorded within modified grassland fields, between arable fields, alongside hedges and at woodland edges. These areas were species-poor consisting predominantly of grass species including Yorkshire Fog, Perennial Rye-grass, and Cock's-Foot. Forbs were generally present in low abundance and diversity in this habitat type, commonly recorded species included Common Nettle, Red Dead Nettle *Lamium purpureum*, Ribwort Plantain, Creeping Thistle, Common Ragwort, Hogweed, Mugwort and Bramble.

Sparsely vegetated land – ruderal/ephemeral– s 17

Sloping banks of SUDS pond

4.1.19 A 0.80ha area of this habitat type was present at the side of Fakenham Road at the roundabout towards the north east of the Scheme (Figure D-12). This UKHab category is the closest fit for this habitat, however it is usually used to categorise coastal and inland rock features. This area was originally designed as a SUDS pond and consisted of sloping banks; however, it was completely dry and lacked vegetation indicative of wet habitats. Bare ground was abundant and accompanying species consisted of a high number of forbs in relation to grass species. Grass species included occasional Quaking-Grass *Briza media*, Sweet Vernal Grass, and Fescue and rarely Common Bent. Forbs included occasional Yellow Rattle *Rhinanthus minor*, Yellow Melilot *Melilotus officinalis* ., Lady's Bedstraw *Galium verum*, Oxeye Daisy, Common Bird's-Foot Trefoil and Tufted Vetch, accompanied by Common Centaury



Centaureum erythraea, Common Knapweed, Hedge Bedstraw *Galium mollugo*, Betony *Betonica officinalis* and Hop Trefoil.

Developed land; sealed surface – u1b

4.1.20 Sealed surface in the form of roads, access tracks, and laybys comprised 3.99ha within the Scheme (Figure D-13).

Artificial unvegetated, unsealed surface – u1c

4.1.21 This habitat type comprises a track through Gravelpit Plantation, an area outside of horse stables and a sand school associated with horse paddocks.

Lowland mixed deciduous woodland

4.1.22 This habitat type is a habitat of principle importance (HPI) and consists of woodland growing on all soil conditions, from very acidic to base-rich. It also occurs largely within enclosed landscapes. There is great variety in the species composition of the canopy layer and the ground flora. Oak *Quercus robur* is generally the commoner oak and may occur with virtually all combinations of other locally native tree species.

Other lowland mixed deciduous woodland – w1f7

Spring Hills

4.1.23 A 0.13ha area of this habitat type was present at the tip of Spring Hills. The main component of the canopy comprised mature Common Beech *Fagus sylvatica* trees with occasional mature Oak trees, other semi-mature species included Elder *Sambucus nigra* and semi-mature Oak. The ground layer was sparse, with some patches of Common Nettle and Bramble occasionally noted, other species included Barren Brome *Bromus sterilis*, Garlic Mustard *Alliaria petiolate* and Common Gorse *Ulex europaeus*.

Long Plantation

4.1.24 A 0.47ha pocket of mature broadleaved trees within the northeast edge of Long Plantation (Figure D-14). The canopy consisted of frequent Sycamore *Acer pseudoplatanus* and Oak with occasional Pine *Pinus sp.*, Common Ash, European Aspen *Populus tremula* and Common Beech. The understory



comprised occasional Sycamore, Common Hawthorn *Crataegus monogyna*, Elder, Bramble, Common Holly *Ilex aquifolium*, Field Maple *Acer campestre* and Blackthorn *Prunus spinosa*. The ground flora mainly consisted of Common Nettle, accompanied by Ground Ivy *Glechoma hederacea*, Common Bluebell *Hyacinthoides non-scripta* and Cow Parsley *Anthriscus sylvestris*.

Unnamed woodland

4.1.25 A 0.68ha section of woodland within an unnamed woodland south of Ringland Lane. The woodland was managed with evidence of coppicing in some areas. There was also some fallen and standing dead wood. This area predominantly consisted of mature Oak and Sycamore with smaller quantities of other species i.e. Common Beech, Cherry *Prunus sp.*, Pine, and Common Ash. The woodland had an open structure with a limited understory consisting of common Hazel *Corylus avellana*, Common Hawthorn, Common Holly, Elder and Common Ivy *Hedera helix*.

4.1.26 The ground flora was species poor and dominated by Common Nettle and Cleavers *Galium aparine*, accompanied by Herb Robert, Mouse-Ear Chickweed *Cerastium vulgatum*, Garlic Mustard, Blackcurrant *Ribes nigrum*, White Dead Nettle, Red Campion, and Ground Ivy.

Broadway woodland

4.1.27 A 0.25ha area of the woodland south of the Broadway within the southern section of the Scheme. The woodland did not seem to be managed and had lots of standing and fallen dead wood. The canopy featured predominantly broadleaved species, including Oak, Common Beech, Sycamore, Common Hawthorn, and European Aspen, with Pine also present frequently. The understory also comprised Common Holly, Sweet Chestnut *Castanea sativa*, Elder and Common Honeysuckle *Lonicera periclymenum*, however was generally open.

4.1.28 The majority of the ground flora comprised Common Nettle, Bramble, and Bracken, accompanied by Garlic Mustard and Cleavers.



Foxburrow Plantation

4.1.29 A 1.63ha area of managed woodland located within the southern section of the Scheme (Figure D-15). The woodland canopy was dominated predominantly by broadleaved species consisting of Sycamore, Oak, Common Beech, Common Ash and rarely Silver Birch *Betula pendula*, with Pine present rarely throughout. There was an open structure with minimal understory, which consisted of Sweet Chestnut, Elder and Common Holly. Rhododendron *Rhododendron sp.* was also recorded in this area which is an invasive non-native species listed on Schedule 9 of the Wildlife & Countryside Act (as amended).

4.1.30 Glades were managed throughout the woodland, with thin glades 2-3m wide running east-west and a wide 15-20m glade north-south. The ground flora within the woodland was sparse in some sections of the woodland with bare ground dominant, other sections of the woodland were dominated by Bramble, Common Nettle, and Bracken. Other species present within the ground flora included Common Bluebell, Garlic Mustard, Male Fern *Dryopteris filix-mas*, Herb Robert *Geranium robertianum*, Red Campion *Silene dioica* and White Dead Nettle *Lamium album*.

Other broadleaved woodland types – w1g7

4.1.31 This habitat type is classified as broadleaved mixed and yew woodland not meeting the criteria of w1a to w1f, meaning that unlike w1f it is not an HPI. It also does not meet the criteria of w1g6 which would be a line of trees at least 20m in length.

Spring Hills

4.1.32 A 0.07ha section of this habitat type was present on the southern edge of Spring Hills. The main component of the canopy comprised mature Sycamore trees with occasional Pine, other semi-mature species included Elder *Sambucus nigra* and semi-mature Oak. The ground layer was sparse, with some patches of Nettle and Bramble occasionally noted, other species included Barren Brome *Bromus sterilis*, Garlic Mustard *Alliaria petiolate* and Common Gorse *Ulex europaeus*.



Unnamed woodland

4.1.33 A 0.26ha section of woodland along the northeast edge of an unnamed woodland south of Ringland Lane. The woodland was managed with evidence of coppicing in some areas. There was also some fallen and standing dead wood. Unlike the rest of the woodland, this area comprised younger trees, predominantly consisting of oak and sycamore with smaller quantities of other species i.e. Common Beech, Cherry *Prunus sp.*, Pine, and Common Ash. The woodland had an open structure with a limited understory consisting of common Hazel *Corylus avellana*, Common Hawthorn, Common Holly, Elder and Common Ivy *Hedera helix*.

4.1.34 The ground flora was species poor and dominated by Common Nettle and Cleavers, accompanied by Herb Robert, Mouse-Ear Chickweed *Cerastium vulgatum*, Garlic Mustard, Blackcurrant *Ribes nigrum*, White Dead Nettle, Red Campion, and Ground Ivy.

Other woodland; mixed; mainly broadleaved – w1h5

4.1.35 A mixture of broadleaved and coniferous trees in which broadleaf species make up between 50 and 80% of the tree cover.

Broadway woodland

4.1.36 A 2.28ha area of this woodland which comprised the majority of the Broadway woodland within the southern section of the Scheme (Figure D-14). The canopy featured predominantly broadleaved species, including Oak, Common Beech, Sycamore, Common Hawthorn, and European Aspen, however unlike the other area within this woodland a significant proportion of the canopy also consisted of Pine and was plantation.

4.1.37 The majority of the ground flora comprised Common Nettle, Bramble, and Bracken, accompanied by Garlic Mustard and Cleavers. Other species present included Green Alkanet *Pentaglottis sempervirens*, Ivy-Leaved Speedwell *Veronica hederifolia*, Ground Ivy, Wood Sorrel *Oxalis acetosella* and Lesser Stitchwort, although they were mainly present on the edge of the woodland along the roadside.



4.1.38 Variegated Yellow Archangel *Lamium galeobdolon* was also recorded in this area which is an invasive non-native species listed on Schedule 9 of the Wildlife & Countryside Act (as amended).

Other woodland; mixed; mainly conifer – w1h6

The Nursery

4.1.39 A 1.76ha area of mixed plantation connected to Rose Carr to the north and Primrose Grove (outside of the Scheme boundary) to the south. On the eastern edge of the woodland a track maintained for access ran north-south between Rose Carr and Primrose Grove through the Nursery. The composition of this woodland consisted predominantly of semi-mature Pine plantation, with semi-mature Sycamore and an understory that was mostly dominated by self-seeded young Sycamore trees, with patches of Bramble and Nettle also present. The majority of native species present in the canopy were located along the north-eastern edge of the woodland and consisted of Oak, Common Ash, and Common Beech. Garlic Mustard, Herb Robert, Ground Ivy, Cleavers, and Red Campion were also present in the ground flora.

Other coniferous woodland – w2c

4.1.40 Coniferous woodland that is not dominated by Scots Pine *Pinus sylvestris*.

Long Planation

4.1.41 A 2.57ha area of woodland extending north from Primrose Grove in the south, on a south facing slope, on sandy soil. The majority of the woodland was dominated by semi-mature/mature Pine plantation. Deciduous species were present; however, they were mainly concentrated in an area towards the southwest of the parcel, with species including Sycamore, Oak, and Common Beech. The understory was limited and consisted of occasional Sycamore and rare Elder and Holly. The ground layer was dominated by Bramble and Bracken in large areas, with other areas bare or more sparsely vegetated with species including Common Nettle, Garlic Mustard, Cleavers, Ground Ivy, and Common Broom *Cytisus scoparius*.



5 References

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Appendix A – Relevant Legislation

England and Wales legislation context

This report has been compiled with reference to relevant wildlife legislation relevant to habitats and plants.

The Wildlife and Countryside Act 1981, (as amended) (WCA)

Protected plants are listed under Schedules 8 and 9 respectively of the WCA, a description of these Schedules and their meaning is provided below.

Schedule 8

The Act makes it an offence (subject to exceptions) to pick, uproot, trade in, or possess (for the purposes of trade) any wild plant listed in Schedule 8, and prohibits the unauthorised intentional uprooting of such plants.

Schedule 9

Invasive species listed under Schedule 9 are prohibited from release into the wild and the Act prohibits planting or “causing to grow” in the wild of any plant species listed in Schedule 9.

Natural Environment and Rural Communities (NERC) Act 2006

Species and Habitats of Principal Importance in England and Wales are listed under Section 41 and Section 42 respectively of the NERC Act. The Section 41 and 42 lists detail species that are of principal importance for the conservation of biodiversity in England and Wales and should be used to guide decision-makers such as local and regional authorities when implementing their duty to have regard for the conservation of biodiversity in the exercise of their normal functions – as required under Section 40 of the NERC Act 2006.

The Conservation of Habitats and Species Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. They also transpose elements of the EU Wild Birds



Directive in England and Wales. The Regulations came into force on 30th November 2017 and extend to England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters). In Scotland, the Habitats Directive is transposed through a combination of the Habitats Regulations 2010 (in relation to reserved matters) and the Conservation (Natural Habitats &c.) Regulations 1994. The Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) transpose the Habitats Directive in relation to Northern Ireland.



Appendix B – Plant Species List

Table B-1 Plant species recorded

Common name	Latin name	Frequency (DAFOR)
Yorkshire fog	<i>Holcus lanatus</i>	D
False oat-grass	<i>Arrhenatherum elatius</i>	F
Tufted hair grass	<i>Deschampsia cespitosa</i>	A
Floating sweet-grass	<i>Glyceria fluitans</i>	F
Perennial rye-grass	<i>Lolium perenne</i>	F
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	O
Common bent	<i>Agrostis capillaris</i>	O
Creeping bent	<i>Agrostis stolonifera</i>	F
Fescue	<i>Festuca sp.</i>	O
Cock's-foot	<i>Dactylis glomerata</i>	F
Marsh thistle	<i>Cirsium palustre</i>	F
Common nettle	<i>Urtica dioica</i>	O
Red dead nettle	<i>Lamium purpureum</i>	O
Ribwort plantain	<i>Plantago lanceolata</i>	O
Oxeye daisy	<i>Leucanthemum vulgare</i>	F
Crested dog's-tail	<i>Cynosurus cristatus</i>	O
Red fescue	<i>Festuca rubra</i>	F
Smooth hawksbeard	<i>Crepis capillaris</i>	R
Reed canary grass	<i>Phalaris arundinacea</i>	F
Common ragwort	<i>Jacobaea vulgaris</i>	O



Common name	Latin name	Frequency (DAFOR)
Soft rush	<i>Juncus effusus</i>	O
Reed sweet-grass	<i>Glyceria maxima</i>	F
White clover	<i>Trifolium repens</i>	O
Creeping buttercup	<i>Ranunculus repens</i>	O
Silverweed	<i>Argentina anserina</i>	F
Creeping thistle	<i>Cirsium arvense</i>	O
Annual meadow grass	<i>Poa annua</i>	O
Broad leaved dock	<i>Rumex obtusifolius</i>	O
Cow parsley	<i>Anthriscus sylvestris</i>	O
Rose	<i>Rosa sp.</i>	O
Hogweed	<i>Heracleum sphondylium</i>	O
Lesser stitchwort	<i>Stellaria graminea</i>	O
Bramble	<i>Rubus fruticosus</i>	F
Common sorrel	<i>Rumex acetosa</i>	O
Jointed rush	<i>Juncus articulatus</i>	O
Red clover	<i>Trifolium pratense</i>	R
Hard rush	<i>Juncus inflexus</i>	O
Ragged robin	<i>Silene flos-cuculi</i>	O
Water mint	<i>Mentha aquatica</i>	O
Tall fescue	<i>Festuca arundinacea</i>	O
Coltsfoot	<i>Tussilago farfara</i>	O
Broadleaf plantain	<i>Plantago major</i>	O



Common name	Latin name	Frequency (DAFOR)
Field bindweed	<i>Convolvulus arvensis</i>	O
Spear thistle	<i>Cirsium vulgare</i>	R
Pineappleweed	<i>Matricaria discoidea</i>	O
Yarrow	<i>Achillea millefolium</i>	O
Mugwort	<i>Artemisia sp.</i>	O
Barren brome	<i>Bromus sterilis</i>	O
Hoary mullein	<i>Verbascum pulverulentum</i>	O
Timothy	<i>Phleum pratense</i>	O
Curled dock	<i>Rumex crispus</i>	O
Sheep's sorrel	<i>Rumex acetosella</i>	O
Squirrel-tail fescue	<i>Vulpia bromoides</i>	O
Musk mallow	<i>Malva moschata</i>	O
Common knapweed	<i>Centaurea nigra</i>	O
Lady's bedstraw	<i>Galium verum</i>	O
Weld	<i>Reseda luteola</i>	O
Common bird's-foot-trefoil	<i>Lotus corniculatus</i>	O
Hedge bedstraw	<i>Galium mollugo</i>	O
Viper's bugloss	<i>Echium vulgare</i>	O
Salad burnet	<i>Sanguisorba minor</i>	O
Quaking-grass	<i>Briza sp.</i>	O
Melilot	<i>Melilotus sp.</i>	O
Self heal	<i>Prunella vulgaris</i>	O



Common name	Latin name	Frequency (DAFOR)
Tufted vetch	<i>Vicia cracca</i>	O
Yellow rattle	<i>Rhinanthus minor</i>	O
Creeping cinquefoil	<i>Potentilla reptans</i>	O
Water forget-me-knot	<i>Myosotis scorpioides</i>	R
Marsh horsetail	<i>Equisetum palustre</i>	O
Marsh foxtail	<i>Alopecurus geniculatus</i>	O
Yellow mignonette	<i>Reseda lutea</i>	O
Hop trefoil	<i>Trifolium campestre</i>	R
Doves-foot cranesbill	<i>Geranium molle</i>	O
Perennial sow-thistle	<i>Sonchus arvensis</i>	O
Common cudweed	<i>Filago vulgaris</i>	O
Red campion	<i>Silene dioica</i>	R
Field forget-me-knot	<i>Myosotis arvensis</i>	R
Lesser burdock	<i>Arctium minus</i>	R
Bracken	<i>Pteridium aquilinum</i>	O
Hedge woundwort	<i>Stachys sylvatica</i>	R
Greater bird's-foot trefoil	<i>Lotus pedunculatus</i>	R
Lesser spearwort	<i>Ranunculus flammula</i>	R
Meadow vetchling	<i>Lathyrus pratensis</i>	R
Common gorse	<i>Ulex europaeus</i>	R
Cleavers	<i>Galium aparine</i>	O
St John's wort	<i>Hypericum sp.</i>	R



Common name	Latin name	Frequency (DAFOR)
Soft brome	<i>Bromus hordeaceus</i>	R
Dandelion	<i>Taraxacum sp.</i>	R
Bristly oxtongue	<i>Helminthotheca echioides</i>	R
Scarlet pimpernel	<i>Anagallis arvensis</i>	R
Catsear	<i>Hypochaeris radicata</i>	R
White campion	<i>Silene latifolia</i>	R
Teasel	<i>Dipsacus fullonum</i>	R
Pyramidal orchid	<i>Anacamptis pyramidalis</i>	R
Common poppy	<i>Papaver rhoeas</i>	R
Nodding thistle	<i>Carduus nutans</i>	R
Field pansy	<i>Viola arvensis</i>	R
Smooth tare	<i>Vicia tetrasperma</i>	R
Wild carrot	<i>Daucus carota</i>	R
Common centaury	<i>Centaureum erythraea</i>	R
Betony	<i>Betonica officinalis</i>	R
Bullrush	<i>Typha latifolia</i>	R
Redshank	<i>Persicaria maculosa</i>	R
Sticky mouse-ear	<i>Cerastium glomeratum</i>	R
Wild marjoram	<i>Origanum vulgare</i>	R
Meadow foxtail	<i>Alopecurus pratensis</i>	R
Common fiddleneck	<i>Amsinckia micrantha</i>	R
Common stork's-bill	<i>Erodium cicutarium</i>	R



Common name	Latin name	Frequency (DAFOR)
Pine	<i>Pinus sp.</i>	F
Sycamore	<i>Acer pseudoplatanus</i>	F
Oak	<i>Quercus sp.</i>	F
Common beech	<i>Fagus sylvatica</i>	F
Common ash	<i>Fraxinus excelsior</i>	O
European aspen	<i>Populus tremula</i>	R
Cherry	<i>Prunus sp.</i>	R
Silver birch	<i>Betula pendula</i>	R
Field maple	<i>Acer campestre</i>	O
Common hawthorn	<i>Crataegus monogyna</i>	R
Common ivy	<i>Hedera helix</i>	A
Elder	<i>Sambucus nigra</i>	R
Common holly	<i>Ilex aquifolium</i>	O
Blackthorn	<i>Prunus spinosa</i>	O
Common hazel	<i>Corylus avellana</i>	R
Sweet chestnut	<i>Sambucus nigra</i>	O
Rhododendron	<i>Rhododendron sp.</i>	O
Common honeysuckle	<i>Lonicera periclymenum</i>	R
Garlic mustard	<i>Alliaria petiolata</i>	F
Common bluebell	<i>Hyacinthoides non-scripta</i>	F
Ground ivy	<i>Glechoma hederacea</i>	O
False brome	<i>Brachypodium sylvaticum</i>	O



Common name	Latin name	Frequency (DAFOR)
Herb robert	<i>Geranium robertianum</i>	O
Male fern	<i>Dryopteris filix-mas</i>	O
Barley	<i>Hordeum vulgare</i>	O
Dock	<i>Rumex sp.</i>	O
White dead nettle	<i>Lamium album</i>	O
Common broom	<i>Cytisus scoparius</i>	R
Germander speedwell	<i>Veronica chamaedrys</i>	R
Wood avens	<i>Geum urbanum</i>	R
Mouse-ear chickweed	<i>Cerastium vulgatum</i>	R
Blackcurrant	<i>Ribes nigrum</i>	Unspecified
Foxglove	<i>Digitalis sp.</i>	R
Variegated yellow archangel	<i>Lamiastrum galeobdolon subsp. argentatum</i>	Unspecified
Ivy-leaved speedwell	<i>Veronica hederifolia</i>	Unspecified
Wood sorrel	<i>Oxalis acetosella</i>	Unspecified
Wood spurge	<i>Euphorbia amygdaloides</i>	Unspecified
Common horsetail	<i>Equisetum arvense</i>	Unspecified
Green alkanet	<i>Pentaglottis sempervirens</i>	Unspecified
Lords and ladies	<i>Arum maculatum</i>	Unspecified



Appendix D – Habitat Photographs

Figure D-1 Cereal crops



Figure D-2 Reedbeds



Figure D-3 Fakenham roadside – north side of roundabout





Figure D-4 Grassland at Pump Farm and horse paddock



Figure D-5 East of Rose Carr



Figure D-6 Grassland strip next to hedgerow





Figure D-7 *Lolium-Cynosurus* neutral grassland



Figure D-8 *Deschampsia* neutral grassland



Figure D-9 *Deschampsia* neutral grassland- coastal and floodplain grazing





Figure D-10 *Holcus-Juncus* neutral grassland



Figure D-11 Modified grassland



Figure D-12 Sparsely vegetated land – ruderal/ephemeral





Figure D-13 Ringland Lane



Figure D-14 Long Plantation – other lowland mixed deciduous woodland



Figure D-15 Foxburrow Plantation

