Lower Thames Crossing

6.3 Environmental Statement Appendices
Appendix 8.2 – Plants and Habitats

APFP Regulation 5 (2)(a)

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

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Lower Thames Crossing

6.3 Environmental Statement Appendices
Appendix 8.2 – Plants and Habitats

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1 Introduction

1.1.1 This document presents the results of a desk study, an extended Phase 1 habitat survey, hedgerows regulations assessment and National Vegetation Classification (NVC) surveys conducted between 2017 and 2020 to inform the Environmental Impact Assessment of the A122 Lower Thames Crossing (the Project).

2 Legislation and conservation status

2.1 Wildlife and Countryside Act 1981

2.1.1 The Wildlife and Countryside Act 1981 (as amended) transposes into UK law the Convention on the Conservation of European Wildlife and Natural Habitats 1979 (commonly referred to as the 'Bern Convention'). The Act makes it an offence, inter alia, to:

a. intentionally pick, uproot or destroy any wild plant listed in Schedule 8

b. intentionally or recklessly uproot any wild plant not included in Schedule 8 without the permission of the owner or the occupier of the land

2.1.2 It is a defence if damage to a protected plant listed on Schedule 8 of the Act is the result of an otherwise lawful action and could not reasonably have been avoided.

2.1.3 The legislation also prohibits the uprooting of wild plants not listed in Schedule 8, unless the uprooting is carried out by the owner or occupier of the land on which the plant is growing, or by someone having their permission to do so, or unless the action is authorised in writing by the appropriate local authority, although such authorisation does not confer a right of entry to the land.

2.1.4 The Act also contains measures for preventing the establishment of certain invasive non-native plant species, which may be detrimental to native wildlife. Under the legislation it is an offence, inter alia, to plant or otherwise cause to grow in the wild those species listed on Schedule 9 of the Act.

2.2 Invasive Alien Species (Enforcement and Permitting) Order 2019

2.2.1 The Invasive Alien Species (Enforcement and Permitting) Order 2019 contains measures to prevent the establishment of other invasive non-native plant species.

2.2.2 Under this legislation, it is an offence to plant or otherwise cause to grow in the wild any specimen that is of a species of plant that is included in Part 2 of Schedule 2 of the Order.

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

2.3.1 A number of plant species protected by the Wildlife and Countryside Act 1981 (as amended) receive further protection under Regulations 44 to 46 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, which implement Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive). For species on Annex IV of the Habitats Directive, member states must put in place a system of strict protection as outlined in Article 13. In the UK, the plant species listed in Annex IV of the Habitats Directive are protected under Schedule 5 of the Conservation of Habitats and Species Regulations 2017 (as amended). The European protection makes it an offence, inter alia, to deliberately pick, collect, cut, uproot or destroy a wild plant of a European protected species.

2.4 Natural Environment and Rural Communities Act 2006

2.4.1 The Natural Environment and Rural Communities Act 2006 places a duty upon public bodies to have regard to the purpose of conserving biodiversity within all of their actions. In addition, this Act requires those species identified within the UK Biodiversity Action Plan (UK BAP) List of Priority Habitats and Species (Biodiversity Reporting Information Group (BRIG), 2010) and the relevant Local Biodiversity Action Plans to be considered as biodiversity conservation priorities.

2.4.2 Habitats and species of principal importance (HoPI and SoPI) for conserving biological diversity in England are listed under section 41 of the Natural Environment and Rural Communities Act 2006, for which conservation steps should be taken or promoted.

2.5 Hedgerows Regulations 1997

2.5.1 Under the Hedgerows Regulations 1997 it is unlawful to remove or destroy certain hedgerows without permission from the relevant local planning authority. The local planning authority is also the enforcement body for offences created by the Regulations. 'Important' hedgerows (as defined in the Regulations) are protected from removal (up-rooting or otherwise destroying) by the Regulations. Various criteria specified in the Regulations are used to identify 'important' hedgerows for wildlife, landscape or historical reasons.

2.6 Protected and notable plant species

2.6.1 A number of protected or otherwise notable plant species were identified by the desk study or field surveys. A full list of these species recorded within, and up to 2km from, the Order Limits and their conservation status is provided in Table 5.6. These include the following:

a. SoPIs listed under section 41 of the Natural Environment and Rural Communities Act 2006

b. Species that are listed on the Kent Rare Plant Register (Kent Botanical Recording Group, 2015)

c. Species that are listed on the Essex Biodiversity Action Plan (Essex BAP) (Essex Biodiversity Project, 2011)

d. Species that are listed on the Kent Biodiversity Action Plan (Kent BAP) (Kent Biodiversity Action Plan Steering Group, 1997)

e. Red List species (Joint Nature Conservation Committee (JNCC), 2019) based on the International Union for Conservation of Nature (IUCN) Red List Categories and Criteria (IUCN Species Survival Commission, 2012)

f. 'Nationally Scarce' species – occurring in 16 to 100 hectads[1] (JNCC, 2019)

g. 'Nationally Rare' species – occurring in 15 or fewer hectads (JNCC, 2019)

[1] A hectad is a 10km by 10km square

2.7 Lower plants

2.7.1 Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) lists 30 species of lichen, 28 mosses and nine liverworts.

2.7.2 The Natural Environment and Rural Communities Act 2006 Section 41 requires the Secretary of State to maintain lists of species and habitats that are of principal importance for the purpose of conserving biodiversity. SoPI under section 41 of the Natural Environment and Rural Communities Act 2006 include 95 lichens, 56 mosses and 21 liverworts.

2.8 Invasive non-native plant species

2.8.1 Invasive non-native plant species are not considered to be of conservation value. Invasive species of particular note are listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). Provisions under Schedule 14 of the Wildlife and Countryside Act 1981 (as amended) and the Invasive Alien Species (Enforcement and Permitting) Order 2019 make it an offence to plant, cause these species to spread, or otherwise grow in the wild. Records of invasive non-native species are included within this document as specific mitigation may be required to prevent their spread through construction activities.

3 Background

3.1.1 The Project route traverses three distinct National Character Areas (NCAs) encompassing a wide diversity of habitat types that correlate closely with the three subdivisions of the Order Limits. The three NCAs and subdivisions are as follows:

a. North Kent Plain NCA (south of the River Thames)

b. Greater Thames Estuary NCA (River Thames crossing and surrounding area)

c. Northern Thames Basin NCA (north of the River Thames)

3.1.2 The North Kent Plain NCA is the area of land between the North Downs and the Thames Estuary. The area is open, low and gently undulating and within the Order Limits is characterised by a large extent of broadleaved ancient semi-natural woodland (ASNW) located to the north and south of the A2 trunk road. Ancient woodlands are HoPI listed under the Natural Environment and Rural Communities Act 2006.

3.1.3 UK Woodland Habitats (JNCC, 2013) states that only 1.2% of Great Britain is ASNW, and the UK BAP Priority Habitat Descriptions (BRIG, 2011) reports that there has been a substantial decline and loss of ancient woodland habitat due to woodland clearance and replanting with non-native species over the last 50 years. Kent supports a significant proportion of the UK ancient woodland resource; the Kent BAP (Kent Biodiversity Action Plan Steering Group, 1997) indicates that there is approximately 23,000ha of ASNW in Kent.

3.1.4 From the A2, the Order Limits traverses an area of arable farmland to reach the edge of the Greater Thames Estuary NCA. This encompasses the Thames Estuary and its intertidal mudflats and saltmarsh and adjacent reclaimed grazing marsh. This area is internationally important, with the grazing marsh supporting internationally important wintering and passage bird assemblages as well as rare plant and invertebrate species, reflected in the international and national designated sites located here. The Order Limits cross an area of reclaimed coastal grazing marsh, with the pasture fields divided by ditches supporting a diverse aquatic plant assemblage and an area of drier grazing marsh forming the Metropolitan Police Firing Range.

3.1.5 Coastal saltmarsh, coastal floodplain grazing marsh and intertidal mudflats are all HoPI listed under the Natural Environment and Rural Communities Act 2006.

3.1.6 The UK BAP Priority Habitat Descriptions (BRIG, 2011) estimates that there is approximately 32,500ha of saltmarsh within England but that saltmarsh is being lost in the UK due to erosion and other factors at a rate of 100ha a year.

3.1.7 Coastal and floodplain grazing marsh is defined as periodically inundated pasture, or meadow with ditches that maintain their water levels, containing standing or brackish fresh water. The ditches are especially rich in plants (BRIG, 2011). The UK BAP estimates that within the UK there may be up to 300,000ha of grazing marsh, with 200,000ha in England (BRIG, 2011). The Kent BAP (Kent Biodiversity Action Plan Steering Group, 1997) identifies 6,900ha of grazing marsh in the county.

3.1.8 The Essex BAP (Essex Biodiversity Project, 2011) estimates that there are 6,500ha of coastal and floodplain grazing marsh in the county.

3.1.9 On the Essex side of the estuary, habitat includes arable farmland; saltmarsh; large areas of previously developed land, including former landfill sites; and areas used for the storage of pulverised fuel ash from the Tilbury Power Station. Interspersed among this are small areas of flower-rich dry acid grassland and scrub, remnants of a habitat type called Thames Terrace Grassland.

3.1.10 Thames Terrace Grasslands are a habitat type unique to the Thames Estuary and are situated on thin, nutrient-poor soils overlying sands and gravels, supporting a mosaic of tall grasses and wildflowers, along with shorter areas disturbed by grazing. Areas of bare ground are also present where the soil is particularly dry, or the sand and gravel substrate has slipped (Essex County Council *et al.*, 2013). Today, true Thames Terrace Grasslands exist only in fragments in South Essex, through which the Order Limits passes.

3.1.11 The decline of Thames Terrace Grassland is partly due to agricultural intensification and increased development (Essex County Council *et al.*, 2013).

3.1.12 Previously developed land, so called brownfield habitat, is also declining. In 2012, Buglife assessed the status of these wildlife-rich brownfields and discovered that, in the six-year period since initial assessment, over half of the wildlife-rich brownfield sites had been either destroyed or had an outstanding planning permission. Only 98 of the 198 sites remained intact and secure in the short term (Robins *et al.*, 2013). Brownfield land can support a habitat type classified by the UK BAP as ‘Open Mosaic Habitat (on previously developed land)’; this habitat type supports a diverse range of plant communities (BRIG, 2011). Areas of brownfield land within the Order Limits are considered to represent this habitat type.

3.1.13 Collectively, the previously developed land or brownfield habitat and remnant Thames Terrace Grassland supports a diverse plant assemblage, including several Local Wildlife Sites (LWSs).

3.1.14 Leaving the Greater Thames Estuary NCA, the Order Limits head north and slightly west through an area of mainly intensively farmed arable land encompassed within the Northern Thames Basin NCA. Despite the predominance of arable farmland, the Order Limits include small areas of semi-natural habitat such as ancient woodland and remnant heath and acid grassland. Both arable field margins and heath/acid grassland are listed as HoPI under the Natural Environment and Rural Communities Act 2006.

4 Methodology

4.1 Scope of study

Zone of Influence

4.1.1 The area over which plants and habitats could reasonably be subject to significant effects as a result of the Project (the 'Zone of Influence') would not be expected to extend more than 50m beyond the Order Limits.

Survey boundary

4.1.2 The plants and habitats survey boundary is the Order Limits plus 50m. This is the area within which the extended Phase 1 habitat survey and the NVC surveys were carried out. The primary purpose of the extended Phase 1 habitat survey was to identify habitats, protected and notable plant species, and invasive non-native plant species, to ascertain how the plants and habitats present within the survey boundary, up to the high-tide mark, would be affected by the Project. The purpose of the NVC surveys was to identify potentially important habitats within the plants and habitats survey boundary that could be significantly affected by the Project.

Wider Study Area

4.1.3 The Plants and Habitats 'Wider Study Area' is the Order Limits plus 2km. This is the area over which desk-based information was collected. The purpose of the desk study was to identify recent records of notable plant species that could also be present in habitats affected by the Project and to provide context to the results of the field surveys.

Hydrology and air quality

4.1.4 Given the potential for indirect effects from hydrology, statutory designated sites that were within 2km of, and hydrologically connected to, the Order Limits, and non-statutory designated sites and ancient woodlands that were within 500m of, and hydrologically connected to, the Order Limits were also considered (Hydrology Study Area).

4.1.5 Given the potential for indirect effects from air pollution, designated sites, ancient woodlands, and ancient, veteran and notable trees that were within 200m of the Order Limits or the Affected Road Network were also considered (Air Quality Study Area; see Chapter 5: Air Quality (Application Document 6.1)).

Desk study

4.1.6 A desk study was carried out in 2020 and subsequently updated in 2022. This considered all recent (2010 onwards) records of protected, notable and invasive non-native plant species within 2km of the Order Limits. Records were requested from Kent & Medway Biological Records Centre (2022), Greenspace Information for Greater London (2022), Essex Wildlife Trust Biological Records Centre (2020) and the Essex Field Club (2022). The Woodland Trust Ancient Tree Inventory (Woodland Trust, 2020), British Lichen Society database (National Biodiversity Network, 2017) and British Bryological Society database (British Bryological Society, 2018) were also reviewed.

4.1.7 The locations of statutory designated sites of importance for biodiversity were obtained within 2km of the Order Limits and locations of non-statutory designated sites and ancient woodland sites were obtained within 500m of the Order Limits (Designated Sites Study Area). Locations of additional designated sites and ancient woodlands that were within 200m of the Affected Road Network were also obtained.

4.1.8 Citations for these sites, which provide information on the reasons for their designation, were reviewed to see whether or not protected or notable plant species or habitats are included as interest features.

4.1.9 The following reports related to the Project were also reviewed:

a. Appendix 7.12: Arboricultural Impact Assessment (AIA) (Application Document 6.3)

b. Lichen survey of a brownfield site at the former power station in Tilbury (Davey, 2017)

c. Tilbury Power Station development site; Lichen Survey Report (Davey, 2006)

d. Tilbury Power Station; Lichen, Bryophyte and Fungi Survey Report (RWE npower, 2008)

4.2 Field surveys

Extended Phase 1 habitat survey

4.2.1 The extended Phase 1 habitat and protected species survey for the Project was carried out from April 2017 to March 2020 by ecologists with suitable botanical experience. The aim of the survey was to identify and map habitats within, and up to 50m from, the Order Limits and to highlight any habitats of potential value for protected or otherwise notable species of plants and/or animals. Where animal species were identified, these have been included in the relevant Terrestrial Biodiversity technical appendices.

4.2.2 Habitats were mapped, following a standard good practice methodology (JNCC, 2010), within the plants and habitats survey boundary using mobile Geographic Information Systems technology. For each habitat, notes were taken on the plant community, including dominant species; species indicative of specific conditions (e.g. pH, soil moisture); non-native invasive plant species; and notable or protected plant species. Other habitat features such as structure, age and management were also noted. No attempt was made to compile an exhaustive species list of all plant species present in a habitat. Botanical names follow New Flora of the British Isles (Stace, 2019).

Hedgerows regulations assessments

4.2.3 Each hedgerow within the plants and habitats survey boundary was mapped, as described above, and subjected to a rapid condition assessment. Hedgerows of potential value were subjected to assessment for importance under the Hedgerows Regulations 1997.

National Vegetation Classification surveys

4.2.4 Analysis and interpretation of the extended Phase 1 habitat survey and desk study data, and a review of the Project design, informed the need for further targeted botanical surveys within potentially important habitats that could be significantly affected by the Project. NVC surveys were conducted in the spring and summer of 2018, 2019 and 2020. The aim of these surveys was to determine which NVC communities were present, thus providing further information on the conservation value of these areas.

4.2.5 For terrestrial grassland and woodland areas, an initial walkover was carried out of each NVC survey area to identify homogeneous stands of vegetation and to assess the likely importance of each. For those considered to be of potential importance, a full NVC survey was carried out, comprising a quadrat-based sampling approach following the NVC protocol, as outlined in the National Vegetation Classification: Users' Handbook (JNCC, 2006). Each species recorded within a quadrat was scored using the 'Domin' scale, a 10-point scale of abundance/cover used to record the extent of species in NVC samples.

4.2.6 A comprehensive list of species with DAFOR scores (Dominant, Abundant, Frequent, Occasional and Rare; Kent and Coker, 1992) was recorded for each community. For plant communities considered to be of low importance, such as species-poor grassland, quadrat sampling was not carried; only a list of species with DAFOR scores was taken.

4.2.7 For NVC surveys of aquatic habitats, all aquatic and emergent/bankside vegetation species were noted at regular sample points along the ditches. An overall DAFOR score for all the species identified was then recorded for each ditch.

4.2.8 In addition to areas within the plants and habitats survey boundary, NVC surveys were carried out at the ditches within the Shorne Marshes, which is located within the Thames Estuary and Marshes Ramsar site.

Lower plant surveys

4.2.9 Specialist surveyors collected information on the lichen and bryophyte communities and assemblages present within 200m of the Order Limits or to the edge of the Order Limits, as the distance that air quality impacts are experienced would be dependent on several factors, which differ across different sites. A walkover survey was conducted and the following information was recorded:

a. Notable lichen or bryophyte species present

b. Individual trees that host notable lichen or bryophyte species

c. Lichen and bryophyte assemblages present and their substrates

d. Small specimens were taken for microscope identification

e. Photographs of habitats and lichen species of interest were taken

5 Results

5.1 Designated sites and ancient woodland

A full description of all designated sites is provided within Appendix 8.1: Designated Sites (Application Document 6.3).

South of River Thames

5.1.1 Eight statutory and 27 non-statutory designated sites, for which plants and habitats were a qualifying/interest feature, were identified by the desk study within the Designated Sites Study Area south of the River Thames.

5.1.2 Of these, 18 sites were present within the plants and habitats survey boundary. These comprised:

a. North Downs Woodland Special Area of Conservation

b. Shorne and Ashenbank Woods Site of Special Scientific Interest (SSSI)

c. South Thames Estuary and Marshes SSSI

d. Great Crabbles Wood SSSI

e. Boxley Warren LNR

f. Great Wood ASNW

g. Area of ancient woodland around A2/M2 junction ASNW

h. Ashenbank Woodland Trust Reserve LWS and Ashenbank Wood ASNW

i. Shorne Wood Country Park and Shorne/Brewers Wood ASNW

j. Claylane Wood ASNW

k. Great Crabbles Wood ASNW

l. Cole Wood ASNW

m. Frith/Impton Woods ASNW

n. Westfield Wood ASNW

o. Starmore Wood ASNW and Peartree Wood ASNW

p. Canal and Grazing Marsh Higham LWS

q. Court Wood LWS

r. A226 Gravesend Roadside Nature Reserve

River Thames

5.1.3 One statutory designated site, the Thames Estuary and Marshes Ramsar site, for which plants and habitats were a designating feature, was identified by the desk study within the Designated Sites Study Area within the River Thames, and it was also present within the plants and habitats survey boundary.

North of the River Thames

5.1.4 Nine statutory and 52 non-statutory designated sites, for which plants and habitats were a qualifying/interest feature, were identified by desk study within the Designated Sites Study Area north of the River Thames.

5.1.5 Of these, 33 sites were present within the plants and habitats survey boundary. These comprised:

a. Mucking Flats and Marshes SSSI

b. Cranham Brickfields Local Nature Reserve

c. Hobbs Hole Wood LWS and ASNW

d. Codham Hall Wood LWS and ASNW

e. Ancient woodland west of M25 junction 29 ASNW

f. Jackson's Wood/Tyler's Shaw LWS and Jackson's Wood ASNW

g. Folkes Lane Wood ASNW

h. Coombe Wood LWS, Foxburrow Wood LWS and Coombegreen Wood ASNW

i. Franks Wood ASNW

j. Terrels Heath Grays LWS and Chadwell Wood ASNW

k. Cats Mede LWS and Sheepfold Wood ASNW

l. Rainbow Wood (a.k.a. Rainbow Shaw) LWS

m. Tilbury Marshes LWS

n. Goshems Farm LWS

o. Tilbury Centre LWS

p. Lytag Brownfield LWS

q. Low Street Pit LWS

r. Broom Hill LWS

s. West Tilbury Church LWS

t. West Tilbury Church LWS

u. Parkers Shaw LWS

v. Blackshots Nature Area LWS

w. Mucking Heath/Orsett Golf Course LWS

x. Orsett Camp Quarry LWS

y. West of Arisdale Avenue LWS

z. Franks Wood and Cranham Brickfields SINC

aa. Fields south of Cranham Marsh Site of Importance for Nature Conservation (SINC)

bb. Puddle Dock Angling Centre SINC

cc. Jermains Wood SINC

dd. Hall Farm moat, paddock and St Mary Magdalene Churchyard, North Ockendon SINC

ee. Stubber's Outdoor Pursuits Centre SINC

ff. North Ockendon Pit SINC

gg. Ockendon Railsides SINC

Hydrology and air quality

5.1.6 In addition to the sites within the plants and habitats survey boundary, 12 sites were present within the Hydrology Study Area and were hydrologically connected to the Order Limits. These were all north of the River Thames and comprised:

a. Mardyke LWS*

b. Palmer’s Shaws LWS and Great Palmer’s Shaw ASNW

c. Millards Gardens/Brannetts Wood LWS

d. Brickbarn Wood and Coombe Wood LWS and Brickbarn ASNW

e. Oak Wood LWS and ASNW*

f. Belhus Park East LWS*

g. Whitehall Wood ASNW

h. Belhus Wood Country Park and Brickkiln Wood ASNW*

i. Belhus Lakes, Belhus Wood Country Park LWS*

j. Warwick Wood LWS

k. Warley Hall Wood LWS and ASNW*

l. Woodlands School Meadow LWS

5.1.7 In addition to the sites within the plants and habitats survey boundary, 30 statutory designated sites and 267 non-statutory designated sites, for which plants and habitats are the qualifying/designating feature, were present within the Air Quality Study Area both north and south of the River Thames.

5.1.8 There were six sites, outside the plants and habitats survey boundary, that were both within the Hydrology Study Area and hydrologically connected to the Order Limits and also within the Air Quality Study Area. These have been marked with an asterisk (*) in the list above and are also included in the Air Quality Study Area numbers given above (i.e. they are accounted for in both lists).

5.2 Extended Phase 1 survey results

5.2.1 Habitats identified during the extended Phase 1 habitat survey are described below and shown on Figure 8.2: Phase 1 Habitat Map (Application Document 6.2). Habitats and features of particular value are identified by target notes (TN) on the map and listed in Annex A.

South of the River Thames

Woodland and scrub

Ancient woodland

5.2.2 There were six areas of ancient woodland located within the plants and habitats survey boundary to the south of the River Thames. These comprised the following:

a. Great Wood ASNW – An area of woodland located south-east of the Project approximately 23m from the Order Limits (TN001).

b. A small fragment of ancient woodland around the A2/M2 junction (TN002), partially within the Order Limits to the south-east of the Project.

c. Great Crabbles Wood ASNW – A large area of ancient woodland located immediately adjacent to the Order Limits to the east of the Project (TN003).

d. Shorne/Brewers/Ashenbank Wood – A large area of ancient woodland, located partially within the Order Limits north and south of the A2 to the south of the Project, forms part of the Shorne and Ashenbank Woods SSSI, the Kent Downs Area of Outstanding Natural Beauty, Shorne Wood Country Park LWS and Ashenbank Woodland Trust Reserve LWS. The wood was largely comprised of Brewers Wood ASNW (TN004, NVC Survey Area 21), Shorne Woods ASNW (TN005, NVC Survey Area 02) and Ashenbank Wood ASNW (TN006, NVC Survey Area 17).

e. Claylane Wood ASNW (TN007, NVC Survey Area 18) – Located partially within the Order Limits to the south of the Project. This woodland had a mixed canopy of hornbeam *Carpinus betulus*, ash *Fraxinus excelsior*, sycamore *Acer pseudoplatanus*, field maple *Acer campestre* and sweet chestnut *Castanea sativa* with a sparse ground flora. This woodland was located entirely within the Order Limits.

f. Peartree Wood Ancient Replanted Woodland (TN008) – Located right next to the Order Limits to the south-east of the Project.

5.2.3 Each of these areas supported semi-natural broadleaved woodland and qualify as 'Lowland Mixed Deciduous Woodland' – a HoPI under the Natural Environment and Rural Communities Act 2006. 'Broadleaved Woodland and Plantations on Ancient Woodland Sites' is also a Kent BAP priority habitat.

Ancient and veteran trees

5.2.4 Thirty-five ancient or veteran trees were identified within the plants and habitats survey boundary, outside ancient woodlands, to the south of the River Thames. Details of these trees are included in Table 5.1 and are shown on Figure 8.2: Phase 1 Habitat Map (Application Document 6.2).

5.2.5 In addition, a record of a veteran beech tree *Fagus sylvatica* was identified to the south of the A2/M2 junction. However, arboricultural surveys recorded this area as highways planting, and there were no veteran trees present.

Table 5.1 Ancient and veteran trees south of the River Thames

Target note (TN)	Common name	Scientific name	Ancient or veteran	AIA reference
TN009	Sweet chestnut	*Castanea sativa*	Veteran	G30 (single veteran within group)
TN010	Sweet chestnut	*Castanea sativa*	Potential veterans	G30 (11 additional potential veterans within group)
TN011	Sweet chestnut	*Castanea sativa*	Potential veteran	T29
TN012	Ash	*Fraxinus excelsior*	Veteran	G40
TN013	Sweet chestnut	*Castanea sativa*	Potential veteran	T70
TN014	Sweet chestnut	*Castanea sativa*	Potential veteran	T41
TN015	Sweet chestnut	*Castanea sativa*	Potential veteran	G148

Target note (TN)	Common name	Scientific name	Ancient or veteran	AIA reference
TN016	Sweet chestnut	*Castanea sativa*	Potential veteran	T202
TN017	Pedunculate oak	*Quercus robur*	Potential veteran	T145
TN018	Sweet chestnut	*Castanea sativa*	Potential veteran	G199
TN019	Sweet chestnut	*Castanea sativa*	Potential veteran	T221
TN020	Sweet chestnut	*Castanea sativa*	Potential veteran	T225
TN021	Sweet chestnut	*Castanea sativa*	Potential veteran	T223
TN022	Pedunculate oak	*Quercus robur*	Potential veteran	T226
TN023	Pedunculate oak	*Quercus robur*	Potential veteran	T234
TN024	Sweet chestnut	*Castanea sativa*	Potential veteran	T244
TN025	Sweet chestnut	*Castanea sativa*	Potential veteran	T242
TN026	Sweet chestnut	*Castanea sativa*	Potential veteran	T237
TN027	Sweet chestnut	*Castanea sativa*	Potential veteran	T238
TN028	Sweet chestnut	*Castanea sativa*	Veteran	T157
TN029	Pedunculate oak	*Quercus robur*	Potential veteran	T133
TN030	Pedunculate oak	*Quercus robur*	Ancient	N/A
TN031	Pedunculate oak	*Quercus robur*	Ancient	N/A
TN032	Pedunculate oak	*Quercus robur*	Ancient	T290
TN033	Pedunculate oak	*Quercus robur*	Ancient	N/A
TN034	Pedunculate oak	*Quercus robur*	Ancient	N/A
TN164	Pedunculate oak	*Quercus robur*	Veteran	N/A
TN165	Common horse chestnut	*Aesculus hippocastanum*	Veteran	N/A
TN166	Common horse chestnut	*Aesculus hippocastanum*	Veteran	N/A
TN167	Common beech	*Fagus sylvatica*	Veteran	N/A
TN168	Pedunculate oak	*Quercus robur*	Ancient	N/A

5.2.6 Thirty-seven individual, or groups of, ancient, veteran and notable trees were present within the Air Quality Study Area south of the River Thames (including TN009, above, and notable trees 403_VT_4 VetTree and 423_VT_24 VetTree, both pedunculate oak – see Table 1.3 in Appendix 5.4: Air Quality Operational Results (Application Document 6.3) and Figure 5.6: Operational Phase Receptors and Results (Application Document 6.2)).

Semi-natural broadleaved woodland (excluding ancient woodland)

5.2.7 The extended Phase 1 habitat survey identified additional areas of broadleaved woodland within the plants and habitats survey boundary to the south of the River Thames, most of which were located near the A2. These woodlands were not listed on the Ancient Woodland Inventory, and the absence of ancient woodland indicator species suggests they were not ancient. These included the following:

a. A large area of woodland to the south of the A2/M2 and HS1 (TN035) – This woodland had an open canopy of sweet chestnut, hornbeam, oak *Quercus* sp. and ash and supported several over-mature and veteran trees.

b. Several small areas of woodland within Rochester & Cobham Park Golf Course (TN036) – These woodlands supported large mature sweet chestnuts with oak and ash.

c. A larger area of woodland to the west of Rochester & Cobham Park Golf Course (TN037).

d. An area of woodland surrounding Jeskyns Community Woodland (TN038).

e. Two areas of woodland bisected by Thong Lane between the A2 and HS1 (TN039).

f. Gravel Hill Wood (TN040) located within the Order Limits – This woodland supported managed sweet chestnut and ash *Fraxinus excelsior* coppice woodland with very few scattered pedunculate oak. The understorey was sparse with sweet chestnut, hazel *Corylus avellana* and field maple, and the ground flora comprised abundant bluebell *Hyacinthoides non-scripta* and dog's mercury *Mercurialis perennis* with bramble *Rubus fruticosus* agg. Next to this was a small area of recently felled woodland.

g. In addition, there were 18 smaller areas of broadleaved woodland present throughout the Survey Boundary to the south of the River Thames.

5.2.8 All these areas supported semi-natural broadleaved woodland and qualify as 'Lowland Mixed Deciduous Woodland' – a HoPI under the Natural Environment and Rural Communities Act 2006. 'Secondary Semi-natural Woodland' is also Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997).

Plantation woodland

5.2.9 Extensive areas of broadleaved plantation woodland were present along the A2 and HS1. These comprised entirely young landscape planting with species

including ash, sycamore, hazel, willow *Salix* sp., sweet chestnut, hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, rose *Rosa* sp., wild privet *Ligustrum* sp., field maple, dogwood *Cornus sanguinea*, guelder-rose *Viburnum opulus* and buckthorn *Rhamnus cathartica*.

5.2.10 Blocks of plantation broadleaved woodland were also found within Jeskyns Community Woodland to the south of the A2/HS1 (TN041). The areas of woodland comprised recently planted trees with species including hawthorn, birch *Betula* sp., hazel, oak species *Quercus* sp., elder *Sambucus nigra*, field maple, wayfaring-tree *Viburnum lantana*, Swedish whitebeam *Sorbus intermedia*, ash, Scots pine *Pinus sylvestris* and aspen *Populus tremula*. Areas of neutral semi-improved, species-poor semi-improved and improved grassland separated the blocks of woodland.

5.2.11 Several smaller areas of broadleaved and mixed plantation woodland were also found further north of the A2, mainly around the Southern Valley Golf Course and Gravesend Road (A226).

5.2.12 All these areas supported broadleaved plantation woodland and qualify as 'Plantation Woodland' – a Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997).

Dense/continuous and scattered scrub

5.2.13 Scattered scrub was present throughout the area within the plants and habitats survey boundary. The majority of the dense scrub within the plants and habitats survey boundary to the south of the River Thames was located within the Order Limits within the Southern Valley Golf Course (TN042). This comprised mainly gorse *Ulex europaeus*, hawthorn and blackthorn. Other smaller areas of dense scrub as well as areas of scattered scrub were also located throughout the plants and habitats survey boundary.

5.2.14 'Dense Scrub' is a Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997), and as such, all areas of continuous and dense scrub qualify as this habitat.

Parkland and scattered trees

5.2.15 The trees located within Cobham Hall School (TN044) were also set within a large area of grassland with mature oaks and sweet chestnuts. These two areas were considered to qualify as 'Wood-Pasture and Parkland' – a HoPI under the Natural Environment and Rural Communities Act 2006 and 'Lowland Wood-pasture and Historic Parkland', a Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997).

5.2.16 Numerous other scattered trees were also present throughout the plants and habitats survey boundary to the south of the River Thames. These were mainly located in and around the golf courses (Rochester & Cobham Park Golf Course and Southern Valley Golf Course), around the A2 and HS1 and in and around farmyards and private dwellings.

Grassland and marsh

Neutral grassland

5.2.17 Several areas of neutral semi-improved grassland were present along the A2 and HS1 corridor. These areas supported a relatively low diversity of common neutral species with occasional scattered pyramidal orchids *Anacamptis pyramidalis*. Access was limited along most of the verge due to health and safety constraints, so these areas were assessed on a precautionary basis using professional judgement. There were also numerous small areas along road verges and tracks.

5.2.18 Large areas of neutral semi-improved grassland were present to the south and east of Great Crabbles Wood ASNW (TN045).

5.2.19 Frequent areas of neutral semi-improved grassland were present through Jeskyns Community Woodland separating blocks of plantation woodland (TN046).

5.2.20 A larger area of neutral semi-improved grassland was present to the south of HS1 (TN047), although the area is likely to have been seeded. Grassland was dominated by red fescue *Festuca rubra* and meadow foxtail *Alopecurus pratensis* with a low diversity of forb species, including scattered orchid species.

5.2.21 Another larger area of neutral semi-improved grassland was present between the A2 and Claylane Wood (TN048). The grassland supported a low diversity of species including false oat-grass *Arrhenatherum elatius*, creeping bent *Agrostis stolonifera* and wild carrot *Daucus carota* subsp. *carota*. There was also evidence of negative human pressures including burning and fly-tipping. Scrub and tall ruderal habitat were also encroaching into the area.

5.2.22 Several fields to the east of Thong comprised neutral semi-improved grassland (TN049). Species included false oat-grass, hogweed *Heracleum sphondylium*, bristly oxtongue *Helminthotheca echioides* and ash saplings.

5.2.23 There were areas of neutral semi-improved grassland present through Southern Valley Golf Course (TN050). Species predominately comprised false oat-grass, creeping bent, wild carrot, creeping thistle *Cirsium arvense*, lady's bedstraw *Galium verum* and hop trefoil *Trifolium campestre* with scattered bee orchid *Ophrys apifera*.

5.2.24 The A226 Gravesend Roadside Nature Reserve (TN051) was designated for supporting an assemblage of chalk grassland indicator plants. However, at the time of survey, indicator species suggested neutral grassland with encroaching tall ruderals.

5.2.25 A large strip of neutral semi-improved grassland was present along the southern side of the North Kent Railway and down into Shorne Marshes (TN052). Another smaller strip of neutral semi-improved grassland was present in Filborough Marshes (TN053).

5.2.26 The habitat along the sea wall included neutral semi-improved grassland (TN054). Grass species included sea couch *Elytrigia atherica*, timothy *Phleum pratense*, cock's-foot *Dactylis glomerata* and creeping bent with forb species including yarrow *Achillea millefolium*, common ragwort *Senecio jacobaea*, teasel *Dipsacus fullonum*, curled dock *Rumex crispus*, ribwort plantain *Plantago*

lanceolata, mugwort *Artemisia vulgaris*, bristly oxtongue, creeping thistle *Cirsium arvense*, stone parsley *Sison amomum* and wild carrot.

5.2.27 These larger areas (excluding small fragments along tracks and roadsides) were classified as 'Neutral Grassland' is also Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997).

Calcareous grassland

5.2.28 There was a very small area (0.41ha) of unimproved calcareous grassland recorded within the plants and habitats survey boundary to the south of the River Thames. This was located to the south of the A2, off Brewers Road junction (TN055). This grassland supported base-rich indicator species including quaking-grass *Briza media*, lady's bedstraw and yellow-wort *Blackstonia perfoliata*. Next to this was a small area of semi-improved calcareous grassland of lower species diversity.

5.2.29 A second area of semi-improved calcareous grassland comprised a long strip of grassland along the south-east edge of Southern Valley Golf Course (TN056). This grassland supported calcareous grassland species, although scrub and tall ruderals were beginning to encroach into the grassland.

5.2.30 Two further very small areas of semi-improved calcareous grassland were present south of Park Pale Lane and the A2 and between the A2 and Havercourt Road (TN057).

5.2.31 'Lowland Calcareous Grassland' is a HoPI under the Natural Environment and Rural Communities Act 2006. However, these areas do not have the floristic diversity to fit the NVC communities required for these habitats to qualify as a priority habitat. Given this, the calcareous grassland within the Plants and Habitats Study Area was not considered to be a HoPI for the purposes of this appendix.

5.2.32 These habitats were considered to fit the description for 'Chalk Grassland', a Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997).

Improved grassland

5.2.33 There was a total of 35.49ha of improved grassland present throughout the plants and habitats survey boundary to the south of the River Thames. These areas were mainly located within Jeskyns Community woodland and around the hamlet of Thong and Chalk.

5.2.34 'Lowland Farmland' is a Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997) primarily in relation to its ability to support wintering birds. Wintering birds are considered within Appendix 8.7: Ornithology (Application Document 6.3). Given this, the improved grassland within the Wider Study Area was not considered to be a BAP habitat for the purposes of this appendix.

Marshy grassland

5.2.35 Two small areas of marshy grassland were recorded within the plants and habitats survey boundary to the south of the River Thames. One was located to the south of A2 and comprised areas of locally abundant bulrush *Typha latifolia* (TN058).

5.2.36 The other was located to the south of the North Kent Railway and canal path (TN059). The area comprised low-lying, recently disturbed land that was likely to flood regularly. Species included marsh foxtail *Alopecurus geniculatus*, water-plantain *Alisma plantago-aquatica*, bulbous buttercup *Ranunculus bulbosus,* curled dock, fan-leaved water-crowfoot *Ranunculus circinatus*, nodding bur-marigold *Bidens cernua* and celery-leaved buttercup *Ranunculus sceleratus*.

5.2.37 Marshy grassland is classified as a Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997). These areas of grassland was located within the South Thames Estuary and Marshes SSSI but entirely outside the Order Limits.

Species-poor semi-improved grassland

5.2.38 Several small areas of species-poor semi-improved grassland were located throughout the plants and habitats survey boundary to the south of the River Thames. These comprised the following:

a. Small strips along the A2 and HS1 corridor as well as along other carriageways

b. Areas located within Jeskyns Community Woodland between plantation woodland

c. Several horse-grazed pastures to the south and west of Thong

d. Small areas located throughout Rochester & Cobham Park Golf Course

5.2.39 All the above areas supported similar species, including false-oat grass, creeping bent, Yorkshire-fog *Holcus lanatus, c*ommon ragwort and bristly oxtongue. Several of the grasslands were encroached with other tall ruderal species.

5.2.40 There were four larger areas of species-poor semi-improved grassland located to the south of the River Thames: to the north of Park Pale Lane , within Cobham Hall School (TN044), within Filborough Marshes (TN068) and within the Metropolitan Police Firing Range (TN061).

5.2.41 The grasslands to the north of Park Pale Lane and within Cobham Hall School (TN044) support a number of widely spaced mature and veteran trees including oak species and sweet chestnut. These areas were classified as ‘Lowland Wood-pasture and Historic Parkland’, which is a Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997), and were considered under the ‘parkland and scattered trees’ heading above.

5.2.42 Almost the entire area of Filborough Marshes located within the plants and habitats survey boundary falls within the South Thames Estuary and Marshes SSSI and Thames Estuary and Marshes Ramsar site. The grassland within Filborough Marshes (TN060) supported the common species mentioned above as well as meadow barley *Hordeum secalinum*, perennial rye-grass *Lolium perenne*, sand sedge *Carex arenaria* and hairy buttercup *Ranunculus sardous*. This rank semi-improved grassland was not a qualifying or designating feature of either of these sites.

5.2.43 The grassland within the Metropolitan Police Firing Range (TN061) forms part of the Canal and Grazing Marsh Higham LWS and comprised a mosaic of

habitats with scattered tall ruderal species present throughout. Species present included creeping thistle *Cirsium arvense*, false oat-grass, sea couch, yarrow, wild carrot and lady's bedstraw.

Tall herb and fern

Continuous bracken

5.2.44 Three small areas of continuous bracken were present near the Brewers Road roundabout within the plants and habitats survey boundary, partially within the Order Limits. These habitats were considered to be of low ecological value.

Tall ruderal herbs

5.2.45 Small areas of tall ruderal herbs were located throughout the plants and habitats survey boundary to the south of the River Thames, mainly located around A2 and HS1, within the golf courses and along edges of arable fields.

5.2.46 A larger area of tall ruderal vegetation was located within the Canal and Grazing Marsh Higham LWS alongside the Thames and Medway Canal (TN062), which comprised mainly common nettle and common thistle species.

Swamp and marginal vegetation

5.2.47 A small area of swamp habitat were recorded within the plants and habitats survey boundary to the south of the River Thames located within Jeskyns Community Woodland car park (TN063) and was dominated by bulrush.

5.2.48 An area of marginal vegetation was present along the ditch running along the southern edge of the Canal and Grazing Marsh Higham LWS (TN064). The area was dominated with common reed, which has encroached onto the adjacent banks. Scattered hawthorn scrub was also present along the ditch.

5.2.49 Areas that were dominated by common reed (TN064) were classified as 'Reedbed' – a HoPI under the Natural Environment and Rural Communities Act 2006 and a Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997).

Open water

Standing water

5.2.50 Twenty-one ponds were identified within the plants and habitats survey boundary to the south of the River Thames, 10 of which were located within the Order Limits. The ponds varied from overflow balancing ponds to undisturbed ponds with associated aquatic vegetation. Ponds present within the survey boundary meet the criteria for 'Pond' HoPI under the Natural Environment and Rural Communities Act 2006. 'Standing Water' is also a Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997). Descriptions of the ponds are included in Appendix 8.5: Amphibians (Application Document 6.3).

5.2.51 Three lakes were identified within the plants and habitats survey area to the south of the River Thames. These waterbodies were largely artificial. However, still meet the criteria for 'Standing Water' priority habitat on the Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997).

5.2.52 An extensive ditch system was present within Filborough Marshes (TN065, NVC Survey Area 13). The ditches mainly comprised wide deep drainage

ditches supporting emergent and bankside vegetation such as sea club-rush, fool's-watercress *Helosciadium nodiflorum*, bulrush and common reed. Aquatic and submerged vegetation was dominated by water fern *Azolla filiculoides*, duckweeds and hornworts. This area was encompassed by the Thames Estuary and Marshes Ramsar site and South Thames Estuary and Marshes SSSI. Ditches meet the criteria for 'Standing Water' priority habitat on the Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997).

5.2.53 The Thames and Medway Canal (TN062), a disused canal, was present between Shorne Marshes and the Metropolitan Police Firing Range. This habitat meet the criteria for 'Standing Water' priority habitat on the Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997).

Running water

5.2.54 No major watercourses were present within the plants and habitats survey boundary to the south of the River Thames. A free-flowing ditch fringed by common reed was present within the Metropolitan Police Firing Range (TN064). 'Rivers and Streams' are a Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997).

Coastal

5.2.55 The habitats between the sea wall and the high tide mark of the Thames Estuary (TN066) comprised saltmarsh habitat and shingles and cobbles, which change to mudflats near to the estuary. These areas were classified as 'Coastal Saltmarsh' and 'Intertidal Mudflats' – HoPI under the Natural Environment and Rural Communities Act 2006. 'Intertidal Mud and Sand' and 'Saltmarsh' are also Kent BAP priority habitats (Kent Biodiversity Action Plan Steering Group, 1997).

Miscellaneous

Arable land

5.2.56 Large areas of arable land were present throughout the plants and habitats survey boundary to the south of the River Thames. 'Lowland Farmland' is a Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997) primarily in relation to its ability to support wintering birds and arable weeds. No arable weed assemblages were recorded during the extended Phase 1 habitat survey. Wintering birds are considered within Appendix 8.7: Ornithology (Application Document 6.3). Given this, the arable land within the Plants and Habitats Study Area was not considered to be a HoPI for the purposes of this appendix.

Amenity grassland

5.2.57 There was a total of 53.37ha of amenity grassland present throughout the plants and habitats survey boundary to the south of the River Thames. These areas were mainly located within the Southern Valley Golf Course with smaller areas near the A2, along the A226 and in the Metropolitan Police Firing Range. These areas qualify as a 'Urban Habitats' – a Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997). Despite this, amenity grassland was considered to be of low ecological value given the urban pressures and intensive management of the grassland in these areas.

Ephemeral/short perennial

5.2.58 Three small areas of ephemeral/short perennial habitat were identified within the plants and habitats survey boundary around the A2. One area was to the north of the A2 (TN067) and was dominated by ephemeral species and ruderal weeds such as creeping thistle, docks and ragwort over a hardcore base.

5.2.59 The other two areas were located around Singlewell substation between the A2 and HS1 (TN068) and were colonised by teasel, bramble, selfheal *Prunella vulgaris*, a willowherb species and birch seedlings. These two areas, along with the surrounding habitat, can be classified as 'Open Mosaic' – HoPIs under the Natural Environment and Rural Communities Act 2006 – and are considered under the 'open mosaic habitats' heading below.

Hedgerows

5.2.60 A total of 104 hedgerows were identified within the plants and habitats survey boundary to the south of the River Thames. These comprised the following:

a. 32 species-rich intact hedgerows

b. 40 species-poor intact hedgerows

c. Three species-rich defunct hedgerows

d. 15 species-poor defunct hedgerows

e. Eight species-rich hedgerows with trees

f. Two species-poor hedgerows with trees

g. Four non-native hedgerows

5.2.61 Excluding non-native hedgerows, all hedgerows were considered to meet the criteria for the 'Hedgerow' HoPI under the Natural Environment and Rural Communities Act 2006 as well as qualify as a Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997).

5.2.62 As stated above in Section 4, all hedgerows were subject to a rapid condition assessment to determine whether a hedgerows regulations assessment was required. Those that were identified as being potentially 'important' were assessed for importance in more detail under the Hedgerows Regulations 1997.

5.2.63 Within the plants and habitats survey boundary to the south of the River Thames, 26 hedgerows were classed as 'important'. A summary of the assessment for each hedgerow is provided in Annex B and shown on Figure 8.3: Hedgerow Regulations Assessment (Application Document 6.2).

Open mosaic habitats

5.2.64 The area around Singlewell substation comprises a mix of plantation woodland, dense scrub, semi-improved neutral and species-poor semi-improved grassland, tall ruderal herbs, standing water, ephemeral/short perennial vegetation (TN068) and bare ground. This area was classified as an 'Open Mosaic on previously developed Land' HoPI under the Natural Environment and Rural Communities Act 2006 and as the 'Urban Habitats' Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997).

Coastal and Floodplain Grazing Marsh

5.2.65 The semi-improved species poor grassland, marshy grassland and ditches located within Filborough marshes and Canal and Grazing Marsh Higham LWS was classified as an ‘Coastal and Floodplain Grazing Marsh' HoPI under the Natural Environment and Rural Communities Act 2006 and a Kent BAP priority habitat (Kent Biodiversity Action Plan Steering Group, 1997).

Other habitats

5.2.66 Other habitats were also recorded within the plants and habitats survey boundary to the south of the River Thames, including recently felled woodland, spoil heaps, refuse-tips, introduced shrub, buildings, bare ground, hardstanding, other built-up areas (inc. houses, gardens, allotments, play areas and railways), fences, walls, dry ditches and earth banks. These habitats were considered to be of low ecological value.

Habitat extents

5.2.67 Forty-six habitats were recorded across the plants and habitats survey boundary to the south of the River Thames. Table 5.2 records all habitats and their area or length, if applicable, within the Study Area.

Table 5.2 Extents of Phase 1 habitat types present within the plants and habitats survey boundary to the south of the River Thames

Phase 1 habitat type		Estimated extent (ha) or length (km)
Woodland and scrub	A1.1.1 Semi-natural broadleaved woodland	106.25ha
	A1.1.2 Broadleaved plantation woodland	83.27ha
	A1.3.2 Mixed plantation woodland	1.48ha
	A2.1 Dense scrub	12.98ha
	A2.2 Scattered scrub	N/A
	A3.1 Broadleaved parkland/scattered trees	N/A
	A3.2 Coniferous parkland/scatted trees	N/A
	A3.3 Mixed parkland/scattered trees	N/A
	A4.1 Recently-felled broadleaved woodland	0.28ha
Grassland and marsh	B2.2 Semi-improved neutral grassland	46.79ha
	B3.1 Unimproved calcareous grassland	0.41ha
	B3.2 Semi-improved calcareous grassland	2.68ha
	B4 Improved grassland	35.49ha
	B5 Marshy grassland	0.18ha
	B6 Poor semi-improved grassland	121.55ha
Tall herb and fern	C1.1 Continuous bracken	0.25ha
	C3.1 Tall ruderal	10.70ha
Swamp, marginal and Inundation	F1 Swamp	0.51ha
	F2.1 Marginal	1.10km
Open water	G1 Standing water	7.78ha
	G2 Running water	0.71ha
Coastal	H1.1 Intertidal mud/sand	0.30ha
	H1.2 Intertidal shingle/cobbles	0.29ha
	H2.6 Dense/continuous saltmarsh	0.09ha
Rock exposure and waste	I2.2 Artificial spoil	0.15ha
Miscellaneous	J1.1 Arable farmland	298.02ha
	J1.2 Amenity grassland	53.37ha
	J1.3 Ephemeral/short perennial	1.74ha

Phase 1 habitat type		Estimated extent (ha) or length (km)
	J1.4 Introduced shrub	0.29ha
	J3.5 Sea wall	0.25km
	J3.6 Buildings	14.37ha
	J4 Bare ground	7.92ha
	J5 Other habitat (hardstanding)	102.47ha
	J5 Other habitat (other built-up areas)	47.80ha
Boundary features	J2.1.1 Intact species-rich hedgerow	5.84km
	J2.1.2 Intact species-poor hedgerow	6.25km
	J2.2.1 Defunct species-rich hedgerow	0.50km
	J2.2.2 Defunct species-poor hedgerow	1.73km
	J2.3.1 Species-rich hedgerow with trees	2.01km
	J2.3.2 Species-poor hedgerow with trees	0.44km
	J5 Other habitat (non-native hedgerow)	0.47km
	J2.4 Fence	38.21km
	J2.5 Wall	0.54km
	J2.6 Dry ditch	1.09km
	J2.8 Earth bank	0.30km

River Thames

5.2.68 The River Thames bisects the Project route, approximately one-third from the southernmost part of the Project. Due to the nature of the survey boundary of the River Thames, no terrestrial botanical surveys were carried out. For more information on this survey boundary, please refer to Chapter 9: Marine Biodiversity (Application Document 6.1).

North of the River Thames

Woodland and scrub

Ancient woodland

5.2.69 There were nine areas of ancient woodland within the plants and habitats survey boundary to the north of the River Thames. These comprise the following:

a. Rainbow Shaw (TN069, NVC Survey Area 23) – This woodland had a mixed canopy of hornbeam, oak sp. and ash with a sparse understory. The ground flora was dominated by bluebell, wood anemone *Anemone nemorosa*, wood speedwell *Veronica montana*, herb-Robert *Geranium robertianum* and lords-and-ladies *Arum maculatum*. Although not listed on the Ancient Woodland Inventory, species composition obtained during

further detailed botanical surveys have suggested this woodland is likely to qualify as an ancient woodland. This woodland was encompassed entirely by the Rainbow Wood (a.k.a Rainbow Shaw) LWS and was located within the Order Limits.

b. Chadwell Wood ASNW (TN070) – Located approximately 19m west of the Order Limits.

c. Sheepfold Wood ASNW (TN071) – Located immediately next to the Order Limits.

d. Franks Wood ASNW (TN072) – Located immediately next to the Order Limits.

e. Hobbs Hole Wood ASNW (TN073, NVC Survey Area 11), which is part of the Hobbs Hole LWS – Ancient woodland dominated by ash with an understory of elder and hawthorn. Located immediately next to the Order Limits.

f. Codham Hall Wood ASNW (TN074, NVC Survey Area 11), which forms part of the Codham Hall Wood LWS – ASNW dominated by hornbeam with pedunculate oak. Bluebells were abundant in the ground flora. No access was granted, so it was viewed from adjacent land right next to the Order Limits and assessed on a precautionary basis using professional judgement.

g. Ancient woodland west of M25 junction 29, likely to be remnants of Codham Hall Wood (TN075, NVC Survey Area 11) – When viewed from adjacent land, appeared to have similar species composition to Cobham Hall Wood. Located immediately next to the Order Limits.

h. Coombegreen Wood ASNW (TN076) – An area of ancient woodland bisected by the M25, immediately next to the Order Limits. The section of this woodland located to the east of the M25 forms part of the Coombegreen Wood LWS.

i. Jackson's Wood ASNW (TN077) – Clearly exhibited the structure and flora characteristic of ancient woodland, encompassed entirely by Jackson's Wood/Tyler's Shaw LWS. Located approximately 21m north-east of the Order Limits.

5.2.70 All these areas support semi-natural broadleaved woodland and qualify as 'Lowland Mixed Deciduous Woodland' – a HoPI under the Natural Environment and Rural Communities Act 2006. 'Ancient woodland sites' are also an Essex BAP priority habitat (Essex Biodiversity Project, 2011).

Ancient and veteran trees

5.2.71 Fourteen ancient or veteran trees were identified within the plants and habitats survey boundary, outside ancient woodlands, to the north of the River Thames. Details of these trees are included in Table 5.3 and are shown on Figure 8.2: Phase 1 Habitat Map (Application Document 6.2).

Table 5.3 Ancient and veteran trees north of the River Thames

Target note (TN)	Common name	Scientific name	Ancient or veteran	AIA reference
TN078	Pedunculate oak	*Quercus robur*	Potential veteran	G312
TN079	Ash	*Fraxinus excelsior*	Potential veteran	T362
TN080	Ash	*Fraxinus excelsior*	Potential veteran	T363
TN081	Pedunculate oak	*Quercus robur*	Potential veteran	T460
TN082	Pedunculate oak	*Quercus robur*	Ancient	N/A
TN083	Pedunculate oak	*Quercus robur*	Potential veteran	T555
TN084	Pedunculate oak	*Quercus robur*	Potential veteran	T557
TN085	Ash	*Fraxinus excelsior*	Potential veteran	T558
TN086	Pedunculate oak	*Quercus robur*	Potential veteran	T562
TN087	Pedunculate oak	*Quercus robur*	Potential veteran	T563
TN088	Pedunculate oak	*Quercus robur*	Potential veteran	T566
TN089	Pedunculate oak	*Quercus robur*	Potential veteran	T570
TN009	Pedunculate oak	*Quercus robur*	Potential veteran	T609
TN091	Pedunculate oak	*Quercus robur*	Potential veteran	G626
TN092	Pedunculate oak	*Quercus robur*	Veteran	T630
TN163	Common lime	*Tilia x europaea*	Veteran	N/A
TN169	Ash	*Fraxinus excelsior*	Veteran	T2

5.2.72 Thirteen individual, or groups of, ancient, veteran and notable trees were present within the Air Quality Study Area north of the River Thames (including TN089 and TN092, above) (see Table 1.3 in Appendix 5.4: Air Quality Operational Results (Application Document 6.3) and Figure 5.6: Operational Phase Receptors and Results (Application Document 6.2)).

Semi-natural broadleaved woodland (excluding ancient woodland)

5.2.73 The extended Phase 1 survey identified additional areas of broadleaved woodland throughout the plants and habitats survey boundary. These include the following:

a. Areas of woodland north of Tilbury Power Station (TN093) partially within the Order Limits.

b. An area of woodland within old fort ruins (TN094) – Secondary woodland with mature hawthorn, sycamore and oak species. The ground flora was

dominated by common nettle *Urtica dioica*. This woodland was located within the plants and habitats survey boundary, next to the Order Limits.

c. A narrow strip of woodland to the south of Low Street Pit LWS (TN095) within the Order Limits, with a canopy of oak sp. and beech.

d. Small area of woodland within Low Street Pit LWS (TN096), within the Order Limits – This woodland comprised pedunculate oak and hawthorn with ground flora dominated by common nettle.

e. Ashen Shaw Woodland (TN097), within the Order Limits, comprising pedunculate oak and ash with a scrubby understory.

f. Area of broadleaved semi-natural woodland next to the Order Limits (TN098) – No access was permitted for further surveys.

g. Area of woodland partially within the Order Limits to the north of Chadwell St Mary's roundabout (TN099).

h. An area of woodland between Orsett and Baker Street (TN100) within the Order Limits.

i. Strips of woodland next to Medebridge Road (TN101), next to the Order Limits.

j. Narrow strips of woodland along the Mardyke (TN102), partially within the Order Limits, comprising field maple, ash, hawthorn, pedunculate oak, white poplar *Populus alba* and hazel.

k. The Wilderness woodland (TN103), partially within the Order Limits – The composition of the wood was assessed as secondary woodland with a mixture of crack-willow *Salix fragilis*, white poplar, ash and sycamore, some of which were mature trees. The canopy cover was quite dense, and the understorey was not well developed, with scattered elder with common ivy *Hedera helix* and common nettle dominating the ground flora.

l. Two areas of semi-natural broadleaved woodland east of Thames Chase Community Forest (TN104): one next to and one partially within the Order Limits.

m. Area to the south-west of M25 junction 29 (TN105, NVC Survey Area 11), partially within the Order Limits – This secondary woodland had an open pedunculate oak canopy with an understorey of hawthorn and spindle *Euonymus europaeus* with dense areas of blackthorn scrub along the pathway through the middle of the wood. There were smaller areas of younger plantation woodland. There were some open areas of semi-improved grassland with bramble and hawthorn scrub and scattered pedunculate oak trees to the north of the site.

n. In addition, there were 47 smaller areas of broadleaved woodland present throughout the Plants and Habitats Study Area to the north of the River Thames.

5.2.74 All these areas support semi-natural broadleaved woodland and qualify as 'Lowland Mixed Deciduous Woodland' – a HoPI under the Natural Environment and Rural Communities Act 2006.

Plantation woodland

5.2.75 The extended Phase 1 habitat survey identified a number of areas of plantation woodland within the plants and habitats survey boundary to the north of the River Thames. Most of these areas comprised small areas or narrow strips of landscape planting near the East Tilbury scrapyard (TN106), the fishing lake at Coles South (TN107), Tarmac (TN108), along the A1089 (TN109) and A13 corridors (TN110, TN111), along the Mardyke and around Benton Land (TN135) and along the M25 corridor (TN113).

5.2.76 The northern area of broadleaved plantation woodland located at Tarmac (TN108) forms the southern edge of the Linford Pit LWS and was partially within the Order Limits. This LWS is designated as a brownfield site for invertebrate interest. The small areas of plantation woodland located within the LWS that overlap with the plants and habitats survey boundary were not considered to form an integral part of the LWS.

5.2.77 A large strip of plantation woodland borders the northern edge of Blackshots Nature Area LWS (TN114) within the Order Limits. This was largely landscape planting along the A13 interchange which has encroached into the LWS and was not considered to form an integral part of the LWS.

5.2.78 Larger areas of plantation woodland were recorded within Thames Chase Community Woodland, which is bisected by the M25. The woodland to the west of the M25 (TN115) supported several blocks with a diverse mix of species including field maple, wild cherry *Prunus avium*, oak sp., silver birch *Betula pendula*, ash and hornbeam. Most of the woodlands were young with a sparse understory and ground flora. The woodland to the east (TN116) comprised similar species, although was scrubby in places. Both areas were partially within the Order Limits.

5.2.79 Further large areas of plantation woodland were also recorded within the woodland off Folkes Lane (within Folkes Lane Wood ASNW) at the very north of the Project route to the west of the M25 (TN117), partially within the Order Limits. This woodland was planted to support a wide diversity of species including oak species, willow species, birch species and dogwood. A network of surfaced paths also runs through the woodland.

5.2.80 In addition to landscape planting, there were 37 other smaller areas of broadleaved, coniferous and mixed plantation woodland present within the plants and habitats survey boundary north of the River Thames.

Dense/continuous and scattered scrub

5.2.81 Areas of dense and scattered scrub were present throughout the plants and habitats survey boundary to the north of the River Thames. Larger areas of dense scrub were located in East Tilbury Marshes (TN118), north-west of Linford (TN119), Blackshots Nature Area LWS (TN120) and in Orsett Golf Course (TN121). Smaller areas of scrub were frequently present east of Grays south of the A13, more sparsely recorded in the area between South Ockendon and Bulphan, and then again more frequently between North Ockendon and the

northern extent of the Project. Dominant species recorded include bramble, blackthorn, hawthorn, willow, broom *Cytisus scoparius*, rose, dogwood, spindle, common ivy and elm *Ulmus* sp.

Parkland and scattered trees

5.2.82 Numerous scattered trees were present throughout the plants and habitats survey boundary to the north of the Thames. These were mainly located around Cole House Fort, in and around farmyards and private dwellings, around large water bodies and within the golf courses.

Grassland and marsh

Acid grassland

5.2.83 Three areas of unimproved acid grassland were recorded within the plants and habitats survey boundary to the north of the River Thames. All three areas were located within Low Street Pit LWS, south of Station Road, to the east of West Tilbury (TN122), within the Order Limits. These areas supported common bent *Agrostis capillaris*, false oat-grass, sheep's fescue *Festuca ovina*, lady's bedstraw, sheep's sorrel *Rumex acetosella*, yarrow, autumn hawkbit *Scorzoneroides autumnalis* and bladder campion *Silene vulgaris*.

5.2.84 Three small areas of semi-improved acid grassland were recorded within the plants and habitats survey boundary to the north of the River Thames. One was recorded within Blackshots Nature Area LWS (TN123) and comprised sheep's sorrel, squirreltail fescue *Vulpia bromoides*, creeping cinquefoil *Potentilla reptans*, common soft-brome *Bromus hordeaceus* and red bartsia *Odontites vernus*.

5.2.85 The other two were in the west of Orsett Golf Course, south of the A13 (TN124, NVC Survey Area NVC7), partially within the Order Limits. These areas were located within the Mucking Heath LWS and supported red fescue, common bent, lady's bedstraw, yarrow, sheep's sorrel, perforate St John's-wort *Hypericum perforatum*, musk-mallow *Malva moschata*, mouse-ear-hawkweed *Pilosella officinarum* and common toadflax *Linaria vulgaris*.

5.2.86 These areas were classified as 'Lowland Dry Acid Grassland' – a HoPI under the Natural Environment and Rural Communities Act 2006 – and were thought to be remnants of Thames Terrace Grassland.

Neutral grassland

5.2.87 One area of unimproved neutral grassland was present within the plants and habitats survey boundary to the north of the River Thames, located to the south of the Orsett Cock roundabout partially within the Order Limits (TN125).

5.2.88 Three large areas of semi-improved neutral grassland were present north of Tilbury Power Station (TN126) partially within the Order Limits, at East Tilbury Marshes (TN127) partially within the Order Limits and immediately south of East Tilbury (TN128) within the Order Limits. Smaller areas of semi-improved neutral grassland were also present around the East Tilbury and West Tilbury areas, mostly as arable field margins (which classify as 'Cereal Field Margins' that are an Essex BAP priority habitat; Essex Biodiversity Project, 2011) and some small pasture fields.

5.2.89 Further areas of semi-improved neutral grassland were present north of Chadwell St Mary (TN129), around Orsett Golf Course (TN130), west of Orsett (TN131), west of South Ockendon (TN132), west of the M25 (TN133), east of the B186 around the Veolia Landfill site (TN134), east and west of the M25 in the vicinity ofnear the Thames Chase Community Forest (TN135), south-west of the M25/A127 junction (TN136), west of the M25 near junction 29 (TN137) and near the Folkes Lane Woodland (TN138).

5.2.90 Smaller scattered areas were also present throughout the plants and habitats survey boundary to the north of the River Thames along tracks and road verges. These habitats supported species including rough meadow-grass *Poa trivialis*, smooth meadow-grass *Poa pratensis*, lady's bedstraw, sweet vernal-grass *Anthoxanthum odoratum*, smooth sow-thistle *Sonchus oleraceus* and fennel *Foeniculum vulgare*.

Improved grassland

5.2.91 There was a total of 101.34ha of improved grassland present throughout the plants and habitats survey boundary to the north of the River Thames. This habitat was considered to be of low conservation value.

Marshy grassland

5.2.92 Five small areas of marshy grassland were recorded within the plants and habitats survey boundary to the north of the River Thames: one in Low Street Pit LWS (TN139) within the Order Limits, one to the east of the M25 (TN140) outside the Order Limits and the other three located within NVC Survey Area 10 (TN141). These areas were species poor and supported soft-rush *Juncus effusus*, hard rush *Juncus inflexus*, great willowherb *Epilobium hirsutum*, celery-leaved buttercup, common nettle and lesser spearwort *Ranunculus flammula*.

Species-poor semi-improved grassland

5.2.93 Small areas of species-poor semi-improved grassland were located throughout the plants and habitats survey boundary to the north of the River Thames. These included the following:

a. Strips around field margins in the East Tilbury and West Tilbury areas, and north-west of Orsett

b. Larger areas south-east of Tilbury

c. Small areas south of Linford, north and east of Grays and Chadwell St Mary and along the A13 south of Orsett

d. Larger areas next to the Mardyke, around the Veolia Landfill site and south-west of Bulphan

e. Strips alongside the M25 around the Thames Chase Community Forest and north of junction 29 (the A127)

f. Two larger areas east and north of the Thames Chase Community Forest

g. A large area near Folkes Lane Woodland

h. Other small areas between the Thames Chase Community Forest and the north-west of the Project

5.2.94 These areas were species-poor, supporting a mixture of species including perennial rye-grass, false oat-grass, Yorkshire fog, hogweed and creeping thistle. Some of these areas were encroached with scattered scrub and tall ruderals.

Tall herb and fern

Tall ruderal herbs

5.2.95 There were 238 small areas of tall ruderal herbs located throughout the plants and habitats survey boundary to the north of the River Thames, mainly located along the M25 and A13, along other road verges and along edges of arable fields.

5.2.96 Two larger areas of tall ruderal vegetation were located within Goshems Farm LWS, partially within the Order Limits, which mainly comprised common nettle, false oat-grass, common ragwort and hemlock.

Non-ruderal herbs

5.2.97 Three small areas of non-ruderal herbs were present within the plants and habitats survey boundary: one near junction 13 of the A13 off Baker Street partially within the Order Limits, one along a field edge near Chafford Hundred within the Order Limits, and the other within NVC Survey Area 10 also within the Order Limits.

Swamp and marginal vegetation

5.2.98 There were 12 small areas of swamp habitat present within the Plants and Habitats Study Area to the north of the River Thames, concentrated around two areas: East Tilbury (TN142, TN143, TN144, TN145 and TN146) and North Ockendon (TN147 and TN148).

5.2.99 The large area of swamp habitat east of East Tilbury (TN145), next to the Order Limits, supported species including sea club-rush, common reed, hard rush, bulrush, soft-rush, a willowherb species *Epilobium* sp., creeping thistle and water figwort *Scrophularia auriculata*. The habitat comprised a complex and intricate mosaic of coastal grassland types, generally species poor and dominated by either false oat-grass, red fescue and/or sea couch. Damp hollows supporting swamp vegetation either common reed or sea club-rush were present. Small areas of more diverse grassland with common spotted-orchid *Dactylorhiza fuchsii*. This area forms part of the Mucking Flats and Marshes SSSI.

5.2.100 Those areas of swamp habitat closer to North Ockendon area (TN147), within the Order Limits, supported species including common reed, bulrush, reed sweet-grass *Glyceria maxima* and lesser pond-sedge *Carex acutiformis*.

5.2.101 An area of marginal vegetation was present to the west of North Ockendon (TN149), outside the Order Limits, fringing a golf course pond and comprising common reed, lesser bulrush *Typha angustifolia* and water mint *Mentha aquatica.*

5.2.102 None of the areas within the Study Area to the north of River Thames fit the description for ‘Reedbed’ – a HoPI under the Natural Environment and Rural Communities Act 2006 due to the absence of common reed species (integral to this habitat type) and also the small size and artificial nature of the habitats within the order limits.

5.2.103 Areas of swamp located at TN144, TN145, TN146 and TN148 did however fit the description for 'Reedbed' - a priority habitat under the Essex BAP (Essex Biodiversity Project, 2011).

Open water

Standing water

5.2.104 Fifty-seven ponds were identified within the plants and habitats survey boundary to the north of the River Thames, 24 of which were located within the Order Limits. The ponds varied from overflow balancing ponds to undisturbed ponds with associated aquatic vegetation. Ponds present within the survey boundary meet the criteria for 'Pond' HoPI under the Natural Environment and Rural Communities Act 2006. Descriptions of the ponds are included in Appendix 8.5: Amphibians (Application Document 6.3).

5.2.105 Twelve artificial lakes and two reservoirs were also present within the plants and habitats survey boundary to the north of the River Thames.

5.2.106 A network of interconnected ditches was present in the East Tilbury Marshes area. These were mainly located within the Goshems Farm Landfill LWS. However, ditches were not a designating feature of this site. Additional ditches were recorded to the south-west of Coalhouse Fort, north of Tilbury Docks, in the area between Bulphan and South Ockendon and south-east of M25 junction 29. These ditches were recorded as being standing water with no flow and supported species included common reed, charlock *Sinapis arvensis*, common water-crowfoot *Ranunculus aquatilis*, celery-leaved buttercup and common water-starwort *Callitriche stagnalis*.

Running water

5.2.107 The River Mardyke, which flows north to south, mainly through Thurrock between the B186 to the west and the A128 to the east, dissects the Order Limits between Bulphan and South Ockendon (TN147). Within this section, the river was approximately 2m wide and 0.5m deep, with a very slow flow rate. It supported species including common reed, fool's-watercress and purple-loosestrife *Lythrum salicaria*. The Mardyke River Corridor LWS covers part of the length of the Mardyke and was to the south (downstream) of the Order Limits.

5.2.108 A small stream was also recorded to the north of Thames Chase Community Forest (TN148), within the Order Limits.

5.2.109 A field drain with flowing water was recorded in the West Tilbury Marshes east of Tilbury Power Station, and a flowing ditch was recorded east of Tilbury Port. Both were immediately next to the Order Limits.

5.2.110 Further flowing field drains and ditches were present in the area between Orsett, Bulphan and South Ockendon, to the south-east of Thames Chase Community Forest and to the east of the M25 north and south of the A127 junction. These habitats supported species including common water-starwort, branched bur-reed *Sparganium erectum*, water-plantain, common reed, fool's-watercress, reed sweet-grass and reed canary-grass *Phalaris arundinacea*.

Coastal

5.2.111 Two areas of coastal habitats were recorded within the plants and habitats survey boundary to the north of the River Thames. Intertidal mud/sand, intertidal

shingle/cobbles, intertidal boulders/rocks, dense/continuous saltmarsh and shingle habitats were recorded south of Coal House Fort (TN152), and immediately next to the Order Limits. Intertidal mud/sand and intertidal boulders/rock habitats were recorded south of Tilbury Marshes (TN153).

5.2.112 These areas classify as 'Coastal Saltmarsh', 'Coastal Vegetated Shingle' and 'Intertidal Mudflats'; which are HoPIs under the Natural Environment and Rural Communities Act 2006.

Miscellaneous

Arable land

5.2.113 There is 1,347.58ha of arable land within the plants and habitats survey boundary to the north of the River Thames (53% of the total area). No evidence of valuable arable weed assemblages was recorded during the field surveys. As such, this habitat was considered to be of low ecological value.

Amenity grassland

5.2.114 There was a total of 55.54ha of amenity grassland present within the plants and habitats survey boundary to the north of the River Thames. This was mainly located around Coalhouse Fort, school playing fields and fairgrounds, and within golf courses.

Ephemeral/short perennial

5.2.115 A large area of ephemeral/short perennial vegetation was located within Goshems Farm LWS to the north of the Thames Estuary (TN154), within the Order Limits. Ephemeral vegetation had colonised exposed pulverised fuel ash, which supported species such as mayweed *Tripleurospermum inodorum*, yellow-wort and a sea spurrey *Spergularia* sp. To the south of this area were additional areas of sparsely vegetated spoil heaps of pulverised fuel ash (TN155), also within the Order Limits. See the 'open mosaic habitat' section below.

5.2.116 Two other large areas of ephemeral/short perennial were present within the plants and habitats survey boundary to the north of the River Thames. The first was located to the south of Rainbow Shaw (TN156), within the Order Limits. This habitat supported species including common mallow *Malva sylvestris*, mugwort, charlock and pineappleweed *Matricaria discoidea*. The second was located to the south-west of the current Tilbury junction of the A13 (TN157), also within the Order Limits.

Hedgerows

5.2.117 A total of 472 hedgerows were identified within the plants and habitats survey boundary to the north of the River Thames. These comprised the following:

a. 103 species-rich intact hedgerows

b. 230 species-poor intact hedgerows

c. 22 species-rich defunct hedgerows

d. 48 species-poor defunct hedgerows

e. 34 species-rich hedgerows with trees

f. 31 species-poor hedgerows with trees

g. Four non-native hedgerows

5.2.118 Excluding non-native hedgerows, all hedgerows were considered to meet the criteria for the 'Hedgerow' HoPI under the Natural Environment and Rural Communities Act 2006. Those identified as native species-rich were also considered to classify as 'Species-Rich Hedgerows' priority habitat on the Essex BAP (Essex Biodiversity Project, 2011).

5.2.119 As outlined in Section 4, all hedgerows were subject to a rapid condition assessment to determine whether a detailed hedgerows regulations assessment was required. Those that were considered to be potentially 'important' were assessed for importance in more detail under the Hedgerows Regulations 1997.

5.2.120 Within the plants and habitats survey boundary to the north of the River Thames, 163 hedgerows were classed as 'important'. A summary of the assessment for each hedgerow is provided in Annex B and the hedgerows are shown on Figure 8.3: Hedgerow Regulations Assessment (Application Document 6.2).

Open mosaic habitat

5.2.121 There were five areas along the Project route that could be classified as open mosaic habitat. 'Open Mosaic' habitat is a HoPI under the Natural Environment and Rural Communities Act 2006

5.2.122 The area within Goshems Farm Landfill LWS and the Ingrebourne Valley landscaping area (NVC Survey Area 04) comprises a mosaic of semi-natural and plantation broadleaved woodland, dense scrub, semi-improved neutral, improved and poor semi-improved grassland, tall ruderal vegetation, swamp, standing water, artificial spoil, ephemeral/short perennial vegetation (TN154 and TN155) and bare ground, and was partially within the Order Limits (with the exception of the area within the LWS).

5.2.123 Construction works to remove the pulverised fuel ash by Ingrebourne Valley Ltd (IVL) were ongoing. Landscape proposals (IVL, 2018) for the IVL Project shows the majority of Goshems Farm LWS to be returned to arable farmland with the LWS and habitat along the boundaries of ditches retained. The field to the west of East Tilbury is also proposed to be returned largely to farmland. As such, these areas have been assessed in line with the IVL landscape masterplan (IVL, 2018).

5.2.124 Next to this, a large field was located to the west of East Tilbury (NVC Survey Area 03, TN127), partially within the Order Limits, which was previously a landfill site. The area was colonised with dense scrub, semi-improved neutral and poor semi-improved grassland, tall ruderals and standing water with patches of bare ground throughout.

5.2.125 Low Street Pit LWS (NVC Survey Area 08, TN139) was a disused, wooded, sand and gravel pit. The area now comprises a mosaic of semi-natural broadleaved woodland, dense scrub, unimproved acid, poor semi-improved and marshy grassland and tall ruderal vegetation.

5.2.126 The area of habitat to the north of Low Street Pit LWS (TN106) can also be classified as open mosaic habitat. The area was previously the Low Street

Station and there were tracks leading to the pit. This has since been dismantled, and the area comprises a mosaic of plantation woodland, poor semi-improved grassland, tall ruderals, artificial spoil and bare ground. Both these areas were within the Order Limits.

5.2.127 The area to the east of Baker Street, within the Order Limits, was previously a farmyard and comprises a mosaic of continuous scrub, tall ruderals, non-ruderal herbs, artificial spoil and ephemeral/short perennial vegetation (TN157).

Other habitats

5.2.128 Other habitats including quarry, artificial spoil, refuse-tips, introduced shrub, caravan sites, buildings, bare ground, hardstanding, other built-up areas (including houses, gardens, allotments, farmyards and railways), fences, walls, dry ditches and sea walls were also recorded within the plants and habitats survey boundary to the north of the River Thames.

Habitat extents

5.2.129 Forty-eight habitats were recorded across the plants and habitats survey boundary to the north of the River Thames. Table 5.4 records all habitats and their area or length, if applicable, within the survey boundary.

Table 5.4 Extents of Phase 1 habitat types present within the plants and habitats survey boundary to the north of the River Thames

Phase 1 habitat type		Estimated extent (ha) or length (km)
Woodland and scrub	A1.1.1 Semi-natural broadleaved woodland	70.41ha
	A1.1.2 Broadleaved plantation woodland	138.31ha
	A1.2.2 Coniferous plantation woodland	0.08ha
	A1.3.1 Semi-natural mixed woodland	0.10ha
	A1.3.2 Mixed plantation woodland	1.5ha
	A2.1 Dense scrub	81.01ha
	A2.2 Scattered scrub	N/A
	A3.1 Broadleaved parkland/scattered trees	N/A
	A3.2 Coniferous parkland/scatted trees	N/A
	A3.3 Mixed parkland/scattered trees	N/A
Grassland and marsh	B1.1 Unimproved acid grassland	0.61ha
	B1.2 Semi-improved acid grassland	1.73ha
	B2.1 Unimproved neutral grassland	0.68ha
	B2.2 Semi-improved neutral grassland	142.06ha
	B3.2 Semi-improved calcareous grassland	0.22ha
	B4 Improved grassland	108.05ha

Phase 1 habitat type		Estimated extent (ha) or length (km)
	B5 Marshy grassland	0.34ha
	B6 Poor semi-improved grassland	164.64ha
Tall herb and fern	C3.1 Tall ruderal	41.63ha
	C3.2 Other tall non-ruderal	0.25ha
Swamp, marginal and inundation	F1 Swamp	4.61ha
Open water	G1 Standing water	23.17ha
	G2 Running water	20.55km
Coastal	H1.1 Intertidal mud/sand	16.67ha
	H1.3 Intertidal boulders/rocks	1.04ha
	H2.6 Dense/continuous saltmarsh	1.39ha
	H3 Shingle above high tide mark	0.02ha
Rock exposure and waste	I2.1 Quarry	4.24ha
	I2.2 Artificial spoil	71.734ha
	I2.4 Refuse-tip	4.53ha
Miscellaneous	J1.1 Arable farmland	1,347.58ha
	J1.2 Amenity grassland	55.54ha
	J1.3 Ephemeral/short perennial	11.55ha
	J1.4 Introduced shrub	0.53ha
	J3.4 Caravan site	3.42ha
	J3.5 Sea wall	1.50km
	J3.6 Buildings	22.55ha
	J4 Bare ground	39.75ha
	J5 Other habitat (hardstanding)	211.52ha
	J5 Other habitat (other built-up areas)	54.30ha
Boundary features	J2.1.1 Intact species-rich hedgerow	16.82km
	J2.1.2 Intact species-poor hedgerow	33.13km
	J2.2.1 Defunct species-rich hedgerow	5.18km
	J2.2.2 Defunct species-poor hedgerow	7.24km
	J2.3.1 Species-rich hedgerow with trees	9.54km
	J2.3.2 Species-poor hedgerow with trees	5.32km
	J5 Other habitat (non-native hedgerow)	0.38km
	J2.4 Fence	49.52km
	J2.5 Wall	1.42km
	J2.6 Dry ditch	9.54km

5.3 NVC survey results

5.3.1 The areas where NVC surveys were carried out are indicated on Figure 8.4: NVC and Lower Plant Survey Locations (Application Document 6.2), with the separate plant communities mapped in cases where more than one community was identified. For woodland NVC survey areas, quadrats for ground flora (GF), shrub layer (SL) and canopy layer (CL) are also mapped. Table 5.5 provides a summary of the NVC survey data for each survey area. The UK Technical Advisory Group (2009) Guidance on the Identification and Risk Assessment of Groundwater Dependent Terrestrial Ecosystems, Annex 1: NVC Plant Communities and Dependency on Groundwater has been used to determine an initial groundwater (GW) dependency rating (1 as high, 2 as moderate, 3 as low and not listed). The detailed survey results are provided in Annex C of this appendix.

Table 5.5 Summary of NVC survey data

NVC survey area	Habitat type	Community	Closest NVC community	UK GW dependency score	England GW dependency score[2]
South of the River Thames					
NVC17 Ashenbank Wood	Woodland	Community 1	W10a *Quercus robur - Pteridium aquilinum - Rubus fruticosus* and W8 *Fraxinus excelsior - Acer campestre - Mercurialis perennis*	Not listed	Not listed
		Community 2	W10a *Quercus robur - Pteridium aquilinum - Rubus fruticosus* and W8 *Fraxinus excelsior - Acer campestre - Mercurialis perennis*	Not listed	Not listed
		Community 3	W10a *Quercus robur - Pteridium aquilinum - Rubus fruticosus* and W8 *Fraxinus excelsior - Acer campestre - Mercurialis perennis*	Not listed	Not listed
NVC01 Brewers Wood	Woodland	Community 1	W10 *Quercus robur – Pteridium aquilinum – Rubus fruticosus*	Not listed	Not listed
NVC02 Shorne Woods	Woodland	Community 1	W10 *Quercus robur – Pteridium aquilinum – Rubus fruticosus*	Not listed	Not listed

[2] Scores in brackets relate to where the score may vary for different hydroecological settings.

NVC survey area	Habitat type		Community	Closest NVC community	UK GW dependency score	England GW dependency score[2]
			Community 2	W10 *Quercus robur – Pteridium aquilinum – Rubus fruticosus*	Not listed	Not listed
			Community 3	W10 *Quercus robur – Pteridium aquilinum – Rubus fruticosus*	Not listed	Not listed
NVC18 Claylane Wood	Woodland		Community 1	W8b *Fraxinus excelsior – Acer campestre – Mercurialis perennis, Anemone nemorosa* sub-community	Not listed	Not listed
NVC13 Filborough Marshes	Aquatic/ Swamp		Mosaic 1 - Floating	A2 *Lemnetum minoris* with development towards A1 *Lemnetum gibbae* in some areas	Not listed	Not listed
			Mosaic 2 - Submerged	A5 *Ceratophylletum demersi* and A6 *Ceratophylletum submersi*	Not listed	Not listed
			Mosaic 3 - Emergent	S4 *Phragmitetum australis*, S19 *Eleocharis palistris* and S21 *Scirpus maritimus*	3	3
			Mosaic 4 - Bankside	S18 *Caricetum otrubae* and S4 *Phragmitetum australis*	3	3
NVC24 Canal and Grazing	Aquatic/ Swamp	Community 1	MG1 *Arrhenatherum elatius* grassland with a *Urtica dioica* sub-community	Not listed 3	Not listed	Not listed

NVC survey area	Habitat type		Community	Closest NVC community	UK GW dependency score	England GW dependency score[2]
Marsh, Highman LWS		Community 2	S4a *Phragmitetum australis* swamp and reed-beds, *Phragmites australis* sub-community, where Common Reed dominates, with small areas of S13 *Typha angustifolia* swamp, S21 *Scirpus maritimus* swamp and S14 *Sparganium erectum* Swamp			3
		Community 3	MG1 *Arrhenatherum elatius* grassland, *Urtica dioica* sub-community with areas of S21 *Scirpus maritimus* swamp.			Not listed
NVC12 Shorne Marshes	Aquatic/ Swamp		Mosaic 1 - Floating	A2 *Lemnetum minoris* with development towards A1 *Lemnetum gibbae* in some areas	Not listed	Not listed
			Mosaic 2 - Submerged	A5 *Ceratophylletum demersi*	Not listed	Not listed
			Mosaic 3 - Emergent and Bankside	S4a *Phragmitetum australis*, *Phragmites australis* sub-community, S13 *Typha angustifolia*, S19 *Eleocharis palistris*, S20 *Scirpus lacustris* ssp. *tabernaemontani* and S21 *Scirpus maritimus*	3	3
			Mosaic 4 - Ponds 1, 3, 4 and 5	S21c *Scirpus maritimus*, *Agrostis stolonifera* sub-community	3	3

NVC survey area	Habitat type	Community	Closest NVC community	UK GW dependency score	England GW dependency score[2]
		Mosaic 5 - Pond 2	S21a *Scirpus maritimus*, *Scirpus maritimus* sub-community and S4a *Phragmites australis*, *Phragmites australis* sub-community	3	3
NVC12 Shorne Marshes cont.	Aquatic/ Swamp cont.	Mosaic 6 - Pond 6	A5 *Ceratophylletum demersi*, A6 *Ceratophylletum submerse*,	Not listed	Not listed
			S21a *Scirpus maritimus*, *Scirpus maritimus* sub-community, S4a *Phragmites australis*, *Phragmites australis* sub-community and S20 *Scirpus lacustris* ssp. *tabernaemontani*	3	3
		Mosaic 7 - Pond 7	A5 *Ceratophylletum demersi*,	Not listed	Not listed
			S21a *Scirpus maritimus*, *Scirpus maritimus* sub-community, S4a *Phragmites australis*, *Phragmites australis* sub-community; and S20 *Scirpus lacustris* ssp. *tabernaemontani*	3	3

NVC survey area	Habitat type	Community	Closest NVC community	UK GW dependency score	England GW dependency score[2]
North of the River Thames					
NVC04 Goshems Farm	Open Mosaic	Community 1	MG11 *Festuca rubra - Agrostis stolonifera - Potentilla anserina*	2	2 (3)
		Community 2	MG1 - *Arrhenatheretum elatioris*	Not listed	Not listed
NVC03 Horse Field	Species-rich Grassland	Community 1	MG1 - *Arrhenatherum elatius*, in particular the *Festuca rubra* subcommunity	Not listed	Not listed
NVC08 Low Street Pit	Species-rich Neutral Grassland	Community 1	U1 *Festuca ovina - Agrostis capillaris - Rumex acetosella*	Scotland only	Not listed
	Marshy Grassland/ Swamp	Community 2	MG11 *Festuca rubra - Agrostis stolonifera - Potentilla anserina*	2	2 (3)
	Species-poor Grassland	Community 3	MG1 *Arrhenatherum elatius* with mosaic of *Festuca rubra* and *Urtica dioica* sub-communities	Not listed	Not listed
NVC23 Rainbow Shaw	Woodland	Community 1	W8 *Fraxinus excelsior - Acer campestre - Mercurialis perennis* or W10 *Quercus robur – Pteridium aquilinum – Rubus fruticosus*	Not listed	Not listed
NVC22 Ashenshaw	Woodland	Community 1	W8 *Fraxinus excelsior - Acer campestre - Mercurialis perennis*	Not listed	Not listed

NVC survey area	Habitat type		Community	Closest NVC community	UK GW dependency score	England GW dependency score[2]
NVC07 Mucking Heath	Species-poor Acid Grassland		Community 1	U1 *Festuca ovina - Agrostis capillaris - Rumex acetosella*	Scotland only	Not listed
NVC09 Blackshots Nature Area LWS	Species-poor grassland	Community 1	MG1 *Arrhenatherum elatius* grassland, either *Festuca rubra* and/or *Urtica dioica* sub-community	Not listed		Not listed
		Community 2	It shows some affinities to the U1f *Festuca ovina-Agrostis capillaris-Rumex acetosella*, *Hypochoeris radicata* sub-community	Scotland only		Not listed
		Community 3	MG1 *Arrhenatherum elatius* grassland, with areas of MG6 *Lolium perenne-Cynosurus cristatus* grassland.	Not listed		Not listed
		Community 4	MG1 *Arrhenatherum elatius* grassland, either *Festuca rubra* and/or *Urtica dioica* sub-community	Not listed		Not listed
		Community 5	MG1 *Arrhenatherum elatius* grassland, with areas of MG6 *Lolium perenne-Cynosurus cristatus* grassland	Not listed		Not listed
		Community 6	This area of grassland does not readily fall within any NVC communities.	N/A		N/A
		Community 7	MG1 *Arrhenatherum elatius* grassland – Does not easily conform to the majority of NVC communities.	Not listed		Not listed

NVC survey area	Habitat type		Community	Closest NVC community	UK GW dependency score	England GW dependency score[2]
		Community 8	MG1 *Arrhenatherum elatius* grassland – Does not easily conform to the majority of NVC communities.	Not listed		Not listed
		Community 9	Degraded and species poor MG1 *Arrhenatherum elatius* grassland. Does not easily conform to the majority of NVC communities.			
NVC10 Ruskins	Species-poor Grassland		Community 1	MG1b *Arrhenatherum elatius, Urtica dioica* sub-community	Not listed	Not listed
	Swamp		Community 2	S26b *Phragmites australis* - *Urtica dioica*, *Arrhenatherum elatius* sub-community	3	3 (2)
	Grassland		Community 3	Vegetation of open habitats (does not really fit within any given community)	N/A	N/A
	Swamp		Community 4	S21a *Scirpetum maritimiylvestr*, *Scirpus maritimus* dominated sub-community	3	3
	Open Habitat		Community 5	OV32 *Myosotis scorpioides* - *Ranunculus sceleratus* and OV33 *Polygonum lapathifolium* - *Poa annua*	Not listed	Not listed

NVC survey area	Habitat type		Community	Closest NVC community	UK GW dependency score	England GW dependency score[2]	
	Grassland/ Open Habitat		Community 6	OV32 *Myosotis scorpioides* - *Ranunculus sceleratus* and MG10 *Holcus lanatus* – *Juncus effusus*, *Juncus inflexus* sub-communities	Not listed	Not listed	
	Open Habitat		Community 7	OV25 *Urtica dioica* - *Cirsium arvense* and OV26 *Epilobium hirsutum*	Not listed	Not listed	
	Grassland		Community 8	MG13 *Agrostis stolonifera* - *Alopecurus geniculatus*	3	3 (2)	
NVC11 Ancient Woodland around M25 junction 29	Woodland		Community 1	W10 *Quercus robur* - *Pteridium aquilinum* - *Rubus fruticosus*	Not listed	Not listed	
NVC25 Hall Farm Moat	Pond	Community 1	Very small areas of S12 *Typha latifolia* swamp and S14 *Sparganium erectum* swamp.			3	3
		Community 2	Very small areas of S4 *Phragmites australis* swamp			3	3
NVC26 Thames Chase Forest Centre	Pond	Community 1	Very small areas of M28 *Iris pseudacorus* - *Filipendula ulmaria* mire and M23 *Juncus effusus/acutiflorus* - *Galium palustre* rushpasture.			3	3
	Ditch	Community 2	Very small areas of M28 *Iris pseudacorus* - *Filipendula ulmaria* mire			3	3
	Ditch	Community 3	Very small areas of S28 *Phalaris arundinacea* tallherb fen and M23 *Juncus effusus/acutiflorus* - *Galium palustre* rushpasture.			3	3

5.4 Protected and notable plant species

5.4.1 The desk study returned 1,797 records of protected or otherwise notable plant species within 2km of the Order Limits, consisting of 319 different plant species. Forty four species were recorded to the south of the River Thames and 275 species were recorded to the north of the River Thames. Further details regarding these species are provided in Annex D.

5.4.2 The extended Phase 1 habitat survey, and targeted NVC and other species surveys, identified 22 notable plant species within the plants and habitats survey boundary. This consisted of 13 species to the south of the River Thames and 12 to the north. Table 5.6 outlines these species; NVC survey areas are shown on Figure 8.4: NVC and Lower Plant Survey Locations (Application Document 6.2) and target notes shown on Figure 8.2: Phase 1 Habitat Map (Application Document 6.2).

Table 5.6 Notable plant species recorded during field surveys

Scientific name	Common name	NERC Act 2006 section 41	Red List (GB or England)	GB status	Kent Rare Plant Register	Kent BAP	Location (NVC survey area or target note (TN))
South of the River Thames							
Cichorium intybus	Chicory		VU (ENG)		P		TN158
Fragaria vesca	Wild strawberry		NT (ENG)		P		NVC2
Hippuris vulgaris	Mare's-tail				P		NVC12
Hydrocharis morsus-ranae	Frogbit		VU		P		NVC12
Inula crithmoides	Golden-samphire			NS	P	P	NVC12
Juncus acutus	Sharp rush			NS	P	P	NVC12 NVC13
Knautia arvensis	Field scabious		NT (ENG)		P		NVC17
Limonium vulgare	Common sea-lavender		NT (ENG)			P	NVC12
Oenanthe lachenalii	Parsley water-dropwort		NT (ENG)		P		NVC12
Oxalis acetosella	Wood-sorrel		NT (ENG)		P		NVC2

Scientific name	Common name	NERC Act 2006 section 41	Red List (GB or England)	GB status	Kent Rare Plant Register	Kent BAP	Location (NVC survey area or target note (TN))
Ranunculus flammula	Lesser spearwort		VU (ENG)		P		NVC12
Rumex maritimus	Golden dock				P		NVC12
Senecio aquaticus	Marsh ragwort		NT (ENG)				NVC12 NVC13
North of the River Thames							
Carex divisa	Divided sedge	P	VU (GB)	NS			TN159
Cichorium intybus	Chicory		VU (ENG)				NVC4 TN160
Fumaria purpurea	Purple ramping-fumitory	P	VU (ENG)	NS			TN161
Hypochaeris glabra	Smooth cat's-ear		VU				NVC7
Knautia arvensis	Field scabious		NT (ENG)				NVC7
Lepidium latifolium	Dittander			NS			NVC4
Matthiola sinuata	Sea stock	P	VU	NR			NVC10
Polypogon monspeliensis	Annual beard-grass			NS			NVC4
Populus nigra subsp. betulifolia	Black poplar				P		TN162
Ranunculus flammula	Lesser spearwort		VU (ENG)				NCV10
Teesdalia nudicaulis	Shepherd's cress		NT				NVC7
Veronica officinalis	Heath speedwell		NT (ENG)				NVC7

Key

NERC Act 2006 section 41: SoPI listed under section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

Scientific name	Common name	NERC Act 2006 section 41	Red List (GB or England)	GB status	Kent Rare Plant Register	Kent BAP	Location (NVC survey area or target note (TN))

Red List (GB or England): Great Britain or England Red Listed Species based on the IUCN Red List Categories and Criteria (IUCN Species Survival Commission, 2012). 'Near Threatened' (NT) refers to species that do not qualify for Lower Risk (conservation dependent), but which are close to qualifying for Vulnerable. In Britain, this category includes species that occur in 15 or fewer hectads but do not qualify as Critically Endangered, Endangered or Vulnerable. 'Vulnerable' (VU) refers to species that are not Critically Endangered or Endangered but are facing a high risk of extinction in the wild in the medium-term future (Dines et al, 2005, Stroh et al, 2014).

GB Status: 'Nationally Rare' (NR) refers to species that have been recorded in 1–15 10km squares of the National Grid (hectads) in Great Britain. 'Nationally Scarce' (NS) refers to species that have been recorded in 16–100 10km squares of the National Grid (hectads) in Great Britain.

Kent Rare Plant Register: Species included in the Kent Rare Plant Register (Kent Botanical Recording Group, 2015).

Kent BAP: Species listed on the Kent Biodiversity Action Plan (Kent Biodiversity Action Plan Steering Group, 1997).

Essex BAP: Species listed on the Essex Biodiversity Action Plan.

5.5 Lower plant species

5.5.1 The areas where lower plant surveys were carried out are shown on Figure 8.4: NVC and Lower Plant Survey Locations (Application Document 6.2). Table 5.7 provides a summary of the survey data for each survey area and Table 5.8 provides a description of the lichen communities found within the survey area.

Records of protected/notable lichens

5.5.2 The British Lichen Society database (British Bryological Society, 2018) and previous lichen survey reports (Davey, 2006; 2017; RWE npower, 2008) provided records from the Tilbury Power Station area in 2006 and 2007 of notable lichen species *Cladonia rei*, which is IUCN Near Threatened and Nationally Scarce (Woods and Coppins, 2012). *Cladonia rei* was recorded in three locations in 2006 at Tilbury Power Station.

5.5.3 The Tilbury Power Station area, including Lytag Brownfield LWS (Survey Area 7), has previously recorded 26 species of terricolous lichens (ground lichens), which is one of the richest terricolous lichen sites in Essex (Davey, 2017). Some of these terricolous lichens recorded at former Tilbury Power Station are notable within an Essex context and include the following:

a. *Cladonia cariosa* (A lichen of open stony ground, recorded from three Essex sites and always indicative of an interesting lichen flora.)

b. *Diploschistes muscorum* (A crustose lichen that parasitises *Cladonia* and is recorded from six sites in Essex. It is/was abundant at Tilbury Power Station and Canvey Wick, both Thameside brownfield sites. It is not uncommon on brick walls in Essex.)

c. *Peltigera membranacea* (Five species of *Peltigera* are known from Essex, of which this is the rarest, currently known from only two sites and in small quantity.)

d. *Cladonia uncialis* subsp. *biuncialis* (no other Essex records).

e. *C. squamosa* (one old record, only localised to a 10km square).

Survey results

Table 5.7 Summary of results of the lower plant surveys

Site name	Lichens 2018/2019 survey	Lichen assemblages	Notable species	Bryophytes 2018/2019 survey
South of the River Thames				
Area 1 – Shorne Woods SSSI	50 lichens and one lichenicolous fungus	Rich lichen assemblage associated with ancient woodlands. Terricolous lichens and *Cladonia* on open ground and rotting tree stumps. Rich foliose communities on branches (*Parmelion perlatae* Alliance).	*Enterographa crassa* and *Cladonia parasitica*	27 mosses and two liverworts
Area 1 – Ashenbank Wood SSSI	26 lichens	*Parmelion perlatae* Alliance on fallen branches, lignicolous lichens on rotting stumps *Cladonia coniocraea* and *C. fimbriata*	None	14 mosses and two liverworts
Area 2 – Claylane Wood	31 lichens and one lichenicolous fungus	*Lecanorion subfuscae* Alliance, *Graphidion scriptae* Alliance and *Xanthorion* Alliance common on small twigs	*Bacidia arceutina* (first record in Kent)	16 mosses and one liverwort
North of the River Thames				
Area 3 – Woodland around M25/A127 junction	45 lichens and one lichenicolous fungus	*Parmelion perlatae* Alliance, *Xanthorion* Alliance common.	*Usnea cf. esperantiana* (Near Threatened IUCN and first record for Essex)	26 mosses and three liverworts
Area 4 – The Wilderness woodland	34 lichens and two lichenicolous fungus	*Opegrapha vermicellifera* (associated with old woods in Essex), nitrophilous lichens (*Xanthorion* Alliance) and	*Physconia distorta* and *Fellhaneropsis vezdae* (one other post 2000 record from Essex)	Seven mosses

Site name	Lichens 2018/2019 survey	Lichen assemblages	Notable species	Bryophytes 2018/2019 survey
		degraded example of *Parmelion perlatae* Alliance		
Area 5 – Mucking Heath	39 lichens and four lichenicolous fungi	*Parmelietum revolutae* and *Physcietum ascenditis* Alliance. Terricolous lichens (two *Cladonia* and one *Peltigera*)	*Cladonia furcata, Cladonia chlorophaea s.lat.* *Peltigera didactyla*	20 mosses no liverworts
Area 6 – Low Street Pit	38 lichens and two lichenicolous fungi	*Lecanorion subfuscae* and *Parmelion perlatae* Alliances but with *Xanthorion* Alliance starting to dominate. Terricolous lichen community degraded.	*Cladonia furcata* and *C. chlorphaea* – two small patches	19 mosses and one liverwort
Area 7 – Lytag Brownfield LWS (not surveyed due to access restrictions, see paragraph 6.1.4)				
Area 8 – Goshems Farm	31 lichens	Impoverished lichen flora – *Xanthorion* Alliance dominates shrubs and terricolous lichen flora poor as grassland overgrown or ground disturbed	None	19 mosses and one liverwort – *Aloina aloides* (few recent records for Essex)
Area 9 - Blackshots Nature Area (not surveyed due to access restrictions, see paragraph 6.1.4)				

Table 5.8 Summary of lichen communities within the survey area

Lichen assemblage descriptions from Lichen Communities in the British Isles (James *et al*., 1977)	
Lecanorion subfuscae Alliance	Pioneer community of well-lit twigs and young trees characterised by a number of crustose lichens, particularly *Lecanora chlarotera* and *Lecidella elaeochroma*
Parmelion perlatae Alliance	Community of well-lit trees characterised by foliose lichens e.g. *Parmelia sulcata* and *Parmotrema perlatum*
Xanthorion Alliance	Nitrophilous community of foliose and crustose lichens of *Xanthoria parietina* and grey *Physcia* species
Parmelietum revolutae	Common assemblage of mainly large foliose lichens typical of well-lit deciduous trees within the *Parmelion perlatae* Alliance
Physcietum ascenditis	Common assemblage in Essex of foliose lichens associated with nutrient-enriched substrates including species *Physcia adscendens*, *Physcia tenella*, *Physconia grisea*
Graphidion scriptae Alliance	Pioneer shade community of twigs and young trees characterised by a number of crustose lichens *Opegrapha*, *Graphis scripta*, *Porina aenea*
Terricolous Lichens	Lichen ground flora associated with acid substrates typically consisting of *Cladonia furcata* and other *Cladonia* spp. and *Peltigera* spp., which are in decline in Essex.

5.6 Invasive non-native plant species

5.6.1 Invasive non-native plant species are not considered to be of ecological value, though are nonetheless relevant to the Project since they are listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) or the Invasive Alien Species (Enforcement and Permitting) Order 2019. These deem it an offence to plant these species or otherwise cause them to grow in the wild.

5.6.2 The desk study returned 356 records of invasive non-native plant species within 2km of the Order Limits, consisting of eight different species (Essex Field Club (2020), Greenspace Information for Greater London CIC (2020), Essex Wildlife Trust Biological Records Centre (2020), Kent & Medway Biological Records Centre (2020)). As well as the invasive species above, Greenspace Information for Greater London CIC (2020) Records Centre also had records of species listed on the London Invasive Species Initiative (2020), including:

a. Butterfly-bush *Buddleja davidii*

b. Green alkanet *Pentaglottis sempervirens*

c. Cherry laurel *Prunus laurocerasus*

d. Evergreen oak *Quercus ilex*

e. False-acacia *Robinia pseudoacacia*

f. Snowberry *Symphoricarpos albus*

5.6.3 The extended Phase 1 walkover survey and other targeted species surveys recorded nine invasive non-native plant species to the south of the River Thames and 14 to the north of the River Thames (see Table 5.9). Locations of these species are shown on Figure 8.5: Invasive Plant Species Locations (Application Document 6.2).

Table 5.9 Locations of invasive non-native plant species

Scientific name	Common name	South	North
Cotoneaster sp.	Cotoneaster sp.	Y	Y
Lagarosiphon major	Curly waterweed	Y	Y
Elodea sp.	Elodea sp.		Y
Hydrocotyle ranunculoides	Floating pennywort		Y
Heracleum mantegazzianum	Giant hogweed	Y	Y
Impatiens glandulifera	Indian (Himalayan) balsam		Y
Fallopia japonica	Japanese knotweed	Y	Y
Rosa rugosa	Japanese rose		Y
Crocosmia x crocosmiiflora	Montbretia		Y
Crassula helmsii	New Zealand pigmyweed	Y	Y
Elodea nuttallii	Nuttall's waterweed		Y

Scientific name	Common name	South	North
Myriophyllum aquaticum	Parrot's-feather	Y	Y
Rhododendron ponticum	Rhododendron	Y	Y
Parthenocissus quinquefolia	Virginia-creeper		Y
Cotoneaster horizontalis	Wall cotoneaster	Y	
Azolla filiculoides	Water fern	Y	

6 Limitations and assumptions

6.1 Field survey limitations

Access limitations

Extended Phase 1 habitat survey

6.1.1 The assessment has been derived from habitat data from several sources. Habitat data collected from field surveys (field-based assessment) is the most accurate dataset and represents 75.4% of the data collected within the Plants and Habitats survey boundary. Changes to the Order Limits and access restrictions meant not all land within the Study Area was surveyed at the time the surveys were carried out. These areas were mapped through an assessment of aerial imagery and Natural England's Priority Habitat Inventory (Natural England, 2021). Data collected in this way accounts for 11.9% of the data collected within the survey boundary. The remaining 12.6% is largely attributable to developed land such as roads, residential areas and buildings and so is not relevant to this assessment. Areas that were surveyed through field-based assessment and desk-based assessment are shown on Figure 8.6: Phase 1 Field and Desk Based Assessment Coverage (Application Document 6.2).

NVC surveys

6.1.2 Access was not granted to the following NVC survey areas:

a. NVC05 – Lytag Brownfield LWS (including Tilbury Centre LWS)

b. NVC06 – Tilbury Marshes LWS

6.1.3 Only partial access was granted to NVC11 – Ancient Woodland around M25 junction 29; as such, only the north-east and south-west areas (NVC 11.3 and 11.1, respectively) were surveyed. The assessment therefore assumes the presence of similar species in these areas on a precautionary reasonable worst-case basis, using professional judgement where a lack of survey data exists.

Lower plants

6.1.4 Access was not granted to the following lower plant survey areas:

a. Survey Area 7 – Lytag Brownfield Site LWS. Known to be one of the richest terricolous lichen sites in Essex and designated for its lichen interest. This is considered a significant limitation to assessing potential impacts to lichen assemblages in this area.

b. Survey Area 9 – Blackshots Nature Area.

6.1.5 Only partial access was granted or obtained to the following lower plant survey areas:

a. Survey Area 3 – Ancient woodland around M25 junction 29. Access was only obtained to the area of woodland south-west of the junction and not granted to Hobbs Hole Wood LWS (south-east of the junction) and Codham Hall Wood LWS (north-east of the junction). These are likely to have had

higher potential for interesting lichen and bryophyte assemblages than the areas of secondary woodland that were surveyed. The assessment therefore assumes this on a precautionary reasonable worst-case basis, using professional judgement where a lack of survey data exists.

b. Survey Area 8 – Goshems Farm LWS. Could not access the south-west of the site.

Survey effort

Lower plants

6.1.6 One day was spent surveying each site, and the different habitat niches for lichens and bryophytes were searched carefully and methodically. However, lichens and bryophytes can be inconspicuous. Should more time have been spent at each site, then it is probable that further species, some of which may be notable within Essex or Kent, could have been found.

Assumptions

Ponds

6.1.7 On a precautionary basis, all ponds are considered to be classified as HoPIs under the Natural Environment and Rural Communities Act 2006.

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Annex A Phase 1 Habitat target notes

Table A.1 Phase 1 target notes

Target note (TN) number	Habitat description	HoPI
South of the River Thames		
TN001	Great Wood; ancient woodland	Lowland Mixed Deciduous Woodland
TN002	Ancient woodland within junction 1 of the M2.	Lowland Mixed Deciduous Woodland
TN003	Great Crabbles Wood	Lowland Mixed Deciduous Woodland
TN004	Brewers Wood is an area of coppiced woodland with a dense scrubby understory. The canopy is predominantly comprised of coppiced ash and sweet chestnut with scattered standard trees. The understory consists of ash, field maple, blackthorn, hazelnut, birch and hawthorn. The ground flora includes bluebell and common nettle.	Lowland Mixed Deciduous Woodland
TN005	Shorne Woods is a semi-natural coppiced woodland used recreationally for bike scrambling and forms part of a much larger ancient woodland. The canopy is comprised of young trees approximately 8m to 10m high including ash, sweet chestnut (R), sycamore (SM), silver birch (A), pedunculate oak (R) and hornbeam approximately 15–20m high. The understory consists of sweet chestnut (R), hawthorn, gorse, holly Ilex *aquifolium*, wood melick *Melica uniflora*, hazel and elder. The ground flora includes bramble (D), bluebell, orchid, wood sage *Teucrium scorodonia*, ash saplings, rose, aspen saplings, rough meadow-grass, cleavers *Galium aparine*, germander speedwell *Veronica chamaedrys*, wood avens *Geum urbanum*, wood millet *Milium effusum*, male-fern *Dryopteris filix-mas* (LA), common nettle, wood meadow-grass, wild strawberry *Fragaria vesca*, violets *Viola* sp., yew tree saplings, cypress-leaved plaitmoss *Hypnum cupressiforme*, twan's-neck thyme-moss *Mnium hornum*, springy turf-moss *Rhytidiadelphus squarrosus*, bracken *Pteridium aquilinum*, Norway maple *Acer platanoides* seedlings, rosebay willowherb *Chamerion angustifolium*,	Lowland Mixed Deciduous Woodland

Target note (TN) number	Habitat description	HoPI
	broom, rhododendron *Rhododendron ponticum* (LA), dog's mercury, honeysuckle *Lonicera periclymenum* (LA), *Luzula* sp., and scaly male-fern *Dryopteris affinis*.	
TN006	Ashenbank Wood is a mature broadleaved woodland containing ancient woodland indicators. It is a recently coppiced woodland with standard sweet chestnut, birch, sycamore, pedunculate oak and ash forming the canopy layer. The understory comprises hazel and hawthorn and the ground flora includes bramble, common nettle, bluebell and bracken.	Lowland Mixed Deciduous Woodland
TN007	Claylane Wood is an ancient semi-natural broadleaved woodland with a canopy consisting of hornbeam, pedunculate oak, ash, sycamore, field maple and an old outgrowth of coppiced sweet chestnut. A shrub layer of elder and hawthorn is present. The ground flora is sparse due to the shade but includes bluebell, wood-sorrel, dog's mercury, violets, broad buckler-fern *Dryopteris dilatata*, wood avens and yellow archangel *Lamiastrum galeobdolon*.	Lowland Mixed Deciduous Woodland
TN008	Peartree Wood ancient replanted woodland	Lowland Mixed Deciduous Woodland
TN009	Veteran tree sweet chestnut	N/A
TN010	Eleven potential veteran trees sweet chestnut	N/A
TN011	Potential veteran tree sweet chestnut	N/A
TN012	Veteran tree ash	N/A
TN013	Potential veteran tree sweet chestnut	N/A
TN014	Potential veteran tree sweet chestnut	N/A
TN015	Potential veteran tree sweet chestnut	N/A
TN016	Potential veteran tree sweet chestnut	N/A
TN017	Potential veteran tree pedunculate oak	N/A
TN018	Potential veteran tree sweet chestnut	N/A
TN019	Potential veteran tree sweet chestnut	N/A
TN020	Potential veteran tree sweet chestnut	N/A
TN021	Potential veteran tree sweet chestnut	N/A
TN022	Potential veteran tree pedunculate oak	N/A
TN023	Potential veteran tree pedunculate oak	N/A
TN024	Potential veteran tree sweet chestnut	N/A
TN025	Potential veteran tree sweet chestnut	N/A

Target note (TN) number	Habitat description	HoPI
TN026	Potential veteran tree sweet chestnut	N/A
TN027	Potential veteran tree sweet chestnut	N/A
TN028	Veteran tree sweet chestnut	N/A
TN029	Potential veteran tree pedunculate oak	N/A
TN030	Ancient tree pedunculate oak	N/A
TN031	Ancient tree pedunculate oak	N/A
TN032	Ancient tree pedunculate oak	N/A
TN033	Ancient tree pedunculate oak	N/A
TN034	Ancient tree pedunculate oak	N/A
TN035	A semi-natural broadleaved coppiced woodland. It is open, partially felled and wind damaged with numerous large over-mature and veteran oak and sweet chestnut present. It has an open canopy consisting of sweet chestnut, hornbeam, sycamore, pedunculate oak and ash. The ground flora is dominated by dog's mercury and bramble but also comprises violets, enchanter's-nightshade *Circaea lutetiana*, celandine *Ranunculus* sp. and some scattered bluebells and lords-and-ladies. The shrub layer is sparse, containing some sycamore and hawthorn.	Lowland Mixed Deciduous Woodland
TN036	Small areas around Rochester & Cobham Park Golf Club include mature woodland consisting of large sweet chestnut but possibly some plantation oak, ash and sweet chestnut as well.	Lowland Mixed Deciduous Woodland
TN037	Broadleaved woodland	Lowland Mixed Deciduous Woodland
TN038	Broadleaved woodland	Lowland Mixed Deciduous Woodland
TN039	Two areas of woodland bisected by Thong Lane between the A2 and HS1. From what could be viewed from adjacent bridge, species include pedunculate oak, ash, sycamore, hazel, willow and sweet chestnut.	Lowland Mixed Deciduous Woodland
TN040	Gravel Hill Wood. Managed sweet chestnut and ash coppice woodland. Adjacent to this is a small area of recent felled woodland.	Lowland Mixed Deciduous Woodland
TN041	Jeskyns Community Woodland is a young plantation woodland consisting of hawthorn, birch, hazel, pedunculate oak, elder, field maple, wayfaring-tree, Swedish whitebeam, ash, scots pine and aspen.	None

Target note (TN) number	Habitat description	HoPI
TN042	Several small areas of dense and continuous scrub present throughout Rochester & Cobham Park Golf Course. Species include gorse, blackthorn and hawthorn.	None
TN044	Historic parkland within Cobham Hall School	None
TN045	Neutral semi-improved grassland	None
TN046	Neutral species-rich semi-improved grassland present within blocks of plantation woodland.	None
TN057	An area of vegetated landscaping supporting neutral species-rich semi-improved grassland but clearly seeded and likely relatively recently. Consists of red fescue, common bird's-foot-trefoil *Lotus corniculatus*, grass vetchling *Lathyrus nissolia*, tufted vetch *Vicia cracca*, oxeye daisy *Leucanthemum vulgare*, yellow-rattle *Rhinanthus minor*, smooth hawk's-beard *Crepis capillaris*, greater knapweed *Centaurea scabiosa*, zigzag clover *Trifolium medium*, wild carrot, scattered orchids, lady's bedstraw, yarrow, sweet vernal-grass, common vetch *Vicia sativa* subsp. *segetalis* and meadow foxtail.	None
TN048	An area of neutral semi-improved grassland with scrub and ruderal weeds starting to invade. Species consist of false oat-grass, cock's-foot, Yorkshire-fog, mugwort, ribwort plantain, creeping thistle, bristly oxtongue, wild carrot, creeping bent, yarrow, common knapweed *Centaurea nigra*, a mint species *Mentha* sp. and perforated St John's-wort *Hypericum perforatum* with patches of bramble and other ruderal weeds.	None
TN049	Neutral semi-improved grassland including false oat-grass, hogweed, bristly oxtongue and ash seedlings.	None
TN050	Multiple areas of neutral semi-improved grassland. Some comprising false oat-grass, creeping bent, wild carrot, common bird's-foot-trefoil, lady's bedstraw, yarrow, bristly oxtongue, creeping thistle and some scattered bee orchids; some comprising false oat-grass, Yorkshire-fog, creeping thistle, common ragwort, wild carrot, hop trefoil and bristly oxtongue.	None
TN051	A226 Gravesend Roadside Nature Reserve	None
TN052	Neutral semi-improved grassland	None
TN053	Neutral semi-improved grassland	None

Target note (TN) number	Habitat description	HoPI
TN054	Neutral semi-improved grassland consisting of yarrow, common ragwort, teasel *Dipsacus* sp., curled dock, ribwort plantain, sea couch, cock's-foot, mugwort,timothy, bristly oxtongue, creeping thistle, stone parsley, wild carrot, creeping bent and a rock-cress species *Aubretia* sp.	None
TN055	Unimproved parched and dry calcareous grassland with quaking-grass, lady's bedstraw, wild carrot, yellow-wort and orchids.	Lowland Calcareous Grassland
TN056	Steep embankment supporting semi-improved calcareous grassland with dense scattered scrub and ruderals.	Lowland Calcareous Grassland
TN057	Semi-improved calcareous grassland	Lowland Calcareous Grassland
TN058	Marshy grassland located to the south of A2 comprising areas of locally abundant bulrush *Typha latifolia*	Coastal Floodplain Grazing Marsh
TN059	Marshy grassland within Filborough Marshes.	Coastal Floodplain Grazing Marsh
TN060	Species poor semi-improved grassland within Filborough Marshes that is likely to flood regularly in winter. There is some evidence of unimprovement such as ant hills and an ancient ditch system that is still visible. There is abundant meadow barley while other species include hairy buttercup, sand sedge and perennial rye-grass.	Coastal Floodplain Grazing Marsh
TN061	Metropolitan Police Firing Range contains a mosaic of semi-improved species poor grassland and scattered tall ruderals. The species present include creeping thistle, false oat-grass, sea couch, yarrow, wild carrot and lady's bedstraw.	G Coastal Floodplain Grazing Marsh
TN062	Thames and Medway Canal.	None
TN063	A swamp habitat comprising a pond and pond edge that supports abundant branched bur-reed, bulrush, hard rush, lesser pond-sedge, purple-loosestrife, marsh woundwort Stachys palustris, meadowsweet *Filipendula ulmaria*, water figwort and common fleabane *Pulicaria dysenterica*.	None
TN064	An area of marginal vegetation along a ditch within the Canal and Grazing Marsh Higham LWS, dominated by common reed.	Reedbed
TN065	An extensive ditch system within Filborough Marshes, part of the Thames Estuary and Marshes Ramsar and the South Thames Estuary	Coastal Floodplain Grazing Marsh

Target note (TN) number	Habitat description	HoPI
	and Marshes SSSI. This comprises shallow field ditches with poached margins and banks of poor semi-improved grassland and scattered scrub. Ditches vary from more than a metre deep to some containing very little water and some appearing to be dry places. Most ditches were choked with algae, duckweed (*Lemnoideae* sub-family), a water-milfoil species *Myriophyllum* sp., a hornwort species *Cetarophyllum* sp., floating sweet-grass *Glyceria fluitans*, common reed, a water fern species *Azolla* sp., sea club-rush, fool's-watercress, common spike-rush *Eleocharis palustris*, creeping bent, nodding bur-marigold, a *Crassula* sp., bulrush, water-plantain and/or watercress *Nasturtium officinale*.	
TN066	An area comprising bare mud flats, sea wall, salt marsh and shingle and cobble habitats. The sea wall habitat comprised mugwort, common ragwort, sea beet *Beta vulgaris* subsp. *maritima*, sea couch, sea-purslane, sea plantain *Plantago maritima*, golden-samphire *Limbarda crithmoides*, rock-cress, red fescue, sea-lavender and mayweed. The salt marsh habitat consisted of saltmarsh-grass, sea-purslane, sea plantain, sea-spurrey, glasswort, golden samphire, a scurvygrass species *Cochlearia* sp., common cord-grass *Spartina anglica* and annual sea-blite *Suaeda maritima*. The shingle and cobble habitat supported common saltmarsh-grass *Puccinellia maritima*, sea-purslane, sea plantain, sea-spurrey, a glasswort species *Salicornia* sp., golden-samphire, a scurvygrass species, common cordgrass and annual sea-blite.	Coastal Saltmarsh and Intertidal Mudflats
TN067	Ephemeral/short perennial vegetation dominated by ephemeral species and ruderal weeds such as creeping thistle, docks and ragwort over a hardcore base	None
TN068	An area of gravel supporting ephemeral short perennial plant species. It has been colonised by teasel, bramble, selfheal, a willowherb species and birch seedlings.	Open Mosaic
TN158	Chicory *Cichorium intybus*	N/A
TN164	Veteran pedunculate oak	N/A
TN165	Veteran common horse chestnut	N/A
TN166	Veteran common horse chestnut	N/A
TN167	Veteran common beech	N/A
TN168	Ancient pedunculate oak	N/A

Target note (TN) number	Habitat description	HoPI
North of the River Thames		
TN069	Rainbow Shaw has a canopy dominated by hornbeam, pedunculate oak and ash with a sparse understory of elder, hazel and hawthorn. The ground flora comprises an extensive cover of bluebells, wood anemone, lesser celandine *Ficaria verna*, wood speedwell, herb-Robert, lords-and-ladies and bramble.	Lowland Mixed Deciduous Woodland
TN070	Chadwell Wood ASNW	Lowland Mixed Deciduous Woodland
TN071	Sheepfold Wood ASNW	Lowland Mixed Deciduous Woodland
TN072	Franks Wood ASNW	Lowland Mixed Deciduous Woodland
TN073	Hobbs Hole Wood ASNW is dominated by ash with an understory of elder and hawthorn. The ground flora is dominated by common woodland species and ancient woodland indicators were absent.	Lowland Mixed Deciduous Woodland
TN074	Codham Hall Wood ASNW is an ASNW dominated by hornbeam with pedunculate oak. Bluebells are abundant in the ground flora. No access was granted so it was viewed from adjacent land.	Lowland Mixed Deciduous Woodland
TN075	Remnants of Codham Hall Wood ASNW, which have been assigned the same value as the adjacent woodland.	Lowland Mixed Deciduous Woodland
TN076	Coombegreen/Foxburrow Wood ASNW. Area of ancient woodland, located either side of the M25, adjacent to the Order Limits.	Lowland Mixed Deciduous Woodland
TN077	Jackson's Wood ASNW.	Lowland Mixed Deciduous Woodland
TN078	Potential veteran tree pedunculate oak	N/A
TN079	Potential veteran tree ash	N/A
TN080	Potential veteran tree ash	N/A
TN081	Potential veteran tree pedunculate oak	N/A
TN082	Ancient tree pedunculate oak	N/A
TN083	Potential veteran tree pedunculate oak	N/A
TN084	Potential veteran tree pedunculate oak	N/A

Target note (TN) number	Habitat description	HoPI
TN085	Potential veteran tree ash	N/A
TN086	Potential veteran tree pedunculate oak	N/A
TN087	Potential veteran tree pedunculate oak	N/A
TN088	Potential veteran tree pedunculate oak	N/A
TN089	Potential veteran tree pedunculate oak	N/A
TN090	Potential veteran tree pedunculate oak	N/A
TN091	Potential veteran tree pedunculate oak	N/A
TN092	NNVeteran tree pedunculate oak	N/A
TN093	Areas of woodland north of Tilbury Power Station.	Lowland Mixed Deciduous Woodland
TN095	Scrubby secondary woodland on the edge of the fort complex. It consists of mature hawthorn with scattered semi-mature sycamore and pedunculate oak. There is a sparse understory of hawthorn and elder and the ground flora is dominated by common nettle.	Lowland Mixed Deciduous Woodland
TN095	A narrow strip of broadleaved woodland approximately 40 metres wide that does not appear to be obviously planted. It consists of a canopy layer of pedunculate oak and beech with a shrub layer of hawthorn, elder and blackthorn. The ground flora includes common nettle, wood avens, a burdock *Arctium* sp., bramble and common ivy.	Lowland Mixed Deciduous Woodland
TN096	Linear strip of broadleaved woodland located within Low Street Pit LWS consists of pedunculate oak and hawthorn with a sparse ground flora dominated by common nettle.	Lowland Mixed Deciduous Woodland
TN097	Ashen Shaw is an area utilised for game management. It has a canopy of pedunculate oak and ash with a scrubby understory of elder. The ground flora is dominated by ruderals with small areas of bluebells and lesser celandine and some areas of bare ground.	Lowland Mixed Deciduous Woodland
TN098	Broadleaved semi-natural woodland adjacent to Order Limits. No access was permitted for further surveys.	Lowland Mixed Deciduous Woodland
TN099	Broadleaved woodland with a canopy dominated by pedunculate oak, ash and beech with scattered larch *Larix* sp. and Scots pine. It is open in places with extensive signs of rabbit digging. There is no shrub layer and the area is dominated by ruderals. Lords-and-ladies and cleavers are the dominate ground flora but there	Lowland Mixed Deciduous Woodland

Target note (TN) number	Habitat description	HoPI
	is common nettle and areas to the west where bluebells are abundant.	
TN100	An area of woodland between Orsett and Baker Street.	Lowland Mixed Deciduous Woodland
TN101	Strips of woodland adjacent to Medebridge Road.	Lowland Mixed Deciduous Woodland
TN102	Thin strip of woodland separating the arable fields from the Mardyke, comprising field maple, ash, hawthorn, pedunculate oak, white poplar and hazel. The ground flora was dominated by cow parsley *Anthriscus sylvestris* and hogweed.	Lowland Mixed Deciduous Woodland
TN103	The Wilderness woodland is an area of woodland and pond. The canopy is comprised of ash, pedunculate oak, poplar *Populus* sp. and sycamore. The understory is made up of scrubby hawthorn, elm and ash and the ground flora consists of common nettle, ground-ivy *Glechoma hederacea*, red campion *Silene dioica* and violets *Viola* sp.	Lowland Mixed Deciduous Woodland
TN104	Two areas of semi-natural broadleaved woodland east of Thames Chase Community Forest.	Lowland Mixed Deciduous Woodland
TN105	Recently established semi-natural broadleaved woodland. It is dominated by semi-mature pedunculate oak and hawthorn with ash and occasional holly and privet. There are some patches of dense hawthorn scrub. The ground flora is species poor and is dominated by bramble with occasional wood avens. There are no species indicative of an ASNW.	Lowland Mixed Deciduous Woodland
TN106	An area of landscape planting consisting of hawthorn, ash, field maple, elm, cherry, oak and a butterfly-bush *Buddleja* sp. with common ivy comprising the main ground flora.	None
TN107	An area of planting around a fishing lake that includes a poplar sp., white willow *Salix alba* and crack-willow.	None
TN108	A narrow belt of young screening plantation woodland dominated by English elm *Ulmus procera*. The canopy comprises oak, hawthorn and wild cherry with young semi-mature white poplar. There are areas of dense bramble scrub, while the ground flora consists of grasses and ruderal vegetation and some scattered bluebells on a steep bank.	None

Target note (TN) number	Habitat description	HoPI
TN109	Landscape planting along A1089 corridor.	None
TN110	Young landscape planting of oak, ash, cherry, hawthorn, field maple and elm with areas that are dense and impenetrable in places.	None
TN111	Landscape planting along A13 corridor.	None
TN112	Young landscape planting along the Mardyke consisting of field maple, hawthorn, ash and aspen.	None
TN113	Young broadleaved plantation woodland along the verge of the M25. The verge consists of semi-improved grassland and tall ruderals as well as oak, ash, hazel, hawthorn, dog-rose *Rosa canina*, birch, field maple, blackthorn and crab apple *Malus sylvestris*. There are some areas that appear to have been clear felled in past and are scrubbier. The areas closer to the junction are more mature.	None
TN114	Woodland north of Blackshots Nature Area LWS	None
TN115	Thames Chase, west of the M25, is a young and dense broadleaved plantation woodland with young trees of even age. It has similar species as the adjacent area, but it is denser and slightly younger. It is dominated by ash on the north-east side. On the southern edge it is dominated by oak, field maple and hawthorn. The northern edge has a strip of a mixture of species including grey willow *Salix cinerea* subsp. *cinerea*. The east side is dominated by coppiced hazel and field maple. The west side consists of young oak and ash around 12–15m tall. The rest of the canopy is dominated by common lime with a wide variety of species including field maple, hawthorn, blackthorn, wild cherry, dog-rose, oak, Scots pine, silver birch, ash, hornbeam, guelder-rose, dogwood, red oak *Quercus rubra*, alder *Alnus glutinosa*, aspen, turkey oak *Quercus cerris*, hybrid black-poplar *Populus nigra x deltoides = P. x canadensis* and hazel. The ground flora consists of male-fern, forget-me-not *Myosotis* sp., common nettle, ash saplings, bramble and lords-and-ladies.	None
TN116	Thames Chase, east of the M25, is dominated by ash on the north side and hornbeam, hazel, oak, blackthorn saplings in the south. The canopy also comprises crack-willow, sweet chestnut, goat willow *Salix caprea*, field maple, hawthorn, Norway maple, wild service-tree *Sorbus torminalis* and small-leaved lime *Tilia*	None

Target note (TN) number	Habitat description	HoPI
	cordata. The ground flora consists of hogweed, bramble, a dock species, cow parsley, dandelion *Taraxacum officinale agg*. and ribwort plantain.	
TN117	The broadleaved plantation woodland off Folkes Lane is surfaced with a path network with a 4m to 6m grass margin. The canopy consists of oak, willow, birch, dogwood, aspen and pine *Pinus* sp.	None
TN118	Dense scrub in East Tilbury Marshes	None
TN119	Dense scrub north-west of Linford	None
TN120	Dense scrub in Blackshots Nature Area LWS	None
TN121	Dense scrub in Orsett Golf Course	None
TN122	Unimproved acid grassland containing common bent, false oat-grass, sheep's fescue, lady's bedstraw, sheep's sorrel, yarrow, autumn hawkbit and bladder campion.	Lowland Dry Acid Grassland
TN123	Semi-improved acid grassland within Blackshots Nature Area LWS	Lowland Dry Acid Grassland
TN124	Semi-improved acid grassland containing red fescue, common bent, ladies bedstraw, yarrow, sheep's sorrel, perforate St John's wort, musk-mallow, mouse-ear-hawkweed and common toadflax.	Lowland Dry Acid Grassland
TN125	Unimproved neutral grassland	None
TN126	Semi-improved neutral grassland north of Tilbury Power Station	None
TN127	Semi-improved neutral grassland at East Tilbury Marshes	None
TN128	Semi-improved neutral grassland	None
TN129	Semi-improved neutral grassland	None
TN130	Semi-improved neutral grassland	None
TN131	Semi-improved neutral grassland	None
TN132	Semi-improved neutral grassland	None
TN133	Semi-improved neutral grassland	None
TN134	Semi-improved neutral grassland	None
TN135	Semi-improved neutral grassland	None
TN136	Semi-improved neutral grassland	None
TN137	Semi-improved neutral grassland	None
TN138	Semi-improved neutral grassland	None
TN139	Marshy grassland	None

Target note (TN) number	Habitat description	HoPI
TN140	Marshy grassland	None
TN141	Marshy grassland	None
TN142	Swamp	None
TN143	Swamp	None
TN144	Swamp	Reedbed
TN145	An SSSI swamp habitat, probably a successional salt marsh, now comprising a complex and intricate mosaic of coastal grassland types. It is generally species poor and dominated by either false oat-grass, red fescue and/or sea couch. Damp hollows support swamp vegetation, either common reed or sea club-rush. There are small areas of more diverse grassland with common spotted-orchid	Coastal Saltmarsh
TN146	Swamp	Reedbed
TN147	A swamp habitat comprised common reed, bulrush, reed sweetgrass and lesser pond-sedge.	None
TN148	Swamp	None
TN149	Marginal vegetation fringing a golf course pond and comprising common reed, lesser bulrush and water mint.	None
TN150	Mardyke river, supporting species including common reed, fool's watercress and purple loosestrife.	None
TN151	Small stream with good water quality, forming pools in places.	None
TN152	Intertidal mud/sand habitats, intertidal single/cobbles, intertidal boulders/rock habitats, dense/continuous saltmarsh and shingle habitats south of Coalhouse Fort.	Coastal Saltmarsh Intertidal Mudflats
TN153	Intertidal mud/sand and intertidal boulders/rock habitats south of Tilbury Marshes.	Intertidal Mudflats
TN154	Goshems Farm consists of ephemeral short perennial vegetation. The topsoil has been stripped and piled in bunds with dumped pulverised fuel ash, which supports the ephemeral short perennial vegetation. It is an open mosaic habitat comprising sheep's-fescue, Yorkshire-fog, false oat-grass, common bird's-foot-trefoil, mayweed, yellow-wort and sea-spurrey, fat-hen *Chenopodium album* and a sow-thistle *Sonchus* sp.	Open Mosaic

Target note (TN) number	Habitat description	HoPI
TN155	A gravel and topsoil mound on top of fuel ash, sparsely vegetated with ruderal weeds. Most of the area is very sparse, largely bare ground with occasional sow-thistle seedling. The edge of the area supports more vegetation including common sow-thistle, groundsel *Senecio vulgaris*, fat-hen, annual beard-grass *Polypogon monspeliensis*, prickly lettuce *Lactuca serriola*, mugwort and teasel.	Open Mosaic
TN156	Ephemeral short perennial habitat comprising mallow, mugwort, charlock, purple ramping-fumitory *Fumaria purpurea*, potato *Solanum tuberosum*, pineappleweed, shepherd's-purse *Capsella bursa-pastoris*, groundsel, creeping thistle, cleavers, common field speedwell *Veronica persica*, dock, cock's-foot, bristly oxtongue, burdock, hoary Mustard *Hirschfeldia incana*, red dead-nettle *Lamium purpureum* and barren brome *Anisantha sterilis*.	None
TN157	Ephemeral/short perennial habitat near the Tilbury junction of the A13	Open Mosaic
TN159	Divided sedge *Carex divisa*.	N/A
TN160	Chicory	N/A
TN161	Purple ramping fumitory	N/A
TN162	Potential black poplar	N/A
TN163	Veteran common lime	N/A
TN169	Veteran ash	N/A

Annex B Hedgerows regulations assessment

Table B.1 Hedgerows regulations assessments to the south of the River Thames

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0016	J2.1.2 Species-poor intact hedge	Not important	Ac, Fe, Cm, Ca	Intact, Trees, Bank/wall
PH1_ln_0053	J2.3.1 Native species-rich hedge with trees	Not important - rapid assessment	Unknown	
PH1_ln_0057	J2.1.1 Native species-rich intact hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_0102	J2.2.2 Species-poor defunct hedge	Not important	Unknown	Bank/wall, Parallel Hedge, 3 flora spp.
PH1_ln_0111	J2.1.2 Species-poor intact hedge	Not important	Tb, Cm, Pa	
PH1_ln_0116	J2.3.1 Native species-rich hedge with trees	Not important - rapid assessment	Unknown	
PH1_ln_0119	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0129	J2.1.2 Species-poor intact hedge	Not important	Cm	
PH1_ln_0140	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0153	J2.2.2 Species-poor defunct hedge	Not assessed - Curtilage boundary	Unknown	
PH1_ln_0163	J2.1.2 Species-poor intact hedge	Not important	Tb, Ps	
PH1_ln_0166	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Sn, Ac, Vl, Cm, Ac	Intact, Trees, Parallel Hedge
PH1_ln_0198	J2.2.1 Native species-rich defunct hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0250	J2.2.2 Species-poor defunct hedge	Not important	Unknown	
PH1_ln_0271	J2.1.2 Species-poor intact hedge	Not assessed - Curtilage boundary	N/A	

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0291	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0293	J2.2.2 Species-poor defunct hedge	Not important	Cm, Um	
PH1_ln_0296	J2.2.1 Native species-rich defunct hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0309	J2.1.2 Species-poor intact hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_0310	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0311	J2.1.1 Native species-rich intact hedge	Important	Um, Sn, Ps, Ros, Liv, Cm	
PH1_ln_0319	J2.1.1 Native species-rich intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0331	J2.1.1 Native species-rich intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0347	J2.1.2 Species-poor intact hedge	Not important	Ps, Ac, Cm	
PH1_ln_0360	J2.1.2 Species-poor intact hedge	Important	Ps, Sn, Cm, Ac	Intact, Trees, Bridleway/path, Bank/wall
PH1_ln_0372	J2.1.1 Native species-rich intact hedge	Important	Um, Cm, Sn, Ac, Ps, Ros	
PH1_ln_0374	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0415	J2.2.2 Species-poor defunct hedge	Not important	Unknown	
PH1_ln_0423	J2.1.1 Native species-rich intact hedge	Important	Cm, Ee, Ac, Liv, Ms, Cos, Vl, Cos	
PH1_ln_0439	J2.2.2 Species-poor defunct hedge	Important – precautionary basis	Unknown	Bridleway/path
PH1_ln_0459	J2.1.2 Species-poor intact hedge	Not important	Ps, Cm, Um, Sx, Sn	

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0465	J2.1.1 Native species-rich intact hedge	Important	Ac, Ps, Ee, Liv, Cos, Ros	
PH1_ln_0471	J2.2.2 Species-poor defunct hedge	Not important	Cm, Sn, Ac	
PH1_ln_0492	J2.1.1 Native species-rich intact hedge	Important	Cm, PS, *Prunus* sp., Cos, Ee, Ac	
PH1_ln_0507	J2.3.1 Native species-rich hedge with trees	Not important	Fe, Pa, Cm, Sn, Ps	Ditch
PH1_ln_0519	J2.2.2 Species-poor defunct hedge	Not important - rapid assessment	Unknown	4+ connections, Parallel Hedge
PH1_ln_0549	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0553	J2.1.1 Native species-rich intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0577	J2.1.1 Native species-rich intact hedge	Important	Pyc, Um, Cm, Liv, Fe, Ros	
PH1_ln_0585	J2.1.1 Native species-rich intact hedge	Not assessed - Curtilage boundary	Sx, Ac, Ros, Ps, Cm, Ca, Vop, Cos	
PH1_ln_0626	J2.2.2 Species-poor defunct hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_0649	J2.2.1 Native species-rich defunct hedge	Important - precautionary basis	Unknown	
PH1_ln_0660	J2.2.2 Species-poor defunct hedge	Not important - rapid assessment	Unknown	Bridleway/path
PH1_ln_0697	J2.1.1 Native species-rich intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0716	J2.2.2 Species-poor defunct hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_0852	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0853	J2.2.2 Species-poor defunct hedge	Not important - rapid assessment	Unknown	
PH1_ln_0912	J2.1.1 Native species-rich intact hedge	Important	Unknown	Intact, Trees, Ditch, Parallel Hedge
PH1_ln_0914	J2.1.2 Species-poor intact hedge	Not important	Cm, Sx	
PH1_ln_0915	J2.1.2 Species-poor intact hedge	Not important	Cm, Ros, Sx	
PH1_ln_0916	J2.1.2 Species-poor intact hedge	Not assessed - Curtilage boundary	Cm, Ps, Sn, Sn, Vop	Intact, Trees
PH1_ln_0919	J2.2.2 Species-poor defunct hedge	Not important	Cm, Um, PS, Sn, Ros, Sx	Trees, Ditch,
PH1_ln_0921	J2.2.2 Species-poor defunct hedge	Not important	Cm, Ros, Ps	Ditch
PH1_ln_0934	J2.1.1 Native species-rich intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0942	J2.1.1 Native species-rich intact hedge	Not important	Unknown	Intact, Trees
PH1_ln_0952	J2.3.2 Species-poor hedge with trees	Important - precautionary basis	Qr, Cm, Sn, Ia	Intact
PH1_ln_0953	J2.1.2 Species-poor intact hedge	Not assessed - Curtilage boundary	Cm, Ca, Ps, *Prunus* sp.	
PH1_ln_0954	J2.3.1 Native species-rich hedge with trees	Important	Fe, Ia, Cm, Sn, Um, Ca, Ac	
PH1_ln_0956	J2.1.2 Species-poor intact hedge	Not important	Cm, Sn	
PH1_ln_0957	J2.1.1 Native species-rich intact hedge	Important	Fe, *Betula* sp., Cm, Ros, Sn, Cos	
PH1_ln_1005	J2.3.1 Native species-rich hedge with trees	Not assessed - <30yrs old	N/A	
PH1_ln_1009	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_1017	J2.2.2 Species-poor defunct hedge	Not important - rapid assessment	Unknown	Parallel Hedge
PH1_ln_1038	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1039	J2.1.1 Native species-rich intact hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_1040	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1041	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1044	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1192	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1198	J2.3.1 Native species-rich hedge with trees	Important	Fe, *Prunus* sp., Ca, Qr, Sx	
PH1_ln_1201	J2.1.1 Native species-rich intact hedge	Not important - rapid assessment	Cm	
PH1_ln_1203	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Ps, Cm, Ac, Liv	Intact, Bank/wall
PH1_ln_1205	J2.1.1 Native species-rich intact hedge	Important	Cm, Ps, Sn, *Prunus* sp., Ac, Ee, Ros	
PH1_ln_1206	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Ps, Sn	
PH1_ln_1207	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Cm, Ps	
PH1_ln_1208	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Cm, Ps, Ac	
PH1_ln_1209	J2.1.1 Native species-rich intact hedge	Not important - rapid assessment	Ac, Ps, Cm, Ee, Ros	Intact

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_1210	J2.1.1 Native species-rich intact hedge	Not important - rapid assessment	Cm	
PH1_ln_1212	J2.1.1 Native species-rich intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_1213	J2.1.1 Native species-rich intact hedge	Not important - rapid assessment	Cb, Cm, Sx, Ia	Intact
PH1_ln_1215	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1217	J2.1.1 Native species-rich intact hedge	Important	Cm, Ms, Fe, Ps, Ac, *Tilia* sp.	
PH1_ln_1248	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1249	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1255	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1258	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	None	
PH1_ln_1391	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1458	J2.3.1 Native species-rich hedge with trees	Not assessed - <30yrs old	N/A	
PH1_ln_1462	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1471	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	*Quercus* sp., Cm, Sn, Cm	Intact
PH1_ln_1472	J2.3.1 Native species-rich hedge with trees	Important - precautionary basis	*Quercus* sp., *Prunus* sp., Ia, Sn	Trees
PH1_ln_1473	J2.1.1 Native species-rich intact hedge	Not assessed - <30yrs old	N/A	

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_1474	J2.1.1 Native species-rich intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_1663	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1674	J2.3.2 Species-poor hedge with trees	Important - precautionary basis	*Quercus* sp., Sn, Cm, Fe	Trees
PH1_ln_1716	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1717	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1725	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1726	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1765	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Unknown	Intact

Table B.2 Hedgerows regulations assessments to the north of the River Thames

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0005	J2.1.2 Species-poor intact hedge	Not important	Sn, Cm, Ps	
PH1_ln_0007	J2.2.2 Species-poor defunct hedge	Not assessed - Curtilage boundary	Ps, Cm, Qr, Um, Ue	
PH1_ln_0011	J2.2.2 Species-poor defunct hedge	Not important	Um, Cm, Sn	
PH1_ln_0012	J2.3.2 Species-poor hedge with trees	Not important	Cm, *Quercus* sp.	
PH1_ln_0013	J2.1.1 Native species-rich intact hedge	Important	*Quercus* sp., Ps, Sn, Um, Sx, Cm	
PH1_ln_0015	J2.3.1 Native species-rich hedge with trees	Important - precautionary basis	Fe, Ac, Sx, Cm, Ps	Parallel Hedge

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0017	J2.1.2 Species-poor intact hedge	Not important	Cm, Sx, Ps, Ac	Intact, Trees, Ditch
PH1_ln_0018	J2.3.1 Native species-rich hedge with trees	Not important	Qr, Sn, Cm, Ue, Ps, Fe, Pyc, Bpe	
PH1_ln_0022	J2.2.2 Species-poor defunct hedge	Not important	Unknown	
PH1_ln_0023	J2.2.2 Species-poor defunct hedge	Not important	Um, *Populus* sp.	
PH1_ln_0028	J2.2.2 Species-poor defunct hedge	Not important - rapid assessment	Unknown	Parallel Hedge
PH1_ln_0031	J2.2.2 Species-poor defunct hedge	Not important	PS, Um, Cm, Qr	Bank/wall, Parallel Hedge
PH1_ln_0033	J2.2.1 Native species-rich defunct hedge	Important	Um, *Quercus* sp., Fe, Sn, Cm	Bank/wall, Ditch, Parallel Hedge
PH1_ln_0036	J2.1.2 Species-poor intact hedge	Important	Cm, Ros, Ps, Sn	Intact, Trees, Bridleway/path , Ditch
PH1_ln_0037	J2.1.2 Species-poor intact hedge	Not important	Ps, Ros, Cm	
PH1_ln_0039	J2.1.2 Species-poor intact hedge	Not important	Cm, Fe, Ps	
PH1_ln_0041	J2.1.2 Species-poor intact hedge	Not important	*Quercus* sp., Um, Sn	
PH1_ln_0047	J2.1.1 Native species-rich intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0050	J2.1.2 Species-poor intact hedge	Not important	Sn, Um, Fe, Cm	Intact, Trees, Bank/wall
PH1_ln_0052	J2.3.2 Species-poor hedge with trees	Not important	Ac, Cm, PS, Um, Ca, Qr	
PH1_ln_0060	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0062	J2.1.2 Species-poor intact hedge	Not important	Ps, Cm, Ros, Sn	Intact, Trees
PH1_ln_0063	J2.3.1 Native species-rich hedge with trees	Not assessed - <30yrs old	N/A	
PH1_ln_0064	J2.1.2 Species-poor intact hedge	Not important	Sn, Um	

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0066	J2.2.2 Species-poor defunct hedge	Not important	Fe, Ps, Um, Ros	Ditch, Parallel Hedge
PH1_ln_0068	J2.1.2 Species-poor intact hedge	Not important	Um, Ros	
PH1_ln_0069	J2.1.1 Native species-rich intact hedge	Important	Unknown	Intact, Trees, Bridleway/path, Ditch
PH1_ln_0072	J2.2.1 Native species-rich defunct hedge	Not important	Cm, Sn, Fe, Qr, Ros	
PH1_ln_0074	J2.3.2 Species-poor hedge with trees	Not important	Um, Cm, Sn, Ros	Parallel Hedge
PH1_ln_0078	J2.2.1 Native species-rich defunct hedge	Not important	Um, Cm, Sn, Fe, Ac	Bank/wall, Parallel Hedge
PH1_ln_0079	J2.1.1 Native species-rich intact hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_0080	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Unknown	Intact, Trees
PH1_ln_0082	J2.1.2 Species-poor intact hedge	Not important	Unknown	Intact, Trees, Bank/wall, 3 flora spp.
PH1_ln_0085	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0086	J2.1.2 Species-poor intact hedge	Not important	Unknown	Intact, Trees, Bank/wall, 3 flora spp.
PH1_ln_0092	J2.1.1 Native species-rich intact hedge	Important	Cm, Ps, Cos, Ca, Ros	Intact, Trees, Bridleway/path, 4+ connections
PH1_ln_0093	J2.2.1 Native species-rich defunct hedge	Not important	Cm, Ac, Qr, Um, Sn	Ditch
PH1_ln_0097	J2.1.2 Species-poor intact hedge	Not important	Cm, Ps, Ros, Um	
PH1_ln_0098	J2.3.2 Species-poor hedge with trees	Not important	Um	
PH1_ln_0100	J2.3.2 Species-poor hedge with trees	Important	Cm, Ps, Qr, Populus sp., Ac, Um	

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0101	J2.1.2 Species-poor intact hedge	Important	Unknown	Intact, Trees, Bridleway/path, Parallel Hedge
PH1_ln_0105	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact, Trees, Ditch
PH1_ln_0112	J2.1.2 Species-poor intact hedge	Not important	Cm, Um, Ac	
PH1_ln_0113	J2.1.2 Species-poor intact hedge	Not important	Um, Fe, Ps, Ac	Intact, Trees
PH1_ln_0114	J2.1.2 Species-poor intact hedge	Not important	Cm, Sn, Ros, Um	Intact, Trees, Bank/wall
PH1_ln_0121	J2.3.1 Native species-rich hedge with trees	Important	Um, Cm, Ca, Ros, Sn	Intact, Parallel Hedge
PH1_ln_0124	J2.1.2 Species-poor intact hedge	Not important	Cm	
PH1_ln_0127	J2.1.2 Species-poor intact hedge	Not important	Um, Sn, Ros, Cm	Intact, Trees, Ditch
PH1_ln_0132	J2.1.1 Native species-rich intact hedge	Not important	Fe, Cm, Ps, Qr, Sn	Intact, Trees, Ditch
PH1_ln_0135	J2.1.2 Species-poor intact hedge	Not important	Um, Sn, Pn hybrid	Intact, Trees, Bank/wall
PH1_ln_0136	J2.3.1 Native species-rich hedge with trees	Important	Um, Cm, Ps, Ac, Ros, Cos, Qr, Sn, Fe	
PH1_ln_0139	J2.3.2 Species-poor hedge with trees	Not important	Um, Cm, Sn	
PH1_ln_0144	J2.1.2 Species-poor intact hedge	Not important	Ps, Cm	
PH1_ln_0145	J2.1.1 Native species-rich intact hedge	Important	Ps, Cm, Sn, Pa, Ac, Fe, Ros, Sx	
PH1_ln_0152	J2.1.2 Species-poor intact hedge	Important	Ps, Um, Cm, Ros	Intact, Trees, Bridleway/path, 4+ connections, Parallel Hedge
PH1_ln_0154	J2.3.1 Native species-rich hedge with trees	Not important - rapid assessment	Unknown	Bridleway/path,

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0156	J2.1.2 Species-poor intact hedge	Not important	Um, Cm	
PH1_ln_0170	J2.2.1 Native species-rich defunct hedge	Important	Cm, Ee, Qr, Sn, Fe, Ps	
PH1_ln_0172	J2.3.2 Species-poor hedge with trees	Not important	Sn, Um	
PH1_ln_0174	J2.2.2 Species-poor defunct hedge	Not important	Sn, Cm, Bet sp.	
PH1_ln_0176	J2.1.1 Native species-rich intact hedge	Not important	Um, Cm, Ps, Fe, Sn	Intact, Trees, Ditch
PH1_ln_0180	J2.1.2 Species-poor intact hedge	Not important	Um, *Quercus* sp., Sn	
PH1_ln_0184	J2.2.1 Native species-rich defunct hedge	Important	Um, *Quercus* sp., Ps, Fe, Cm, Sn	
PH1_ln_0188	J2.3.1 Native species-rich hedge with trees	Not assessed - Curtilage boundary	N/A	
PH1_ln_0196	J2.1.2 Species-poor intact hedge	Not important	Sn, Cm, Ps, Um	Intact, Trees
PH1_ln_0200	J2.2.2 Species-poor defunct hedge	Not important	Unknown	
PH1_ln_0203	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact, Trees
PH1_ln_0213	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	Cm	
PH1_ln_0215	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0225	J2.1.2 Species-poor intact hedge	Not important	Um	
PH1_ln_0226	J2.1.1 Native species-rich intact hedge	Important	Cos, Ms, Ps, Cm, Fe, Ac	
PH1_ln_0228	J2.3.2 Species-poor hedge with trees	Not important	PS, Qr, Ros	
PH1_ln_0235	J2.1.2 Species-poor intact hedge	Not important	Um, Ps, Sn	
PH1_ln_0242	J2.2.2 Species-poor defunct hedge	Not important	Unknown	

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0243	J2.1.1 Native species-rich intact hedge	Important	*Quercus* sp., Um, Sx, Cys, Ue, Sn	
PH1_ln_0246	J2.3.2 Species-poor hedge with trees	Not important	Um, Cm, *Quercus* sp.	
PH1_ln_0255	J2.2.2 Species-poor defunct hedge	Not important	Unknown	Bank/wall, Ditch, 3 flora spp.
PH1_ln_0257	J2.3.1 Native species-rich hedge with trees	Not assessed - <30yrs old	N/A	
PH1_ln_0267	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Unknown	Intact, Trees
PH1_ln_0269	J2.1.2 Species-poor intact hedge	Not important	Cm, Um	
PH1_ln_0273	J2.3.1 Native species-rich hedge with trees	Important	Um, Cm, Qr, Ros, Ac, Ps, Cos, Cb	
PH1_ln_0276	J2.3.1 Native species-rich hedge with trees	Important	Ac, Cm, Ps, Ros, Um, Ee	
PH1_ln_0279	J2.1.2 Species-poor intact hedge	Not important	Ps	
PH1_ln_0283	J2.1.2 Species-poor intact hedge	Important	Um, Fe, Pa, Qr, Ros, Cm	Intact, Trees, Bridleway/path, Ditch, Parallel Hedge
PH1_ln_0294	J2.1.2 Species-poor intact hedge	Not important	Um, Cm, Ps, Sn, Pa	Intact, Trees, Ditch
PH1_ln_0297	J2.3.2 Species-poor hedge with trees	Not important	Um, Qr, Ps, Sx	Ditch
PH1_ln_0300	J2.2.2 Species-poor defunct hedge	Not important	Um, Sn	
PH1_ln_0306	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Sx, Sxv, Sn, Fe	Intact, Trees
PH1_ln_0308	J2.3.2 Species-poor hedge with trees	Important	Um, Ac, *Quercus* sp., Ros	Bridleway/path, Parallel Hedge
PH1_ln_0314	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact, Trees

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0315	J2.2.1 Native species-rich defunct hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0320	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0321	J2.1.2 Species-poor intact hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_0322	J2.1.2 Species-poor intact hedge	Not important	Um, Cos, Sn	
PH1_ln_0328	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Unknown	Intact, Trees, Bank/wall, Parallel Hedge
PH1_ln_0330	J2.1.2 Species-poor intact hedge	Not important	Um, Cm	
PH1_ln_0334	J2.1.2 Species-poor intact hedge	Not important	Cm, Ps, Fe, Um, Qr	Intact, Trees, Bank/wall, Parallel Hedge
PH1_ln_0342	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact, Trees
PH1_ln_0343	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact, Trees
PH1_ln_0348	J2.3.1 Native species-rich hedge with trees	Important	Ps, Qr, Cm, Ac, Sx, Sn, Ros, Ca	
PH1_ln_0351	J2.1.1 Native species-rich intact hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_0352	J2.2.1 Native species-rich defunct hedge	Important - precautionary basis	Cm, Ps, Ros, Sn, Cos	4+ connections
PH1_ln_0355	J2.2.2 Species-poor defunct hedge	Not important - rapid assessment	Unknown	Bridleway/path, 4+ connections
PH1_ln_0357	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	Intact, Trees
PH1_ln_0361	J2.2.2 Species-poor defunct hedge	Not important	Sn, Um, Ac	
PH1_ln_0370	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact, Trees, 4+ connections

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0371	J2.2.2 Species-poor defunct hedge	Not important	Ps, Fe, Sn	
PH1_ln_0377	J2.2.2 Species-poor defunct hedge	Not Important	Um	
PH1_ln_0378	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0381	J2.1.2 Species-poor intact hedge	Not important	Cm, Sn, Ps	
PH1_ln_0385	J2.1.2 Species-poor intact hedge	Not important	Um, Sn	
PH1_ln_0388	J2.2.2 Species-poor defunct hedge	Not important	Cm, Sn	
PH1_ln_0389	J2.1.2 Species-poor intact hedge	Not important	Sn, Um	
PH1_ln_0392	J2.1.2 Species-poor intact hedge	Not important	Cm, Sn	
PH1_ln_0395	J2.1.1 Native species-rich intact hedge	Important	Um, Ps, *Quercus* sp., Sx, *Populus* sp.	Intact, Trees, 4+ connections, Parallel Hedge
PH1_ln_0396	J2.1.1 Native species-rich intact hedge	Important	Ps, Ac, Cm, Sn, Qr, Um	
PH1_ln_0398	J2.1.2 Species-poor intact hedge	Not important	Ps, Cm, Qr	
PH1_ln_0400	J2.3.1 Native species-rich hedge with trees	Important	*Prunus* sp., Cm, Ps, Cos, Um, Fe, Ac, *Quercus* sp.	
PH1_ln_0406	J2.2.2 Species-poor defunct hedge	Not important	Cm, Sn, Ps	
PH1_ln_0407	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0408	J2.1.1 Native species-rich intact hedge	Not important	Um, Cm, Ac, *Quercus* sp., Prunus sp.	Intact, Trees
PH1_ln_0413	J2.1.1 Native species-rich intact hedge	Important	Cm, Ps, Ros, Qr, Sx, Fe	
PH1_ln_0414	J2.1.2 Species-poor intact hedge	Not important	Unknown	Intact, Trees, Ditch
PH1_ln_0426	J2.1.2 Species-poor intact hedge	Not important	Um, *Populus* sp., Fe, Sn	Intact, Trees, Parallel Hedge

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0427	J2.2.1 Native species-rich defunct hedge	Not important	Qr, Sn, Cm, Ps, Um	
PH1_ln_0430	J2.2.2 Species-poor defunct hedge	Not important	Um	
PH1_ln_0435	J2.1.1 Native species-rich intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0436	J2.3.2 Species-poor hedge with trees	Not important	*Quercus* sp., Ps, Cm	
PH1_ln_0438	J2.3.1 Native species-rich hedge with trees	Important	*Prunus* sp., Ac, Sx, Cm, Sn, Um, Ps, Fe	
PH1_ln_0448	J2.2.2 Species-poor defunct hedge	Not important - rapid assessment	Unknown	
PH1_ln_0449	J2.1.1 Native species-rich intact hedge	Not important	Cm, Sn, Ps, Qr, Ca	Intact, Trees
PH1_ln_0452	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact, Trees
PH1_ln_0456	J2.3.1 Native species-rich hedge with trees	Important	Um, Qr, Ps, Cm, Fe, Ee, Sn, Sx, Ros, Ac, Cos	
PH1_ln_0457	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact, Trees, 4+ connections, Parallel Hedge
PH1_ln_0461	J2.1.2 Species-poor intact hedge	Not important	Um, Cm, Ac, Ros	Intact, Trees, Ditch
PH1_ln_0462	J2.3.1 Native species-rich hedge with trees	Important	*Quercus* sp., Ps, Cm, Ca, Fe	Bridleway/path, Parallel Hedge
PH1_ln_0468	J2.3.2 Species-poor hedge with trees	Not important	Um, Sn, Fe	
PH1_ln_0473	J2.1.2 Species-poor intact hedge	Not important	Um	
PH1_ln_0478	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact, Trees

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0480	J2.2.2 Species-poor defunct hedge	Important	Unknown	Bridleway/path, Bank/wall, Ditch
PH1_ln_0481	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0484	J2.3.2 Species-poor hedge with trees	Not important	Um, Cm	
PH1_ln_0485	J2.1.2 Species-poor intact hedge	Not important	Ac, Ag, Cm	
PH1_ln_0486	J2.1.1 Native species-rich intact hedge	Important	Um, Cm, Ps, Pa, Fe, Qr, Ros	
PH1_ln_0487	J2.1.2 Species-poor intact hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_0490	J2.2.1 Native species-rich defunct hedge	Important	Cm, Um, Fe, Liv, Ps, Ac, Sn	
PH1_ln_0491	J2.3.2 Species-poor hedge with trees	Not important	Um	
PH1_ln_0495	J2.3.2 Species-poor hedge with trees	Not important	Um	
PH1_ln_0496	J2.1.1 Native species-rich intact hedge	Important	Liv, Cm, Ac, Um, Sn, Ps	
PH1_ln_0497	J2.3.2 Species-poor hedge with trees	Not important	Um	
PH1_ln_0498	J2.3.1 Native species-rich hedge with trees	Important	Ps, Fe, Sn, Qr, Cm, Um	
PH1_ln_0502	J2.2.2 Species-poor defunct hedge	Not important	Cm, Um	
PH1_ln_0504	J2.2.2 Species-poor defunct hedge	Not important - rapid assessment	Unknown	
PH1_ln_0508	J2.2.2 Species-poor defunct hedge	Important - precautionary basis	Cm, Ps, Um, Sn	Bridleway/path, 3 flora spp.
PH1_ln_0509	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact, Trees

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0510	J2.3.2 Species-poor hedge with trees	Not important - rapid assessment	Unknown	
PH1_ln_0512	J2.2.2 Species-poor defunct hedge	Not important	Um, Ps, Cm	
PH1_ln_0513	J2.1.1 Native species-rich intact hedge	Important	Ps, Um, Qr, Cm, Ac, Cos, Sn, Ros, Ca, Sx	
PH1_ln_0514	J2.1.1 Native species-rich intact hedge	Important	Cm, Pa, Fe, Sx, Cos, Um, Ps	
PH1_ln_0516	J2.3.1 Native species-rich hedge with trees	Important	Sn, Um, Ps, Cm, Ros, Sx	Bank/wall, Ditch
PH1_ln_0522	J2.3.1 Native species-rich hedge with trees	Important	Ee, Ca, Fe, Qr, Sn, Cm, Ps, Ros	
PH1_ln_0540	J2.1.2 Species-poor intact hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_0548	J2.3.2 Species-poor hedge with trees	Not assessed - Curtilage boundary	N/A	
PH1_ln_0552	J2.1.1 Native species-rich intact hedge	Important	Unknown	Intact, Trees, Ditch, Parallel Hedge
PH1_ln_0556	J2.3.1 Native species-rich hedge with trees	Important	Cm, Cos, Ca, Ms, *Quercus* sp., Fe, *Prunus* sp., Ros	
PH1_ln_0558	J2.2.2 Species-poor defunct hedge	Not important - rapid assessment	Unknown	Ditch, 4+ connections
PH1_ln_0574	J2.1.2 Species-poor intact hedge	Important	Unknown	Intact, Trees, Bridleway/path, Ditch
PH1_ln_0579	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0581	J2.1.1 Native species-rich intact hedge	Important	Ps, Cm, Um, Sx, Sn	Intact, Trees, Bridleway/path, Bank/wall, Ditch, 3 flora spp.
PH1_ln_0583	J2.2.2 Species-poor defunct hedge	Not important	Cm, Um, Sn	Parallel Hedge

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0586	J2.3.2 Species-poor hedge with trees	Not important	Um, Cm, Qu sp.	
PH1_ln_0588	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact, Trees, Parallel Hedge
PH1_ln_0593	J2.1.1 Native species-rich intact hedge	Important	Unknown	Intact, Trees, 4+ connections, Parallel Hedge
PH1_ln_0602	J2.2.1 Native species-rich defunct hedge	Important - precautionary basis	Unknown	4+ connections
PH1_ln_0605	J2.1.2 Species-poor intact hedge	Not important	Cm	
PH1_ln_0608	J2.2.1 Native species-rich defunct hedge	Not important	Cm, Qr, Sn, Ps, Fe	Parallel Hedge
PH1_ln_0617	J2.1.2 Species-poor intact hedge	Not important	Sn, Um, Cm	
PH1_ln_0619	J2.1.2 Species-poor intact hedge	Not important	Cm, Um	
PH1_ln_0624	J2.1.1 Native species-rich intact hedge	Important	*Quercus* sp., Sx, Um, Sn, Ros, Cm	
PH1_ln_0627	J2.3.2 Species-poor hedge with trees	Not important	*Quercus* sp., Sn, Cm	
PH1_ln_0629	J2.1.1 Native species-rich intact hedge	Important	Unknown	Intact, Trees, Bridleway/path, 4+ connections
PH1_ln_0636	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0638	J2.3.1 Native species-rich hedge with trees	Important	Cm, Ps, Sn, Ms, Um, Fe, *Prunus* sp.	
PH1_ln_0639	J2.1.2 Species-poor intact hedge	Not important	Sn, Cm	
PH1_ln_0640	J2.1.2 Species-poor intact hedge	Not important	Ps, Sn, Cm	
PH1_ln_0641	J2.3.1 Native species-rich hedge with trees	Important	Cm, Ac, Ros, *Quercus* sp., Vop, Liv, Ps	

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0646	J2.1.1 Native species-rich intact hedge	Important	Unknown	Intact, Trees, Bridleway/path, 4+ connections
PH1_ln_0647	J2.2.2 Species-poor defunct hedge	Not important - rapid assessment	Unknown	4+ connections
PH1_ln_0650	J2.1.1 Native species-rich intact hedge	Important	Um, Qr, Cm, Ps, Ros, Ac, Sn	
PH1_ln_0651	J2.2.1 Native species-rich defunct hedge	Important	Um, Cm, Ros, Ps, Cos, Fe	
PH1_ln_0655	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	Intact, Trees, 4+ connections
PH1_ln_0659	J2.2.2 Species-poor defunct hedge	Not important	Cm, Fe, Ps, Qr	Bank/wall
PH1_ln_0661	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact, Trees, Parallel Hedge
PH1_ln_0662	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0664	J2.2.2 Species-poor defunct hedge	Not important	Unknown	
PH1_ln_0665	J2.3.1 Native species-rich hedge with trees	Important	Qr, Ros, Ps, Um, Cm, Ac, Fe	
PH1_ln_0666	J2.1.2 Species-poor intact hedge	Important	Um, Ac, Cm, Qr	Intact, Trees, Bridleway/path, Parallel Hedge
PH1_ln_0668	J2.1.1 Native species-rich intact hedge	Important	Um, Ps, Cm, Ac, Fe	Intact, Trees, 4+ connections, Parallel Hedge
PH1_ln_0669	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Cm, Ps, Ac, Sn	Intact, Trees, Parallel Hedge
PH1_ln_0670	J2.1.1 Native species-rich intact hedge	Important	Ee, Cm, Ca, Ps, Qr, Fe	
PH1_ln_0675	J2.2.2 Species-poor defunct hedge	Not important	Unknown	Ditch

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0679	J2.2.2 Species-poor defunct hedge	Not important	Um	
PH1_ln_0683	J2.2.2 Species-poor defunct hedge	Not important	Unknown	Bank/wall
PH1_ln_0685	J2.1.2 Species-poor intact hedge	Not important	Ps, Um	
PH1_ln_0687	J2.1.1 Native species-rich intact hedge	Important	Ms, Cm, Qr, Ps, Ros	Intact, Trees, Bridleway/path , Ditch
PH1_ln_0696	J2.2.1 Native species-rich defunct hedge	Important	Qr, Ps, Sn, Cm, Ros, Fe	
PH1_ln_0699	J2.3.1 Native species-rich hedge with trees	Not assessed - <30yrs old	N/A	
PH1_ln_0701	J2.3.1 Native species-rich hedge with trees	Important	Cos, Fe, Cm, Qr, Ros, Sn	
PH1_ln_0704	J2.1.2 Species-poor intact hedge	Not important	Um, Ros, Sn, Ros	
PH1_ln_0711	J2.2.1 Native species-rich defunct hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0712	J2.1.2 Species-poor intact hedge	Not important	PS, Um	
PH1_ln_0718	J2.2.1 Native species-rich defunct hedge	Important	Um, *Quercus* sp., Ac, Ee, Ps, Fe	
PH1_ln_0729	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0734	J2.2.2 Species-poor defunct hedge	Not assessed - Curtilage boundary	Sx, Sn, Cm, Liv	
PH1_ln_0737	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0746	J2.1.2 Species-poor intact hedge	Not important	Cm, Um, Liv	
PH1_ln_0748	J2.1.2 Species-poor intact hedge	Not important	Um, Cm	
PH1_ln_0756	J2.2.1 Native species-rich defunct hedge	Important - precautionary basis	Cm, Sn, Sx, Ca, Cla, Liv	
PH1_ln_0759	J2.1.2 Species-poor intact hedge	Not important	Um, Fe, Cm	

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0760	J2.1.2 Species-poor intact hedge	Not important	Um	
PH1_ln_0764	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Fe, Um, Liv, Sn, Cm	Intact, Trees
PH1_ln_0765	J2.1.1 Native species-rich intact hedge	Important	Um, Sn, Liv, *Quercus* sp., Cm	Intact, Trees, Bank/wall, Parallel Hedge
PH1_ln_0767	J2.1.2 Species-poor intact hedge	Not important	Um	
PH1_ln_0771	J2.1.2 Species-poor intact hedge	Not important	Um, Cm	
PH1_ln_0772	J2.1.1 Native species-rich intact hedge	Important	Sn, Um, Cm, Ms, Ros, Ac, Ps	
PH1_ln_0773	J2.1.2 Species-poor intact hedge	Not important	Um, Cm	
PH1_ln_0775	J2.1.2 Species-poor intact hedge	Not important	Cm	
PH1_ln_0776	J2.1.2 Species-poor intact hedge	Not important	Cm, Sn	
PH1_ln_0782	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Um, Cm, Ia, *Quercus* sp.	Intact, Trees, 4+ connections
PH1_ln_0791	J2.1.2 Species-poor intact hedge	Not important	Cm, Um,	
PH1_ln_0804	J2.1.2 Species-poor intact hedge	Not important	Um, Sn	
PH1_ln_0808	J2.1.2 Species-poor intact hedge	Not important	Um, Cm, *Prunus* sp.	
PH1_ln_0810	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0818	J2.1.1 Native species-rich intact hedge	Important	Ps, Um, Cm, Sn	Intact, Trees, Bridleway/path, Parallel Hedge
PH1_ln_0823	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0834	J2.1.1 Native species-rich intact hedge	Important	Cm, Um, Sn, Ros, Ps	Intact, Trees, Bridleway/path, Ditch, 4+ connections, Parallel Hedge

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0860	J2.1.1 Native species-rich intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0861	J2.1.1 Native species-rich intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0862	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Ps, Um, Cm, Ros, Ac, Ca	Intact, Trees, 4+ connections
PH1_ln_0865	J2.2.2 Species-poor defunct hedge	Not important	Um	
PH1_ln_0866	J2.1.2 Species-poor intact hedge	Not important	Cb, Um, Sn	
PH1_ln_0867	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Sn, Cm, Um, Ia	Intact, Trees, Ditch
PH1_ln_0869	J2.2.1 Native species-rich defunct hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0871	J2.1.2 Species-poor intact hedge	Not important	Um, Ps	
PH1_ln_0875	J2.1.2 Species-poor intact hedge	Not important	Um, Sn, Ros	
PH1_ln_0878	J2.1.1 Native species-rich intact hedge	Important	Cm, Ps, Ros, Sn, Qr	Intact, Trees, Bridleway/path, 4+ connections
PH1_ln_0879	J2.1.1 Native species-rich intact hedge	Important	Cm, Um, Ps, Qr, Sn, Ros	
PH1_ln_0886	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Cm, Ps, Ros, Sn	Intact, Trees, Ditch, 4+ connections
PH1_ln_0890	J2.1.2 Species-poor intact hedge	Not important	Unknown	Intact, Trees, Ditch
PH1_ln_0892	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Cm, Fe, Ps, Ros	Intact, Trees
PH1_ln_0909	J2.1.2 Species-poor intact hedge	Not important	Cm, Sn	
PH1_ln_0910	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_0996	J2.1.2 Species-poor intact hedge	Not important	Cm, Ps, Ros	

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_0998	J2.1.2 Species-poor intact hedge	Not important	Cm, Ps, Sn	
PH1_ln_0999	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Cm, Ps, Ros, Quercus sp.	Intact, Trees
PH1_ln_1001	J2.2.1 Native species-rich defunct hedge	Important	Cm, Ps, Sn, Ros, *Quercus* sp.	Trees, Bridleway/path, Ditch
PH1_ln_1003	J2.1.2 Species-poor intact hedge	Not important	Cm	
PH1_ln_1004	J2.3.2 Species-poor hedge with trees	Not assessed - too short	N/A	
PH1_ln_1008	J2.1.2 Species-poor intact hedge	Important	Unknown	Intact, Trees, Bridleway/path, Parallel Hedge
PH1_ln_1010	J2.2.2 Species-poor defunct hedge	Not important	Unknown	Ditch, 4+ connections
PH1_ln_1011	J2.3.2 Species-poor hedge with trees	Not important	Um, Qr, Ps, Sx	Trees, Ditch
PH1_ln_1012	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_1013	J2.1.1 Native species-rich intact hedge	Important	Unknown	Intact, Trees, Bridleway/path, Bank/wall, Ditch, 4+ connections
PH1_ln_1014	J2.1.2 Species-poor intact hedge	Not assessed - too short	N/A	
PH1_ln_1015	J2.1.2 Species-poor intact hedge	Not important	Um, Sn	
PH1_ln_1016	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Cm, Ps, Ros, Sn	Intact, Trees, Ditch
PH1_ln_1020	J2.3.1 Native species-rich hedge with trees	Important	Um, Cm, Ca, Ros, Sn	Intact, Bank/wall, Parallel Hedge
PH1_ln_1021	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	Intact, Ditch
PH1_ln_1022	J2.1.1 Native species-rich intact hedge	Important	Unknown	Intact, Ditch, 4+ connections

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_1023	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	Intact
PH1_ln_1029	J2.1.2 Species-poor intact hedge	Not important	Unknown	
PH1_ln_1030	J2.1.2 Species-poor intact hedge	Not important	Unknown	
PH1_ln_1031	J2.1.2 Species-poor intact hedge	Not important	Unknown	
PH1_ln_1032	J2.1.2 Species-poor intact hedge	Not important	Unknown	
PH1_ln_1088	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1089	J2.1.1 Native species-rich intact hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_1090	J2.3.1 Native species-rich hedge with trees	Important - precautionary basis	Unknown	
PH1_ln_1091	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1092	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1093	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1094	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1095	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1096	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1097	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1098	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_1099	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1100	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1101	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1103	J2.1.1 Native species-rich intact hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_1105	J2.1.1 Native species-rich intact hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_1107	J2.1.1 Native species-rich intact hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_1110	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1115	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1117	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1120	J2.1.1 Native species-rich intact hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_1121	J2.1.1 Native species-rich intact hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_1127	J2.1.1 Native species-rich intact hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_1137	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1138	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1139	J2.2.2 Species-poor defunct hedge	Not important	Unknown	

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_1141	J2.1.2 Species-poor intact hedge	Not important	Unknown	
PH1_ln_1142	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1148	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1151	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1152	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1153	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1157	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1158	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1159	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1163	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1164	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1165	J2.1.1 Native species-rich intact hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_1166	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1167	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1168	J2.3.1 Native species-rich hedge with trees	Important - precautionary basis	Unknown	

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_1169	J2.3.1 Native species-rich hedge with trees	Important - precautionary basis	Unknown	
PH1_ln_1170	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1172	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1173	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1174	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1175	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1176	J2.1.1 Native species-rich intact hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_1177	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1178	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1183	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1184	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1185	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1220	J2.2.1 Native species-rich defunct hedge	Important	Ros, Cm, Sn, Ac, Ps, Prunus Sp., Fe	
PH1_ln_1222	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Ps	
PH1_ln_1282	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_1297	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um, Ps	
PH1_ln_1298	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Fs, Cm	
PH1_ln_1303	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_1304	J2.1.2 Species-poor intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_1305	J2.1.1 Native species-rich intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_1306	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um, *Quercus* sp.	
PH1_ln_1307	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1309	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1312	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1319	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um, Cm	
PH1_ln_1322	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um, Cm, Ee	
PH1_ln_1326	J2.2.2 Species-poor defunct hedge	Not important - rapid assessment	Unknown	
PH1_ln_1327	J2.2.2 Species-poor defunct hedge	Not important - rapid assessment	Unknown	
PH1_ln_1329	J2.2.2 Species-poor defunct hedge	Not important - rapid assessment	Unknown	
PH1_ln_1343	J2.2.1 Native species-rich defunct hedge	Important - precautionary basis	Cm, *Quercus* sp., Ps, *Prunus* sp., Fe	Bridleway/path, Ditch

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_1345	J2.1.1 Native species-rich intact hedge	Important	Ros, Cm, Ps, Ac, Sx, Cos	
PH1_ln_1346	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Ac, Ros, Cm, *Prunus* sp., Ps	Intact, Bridleway/path
PH1_ln_1350	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Ps, Cm, Cos	
PH1_ln_1352	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Ps, Cm, *Quercus* sp.	
PH1_ln_1354	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Ps, Cm, *Quercus* sp.	
PH1_ln_1355	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um, Ros, Sn	
PH1_ln_1356	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Cm, Ac, Ps, *Quercus* sp.	Intact, 4+ connections
PH1_ln_1358	J2.1.1 Native species-rich intact hedge	Important	Ps, Ac, Ee, Cm, *Quercus* sp. Sx	
PH1_ln_1359	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Cm, Ps, Sx, Um	Intact
PH1_ln_1361	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Um, Ps, *Quercus* sp., Fe, Ac	Intact
PH1_ln_1366	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Ps, Cm, Um, Sn	Intact, 4+ connections
PH1_ln_1368	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Um, Cm, *Prunus* sp., Sn	Intact, Parallel Hedge
PH1_ln_1382	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1403	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1407	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_1413	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Cm, Sn, Ros	
PH1_ln_1414	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um, Cm, Ps	
PH1_ln_1415	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Ac, *Quercus* sp.	
PH1_ln_1416	J2.1.2 Species-poor intact hedge	Important	Cm, Ac, *Prunus* sp., Ros, Fe	Intact, Bridleway/path, 4+ connections
PH1_ln_1419	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Ac, Cm, Um, Ros	Intact
PH1_ln_1420	J2.1.2 Species-poor intact hedge	Important	Cm, Vl, Ac, Um, Ros, Ms	
PH1_ln_1421	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1422	J2.1.2 Species-poor intact hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_1423	J2.1.2 Species-poor intact hedge	Not assessed - Curtilage boundary	N/A	Intact
PH1_ln_1424	J2.3.2 Species-poor hedge with trees	Not important - rapid assessment	Ps, Um	
PH1_ln_1427	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1428	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um, Sn, Cm	
PH1_ln_1429	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Ac, *Prunus* sp., Cm, Um	Intact
PH1_ln_1430	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	None	
PH1_ln_1432	J2.2.2 Species-poor defunct hedge	Not important - rapid assessment	Unknown	

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_1434	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Cm	
PH1_ln_1437	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Cm, Um, Fe	
PH1_ln_1438	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1441	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Cm, *Quercus* sp., Ps	
PH1_ln_1442	J2.1.2 Species-poor intact hedge	Not assessed - Curtilage boundary	N/A	
PH1_ln_1443	J2.3.2 Species-poor hedge with trees	Not important - rapid assessment	Cm, *Quercus* sp., Ps	
PH1_ln_1445	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Cm	
PH1_ln_1446	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Ps, Cm, Ac	
PH1_ln_1447	J2.2.2 Species-poor defunct hedge	Important - precautionary basis	Am, Ros, Fe, Ps, Sx	Ditch
PH1_ln_1448	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Cm	
PH1_ln_1450	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Ps, Cm	
PH1_ln_1451	J2.3.2 Species-poor hedge with trees	Not important - rapid assessment	Cm	
PH1_ln_1452	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Ps, Cm, Fe, *Quercus* sp., Sx	Intact, Ditch
PH1_ln_1453	J2.1.2 Species-poor intact hedge	Not assessed - Curtilage boundary	N/A	Intact
PH1_ln_1454	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Cm, Ros, Liv, Sn, Um	Intact

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_1455	J2.3.2 Species-poor hedge with trees	Important - precautionary basis	Cm, Ps, Um, Fe, Um, Fe	Trees, Ditch
PH1_ln_1457	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Sn, Um, Cm	
PH1_ln_1466	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1467	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1496	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1501	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1502	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1503	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1506	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Unknown	
PH1_ln_1509	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1510	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1511	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1515	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1516	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	Intact, 4+ connections
PH1_ln_1518	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_1520	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um, Sn, Fe	
PH1_ln_1521	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um, Sn	
PH1_ln_1522	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Cm, Ros	
PH1_ln_1524	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um, Sn	
PH1_ln_1525	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um, Cm	
PH1_ln_1527	J2.1.2 Species-poor intact hedge	Important	Ps, Ac, Cm, *Prunus* sp., *Tilia* sp.	Intact, Ditch, 4+ connections
PH1_ln_1529	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1530	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1531	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um	
PH1_ln_1532	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Cm	
PH1_ln_1535	J2.3.2 Species-poor hedge with trees	Not important - rapid assessment	Unknown	Trees
PH1_ln_1539	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um, Cm	
PH1_ln_1541	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1546	J2.1.1 Native species-rich intact hedge	Not assessed - <30yrs old	N/A	
PH1_ln_1547	J2.3.1 Native species-rich hedge with trees	Important	Ps, Cm, *Quercus* sp., Ros, Um, Cb, Fe	

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_1548	J2.3.1 Native species-rich hedge with trees	Important	Cm, Ps, *Quercus* sp., Ros, *Prunus* sp., Um	
PH1_ln_1554	J2.1.1 Native species-rich intact hedge	Important	Unknown	Intact
PH1_ln_1578	J2.3.2 Species-poor hedge with trees	Not important - rapid assessment	Um, Ps	
PH1_ln_1584	J2.2.2 Species-poor defunct hedge	Not important - rapid assessment	Unknown	
PH1_ln_1585	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1587	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Cm, *Populus* sp.	
PH1_ln_1588	J2.3.1 Native species-rich hedge with trees	Important	Cm, Um, Ros, Fe, *Quercus* sp.	Trees, Ditch, Parallel Hedge
PH1_ln_1589	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um, Cm	
PH1_ln_1591	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um	
PH1_ln_1592	J2.2.2 Species-poor defunct hedge	Not important - rapid assessment	Unknown	
PH1_ln_1593	J2.3.1 Native species-rich hedge with trees	Important	Cm, Um, Sn, Ee, Ac, Ros, *Quercus* sp., Fe	
PH1_ln_1594	J2.3.2 Species-poor hedge with trees	Important - precautionary basis	Ac, Ros, Um, Cm	Trees
PH1_ln_1595	J2.3.1 Native species-rich hedge with trees	Important	Fe, *Quercus* sp., Cm, Ros, Ps, Um, Sn	
PH1_ln_1596	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1597	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_1598	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um, Cm	
PH1_ln_1599	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Cm, Ps, Ac	
PH1_ln_1603	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Cm	
PH1_ln_1604	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Cm	
PH1_ln_1606	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1611	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Cm	
PH1_ln_1617	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1621	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1626	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1646	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1650	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um	
PH1_ln_1651	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um, Sx	
PH1_ln_1652	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Um, Ps, *Quercus* sp., Sx, Fe, Sxv	Intact
PH1_ln_1653	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Cm, Ps, Um	
PH1_ln_1654	J2.3.1 Native species-rich hedge with trees	Important	Sx, Cm, Um, Ps, *Quercus* sp., Ms	

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_1656	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Cm, Ps, Um	
PH1_ln_1660	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1682	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1685	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1686	J2.2.2 Species-poor defunct hedge	Not important - rapid assessment	Unknown	
PH1_ln_1687	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um	
PH1_ln_1694	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1701	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1740	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Unknown	Intact
PH1_ln_1749	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um, Sn, Fe	
PH1_ln_1750	J2.2.2 Species-poor defunct hedge	Not important - rapid assessment	Cm, Um, Ms	
PH1_ln_1751	J2.1.2 Species-poor intact hedge	Not important - rapid assessment	Um, Sn, Cm	
PH1_ln_1752	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Ps, Cm, Fe, *Quercus* sp., Sx	Intact
PH1_ln_1756	J2.1.1 Native species-rich intact hedge	Important - precautionary basis	Unknown	
PH1_ln_2014	J2.1.2 Species-poor intact hedge	Important - precautionary basis	Unknown	

Hedgerow number	Phase 1 category	Important	Woody species	Features
PH1_ln_2015	J2.3.2 Species-poor hedge with trees	Important - precautionary basis	Unknown	
PH1_ln_2021	J2.3.2 Species-poor hedge with trees	Important - precautionary basis	Unknown	
PH1_ln_2022	J2.2.2 Species-poor defunct hedge	Important - precautionary basis	Unknown	

Table B.3 Key to Table B.1 and Table B.2, Woody species abbreviations

Spp code	Scientific name	Common name	Spp code	Scientific name	Common name
Ac	*Acer campestre*	Field maple	Pa	*Prunus avium*	Wild cherry
Ag	*Alnus glutinosa*	Alder	Pn hybrid	*Populus nigra x deltoides = P. x canadensis*	Hybrid black poplar
Bpe	*Betula pendula*	Silver birch	Ps	*Prunus spinosa*	Blackthorn
Cos	*Cornus sanguinea*	Dogwood	Pyc	*Pyrus communis*	Pear
Ca	*Corylus avellana*	Hazel	Qr	*Quercus robur*	Pedunculate oak
Cb	*Carpinus betulus*	Hornbeam	Ros	*Rosa* spp.	Rose
Cla	*Crataegus laevigata*	Midland hawthorn	Sx	*Salix* spp.	Willow
Cm	*Crataegus monogyna*	Hawthorn	Sxv	*Salix viminalis*	Osier
Cys	*Cytisus scoparius*	Broom	Sn	*Sambucus nigra*	Elder
Ee	*Euonymus europaeus*	Spindle	Tb	*Taxus baccata*	Yew
Fe	*Fraxinus excelsior*	Ash	Ue	*Ulex europaeus*	Gorse
Ia	*Ilex aquilfolium*	Holly	Um	*Ulmus* spp.	Elm
Liv	*Ligustrum vulgare*	Wild privet	Vl	*Viburnum lantana*	Wayfaring-tree
Ms	*Malus sylvestris*	Crab apple	Vop	*Viburnum opulus*	Guelder-rose

Annex C NVC survey data

C.1.1 The NVC survey results comprise a description of the plant community, an interpretation of the results (including the assignment of NVC communities where possible) and a series of tables with species lists. For communities where quadrats were taken, quadrat Domin scores, a Domin range, a frequency of occurrence and a DAFOR score is given for each species. For communities where quadrats were not taken, a DAFOR score is given for each species.

Annex D South of the River Thames

D.1 NVC17 Ashenbank Wood

Community 1

D.1.1 Ashenbank Wood was a mature broadleaved woodland containing ancient woodland indicators. Community 1 comprised an area of recently coppiced woodland with well-spaced standard ash, sycamore and hornbeam. The shrub layer was limited except for some sycamore coppice regrowth. The ground flora was dominated by common nettle and bramble.

D.1.2 The closest NVC community of community 1 is W10a *Quercus robur - Pteridium aquilinum - Rubus fruticosus* woodland, with a degraded W8 *Fraxinus excelsior - Acer campestre - Mercurialis perennis* woodland in some places.

Table D.1 NVC17 Ashenbank Wood Community 1

Scientific name	Common name	Q1 (Domin scale)		Frequency	DOMIN range	DAFOR
Canopy layer						
Acer pseudoplatanus	Sycamore	5		I	5	F
Fraxinus excelsior	Ash	4		I	4	O
Carpinus betulus	Hornbeam	1		I	1	O
Scientific name	**Common name**	**Q1**	**Q2**	**Frequency**	**DOMIN range**	**DAFOR**
Shrub layer						
Acer pseudoplatanus	Sycamore	4	3	II	3-4	R
Sambucus nigra	Elder		3	I	3	R

Scientific name	Common name	Q1	Q2	Q3	Frequency	DOMIN range	DAFOR
Ground flora							
Rubus fruticosus agg.	Bramble	9	3	5	III	3-9	F
Poa nemoralis	Rough meadow-grass	3	8	5	III	3-8	O lf
Bare ground/leaf litter/deadwood		7	4	5	III	4-7	F
Urtica dioica	Common nettle	6	4	5	III	4-6	F
Murcuralis perennis	Dog's mercury	4	3	6	III	3-6	O lf
Galium aparine	Cleavers	4	3	3	III	3-4	F

Scientific name	Common name	Q1	Q2	Q3	Frequency	DOMIN range	DAFOR
Ground flora							
Eurhynchium praelongum	Common feather moss	4	3	3	III	3-4	F
Fraxinus excelsior	Ash seedling	2	3	3	III	2-3	O
Acer pseudoplatanus	Sycamore seedling	3	3	3	III	3	F
Geum urbanum	Wood avens	3	3	3	III	3	O
Glechoma hederacea	Ground-ivy		4	5	II	4-5	O
Arum maculatum	Lords-and-ladies	3		2	II	2-3	R
Brachythecium rutabulum	Rough-stalked feather-moss	3		3	II	4	O
Atrium undulatum	Moss	3		3	II	3	O lf
Epilobium hirsutum	Great willowherb	1		1	II	1	R
Pteridium aquilinum	Bracken		1	1	II	1	R
Veronica chamaedrys	Germander speedwell		3		I	3	R
Scrophularia nodosa	Common figwort	2			I	2	R
Dryopteris filix-mas	Male-fern			2	I	2	R
Circaea lutetiana	Enchanter's-nightshade			2	I	2	R
Clematis sp.	Clematis sp.			2	I	2	R
Arctium lappa	Greater burdock	1			I	1	R
Ranunculus repens	Creeping buttercup			1	I	1	R
Taraxicum officianales agg.	Dandelion		1		I	1	R
Heracleum sphondylium	Hogweed		1		I	1	R
Brachypodium sylvaticum	False-brome		1		I	1	R
Ranunculus bulbosa	Bulbous buttercup		1		I	1	R
Crepis capilaris	Smooth hawk's-beard		1		I	1	R
Sonchus oleraceus	Smooth sow-thistle		1		I	1	R
Bromus sp.	Brome sp.		1		I	1	R
Vicia sativa subsp. Segetalis	Common vetch		1		I	1	R
Crataegus monogyna	Hawthorn seedling		1		I	1	R
Rumex crispis	Curled dock		1		I	1	R
Quercus robur	Oak seedling		1		I	1	R

Scientific name	Common name	Q1	Q2	Q3	Frequency	DOMIN range	DAFOR
Ground flora							
Rumex sanguineum	Wood dock			1	I	1	R
Sambucus nigra	Elder sapling			1	I	1	R
Dryopteris dilatata	Broad buckler-fern			1	I	1	R
Acer pseudoplatanus	Sycamore sapling			1	I	1	R

Table D.2 NVC17 Ashenbank Wood Community 1: additional species recorded but not present within the quadrats

Scientific name	Common name	DAFOR
Canopy layer		
Quercus robur	Pedunculate oak	O
Scientific name	**Common name**	**DAFOR**
Ground flora		
Geranium robertianum	Herb-Robert	R
Hyacinthoides non-scripta	Bluebell	R lf
Silene dioica	Red campion	R
Cirsium arvense	Creeping thistle	R
Betula pubescens	Downy birch seedling	R
Stachys sylvatica	Hedge woundwort	R

Community 2

D.1.3 Ashenbank Wood was a mature broadleaved woodland containing ancient woodland indicators. Community 2 comprised regenerating secondary woodland on what is considered to be ancient woodland soils. The low canopy was dominated by sycamore and silver birch with scattered mature standards of pedunculate oak and sweet chestnut. The shrub layer is relatively well-developed over a ground flora of abundant bluebell and fern species with some areas dominated by bramble.

D.1.4 The nearest NVC community for community 2 is W10a *Quercus robur - Pteridium aquilinum - Rubus fruticosus* woodland, with a degraded W8 *Fraxinus excelsior - Acer campestre - Mercurialis perennis* woodland in some places.

Table D.3 NVC17 Ashenbank Wood Community 2

Scientific name	Common name	Q2 (Domin scale)	Frequency	DOMIN range	DAFOR
Canopy layer					
Betula pendula	Silver birch	5	I	5	O
Acer pseudoplatanus	Sycamore	4	I	4	O
Quercus robur	Pedunculate oak	4	I	4	O
Castanea sativa	Sweet chestnut	4	I	4	O
Scientific name	**Common name**	**Q1**	**Frequency**	**DOMIN range**	**DAFOR**
Shrub layer					
Sambucus nigra	Elder	5	I	5	O
Acer pseudoplatanus	Sycamore	4	I	4	O

Scientific name	Common name	Q1	Q2	Q3	Q4	Frequency	DOMIN range	DAFOR
Ground flora								
Hyacinthoides non-scripta	Bluebell	7	10	4	9	IV	4-10	A
Bare ground/leaf litter/deadwood		7	4	8	5	IV	4-8	F
Acer pseudoplatanus	Sycamore seedling	3	4	3	2	IV	2-4	O
Rubus fruticosus agg.	Bramble	1		8	6	III	1-8	O la
Galium aparine	Cleavers	2		3		III	2-3	O
Pteridium aquilinum	Bracken			3	1	II	1-3	R lf
Dryopteris dilatata	Broad buckler-fern		1	2		II	1-2	O
Mercurialis perennis	Dog's mercury	3				I	3	O
Eurhynchium praelongum	Common feather moss	3				I	3	O
Dryopteris filix-mas	Male-fern	3				I	3	O
Urtica dioica	Common nettle	2				I	2	R

Scientific name	Common name	Q1	Q2	Q3	Q4	Frequency	DOMIN range	DAFOR
Poa nemoralis	Wood meadow-grass	2				I	2	R
Atrium undulatum	Moss	1				I	1	R
Geum urbanum	Wood avens	1				I	1	R

Table D.4 NVC17 Ashenbank Wood Community 2: additional species recorded but not present within the quadrats

Scientific name	Common name	DAFOR
Arum maculatum	Lords-and-ladies	R
Brachythecium rutabulum	Rough-stalked feather-moss	R
Fraxinus excelsior	Ash seedling	R
Poa trivialis	Rough meadow-grass	R
Circaea lutetiana	Enchanter's-nightshade	R
Glechoma hederacea	Ground-ivy	R
Brachypodium sylvaticum	False-brome	E
Geranium robertianum	Herb-Robert	R
Crataegus monogyna	Hawthorn seedling	R
Quercus sp.	Oak seedling	R
Rumex sanguineus	Wood dock	R
Silene dioica	Red campion	R
Sambucus nigra	Elder sapling	R
Clematis sp.	Clematis	R
Acer pseudoplatanus	Sycamore sapling	R
Betula pubescens	Downy birch seedling	R
Stachys sylvatica	Hedge woundwort	R
Iris foetidissima	Stinking iris	R
Anemone nemorosa	Wood anenome	R

Community 3

D.1.5 Community 3 comprised an area of partially cleared woodland with more open areas dominated by bracken and bramble. Scattered mature sweet chestnut and pedunculate oak with young silver birch formed an open canopy. The understorey is sparse, comprising of sycamore, silver birch, hazel and spindle. The ground flora in the more wooded areas are dominated by dog's mercury with scattered bluebells.

D.1.6 The nearest NVC community for community 3 is W10a *Quercus robur* - *Pteridium aquilinum* - *Rubus fruticosus* woodland, with a degraded W8 *Fraxinus excelsior* - *Acer campestre* - *Mercurialis perennis* woodland in some places.

Table D.5 NVC17 Ashenbank Wood Community 3

Scientific name	Common name	Q3 (Domin scale)	Frequency	DOMIN range	DAFOR
Canopy layer					
Betula pendula	Silver birch	4	I	4	O
Castanea sativa	Sweet chestnut	4	I	4	O
Quercus robur	Pedunculate oak	4	I	4	O
Acer pseudoplatanus	Sycamore	3	I	3	R
Fraxinus excelsior	Ash	2	I	2	R
Scientific name	**Common name**	**Q1**	**Frequency**	**DOMIN range**	**DAFOR**
Shrub layer					
Acer pseudoplatanus	Sycamore	4	I	4	O
Corylus avellana	Hazel	3	I	3	O
Euonymus europaeus	Spindle	3	I	3	R

Scientific name	Common name	Q1	Q2	Q3	Frequency	DOMIN range	DAFOR
Ground flora							
Rubus fruticosus agg.	Bramble	3	10	5	III	3-10	O lD
Pteridium aquilinum	Bracken	2	2	10	III	2-10	O lD
Bare ground		6	7	8	III	6-8	F
Urtica dioica	Common nettle	3	3	4	III	3-4	O lF
Eurhynchium praelongum	Common feather-moss	5	4		II	4-5	F
Galium aparine	Cleavers	3	3		II	3	F

Scientific name	Common name	Q1	Q2	Q3	Frequency	DOMIN range	DAFOR
Ground flora							
Mercurialis perennis	Dog's mercury	8			I	8	O lA
Acer pseudoplatanus	Sycamore seedling	3			I	3	O
Dryopteris dilatata	Broad buckler-fern	2			I	2	O
Geum urbanum	Wood avens	2			I	2	O
Glechoma hederacea	Ground-ivy	2			I	2	O
Veronica montana	Wood speedwell	2			I	2	R
Fraxinus excelsior	Ash seedling	2			I	2	R
Dryopteris filix-mas	Male-fern	1			I	1	R
Circaea lutetiana	Enchanter's-nightshade	1			I	1	R

Table D.6 NVC17 Ashenbank Wood Community 3: additional species recorded but not present within the quadrats

Scientific name	Common name	DAFOR
Shrub layer		
Sambucus nigra	Elder	R
Betula pendula	Silver birch	R
Crataegus monogyna	Hawthorn	R
Scientific name	**Common name**	**DAFOR**
Ground flora		
Teucrium scorodonia	Wood sage	R
Rumex sanguineus	Wood dock	R
Arum maculatum	Lords-and-ladies	R
Atrichum undulatum	Common smoothcap moss	R
Hyacinthoides non-scripta	Bluebell	R
Rubus idaeus	Raspberry	R
Poa nemoralis	Wood meadow-grass	R

NVC01 - Brewers Wood

Community 1

D.1.7 Mature sweet chestnut coppice woodland, which has not been managed for about 20 years. The canopy contained scattered standards with a sparse understory. The ground flora was also sparse and dominated by bramble.

D.1.8 The nearest NVC community for community 1 is assigned to W10 *Quercus robur - Pteridium aquilinum - Rubus fruticosus* woodland. This type of woodland is widely distributed and common over lowland England and Wales.

Table D.7 NVC01 Brewers Wood Community 1

Scientific name	Common name	Quadrat (Domin scale)	DAFOR
		Q1	
Canopy layer			
Castanea sativa	Sweet chestnut	9	A
Quercus robur	Pedunculate oak	4	R
Betula pendula	Silver birch	2	R
Fraxinus excelsior	Ash	2	R
Scientific name	**Common name**	**Quadrat (Domin scale)**	**DAFOR**
		Q1	
Shrub layer			
Castanea sativa	Sweet chestnut	4	O
Crataegus monogyna	Hawthorn	3	O
Ilex aquifolium	Holly	3	R
Scientific name	**Common name**	**Quadrat (Domin scale)**	**DAFOR**
		Q1	
Ground flora			
Rubus fruticosus agg.	Bramble	7	A
Bare ground/leaf litter		7	
Arum maculatum	Lords-and-ladies	3	O
Viola sp.	Violet sp.	3	R
Ilex aquifolium	Holly	2	R
Crataegus monogyna	Hawthorn	1	R
Fraxinus excelsior	Ash	1	R
Prunus laurocerasus	Cherry laurel	1	R

Table D.8 NVC01 Brewers Wood Community 1: additional species recorded but not present within the quadrats

Scientific name	Common name	DAFOR
Shrub layer		
Acer pseudoplatanus	Sycamore	R
Cornus sanguinea	Dogwood	R
Rhododendron ponticum	Rhododendron	R
Scientific name	**Common name**	**DAFOR**
Ground flora		
Anemone nemorosa	Wood anemone	R
Carex sylvatica	Wood-sedge	R
Hyacinthoides non-scripta	Bluebell	R
Poa nemoralis	Wood meadow-grass	R

NVC02 - Shorne Woods

Community 1

D.1.9 Open semi-mature plantation woodland with scattered standards. The low canopy is young with no understory. Ground flora is homogenous throughout with abundant bluebell and some bryophytes and bare ground. Only one ground flora quadrat needed due to homogeneity.

D.1.10 The nearest NVC community for community 1 is W10 *Quercus robur* – *Pteridium aquilinum* – *Rubus fruticosus* woodland. Despite the absence of oak, the presence of hornbeam together with dominance of bluebell in the ground flora with occasional bramble and honeysuckle would suggest W10 instead of W8.

Table D.9 NVC02 Shorne Woods Community 1

Scientific name	Common name	Quadrat (Domin scale)	DAFOR
		Q1	
Canopy layer			
Carpinus betulus	Hornbeam	7	A
Acer pseudoplatanus	Sycamore	4	R
Betula pendula	Silver birch	4	R
Castanea sativa	Sweet chestnut	3	R
Fagus sylvatica	Beech	3	R
Prunus avium	Wild cherry	1	R
Ulmus glabra	Wych elm	1	R
Ground flora			
Hyacinthoides non-scripta	Bluebell	8	O
Bare ground/leaf litter		5	
Brachythecium rutabulum	Rough-stalked feather-moss	4	O
Eurhynchium praelongum	Common feather-moss	4	R
Mnium hornum	Swan's-neck thyme-moss	4	O
Atrichum undulatum	Common smoothcap	3	O
Thuidium tamariscinum	Tamarisk moss	3	O
Oxalis acetosella	Wood-sorrel	1	R
Rubus fruticosus agg.	Bramble	1	R

Table D.10 NVC02 Shorne Woods Community 1: additional species recorded but not present within the quadrats

Scientific name	Common name	DAFOR
Arum maculatum	Lords-and-ladies	R
Dryopteris dilatate	Broad buckler-fern	R
Ilex aquifolium	Holly	R
Lonicera periclymenum	Honeysuckle	R
Mercurialis perennis	Dog's mercury	R
Sambucus nigra	Elder	R
Teucrium scorodonia	Wood sage	R

Community 2

D.1.11 Semi-mature woodland with tall, semi-mature broadleaved trees forming canopy with a very sparse shrub layer. Ground flora sparse although significant patches of bryophytes present in places with large areas of bare ground/leaf litter. Part

of woodland on steep north facing embankment. Only one ground flora quadrat needed as homogenous throughout community.

D.1.12 The nearest NVC community for community 2 is W10 *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland despite the absence of oak, the presence of hornbeam with occasional bramble and honeysuckle would suggest W10 instead of W8.

Table D.11 NVC2 Shorne Woods Community 2

Scientific name	**Common name**	**Quadrat (Domin scale)**	**DAFOR**
		Q2	
Canopy layer			
Betula pendula	Silver birch	6	R
Carpinus betulus	Hornbeam	6	A
Acer pseudoplatanus	Sycamore	4	R
Castanea sativa	Sweet chestnut	4	O
Fraxinus excelsior	Ash	1	R
Scientific name	**Common name**	**Quadrat (Domin scale)**	**DAFOR**
		Q1	
Shrub layer			
Acer pseudoplatanus	Sycamore	3	R
Carpinus betulus	Hornbeam	3	R
Scientific name	**Common name**	**Quadrat (Domin scale)**	**DAFOR**
		Q1	
Ground flora			
Bare ground/leaf litter		9	
Rubus fruticosus agg.	Bramble	4	F
Brachythecium rutabulum	Rough-stalked feather-moss	3	F
Eurhynchium praelongum	Common feather-moss	3	F
Hypnum cupressiforme	Cypress-leaved plait-moss	3	O
Fragaria vesca	Wild strawberry	2	R
Mnium hornum	Swan's-neck thyme-moss	2	R
Acer pseudoplatanus	Sycamore	1	R
Brachypodium sylvaticum	False-brome	1	O

Table D.12 NVC 2 Shorne Woods Community 2: additional species recorded but not present within the quadrats

Scientific name	Common name	DAFOR
Canopy layer		
Quercus robur	Pedunculate oak	R
Scientific name	**Common name**	**DAFOR**
Shrub layer		
Rhododendron ponticum	Rhododendron	R
Taxus baccata	Yew	R
Quercus ilex	Evergreen oak	R
Ground flora		
Lonicera periclymenum	Honeysuckle	O
Hedera helix	Common ivy	R lf
Hyacinthoides non-scripta	Bluebell	R lf
Dryopteris dilatata	Broad buckler-fern	R
Dryopteris filix-mas	Male-fern	R
Luzula sylvatica	Great wood-rush	R
Poa nemoralis	Wood meadow-grass	R
Primula vulgaris	Primrose	R
Teucrium scorodonia	Wood sage	R
Thuidium tamariscinum	Tamarisk moss	R
Ulex europaeus	Gorse	R

Community 3

D.1.13 Semi-mature woodland with tall semi-mature broadleaved trees forming canopy. Very sparse shrub layer with large areas of bare ground/leaf litter. Ground flora containing significant patches of bryophytes and scattered dense patches of ivy and honeysuckle. Community 3 contained a few scattered standards.

D.1.14 The nearest NVC community for community 3 is W10 Quercus *robur* – *Pteridium aquilinum* – *Rubus fruticosus* woodland despite the absence of oak, the presence of hornbeam with occasional bramble and honeysuckle would suggest W10 instead of W8.

Table D.13 NVC2 Shorne Woods Community 3

Scientific name	Common name	Quadrat (Domin scale)	Frequency	Domin Range	DAFOR
		Q3			
Canopy layer					
Carpinus betulus	Hornbeam	7	-	-	A
Betula pendula	Silver birch	4	-	-	O
Fraxinus excelsior	Ash	1	-	-	R

Scientific name	Common name	Quadrat (Domin scale)	Frequency	Domin Range	DAFOR
		Q1			
Shrub layer					
Carpinus betulus	Hornbeam	1	-	-	O
Ilex aquifolium	Holly	1	-	-	O
Taxus baccata	Yew	1	-	-	R

Scientific name	Common name	Quadrat (Domin scale)		Frequency	Domin Range	DAFOR
		Q1	Q2			
Ground flora						
Bare ground/leaf litter		9	8	II	8-9	
Brachythecium rutabulum	Rough-stalked feather-moss	4	3	II	3-4	F
Thuidium tamariscinum	Common tamarisk-moss	3	2	II	2-3	O
Fragaria vesca	Wild strawberry	2	1	II	1-2	R
Luzula sylvatica	Great wood-rush	3	3	II	3	O
Acer pseudoplatanus	Sycamore	1	1	II	1	O
Hedera helix	Common ivy		5	I	5	R lf
Lonicera periclymenum	Honeysuckle		4	I	4	O lf
Agrostis stolonifera	Creeping bent		3	I	3	O
Kindbergia praelonga	Common feather-moss	3		I	3	O
Rubus fruticosus agg.	Bramble		3	I	3	R
Teucrium scorodonia	Wood sage		3	I	3	R
Viola sp.	Violet sp.		2	I	2	R
Carpinus betulus	Hornbeam		1	I	1	O
Dryopteris dilatata	Broad buckler-fern	1		I	1	R

Table D.14 NVC 2 Shorne Woods Community 3: additional species recorded but not present within the quadrats

Scientific name	Common name	DAFOR
Canopy layer		
Pinus sylvestris	Scots pine	R
Quercus robur	Pedunculate oak	R
Scientific name	**Common name**	**DAFOR**
Shrub layer		
Quercus ilex	Evergreen oak	R
Rhododendron ponticum	Rhododendron	R
Scientific name	**Common name**	**DAFOR**
Ground flora		
Brachypodium sylvaticum	False-brome	O
Arum maculatum	Lords-and-ladies	R
Crataegus monogyna	Hawthorn	R
Euphorbia amygdaloides	Wood spurge	R
Galium aparine	Cleavers	R
Geum urbanum	Wood avens	R
ilex aquifolium	Holly	R
Mercurialis perennis	Dog's mercury	R
Poa nemoralis	Wood meadow-grass	R
Taraxacum officinale agg.	Dandelion	R

NVC18 - Claylane Wood

Community 1

D.1.15 Mature coppice woodland with no evidence of recent management. Relatively homogenous throughout. Understory is variable throughout, relatively open/sparse in places and relatively dense in others. Ground flora is homogenous with good cover and relatively diverse but dominated by bluebell, wood anemone and dog's mercury, in places. Ancient woodland indicators present. Few scattered standards throughout woodland

D.1.16 The nearest NVC community for community 1 is W8b *Fraxinus excelsior – Acer campestre – Mercurialis perennis* woodland with *Anemone nemorosa* sub-community. Ash dominated woodland rather than oak with less dog's mercury than usually associated with W8. The presence of wood anemone and lesser celandine suggests the sub-community W8b.

Table D.15 NVC18 Claylane Wood Community 1

Scientific name	Common name	Quadrat (Domin scale)					Frequency	Domin range	DAFOR
		Q1	Q2	Q3	Q4	Q5			
Canopy layer									
Carpinus betulus	Hornbeam	6	5	5	4	3	V	3-6	F
Castanea sativa	Sweet chestnut	5	4	4	7	8	V	4-8	A
Fraxinus excelsior	Ash	1	6	6	6	4	V	1-6	F
Acer pseudoplatanus	Sycamore	1		4			II	1-4	O
Prunus avium	Wild cherry			1			I	1	O
Scientific name	**Common name**	**Quadrat (Domin scale)**					**Frequency**	**Domin range**	**DAFOR**
		Q1	**Q2**	**Q3**	**Q4**	**Q5**			
Shrub layer									
Sambucus nigra	Elder	3	3	2	3		IV	2-3	O
Carpinus betulus	Hornbeam		4	4		3	III	3-4	O
Crataegus monogyna	Hawthorn			2	5	4	III	2-5	O
Acer pseudoplatanus	Sycamore			3			I	3	O
Fraxinus excelsior	Ash					3	I	3	O
Ilex aquifolium	Holly	2					I	2	O

Scientific name	Common name	Quadrat (Domin scale)					Frequency	Domin range	DAFOR
		Q1	Q2	Q3	Q4	Q5			
Ground flora									
Anemone nemorosa	Wood anemone	5	7	4	7	9	V	4-9	A
Hyacinthoides non-scripta	Bluebell	6	3	3	7	3	V	3-7	A
Bare ground/leaf litter		4	4	5	6	4	V	4-6	
Ficaria verna	Lesser celandine	4	4	4		4	IV	4	O lf
Galium aparine	Cleavers	3	1	1			III	1-3	O

Scientific name	Common name	Quadrat (Domin scale)					Frequency	Domin range	DAFOR
		Q1	Q2	Q3	Q4	Q5			
Ground flora									
Eurhynchium praelongum	Common feather-moss		3	1			II	1-3	O
Fraxinus excelsior	Ash			3		3	II	3	O
Hedera helix	Common ivy	1	2				II	1-2	R
Mercurialis perennis	Dog's mercury			6		3	II	3-6	O lf
Poa nemoralis	Wood meadow-grass	3	2				II	2-3	O
Rubus fruticosus agg.	Bramble	2				2	II	2	O
Acer pseudoplatanus	Sycamore			3			I	3	O
Arum maculatum	Lords-and-ladies	2					I	2	O
Brachythecium rutabulum	Rough-stalked feather-moss	2					I	2	O
Conopodium majus	Pignut		2				I	2	O
Geum urbanum	Wood avens	1					I	1	R
Poa trivialis	Rough meadow-grass			3			I	3	O
Thuidium tamariscinum	Common tamarisk-moss	2					I	2	R
Urtica dioica	Common nettle			1			I	1	R
Viola sp.	Violet sp.					1	I	1	O

Table D.16 NVC18 Claylane Wood Community 1: additional species recorded but not present within the quadrats

Scientific name	Common name	DAFOR
Canopy layer		
Betula pendula	Silver birch	R
Scientific name	**Common name**	**DAFOR**
Shrub layer		
Taxus baccata	Yew	R
Scientific name	**Common name**	**DAFOR**
Ground flora		
Dryopteris dilatata	Broad buckler-fern	O
Viola reichenbachiana	Early dog-violet	O
Lamiastrum galeobdolon	Yellow archangel	R lf
Alliaria petiolata	Garlic mustard	R
Cardamine pratensis	Cuckooflower	R
Dryopteris affinis	Scaly male-fern	R
Geranium robertianum	Herb-Robert	R
Lamiastrum galeobdolon	Yellow srchangel	R
Lonicera periclymenum	Honeysuckle	R
Polystichum setiferum	Soft shield-fern	R
Ribes rubrum	Red currant	R
Ribes uva-crispa	Gooseberry	R
Rumex sanguineus	Wood dock	R
Stachys sylvatica	Hedge woundwort	R
Veronica montana	Wood speedwell	R

NVC13 - Filborough Marshes

D.1.17 Network of ditches varying from large, wide drainage ditches to smaller, seasonally dry ditches. The majority of ditches were dominated by tall reed vegetation. *Azolla* was also present throughout the area.

D.1.18 The ditch network supports a number of NVC community types; some are distinct and obvious community types, whereas the majority form intricate mosaics with each other.

D.1.19 Four distinct community mosaics were present within the aquatic/swamp habitats: floating communities, submerged communities, emergent communities and bankside communities.

Mosaic 1 - Floating

D.1.20 The floating community mosaic was assigned to A2 *Lemnetum minoris* with development towards A1 *Lemnetum gibbae* in some areas.

Mosaic 2 - Submerged

D.1.21 The submerged community mosaic comprised A5 *Ceratophylletum demersi* and A6 *Ceratophylletum submersi*.

Mosaic 3 - Emergent

D.1.22 The emergent/swamp community mosaic comprised S4 *Phragmitetum australis* swamp and reed-beds where common reed dominates, S19 *Eleocharis palistris* swamp and S21 *Scirpus maritimus* swamp. Where present, most of these communities extend onto the bankside.

Mosaic 4 - Bankside

D.1.23 The mixture of emergent and bankside plant species made it hard to assign to any individual community but the closest was S18 *Caricetum otrubae* swamp where false fox-sedge was dominant and S4 *Phragmitetum australis* swamp and reed-beds where common reed was dominant.

Table D.17 NVC13 Filborough Marshes: closest NVC communities Floating: A2 Lemnetum minoris, A1 Lemnetum gibbae, Submerged: A5 Ceratophylletum demersi, A6 Ceratophylletum submerse, Emergent: S4 Phragmitetum australis, S19 Eleocharis palistris, S21 Scirpus maritimus, Bankside: S18 Caricetum otrubae, S4 Phragmitetum australis

Scientific name	Common name	Ditch (DAFOR scale)													
		D1	D2	D4	D5	D6	D7	D8	D9	D 10	D 11	D 12	D 13	D 15	D 16	D 17
Lemna minor	Common duckweed	F la	O	A	O	F	F	O	O	O	F la		O	F la	F	F la
Lemna trisulca	Ivy-leaved duckweed	A	A		O la	A	A	A	O la	A	A	A	F la	F	A	A
Ceratophyllum demersum	Rigid hornwort	F	A		O	O	A	A	A	A	F	A	O lf	A	A	A
Ceratophyllum submersum	Soft hornwort	O lf	A			A	A	A	A	A	F	A	O lf	A	A	A
Rorippa nasturtium-aquaticum	Watercress	O	R	O	O	R		O lf	R	O	O			F	R	O
Cladophora spp.	Blanket weed	F	F			F	O	O		F	O	O	O	F	A	F
Apium nodiflorum	Fool's-watercress		O	O	F	O	O	O lf	F la	O lf	O la		O lf		R	O
Bolboschoenus maritimus	Sea club-rush				O lf	O	O lf	F la	F	F	F		F	O	F	F
Lemna gibba	Fat duckweed	O		O				R		O	F la			O	O	F
Crassula helmsii	New Zealand pigmyweed	O	R				R					F	A ld	F	R	O lf
Alisma plantago-aquatica	Water-plantain			R	O	R			R		O			O		
Glyceria fluitans	Floating sweet-grass			O la	O	O	O	O	R							

Scientific name	Common name	Ditch (DAFOR scale)														
		D1	D2	D4	D5	D6	D7	D8	D9	D 10	D 11	D 12	D 13	D 15	D 16	D 17
Eleocharis palustris	Common spike-rush				O	A lf	O lf	O	O lf		O					
Phragmites australis	Common reed		F la					O lf	O la	O	R	F		R	O la	O la
Zannichellia palustris	Horned pondweed		R							O						R
Myosotis scorpioides	Water forget-me-not					R	R	R								
Solanum dulcamara	Bittersweet						O	R	O							
Typha latifolia	Bulrush				R lf		R									
Azolla filiculoides	Water fern						O	O								
Potamogeton pectinatus	Fennel pondweed										O					
Ranunculus circinatus	Fan-leaved water-crowfoot					R										
Veronica catenata	Pink water-speedwell							R								
Epilobium hirsutum	Great willowherb													R		
Carex otrubae	False fox-sedge	F	O	O	O	O	O	O	O	R	O	R	O	O	O	O
Juncus inflexus	Hard rush	O	O	O	F	A	F la	F	F	R	O	O	O	O	F	O
Agrostis stolonifera	Creeping bent	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F

Scientific name	Common name	Ditch (DAFOR scale)														
		D1	D2	D4	D5	D6	D7	D8	D9	D 10	D 11	D 12	D 13	D 15	D 16	D 17
Rumex conglomeratus	Clustered dock	F	F	O	O	O	O	A	F	O	O	O	O	O	O	O
Bolboschoenus maritimus	Sea club-rush	F la	O lf		O lf	O	O lf	F la	F la	A	A	F	A	O	A	F la
Eleocharis palustris	Common spike-rush	O	O lf		O	O lf	O lf	O lf	O la	O	O	O	O	O	F	O
Apium nodiflorum	Fool's-watercress	O lf	O		O	A		O lf	O	O	O lf	O	O lf	R lf	O	O
Galium palustre	Marsh-bedstraw	O	O lf	O	O	O	O	O	O	O	O				O	R
Lycopus europaeus	Gypsywort	O	O	O	O lf	O	O	O	F		R				O	O
Nasturtium officinale	Watercress	O		O				O lf	R	O	O	R		F	O	O
Phragmites australis	Common reed	O	F la					O lf	O la	Ld	R	A ld		O	O ld	O la
Crassula helmsii	New Zealand pigmyweed	O lf								R	O	A	A ld	F	O	F
Glyceria fluitans	Floating sweet-grass			O	O	O	O	O	R		R	R				
Ranunculus sceleratus	Celery-leaved buttercup			R						R	R	R	R	R	R	
Pulicaria dysenterica	Common fleabane				R						R	R		R		
Bidens cernua	Nodding bur-marigold			R									O	R		
Juncus effusus	Soft-rush				R	O	O									

Scientific name	Common name	Ditch (DAFOR scale)														
		D1	D2	D4	D5	D6	D7	D8	D9	D 10	D 11	D 12	D 13	D 15	D 16	D 17
Solanum dulcamara	Bittersweet						O	R	O							
Alisma plantago-aquatica	Water-plantain										R			F		R
Ranunculus circinatus	Fan-leaved water-crowfoot			R						R						
Myosotis laxa	Tufted forget-me-not										R	O				
Carex sp.	Sedge sp.						F									
Juncus sp.	Jointed rush sp.		O													
Berula erecta	Lesser water-parsnip	R														
Rumex crispus	Curled dock			R												
Alopecurus geniculatus	Marsh foxtail			R												
Senecio aquaticus	Marsh ragwort									R						
Juncus acutus	Sharp rush												R			
Epilobium hirsutum	Great willowherb													R		

NVC24 – Canal and Grazing Marsh LWS

Community 1

D.1.24 Extensive area of tall rank grassland, homogenous throughout and dominated by false oat-grass, with some colonisation with ruderal and scrub species.

D.1.25 The nearest NVC community for community 1 is MG1 *Arrhenatherum elatius* grassland with *Urtica dioica* sub-community, species poor.

Table D.18 NVC24 Canal and Grazing Marsh LWS Community 1

Scientific name	Common name	Q1 - Grass area
Arrhenatherum elatius	False oat-grass	D
Elytrigia atherica	Sea couch	O lf
Matthiola sinuata	Sea stock	O lf
Urtica dioica	Common nettle	O
Alopecurus pratensis	Meadow foxtail	O
Galium aparine	Cleavers	O
Anthriscus sylvestris	Cow parsley	O
Conium maculatum	Hemlock	R lf
Ranunculus bulbosus	Bulbous buttercup	R lf
Rubus fruticosus agg.	Bramble	R lf
Elytrigia repens	Common couch	R
Cirsium arvense	Creeping thistle	R
Phragmites australis	Common reed	R
Vicia sativa subsp. segetalis	Common vetch	R
Rumex crispus	Curled dock	R
Lamium purpureum	Red dead-nettle	R
Holcus lanatus	Yorkshire-fog	R
Heracleum sphondylium	Hogweed	R
Sonchus asper	Prickly sow-thistle	R
Festuca rubra	Red fescue	R
Geranium dissectum	Cut-leaved crane's-bill	R
Achillea millefolium	Yarrow	R
Sison amomum	Stone parsley	R
Poa trivialis	Rough meadow-grass	R
Tragopogon pratensis	Goat's-beard	R
Linaria vulgaris	Common toadflax	R
Dactylis glomerata	Cock's-foot	R

Scientific name	Common name	Q1 - Grass area
Hieracium sp.	Hawkweed sp.	R
Epilobium hirsutum	Great willowherb	R
Solidago virgaurea	Goldenrod	R
Artemisia vulgaris	Mugwort	R
Rosa canina	Dog-rose	R
Potentilla reptans	Creeping cinquefoil	R
Lactuca saligna	Least lettuce	R
Galium verum	Lady's bedstraw	R

Community 2

D.1.26 Wet ditch forming northern boundary of the site. The majority of the ditch supporting dense common reed, with small areas open with frequent reed mace, sea club-rush and/or branched bur-reed.

D.1.27 The nearest NVC community for community 2 is S4a *Phragmitetum australis* swamp and reed-beds, *Phragmites australis* sub-community, where common reed dominates, with small areas of S13 *Typha angustifolia* swamp, S21 *Scirpus maritimus* swamp and S14 *Sparganium erectum* swamp.

Table D.19 NVC24 Canal and River Grazing Marsh LWS Community 2

Scientific name	Common name	Wet Ditch
Phragmites australis	Common reed	A
Typha latifolia	Bulrush	O lf
Sparganium erectum	Branched bur-reed	O lf
Bolboschoenus maritimus	Sea club-rush	O lf
Rumex hydrolapathum	Water dock	O
Lemna minor	Common duckweed	O

Ditch D11

D.1.28 Old dry ditch, grassy and continuous with the rest of the field with areas dominated by sea club-rush.

D.1.29 MG1 *Arrhenatherum elatius* grassland, *Urtica dioica* sub-community with areas of S21 *Scirpus maritimus* swamp.

Table D.20 NVC24 Canal and River Grazing Marsh LWS Ditch D11

Scientific name	Common name	Old Dry Ditch
Bolboschoenus maritimus	*Sea club-rush*	*F la*
Arrhenatherum elatius	*False oat-grass*	*F*
Urtica dioica	*Common nettle*	*O*
Conium maculatum	*Hemlock*	*O*
Matthiola sinuata	*Sea stock*	*O*
Chenopodium sp.	*Goosefoot sp.*	*O*
Festuca rubra	*Red fescue*	*R*
Juncus maritimus	*Sea rush*	*R*
Sison amomum	*Stone parsley*	*R*
Carex sp.	*Fox sedge sp.*	*R*
Schedonorus pratensis	*Meadow fescue*	*R*

NVC12 - Shorne Marshes

D.1.30 Network of ponds/scrapes and ditches varying from large, wide drainage ditches to smaller, seasonally dry ditches. The majority of ditches were dominated by tall reed vegetation. *Azolla* was also present throughout the area.

D.1.31 The pond and ditch network supports a number of NVC community types; some are distinct and obvious community types, whereas the majority form intricate mosaics with each other.

D.1.32 Four distinct community mosaics were present within the aquatic/swamp habitats: floating communities, submerged communities, emergent communities and bankside communities.

Mosaic 1 - Floating

D.1.33 The floating community mosaic was assigned to A2 *Lemnetum minoris* with development towards A1 *Lemnetum gibbae* in some areas.

Mosaic 2 - Submerged

D.1.34 The submerged community mosaic comprised A5 *Ceratophylletum demersi*.

Mosaic 3 - Emergent and bankside

D.1.35 The emergent/swamp community mosaic comprised: S4a *Phragmitetum australis* swamp and reed-beds, *Phragmites australis* sub-community where common reed dominates; S13 *Typha angustifolia* swamp; S19 *Eleocharis palistris* swamp; S20 *Scirpus lacustris* ssp. *tabernaemontani* swamp; and S21 *Scirpus maritimus* swamp.

Mosaic 4 - Ponds 1, 3, 4 and 5

D.1.36 S21c Scirpus maritimus swamp, Agrostis stolonifera sub-community.

Mosaic 5 - Pond 2

D.1.37 S21a Scirpus maritimus swamp, sub-community dominated by Scirpus maritimus; and S4a Phragmites australis, Phragmites australis sub-community.

Mosaic 6 - Pond 6

D.1.38 A5 *Ceratophylletum demersi* community – given the presence of horned pondweed and the proximity of soft hornwort on Filborough Marshes, it is possible that this species may have been overlooked, and the A6 *Ceratophylletum submersi* community is also present here. Also present are S21a *Scirpus maritimus* swamp, sub-community dominated by *Scirpus maritimus;* S4a *Phragmites australis*, *Phragmites australis* sub-community; and S20 *Scirpus lacustris* ssp. *tabernaemontani* swamp.

Mosaic 7 - Pond 7

D.1.39 A5 Ceratophylletum demersi community; also present are S21a Scirpus maritimus swamp, sub-community dominated by Scirpus maritimus; S4a Phragmites australis, Phragmites australis sub-community; and S20 Scirpus lacustris ssp. tabernaemontani swamp.

Table D.21 NVC12 Shorne Marshes Ditches: closest NVC communities Floating: A2 *Lemnetum minoris*, A1 *Lemnetum gibbae*, Submerged: A5 *Ceratophylletum demersi*, Emergent and Bankside: S4a *Phragmitetum australis*, *Phragmites australis* sub-community, S13 *Typha angustifolia*, S19 *Eleocharis palistris*, S20 *Scirpus lacustris* ssp. *tabernaemontani* and S21 *Scirpus maritimus*

Scientific name	Common name	Ditch (DAFOR scale)															
		D1	D2	D3	D4	D5	D6	D7	D8	D9	D 10	D 11	D 17	D18	D19	D20	D21
Phragmites australis	Common reed		R	R			O lF		R lA		R lF	P	R			O	
Eleocharis palustris	Common spike-rush							R		O	O		O lA		R lF	O lF	O
Schoenoplectus tabernaemontani	Grey club-rush					R lF	R lF										
Typha angustifolia	Lesser bulrush						R lA	R lA		R lA			R lA			R lA	R lA
Bolboschoenus maritimus	Sea club-rush	O	A		lF	R lF	F	F	F	F	F	P	F	F	F	F	F
Phragmites australis	Common reed	O	O				R lF		R lA		R lA	P	R			O	
Eleocharis palustris	Common spike-rush								O	O lF	O		O lA		R lF	O lA	O
Schoenoplectus tabernaemontani	Grey club-rush	O lA				R lF	R lF										
Typha angustifolia	Lesser bulrush									O lA			R lA				R lA
Bolboschoenus maritimus	Sea club-rush	D	D	D	D	D	A lD	D	D	D	D		A	A	A	A lD	A

Table D.22 NVC12 Shorne Marshes Ponds: closest NVC communities Ponds 1, 3, 4 and 5: S21c *Scirpus maritimus*, *Agrostis stolonifera* sub-community, Pond 2: S21a *Scirpus maritimus*, *Scirpus maritimus* sub-community and S4a *Phragmites australis*, *Phragmites australis* sub-community, Pond 6: A5 *Ceratophylletum demersi*, A6 *Ceratophylletum submerse*, S21a *Scirpus maritimus*, *Scirpus maritimus* sub-community, S4a *Phragmites australis*, *Phragmites australis* sub-community and S20 *Scirpus lacustris* ssp. *tabernaemontani*, Pond 7: A5 *Ceratophylletum demersi*, S21a *Scirpus maritimus*, *Scirpus maritimus* sub-community, S4a *Phragmites australis*, *Phragmites australis* sub-community; and S20 *Scirpus lacustris* ssp. *tabernaemontani*

Scientific name	Common name	Pond (DAFOR scale)						
		P1	P2	P3	P4	P5	P6	P7
Phragmites australis	Common reed						O IA	
Schoenoplectus tabernaemontani	Grey club-rush						O	
Zannichellia palustris	Horned pondweed						F	
Ceratophyllum demersum	Rigid hornwort						A	O
Bolboschoenus maritimus	Sea club-rush					F	O	O
Alisma plantago-aquatica	Water-plantain							O
Phragmites australis	Common reed		F				O IA	
Agrostis stolonifera	Creeping bent	A		F	F	F	F	F
Rumex crispus	Curled dock	O		R	R	O	R	O
Ranunculus circinatus	Fan-leaved water-crowfoot			F	F			
Chenopodium album	Fat-hen			F	F	O	O	
Apium nodiflorum	Fool's-watercress					O		
Schoenoplectus tabernaemontani	Grey club-rush						O IA	
Alopecurus geniculatus	Marsh foxtail			O	O			
Veronica catenata	Pink water-speedwell			O	O			

Scientific name	Common name	Pond (DAFOR scale)						
		P1	P2	P3	P4	P5	P6	P7
Carex arenaria	Sand sedge					R		
Bolboschoenus maritimus	Sea club-rush	A	D	A	A	D	A	D
Alisma plantago-aquatica	Water-plantain							O

North of the River Thames

NVC04 - Goshems Farm LWS

Community 1

D.1.40 Area of vegetation on pulverised fuel ash with a mixture of calcareous indicators, saltmarsh species, ruderal weeds and ephemerals. Large areas of open ground.

D.1.41 Does not really fit with the NVC. Closest affinity would be MG11 *Festuca rubra - Agrostis stolonifera - Potentilla anserina* grassland due to the dominance of creeping bent and red fescue. This community has developed on pulverised fuel ash and is a mixture of those species which established first.

Table D.23 NVC04 Goshems Farm Community 1: closest NVC community MG11 *Festuca rubra - Agrostis stolonifera - Potentilla anserina* grassland

Scientific name	Common name	Quadrat (Domin scale)												Frequency	Domin Range
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q 10	Q 11	Q 12		
Agrostis stolonifera	Creeping bent		7	7		4	7	4	8	3	7	9	7	X	3-9
Bare ground		7	4	8	8	8			5	8			4	VIII	4-8
Lotus corniculatus	Common bird's-foot-trefoil	5	7						5	4	8		7	VI	4-8
Holcus lanatus	Yorkshire-fog	4					7	9	3		2			V	2-9
Picris hieracioides	Hawkweed oxtongue	3	3				3	4	1	3	4	3	1	IX	1-4
Chenopodium rubrum	Red goosefoot			6	5	5			2					IV	2-6
Tripleurospermum inodorum	Scentless mayweed	3	3	2			3							IV	2-3
Cirsium arvense	Creeping thistle	3	2				2	3						IV	2-3
Festuca rubra	Red fescue	2	3					2			2			IV	2-3
Picris echioides	Bristly oxtongue	3	3				1	1						IV	1-3
Lepidium latifolium	Dittander				4						4		4	III	4
Trifolium campestre	Hop trefoil		4				4					4		III	4
Lathyrus pratensis	Meadow vetchling	3						4	2					III	2-4
Phalaris canariensis	Canary-grass			2	5	2								III	2-5
Phragmites australis	Common reed			3	2	4								III	2-4
Chamerion angustifolium	Rosebay willowherb			3		2				1				III	1-3

Scientific name	Common name	Quadrat (Domin scale)												Frequency	Domin Range
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q 10	Q 11	Q 12		
Galega officinalis	Goat's-rue								7			2		II	2-7
Arrhenatherum elatius	False oat-grass		4					3						II	3-4
Blackstonia perfoliata	Yellow-wort	4	3											II	3-4
Juncus maritimus	Sea rush				4	2								II	2-4
Chenopodium polyspermum	Many-seeded goosefoot									1	2			II	1-2
Plantago major	Greater plantain			1		1								II	1
Festuca ovina	Sheep's-fescue									5				I	5
Carex nigra	Common sedge			2										I	2
Cirsium vulgare	Spear thistle								1					I	1
Crepis biennis	Rough hawk's-beard							1						I	1
Lolium perenne	Perennial rye-grass									1				I	1
Vicia cracca	Tufted vetch							1						I	1

Community 2

D.1.42 Florally rich grassland on pulverised fuel ash with varying topography due to vegetated substrate mounds. Scattered scrub present in parts.

D.1.43 The nearest NVC community for community 2 is MG1 - *Arrhenatheretum elatioris* grassland.

Table D.24 NVC04 Goshems Farm Community 2

Scientific name	Common name	Quadrat (Domin scale)											Frequency	Domin Range	DAFOR
		Q13	Q14	Q15	Q16	Q18	Q19	Q20	Q21	Q22	Q23	Q24			
Daucus carota subsp. carota	Wild carrot	4	3	2	4	5	3	2	2	3	2	1	XI	1-5	A
Senecio jacobaea	Common ragwort	3	3	3	2	4	3	2	3	1	2	3	XI	1-4	F
Arrhenatherum elatius	False oat-grass	9	8	6	4		8	7	7	8	8	9	X	4-9	D
Agrostis stolonifera	Creeping bent	7	8	4	7	6			6	7	8		VIII	4-8	F
Heracleum sphondylium	Hogweed	5	6	3		5	6	6	4		6		VIII	3-6	F
Galega officinalis	Goat's-rue	7	8			5	8	8		3		7	VII	3-8	LD
Festuca rubra	Red fescue	4	3		7	7		5	6	4			VII	3-7	F
Lotus corniculatus	Common bird's-foot-trefoil		5			7	6	5	4	6	2		VII	2-7	F
Dactylis glomerata	Cock's-foot		6	4	7	2				3	1	4	VII	1-7	O
Picris hieracioides	Hawkweed oxtongue	3		3	4	6	2			4		3	VII	2-6	A
Artemisia vulgaris	Mugwort	5	3	6	2	2				1			VI	1-6	O
Cirsium arvense	Creeping thistle		3	3	2	1		2	4				VI	1-4	F
Cirsium vulgare	Spear thistle	3		4			2		1		3	2	VI	1-4	F
Conium maculatum	Hemlock	4		6			7		6	5			V	4-7	LF
Picris echioides	Bristly oxtongue	4		3	5			2		6			V	2-6	A
Rubus fruticosus agg.	Bramble	2		2	6				2	6			V	2-6	F

Scientific name	Common name	Quadrat (Domin scale)											Frequency	Domin Range	DAFOR
		Q13	Q14	Q15	Q16	Q18	Q19	Q20	Q21	Q22	Q23	Q24			
Potentilla reptans	Creeping cinquefoil	6		7	5	6	8		3	7	8	5	IX	3-8	F
Urtica dioica	Common nettle				4			7	5	4			IV	4-7	O
Lathyrus pratensis	Meadow vetchling				4	5			7	1			IV	1-7	O
Artemisia absinthium	Wormwood				2	4			3	1			IV	1-4	R
Bryonia dioica	White bryony					5	6					3	III	3-6	R
Reseda luteola	Weld		4	3			5						III	3-5	R
Trifolium campestre	Hop trefoil	3				2					6		III	2-6	R
Trifolium repens	White clover			3	2				5				III	2-5	R
Medicago lupulina	Black medick	4					3					1	III	1-4	R
Foeniculum vulgare	Fennel	1					3	2					III	1-3	R
Agrimonia eupatoria	Agrimony		1				2				1		III	1-2	R
Trifolium pratense	Red clover		4						5				II	4-5	O
Pastinaca sativa	Wild parsnip	1						3					II	1-3	R
Crataegus monogyna	Hawthorn				2				1				II	1-2	R
Prunus spinosa	Blackthorn	1										2	II	1-2	R

NVC03 - Horse Field

Community 1

D.1.44 Species-rich grassland that has established on top of capped landfill and supports a number of grassland and ruderal species.

D.1.45 Due to the dominance of false oat-grass, red fescue and cock's-foot, the best fit is for community 1 is MG1 - *Arrhenatherum elatius* grassland, in particular the *Festuca rubra* subcommunity.

Table D.25 NVC03 Horse Field Community 1

Scientific name	Common name	Quadrat (Domin scale)							Frequency	Domin Range	DAFOR
		Q1	Q2	Q3	Q4	Q5	Q6	Q7			
Agrostis stolonifera	Creeping bent	7	5	7	6	8	2	3	VII	2-8	O Ia
Picris echioides	Bristly oxtongue	3	1	3	4	3	2	1	VII	1-4	O
Elytrigia repens	Common couch	4	6	4	6		5	3	VI	3-6	F
Holcus lanatus	Yorkshire-fog	3	4	3	4	3		2	VI	2-4	O
Lotus corniculatus	Common bird's-foot-trefoil	7	6	6	6	8			V	6-8	O Ia
Festuca rubra	Red fescue	7	7	5	7	6			V	5-7	F Ia
Dactylis glomerata	Cock's-foot	4	3		2	3		3	V	2-4	O
Daucus carota subsp. *carota*	Wild carrot	1	3	3	3	2			V	1-3	F
Bromus hordeaceus subsp. *hordeaceus*	Common soft-brome	3		4	4	3			IV	3-4	O If
Trifolium repens	White clover	4	4	3		4			IV	3-4	O Ia
Alopecurus pratensis	Meadow foxtail		3	3	3			2	IV	2-3	F
Vicia cracca	Tufted vetch	1	4	4					III	1-4	O Ia
Cirsium arvense	Creeping thistle		3			3	1		III	1-3	O Ia
Artemisia vulgaris	Mugwort			2	1	1			III	1-2	O
Pilosella sp.	Hawkweed sp.	1	1		1				III	1	O
Lolium perenne	Perennial rye-grass	4	3						II	3-4	O
Matricaria recutita	Scented mayweed			1	3				II	1-3	O
Arrhenatherum elatius	False oat-grass						10	10	II	10	F Ld
Medicago lupulina	Black medick			3	3				II	3	O
Festuca pratensis	Meadow fescue		3			3			II	3	O

Scientific name	Common name	Quadrat (Domin scale)							Frequency	Domin Range	DAFOR
		Q1	Q2	Q3	Q4	Q5	Q6	Q7			
Elytrigia atherica	Sea couch			2			2		II	2	O
Sonchus asper	Prickly sow-thistle			1	1				II	1	R
Cirsium vulgare	Spear thistle			1	1				II	1	O
Vicia sativa subsp. *segetalis*	Common vetch					3			I	3	O
Lathyrus nissolia	Grass vetchling			3					I	3	R
Bromus commutatus	Meadow brome				3				I	3	O la
Poa trivialis	Rough meadow-grass	3							I	3	R
Anthoxanthum odoratum	Sweet vernal-grass			3					I	3	R
Anisantha sterilis	Barren brome						2		I	2	O
Senecio jacobaea	Common ragwort			2					I	2	O
Potentilla reptans	Creeping cinquefoil						2		I	2	O
Rumex crispus	Curled dock			2					I	2	O lf
Geranium dissectum	Cut-leaved crane's-bill							2	I	2	O
Tragopogon pratensis	Goat's-beard				2				I	2	O
Trifolium campestre	Hop trefoil				2				I	2	O
Torilis nodosa	Knotted hedge-parsley						2		I	2	R
Malva sylvestris	Common mallow						1		I	1	R lf
Arctium minus	Lesser burdock							1	I	1	R
Melilotus officinalis	Ribbed melilot					1			I	1	O
Plantago lanceolata	Ribwort plantain	1							I	1	O

Table D.26 NVC03 Horse Field Community 1: additional species recorded but not present within the quadrats

Scientific name	Common name	DAFOR
Phleum pratense	Timothy	O
Trifolium pratense	Red clover	O
Conium maculatum	Hemlock	R lf
Urtica dioica	Common nettle	R lf
Agrimonia eupatoria	Agrimony	R
Ballota nigra	Black horehound	R
Rumex obtusifolius	Broadleaved dock	R
Galium aparine	Cleavers	R
Anthriscus sylvestris	Cow parsley	R
Foeniculum vulgare	Fennel	R
Convolvulus arvensis	Field bindweed	R
Cynara cardunculus	Globe artichoke	R
Plantago major	Greater plantain	R
Hordeum secalinum	Meadow barley	R
Lotus tenuis	Narrow-leaved bird's-foot-trefoil	R
Beta vulgaris subsp. maritima	Sea beet	R
Dipsacus fullonum	Wild teasel	R

NVC08 - Low Street Pit LWS

Community 1

D.1.46 Floristically rich neutral grassland with acid grassland elements.

D.1.47 The nearest NVC community for community 1 is U1 *Festuca ovina-Agrostis capillaris-Rumex acetosella* grassland, due to the dominance of common bent and sheep's sorrel. Sheep's-fescue is likely to be present but is likely to have been overlooked given the drought conditions.

Table D.27 NVC08 Low Street Pit Community 1

Scientific name	Common name	Quadrat (Domin scale)							Frequency	Domin range	DAFOR
		Q1	Q2	Q3	Q4	Q5	Q8	Q9			
Phleum pratense	Timothy	3	4	5	4	5	5	4	VII	3-5	F
Agrostis capillaris	Common bent	8	8	6	6	4	8	6	VII	4-8	F la
Festuca rubra	Red fescue	6	6	6	7	5	4	4	VII	4-7	F la
Galium verum	Lady's bedstraw	6	5	6	5	4	6	6	VII	4-6	F la
Holcus lanatus	Yorkshire-fog	5	4	4	4	4	4	4	VII	4-5	F
Arrhenatherum elatius	False oat-grass	2		3			2	3	IV	2-3	O la
Achillea millefolium	Yarrow			3	4	5	3		IV	3-5	O
Rumex acetosella	Sheep's sorrel	3	4	3	3	4	3		VI	3-4	O lf
Alopecurus pratensis	Meadow foxtail	4	3	4	2	3			V	2-4	F
Dactylis glomerata	Cock's-foot		2	3		3	2		IV	2-3	O
Bare Ground		3	2	2	2				IV	2-3	
Plantago lanceolata	Ribwort plantain	2		2	2	3		2	V	2-3	R
Trisetum flavescens	Yellow oat-grass	2	2	2		3		2	V	2-3	R
Senecio jacobaea	Common ragwort	3	3		1	1		3	V	1-3	O
Ranunculus acris	Meadow buttercup	2	2			3		2	IV	2-3	O
Leaf litter							6	4	II	4-6	
Trifolium dubium	Lesser trefoil		1		1		3		III	1-3	O
Vulpia bromoides	Squirreltail fescue	3	3	3	3				IV	3	O
Leontodon autumnalis	Autumn hawkbit	3	3	2	3				IV	2-3	O

Scientific name	Common name	Quadrat (Domin scale)							Frequency	Domin range	DAFOR
		Q1	Q2	Q3	Q4	Q5	Q8	Q9			
Vicia sativa subsp. *segetalis*	Common vetch							1	I	1	O
Trifolium repens	White clover		1			2		3	III	1-3	O
Deschampsia flexuosa	Wavy hair-grass		2	2	2				III	2	R
Trifolium sp.	Clover sp.		2		4				II	2-4	R lf
Hypochaeris radicata	Cat's-ear				3	2			II	2-3	O
Bromus commutatus	Meadow brome					3	1		II	1-3	O
Galium aparine	Cleavers			1				2	II	1-2	R
Rumex crispus	Curled dock			1			2		II	1-2	O
Sonchus oleraceus	Smooth sow-thistle	2					1		II	1-2	R
Geranium dissectum	Cut-leaved crane's-bill						2	2	II	2	O
Cerastium fontanum	Common mouse-ear				1			1	II	1	R
Galium mollugo	Hedge bedstraw			1					I	1	R
Sonchus sp.	Sow-thistle sp.						1		I	1	R
Potentilla reptans	Creeping cinquefoil							8	I	8	O lf
Agrostis stolonifera	Creeping bent						3		I	3	R
Taraxacum officinale agg.	Dandelion		3						I	3	R
Lolium perenne	Perennial rye-grass							2	I	2	R
Rubus fruticosus agg.	Bramble						1		I	1	O la
Lotus corniculatus	Common bird's-foot-trefoil						1		I	1	O
Cirsium arvense	Creeping thistle						1		I	1	O
Geranium molle	Dove's-foot crane's-bill						1		I	1	R
Vicia tetrasperma	Smooth tare							1	I	1	O lf

Table D.28 NVC08 Low Street Pit Community 1: additional species recorded but not present within the quadrats

Scientific name	Common name	DAFOR
Cytisus scoparius	Broom	O Lf
Cirsium vulgare	Spear thistle	O
Carex sp.	Sedge sp.	R lf
Sambucus nigra	Elder	R
Sisymbrium officinale	Hedge mustard	R
Heracleum sphondylium	Hogweed	R
Hypericum maculatum	Imperforate St John's-wort	R
Cladonia pyxidata	Lichen	R
Hypericum perforatum	Perforate St John's-wort	R
Trifolium subterraneum	Subterranean clover	R
Reseda luteola	Weld	R
Reseda lutea	Wild mignonette	R

Community 2

D.1.48 Marshy grassland/swamp similar to Community 1 but with the presence of some different species indicative of wetter conditions.

D.1.49 Does not fit readily with the NVC. Habitat is a damp hollow with abundant creeping bent and silverweed and other species indicative of wet conditions, such as common spike-rush. Therefore, the closest fit is MG11 *Festuca rubra-Agrostis stolonifera-Potentilla anserina* grassland.

Table D.29 NVC08 Low Street Pit Community 2: closest NVC community MG11 *Festuca rubra-Agrostis stolonifera-Potentilla anserina* grassland

Scientific name	Common name	Quadrat (Domin scale)		Frequency	Domin Range	DAFOR
		Q1	Q2			
Agrostis stolonifera	Creeping bent	9	9	II	9	A
Eleocharis palustris	Common spike-rush	8	4	II	4-8	A
Potentilla reptans	Creeping cinquefoil	3	3	II	3	F
Rumex crispus	Curled dock	1	1	II	1	F
Potentilla anserina	Silverweed	6	3	II	3-6	F la
Cirsium arvense	Creeping thistle	3	3	II	3	O
Carex otrubae	False fox-sedge		1	I	1	O
Elytrigia atherica	Sea couch		1	I	1	O
Salix cinerea subsp. cinerea	Grey willow		1	I	1	O
Leaf litter			5	I	5	

Table D.30 NVC08 Low Street Pit Community 2: additional species recorded but not present within the quadrats

Scientific name	Common name	DAFOR
Elytrigia repens	Common couch	O
Holcus lanatus	Yorkshire-fog	O
Juncus conglomeratus	Compact rush	O
Ranunculus repens	Creeping buttercup	O
Rumex conglomeratus	Clustered dock	O
Bolboschoenus maritimus	Sea club-rush	R ld
Glyceria fluitans	Floating sweet-grass	R lf
Juncus acutiflorus	Sharp-flowered rush	R lf
Epilobium hirsutum	Great willowherb	R
Juncus inflexus	Hard rush	R
Lycopus europaeus	Gypsywort	R
Trifolium repens	White clover	R
Typha latifolia	Bulrush	R

Community 3

D.1.50 Species-poor rank grassland with red fescue and common nettle.

D.1.51 The nearest NVC community for community 3 is species-poor MG1 *Arrhenatherum elatius* grassland. Mosaic of *Festuca rubra* and *Urtica dioica* sub-communities.

Table D.31 NVC08 Low Street Pit Community 3

Scientific name	Common name	Quadrat (Domin scale)		Frequency	Domin Range	DAFOR
		Q6	Q7			
Phleum pratense	Timothy	3	3	II	3-3	F
Agrostis capillaris	Common bent	3		I	3	F la
Festuca rubra	Red fescue	4		I	4	F la
Galium verum	Lady's bedstraw	1		I	1	F la
Holcus lanatus	Yorkshire-fog		3	I	3	F
Arrhenatherum elatius	False oat-grass	8	10	II	8-10	O la
Achillea millefolium	Yarrow	2	3	II	2-3	O
Alopecurus pratensis	Meadow foxtail	4		I	4	F
Dactylis glomerata	Cock's-foot	3	3	II	3	O
Bare ground			4	I	4	
Ranunculus acris	Meadow buttercup	1		I	1	O
Leaf litter		9	8	II	8-9	
Trifolium dubium	Lesser trefoil	1		I	1	O
Vicia sativa subsp. segetalis	Common vetch	3	1	II	1-3	O
Elytrigia repens	Common couch	6	3	II	3-6	O lf
Galium mollugo	Hedge bedstraw		1	I	1	R
Sonchus sp.	Sow-thistle sp.		1	I	1	R
Urtica dioica	Common nettle		3	I	3	R lf
Lolium multiflorum	Italian rye-grass		3	I	3	R
Anisantha sterilis	Barren brome		3	I	3	R lf

Scientific name	Common name	Quadrat (Domin scale)		Frequency	Domin Range	DAFOR
		Q6	Q7			
Ballota nigra	Black horehound		2	I	2	R
Convolvulus arvensis	Field bindweed	1		I	1	R
Silene latifolia	White campion		1	I	1	R

Table D.32 NVC08 Low Street Pit Community 1: additional species recorded but not present within the quadrats

Scientific name	Common name	DAFOR
Cytisus scoparius	Broom	O lf
Cirsium vulgare	Spear thistle	O
Carex sp.	Sedge sp.	R lf
Sambucus nigra	Elder	R
Sisymbrium officinale	Hedge mustard	R
Heracleum sphondylium	Hogweed	R
Hypericum maculatum	Imperforate St John's-wort	R
Cladonia pyxidata	Lichen	R
Hypericum perforatum	Perforate St John's-wort	R
Trifolium subterraneum	Subterranean clover	R
Reseda luteola	Weld	R
Reseda lutea	Wild mignonette	R

NVC23 - Rainbow Shaw

Community 1

D.1.52 Area of broadleaved semi-natural woodland on a slope. An open canopy supporting mature pedunculate oak, sweet chestnut, wild cherry, hornbeam and field maple over a relatively sparse shrub layer of sweet chestnut, hornbeam, field maple, wild cherry, hawthorn and elder. The ground flora was generally comprised of extensive carpets of bluebell throughout with some areas of bare ground, wood speedwell, lord's-and-ladies, lesser celandine and herb-Robert. Large amounts of fallen deadwood were present throughout the woodland, and the front edge of woodland was colonised by extensive areas of dense scrub (bramble, hawthorn and blackthorn dominated).

D.1.53 The woodland community present within Rainbow Wood shows tendencies towards both W8 *Fraxinus excelsior - Acer campestre - Mercurialis perennis* and W10 *Quercus robur – Pteridium aquilinum – Rubus fruticosus* communities. Generally, due to a relatively species-poor ground flora and a modified canopy, it would fit within a degraded version of either.

Table D.33 NVC23 Rainbow Shaw Community

Scientific name	Common name	Q1	Q2	Frequency	Domin Range
Canopy layer					
Castanea sativa	Sweet chestnut	6	4	II	4-6
Caprinus betula	Hornbeam	4	5	II	4-5
Quercus rober	Pedunculate oak	4	4	II	4
Prunus avium	Wild cherry	2	4	II	2-4
Acer campestre	Field maple	2	4	II	2-4
Fraxinus excelsior	Ash		3	I	3

Scientific name	Common name	Q1	Q2	Q1	Q2	Frequency	Domin Range
Shrub layer							
Crataegus monogyna	Hawthorn	4	4	6	4	IV	4-6
Acer campestre	Field maple	4	4	4	5	IV	4-5
Sambucus nigra	Elder		3	5	5	III	3-5
Castanea sativa	Sweet chestnut	2				I	2
Caprinus betula	Hornbeam	2				I	2
Prunus avium	Wild cherry	2				I	2

Scientific name	Common name	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5	Frequency	Domin Range
Ground flora													
Hycinthoides non-scripta	Bluebell	10	9	7	7	10	10	10	8	10	9	X	7-10
Galium aparine	Cleavers	2	4	4	3	4	2	3	2	2	3	X	2-4

Scientific name	Common name	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5	Frequency	Domin Range
Ranunculus ficaria	Lesser celandine	2	3	3	3	3	3		2	2	3	IX	2-3
Scientific name	**Common name**	**Q1**	**Q2**	**Q3**	**Q4**	**Q5**	**Q1**	**Q2**	**Q3**	**Q4**	**Q5**	**Frequency**	**Domin Range**
Bare ground/leaf litter		3	2	4	4	1		3	5	3	1	IX	1-5
Veronica montana	Wood speedwell	2	4	6		4	3				3	VI	2-6
Castanea sativa	Sweet chestnut seedling	1	1			1	1	1	1			VI	1
Geranium robertianum	Herb-Robert	2	4	5	6	4						V	2-6
Arum maculatum	Lord's-and-Ladies	1	1		1	1	2					V	1-2
Crataegus monogyna	Hornbeam seedling								2	3	3	III	2-3
Rubus fruticosus agg.	Bramble		2	1		2						III	1-2
Prunus avium	Cherry seedling						2	2				II	2
Sambucus nigra	Elder seedling				2				1			II	1-2
Silene dioica	Red campion		1		2							II	1-2
Urtica dioica	Common nettle		1		1							II	1
Hedera helix	Common Ivy				4							I	4
Poa nemoralis	Wood Meadow-grass										3	I	3
Unidentified seedling		1										I	1
Crataegus monogyna	Hawthorn seedling	1										I	1
Rumex sanguineus	Wood dock		1									I	1
Conopodium majus	Pignut								1			I	1

NVC22 - Ashenshaw

Community 1

D.1.54 Small remnant area of semi-natural, broadleaved woodland. The canopy comprised scattered mature pedunculate oak trees with semi-mature hornbeam, wild cherry and ash with a sparse shrub layer comprised of hawthorn, elder and field maple. Heavy disturbance of the ground has led to large areas of bare ground where common nettle and bramble now dominate. Patches of more original ground flora still exist within the woodland, where bluebell and lesser celandine are frequent.

D.1.55 The woodland block shows tendencies to both the W8 and W10 woodland communities. The constant presence of dog's mercury across the woodland may indicate a closer affinity with the W8 *Fraxinus excelsior - Acer campestre - Mercurialis perennis* community.

Table D.34 NVC22 Ashenshaw Community

Scientific name	Common name	Q1 (Domin Scale)		Frequency	Domin Range
Canopy layer					
Quercus rubra	Red oak	5		I	5
Carpinus betulus	Hornbeam	5		I	5
Prunus avium	Wild cherry	5		I	5
Fraxinus excelsior	Ash	4		I	4
Scientific name	**Common name**	**Q1**	**Q2**	**Frequency**	**Domin Range**
Shrub layer					
Sambucus nigra	Elder	7	4	II	4-7
Acer campestre	Field maple	4	5	II	4-5
Crataegus monogyna	Hawthorn		5	I	5

Scientific name	Common name	Q1	Q2	Q3	Q4	Q5	Frequency	Domin Range
Ground flora								
Hyacinthoides non-scripta	Bluebell	7	5	9	8	4	V	4-9
Bare ground/leaf		6	7	4	4	8	V	4-8
Galium aparine	Cleavers	3	3	3	4	3	V	3-4
Ulmus minor	English elm sapling	3	3	3	3	3	V	3
Stellaria media	Chickweed	3	2	2	2	2	V	2-3

Scientific name	Common name	Q1	Q2	Q3	Q4	Q5	Frequency	Domin Range
Ground flora								
Urtica dioica	Common nettle	3	7	1	3	6	V	1-7
Veronica montana	Wood speedwell	3		2	3	2	IV	2-3
Epilobium sp.	Willowherb sp.	3	3	2	2		IV	2-3
Scientific name	Common name	Q1	Q2	Q3	Q4	Q5	Frequency	Domin range
Sambucus nigra	Elder seedling		3	1	2	1	IV	1-3
Arum maculatum	Lords-and-ladies		1	2		2	III	1-2
Ranunculus ficaria	Lesser celandine	3	7				II	3-7
Triticum aestivum	Wheat	3	3				II	3
Carpinus betulus	Hornbeam seedling	3					I	3
Hedera helix	Ivy			3			I	3
Poa nemoralis	Wood meadowgrass				3		I	3
Veronica persica	Field speedwell				2		I	2
Unidentified Moss sp.		2					I	2
Arctium sp.	Burdock sp.		2				I	2
Glechoma hederacea	Ground-ivy	1					I	1
Senecio jacobaea	Common ragwort	1					I	1
Taraxicum officianale agg.	Dandelion	1					I	1
Cirsium arvense	Creeping thistle	1					I	1

NVC07 - Mucking Heath LWS

Community 1

D.1.56 Area of unmanaged acid grassland, generally species-poor but contains some species-rich areas.

D.1.57 The nearest NVC community for community 1 is assigned to U1 *Festuca ovina-Agrostis capillaris-Rumex acetosella* grassland due to the dominance of sheep's-fescue, common bent and sheep's sorrel.

Table D.35 NVC07 Mucking Heath Community

Scientific name	Common name	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Frequency	Domin Range	DAFOR
Agrostis capillaris	Common bent	9	8	7	5	9	9	8	8	VIII	5-9	D
Galium verum	Lady's bedstraw	6	7	8	5	6	5	6	4	VIII	4-8	A
Deschampsia flexuosa	Wavy hair-grass		4	4	4	5	6	6	6	VII	4-6	F
Festuca ovina	Sheep's-fescue	4	6	5	3	2		2		VI	2-6	O
Pilosella officinarum	Mouse-ear-hawkweed	1	5		4	2	4		4	VI	1-5	LF
Unidentified bryophyte sp.		4	3	2		2		2	2	VI	2-4	O
Festuca rubra	Red fescue	2	3	4	3	4				V	2-4	O
Veronica officinalis	Heath speedwell		2	2	1			2		IV	1-2	O
Cerastium sp.	Mouse ear sp. (dried)	1	1		1	1				IV	1	R
Holcus lanatus	Yorkshire-fog		3	5	4					III	3-5	O
Malva moschata	Musk-mallow	3	3	4						III	3-4	LF
Luzula multiflora	Heath wood-rush					3	2	2		III	2-3	LF
Leontodon autumnalis	Autumn hawkbit			1	1				2	III	1-2	R
Rumex acetosella	Sheep's sorrel			4		3				II	3-4	O
Hypericum perforatum	Perforate St John's-wort	4	2							II	2-4	LF
Aira praecox	Early hair-grass	2	3							II	2-3	R
Linaria vulgaris	Common toadflax		2	3						II	2-3	O
Festuca sp.	Squirreltail fescue (possibly rat's-tail fescue)	2	1							II	1-2	R
Senecio jacobaea	Common ragwort					1			1	II	1	R

Scientific name	Common name	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Frequency	Domin Range	DAFOR
Teesdalia nudicaulis	Shepherd's cress	3								I	3	R
Agrostis stolonifera	Creeping bent	2								I	2	R
Dactylis glomerata	Cock's-foot		2							I	2	O
Hypochaeris glabra	Smooth cat's-ear						1			I	1	R
Lathyrus pratensis	Meadow vetchling							1		I	1	R

Table D.36 NV07 Mucking Heath Community 1: additional species recorded but not present within the quadrats

Scientific name	Common name	DAFOR
Arrhenatherum elatius	False oat-grass	LF
Ulmus sp.	Elm seedling	O
Rubus fruticosus agg.	Bramble	O
Knautia arvensis	Field scabious	O
Centaurea nigra	Common knapweed	O
Achillea millefolium	Yarrow	R

NVC09 – Blackshots

D.1.58 The site comprised two distinct landscape areas:

a. A large area that has been excavated in the past (probably for sands and gravel) and has left a large depression to the north

b. A flat area of possibly undisturbed soils to the south above the quarried area

D.1.59 However, both areas support a very similar suite of habitats and species. The site supports a number of habitats including species-poor neutral and acid grassland, dense and scattered scrub, broadleaved plantation woodland, scattered broadleaved and conifer trees and bare ground. A small pond is also located towards the north of the site. The whole area shows signs of recent disturbance by motorbike scrambling and areas of burning.

D.1.60 The majority of the grassland present onsite is neutral species-poor (Communities 1, 3, 4 and 5) and comprises a similar suite of species with some variation in the dominant grass species. Some areas dominated by false oat-grass (Community 1 and 5), while others have a higher proportion of other species including Yorkshire-fog, red fescue, meadow fescue or soft brome. Forbs are generally frequent/abundant throughout but limited in diversity and dominated by species such as ribwort plantain and cat's-ear. Small areas of more 'acid' grassland (Community 2) are also present where common bent, sweet vernal grass, sheep's sorrel and squirreltail fescue were recorded. In addition to these small discrete areas, very small areas of similar grassland are present in an intricate mosaic with the neutral Communities 3 and 5 across much of the site.

Community 1

D.1.61 Area dominated by false oat-grass with some intricate mosaic with C2. This area also supports dense and scattered scrub and planted trees, degraded and being lost to scrub invasion.

D.1.62 The nearest NVC community for community 1 is MG1 *Arrhenatherum elatius* grassland, either *Festuca rubra* and/or *Urtica dioica* sub-community, species poor.

Table D.37 NVC09 Blackshots Community 1

Scientific name	Common name	Quadrat (Domin scale)				Frequency	Domin range	DAFOR
		Q1	Q2	Q3	Q4			
Arrhenatherum elatius	False oat-grass	10	6	10	8	IV	6-10	D
Holcus lanatus	Yorkshire-fog	3	7	3	5	IV	3-7	O lf
Eurhynchium praelongum	Common feather-moss	3	4	3	3	IV	3-4	F
Epilobium sp.	Epilobium sp.	2	3	2		III	2-3	R
Lophocolea bidentata	Bifid crestwort	3	3	3		III	3	O
Plantago lanceolata	Ribwort plantain	3	3		3	III	3	O
Hypnum compressiforme	Cypress-leaved plait-moss	3	3	3		III	3	O
N/A	Bare ground	3	3	3		III	3	O
Senecio jacobaea	Common ragwort	2	2	2		III	2	O
Myosotis sp.	Forget-me-not sp.		3	3		II	3	R
Vicia sativa subsp. *segetalis*	Common vetch	3	1			II	1-3	R
Dactylis glomerata	Cock's-foot				4	I	4	O
Urtica dioica	Common nettle			4		I	4	R la
Hypochaeris radicata	Cat's-ear		3			I	3	O
Cirsium arvense	Creeping thistle			3		I	3	O
Scorzoneroides autumnalis	Autumn hawkbit		3			I	3	R
Convolvulus arvensis	Field bindweed			3		I	3	R
Stellaria holostea	Greater stitchwort		3			I	3	R
Hypericum perforatum	Perforate St John's-wort	2				I	2	O
Agrostis capillaris	Common bent				2	I	2	R

Scientific name	Common name	Quadrat (Domin scale)				Frequency	Domin range	DAFOR
		Q1	Q2	Q3	Q4			
Bromus hordeaceus	Soft brome	2				I	2	R
Vicia tetrasperma	Smooth tare				1	I	1	O
Cerastium fontanum	Common mouse-ear	1				I	1	R
Ranunculus repens	Creeping buttercup				1	I	1	R
Geranium dissectum	Cut-leaved crane's-bill				1	I	1	R
Taraxacum officinale agg.	Dandelion				1	I	1	R
Rumex acetosella	Sheep's sorrel				1	I	1	R

Table D.38 NVC09 Community1: additional species recorded but not present within the quadrats

Scientific name	Common name	DAFOR
Chamerion angustifolium	Rosebay willowherb	O la

Community 2

D.1.63 Short sward with some evidence of past burning and rabbit grazing. The sandy nature of the soils has led to the development of sparse, species-poor and base-poor community where common bent and squirreltail fescue form the grass element of the sward along with frequent ribwort plantain and cat's-ear.

D.1.64 The species-poor nature of the sward and lack of diversity and evidence of past disturbance (burning) make assigning an NVC community to this area difficult. Community 2 shows some affinities to the U1f *Festuca ovina-Agrostis capillaris-Rumex acetosella*, *Hypochoeris radicata* sub-community.

Table D.39 NVC09 Blackshots Community 2

Scientific name	Common name	Quadrat (Domin scale)				Frequency	Domin range	DAFOR
		Q1	Q2	Q3	Q4			
Vulpia bromoides	Squirreltail fescue	4	6	7	5	IV	4-7	F la
Holcus lanatus	Yorkshire-fog	4	4	5	4	IV	4-5	O
N/A	Bare ground	4	5	4	3	IV	3-5	F
Plantago lanceolata	Ribwort plantain	4	3	3	3	IV	3-4	F
Festuca rubra	Red fescue	3	3	4	4	IV	3-4	O
Eurhynchium praelongum	Common feather-moss	3	2	3	3	IV	2-4	O
Senecio jacobaea	Common ragwort	2	3	2	2	IV	2-4	R
Cerastium fontanum	Common mouse-ear	3	1	4	3	IV	1-4	O
Dactylis glomerata	Cock's-foot	3	3	2	2	IV	2-3	O
Hypochaeris radicata	Cat's-ear	4	4	4	4	IV	4	F
Bromus hordeaceus	Soft brome	3	3	3	3	IV	3	O
Rumex acetosella	Sheep's sorrel	3	3	3	3	IV	3	O lf
Agrostis capillaris	Common bent	6	3		7	III	3-7	O lf
Hypnum compressiforme	Cypress leaved plait-moss	3	3	3		III	3	O
Hieracium sp.	Hawkweed sp.	3	2			II	2-3	R
Arrhenatherum elatius	False oat-grass	3			3	II	3	O
Vicia tetrasperma	Smooth tare	2	2			II	2	R
Poa pratensis	Smooth meadow-grass	3				I	3	R
Achillea millefolium	Yarrow				3	I	3	R
Vicia sativa subsp. *segetalis*	Common vetch	2				I	2	O
Leontodon autumnalis	Autumn hawkbit	2				I	2	R

Scientific name	Common name	Quadrat (Domin scale)				Frequency	Domin range	DAFOR
		Q1	Q2	Q3	Q4			
Hypericum perforatum	Perforate St John's-wort	2				I	2	R
Taraxacum officinale agg.	Dandelion			1		I	1	O
Cirsium arvense	Creeping thistle	1				I	1	O lf
Lotus corniculatus	Common bird's-foot-trefoil			1		I	1	R
Filago vulgaris	Common cudweed	1				I	1	R
Alopecurus pratensis	Meadow foxtail			1		I	1	R
Prunella vulgaris	Selfheal		1			I	1	R

Community 3

D.1.65 This community comprises a large percentage of the grassland habitat onsite. This species-poor neutral grassland shows variations in the grass element across the site, varying from areas dominated by false oat-grass to areas where other grass species are present at higher proportions within the sward.

D.1.66 The variation in species composition throughout this area and the level of disturbance and burning make assigning an NVC community to this area difficult. However, the lack of diversity and the constant presence of false oat-grass would suggest community 3 is a species poor MG1 *Arrhenatherum elatius* grassland, with areas of MG6 *Lolium perenne-Cynosurus cristatus* grassland.

Table D.40 NVC09 Blackshots Community 3

Scientific name	Common name	Q1	Q2	Frequency	Domin range	DAFOR
Plantago lanceolata	Ribwort plantain	6	6	II	6	F la
N/A	Bare ground	5	4	II	4-5	O
Hypochaeris radicata	Cat's-ear	4	4	II	4-4	O lf
Holcus lanatus	Yorkshire-fog	4	4	II	4	F la
Arrhenatherum elatius	False oat-grass	4	4	II	4	O lf
Vulpia bromoides	Squirreltail fescue	3	4	II	3-4	F
Cerastium fontanum	Common mouse-ear	3	3	II	3	O
Eurhynchium praelongum	Common feather-moss	3	3	II	3	O
Bromus hordeaceus subsp. *hordeaceus*	Common soft-brome	3	3	II	3	R
Dactylis glomerata	Cock's-foot	3	2	II	2-3	O
Daucus carota subsp. carota	Wild carrot	2	3	II	2-3	R
Hieracium sp.	Hawkweed sp.	2	2	II	2	O
Trifolium dubium	Lesser trefoil	1	1	II	1	R
Festuca rubra	Red fescue		5	I	5	O lf
Rumex acetosella	Sheep's sorrel	3		I	3	O
Achillea millefolium	Yarrow	3		I	3	R
Prunus spinosa	Blackthorn	3		I	3	R
Mentha sp.	Mint sp.	3		I	3	R
Agrostis capillaris	Common bent	3		I	2	O
Rubus fruticosus agg.	Bramble	2		I	2	R

Scientific name	Common name	Q1	Q2	Frequency	Domin range	DAFOR
Centaurium erythraea	Common centaury	2		I	2	R
Senecio jacobaea	Common ragwort		2	I	2	R
Vicia tetrasperma	Smooth tare		2	I	2	R
Vicia sativa subsp. *segetalis*	Common vetch		2	I	2	R
Hypericum perforatum	Perforate St John's-wort		2	I	2	R
Cirsium arvense	Creeping thistle	1		I	1	R
Artemisia vulgaris	Mugwort	1		I	1	R

Table D.41 NVC09 Blcakshots: additional species recorded but not present within the quadrats

Scientific name	Common name	DAFOR
Lotus corniculatus	Common bird's-foot-trefoil	R

Community 4

D.1.67 This area is dominated by false oat-grass. This area also supports dense and scattered scrub and planted trees. The area is degraded and being lost to scrub invasion.

D.1.68 Community 4 would be classified as a species poor MG1 *Arrhenatherum elatius* grassland, either *Festuca rubra* and/or *Urtica dioica* sub-community.

Table D.42 NVC09 Blackshots Community 4

Scientific name	Common name	Quadrat (Domin scale)	DAFOR
		Q1	
Arrhenatherum elatius	False oat-grass	8	A
Plantago lanceolata	Ribwort plantain	5	F
Holcus lanatus	Yorkshire-fog	4	F
N/A	Bare ground	4	O
Eurynchium sp.	Eurynchium moss sp.	3	F
Dactylis glomerata	Cock's-foot	3	O
Senecio jacobaea	Common ragwort	3	O
Bryum sp.	Bryum moss sp.	3	O
Centaurea nigra	Common knapweed	2	R
Vicia sativa subsp. *segetalis*	Common vetch	1	R
Hypericum humifusum	Trailing St John's-wort	1	R
Silene latifolia	White campion	1	R

Community 5

D.1.69 This community comprises a large percentage of the grassland habitat onsite. This species-poor neutral grassland shows variations in the grass element across the site, varying from areas dominated by false oat-grass to areas where other grass species are present at higher proportions within the sward.

D.1.70 The variation in species composition throughout this area and the level of disturbance and burning make assigning an NVC community to this area difficult. However, the lack of diversity and the constant presence of false oat-grass would suggest community 5 is species poor MG1 *Arrhenatherum elatius* grassland, with areas of MG6 *Lolium perenne-Cynosurus cristatus* grassland.

Table D.43 NVC09 Blackshots Community 5

Scientific name	Common name	DAFOR
Plantago lanceolata	Ribwort plantain	F la
Holcus lanatus	Yorkshire-fog	F la
Vulpia bromoides	Squirreltail fescue	F
Hypochaeris radicata	Cat's-ear	O lf
Festuca rubra	Red fescue	O lf
Arrhenatherum elatius	False oat-grass	O lf
Rumex acetosella	Sheep's sorrel	O
N/A	Bare ground	O
Cerastium fontanum	Common mouse-ear	O
Dactylis glomerata	Cock's-foot	O
Hieracium sp.	Hawkweed sp.	O
Agrostis capillaris	Common bent	O
Eurhynchium praelongum	Common feather-moss	O
Achillea millefolium	Yarrow	R
Bromus hordeaceus subsp. hordeaceus	Common soft-brome	R
Rubus fruticosus agg.	Bramble	R
Prunus spinosa	Blackthorn	R
Mentha sp.	Mint sp.	R
Cirsium arvense	Creeping thistle	R
Centaurium erythraea	Common centaury	R
Artemisia vulgaris	Mugwort	R
Daucus carota subsp. *carota*	Wild carrot	R
Trifolium dubium	Lesser trefoil	R
Senecio jacobaea	Common ragwort	R
Vicia tetrasperma	Smooth tare	R
Vicia sativa subsp. *segetalis*	Common vetch	R
Hypericum perforatum	Perforate St John's-wort	R
Lotus corniculatus	Common bird's-foot-trefoil	R

Community 6

D.1.71 Short sward on thin soils, possibly recently burnt, acid in nature, sparse vegetation with a high proportion of bryophytes, sheep's sorrel and squirreltail fescue.

D.1.72 This area of grassland does not readily fall within any NVC communities.

Table D.44 NVC09 Blackshot Community 6

Scientific name	Common name	Quadrat (Domin scale)			Frequency	Domin range	DAFOR
		Q1	Q2	Q3			
Rumex acetosella	Sheep's sorrel	5	4	7	III	4-7	F la
Plantago lanceolata	Ribwort plantain	4	6	4	III	4-6	F
Bromus hordeaceus subsp. *hordeaceus*	Common soft-brome	6	3	3	III	3-6	F la
N/A	Bare ground	4	4	5	III	4-5	F
Euphrasia sp.	Eyebright sp.	1	2	2	III	1-2	R
Vulpia bromoides	Squirreltail fescue		5	4	II	4-5	F la
Kindbergia praelongum	Common feather moss	3	3		II	3	O
Holcus lanatus	Yorkshire-fog	3		3	II	3	O
Hypochaeris radicata	Cat's-ear		2	3	II	2-3	O
Polytrichum juniperum	Juniper haircap moss		5		I	5	O lf
Cladonia sp.	*Cladonia* moss sp.		4		I	4	O lf
Dactylis glomerata	Cock's-foot	4			I	4	O
Plantago coronopus	Buck's-horn plantain		3		I	3	O lf
Hypnum sp.	*Hypnum* moss sp.	3			I	3	O
Bryum sp.	*Bryum* moss sp.		3		I	3	O
Cerastium fontanum	Common mouse-ear			3	I	3	O
Odontites vernus	Red bartsia		2		I	2	R
Senecio jacobaea	Ragwort			2	I	2	R
Potentilla reptans	Creeping cinquefoil			2	I	2	R
Hypericum perforatum	Perforate St John's-wort	1			I	1	R

Scientific name	Common name	Quadrat (Domin scale)			Frequency	Domin range	DAFOR
		Q1	Q2	Q3			
Peltigera canina	Dog lichen		1		I	1	R
Crataegus monogyna	Hawthorn			1	I	1	R
Achillea millefolium	Yarrow			1	I	1	R
Filago vulgaris	Common cudweed			1	I	1	R

Community 7

D.1.73 Area of possibly slightly wetter ground where Yorkshire-fog is the dominant grass species within the sward.

D.1.74 Does not easily conform to the majority of NVC communities but is likely to still be MG1 *Arrhenatherum elatius* grassland due to the presence of false oat-grass.

Table D.45 NVC09 Blackshots Community 7

Scientific name	Common name	Quadrat (Domin scale)	DAFOR
		Q1	
Holcus lanatus	Yorkshire-fog	7	A
Hieracium sp.	Hawkweed sp.	5	F
Arrhenatherum elatius	False oat-grass	4	F
Vicia sativa subsp. segetalis	Common vetch	4	F
Vicia tetrasperma	Smooth tare	4	F
Plantago lanceolata	Ribwort plantain	4	F
N/A	bare ground	4	O
Cirsium arvense	Creeping thistle	4	O
Hypochaeris radicata	Cat's-ear	3	F
Artemisia vulgaris	Mugwort	3	O
Anthriscus sylvestris	Cow parsley	3	O
Geranium dissectum	Cut-leaved crane's-bill	3	O
Rumex crispus	Curled dock	2	O
Dactylis glomerata	Cock's-foot	2	R
Sonchus asper	Prickly sow-thistle	1	O
Leucanthemum vulgare	Oxeye daisy	1	R
Epilobium sp.	Willowherb sp.	1	R

Community 8

D.1.75 Similar grassland to the majority of the site, but meadow fescue is the dominant grass species within this area.

D.1.76 Community 8 does not easily conform to the majority of NVC communities but is likely to still be MG1 *Arrhenatherum elatius* grassland due to the presence of false oat-grass.

Table D.46 NVC09 Blackshots Community 8

Scientific name	Common name	Quadrat (Domin scale)	DAFOR
		Q1	
Schedonorus pratensis	Meadow fescue	7	A
Plantago lanceolata	Ribwort plantain	6	F
Holcus lanatus	Yorkshire-fog	4	F
Arrhenatherum elatius	False oat-grass	4	F
Eurynchium sp.	Eurynchium moss sp.	4	F
Vicia sativa subsp. *segetalis*	Common vetch	3	O
Hieracium sp.	Hawkweed sp.	3	O
Dactylis glomerata	Cock's-foot	3	O
Vicia tetrasperma	Smooth tare	3	O
Senecio jacobaea	Common ragwort	3	O
Rumex acetosella	Sheep's sorrel	2	R
Hypericum perforatum	Perforate St John's-wort	2	R
Geranium dissectum	Cut-leaved crane's-bill	2	R
Rumex acetosa subsp. *acetosa*	Common sorrel	2	R
Artemisia vulgaris	Mugwort	2	R
Epilobium sp.	Willowherb sp.	2	R
Crataegus monogyna	Hawthorn seedling	1	R
Hypericum humifusum	Trailing St John's-wort	1	R

Community 9

D.1.77 Relatively short sward with abundant sweet-vernal grass. This habitat does not easily fit into any NVC community type. The closest community type would be degraded and species poor MG1 *Arrhenatherum elatius* grassland.

Table D.47 NVC09 Blackshots Community 9

Scientific name	Common name	Quadrat (Domin scale)	DAFOR
		Q1	
Anthoxanthum odoratum	Sweet vernal-grass	7	F la
Holcus lanatus	Yorkshire-fog	4	F
Vulpia bromoides	Squirreltail fescue	4	F
Plantago lanceolata	Ribwort plantain	4	O
Hieracium sp.	Hawkweed sp.	4	O
Arrhenatherum elatius	False oat-grass	3	O
Senecio jacobaea	Common ragwort	3	O
Hypochaeris radicata	Cat's-ear	3	O
Dactylis glomerata	Cock's-foot	3	O
Eurynchium sp.	Eurynchium moss sp.	3	O
Vicia sativa subsp. segetalis	Common vetch	3	O
N/A	Bare ground	3	R
Hypericum perforatum	Perforate St John's-wort	2	O
Geranium dissectum	Cut-leaved crane's-bill	2	O

NVC10 - Ruskins

D.1.78 Large former landfill with a number of habitats, the largest of which (Community 1) comprised either rank species-poor grassland dominated by tall grasses such as false oat-grass and cocksfoot; ruderal vegetation supporting species such as abundant common nettle, creeping thistle and hemlock; or an intricate mosaic of both. The general unevenness of ground has led to the development of damp hollows (Communities 2, 4, 5, 6, 7 and 8), some of which appear to hold water seasonally. These areas support species including creeping bent, rush species, marsh foxtail, redshank, great willowherb and lesser spearwort, and are becoming colonised by ruderal species including docks, thistles and nettles. Three small areas of dry heavily rabbit-grazed grassland were also recorded (Community 3). Some extensive areas of grassland are rapidly being lost to colonising bramble, hawthorn and blackthorn scrub, and scattered scrub was recorded across the majority of the site.

Community 1

D.1.79 MG1b *Arrhenatherum elatius* grassland - *Urtica dioica* sub-community, some parts likely to fit the *Epilobium hirsutum* variant.

Community 2

D.1.80 S26b Phragmites australis - *Urtica dioica* fen, Arrhenatherum elatius sub-community.

Community 3

D.1.81 This vegetation of open habitats does not really fit within any given community type.

Community 4

D.1.82 S21a *Scirpetum maritimi* swamp, *Scirpus maritimus* dominated sub-community.

Community 5

D.1.83 This damp habitat (likely to be periodically inundated) shows affinities to both the OV32 *Myosotis scorpioides* - *Ranunculus sceleratus* and OV33 *Polygonum lapathifolium* - *Poa annua* communities.

Community 6

D.1.84 This damp habitat (likely to be periodically inundated) shows affinities to both the OV32 *Myosotis scorpioides* - *Ranunculus sceleratus* and MG10 *Holco-Juncetum effusi*, *Juncus inflexus* sub-communities, given the presence of hard rush and celery-leaved buttercup.

Community 7

D.1.85 This damp habitat (likely to be periodically inundated) shows affinities to both the OV25 *Urtica dioica* - *Cirsium arvense* and OV26 *Epilobium hirsutum* communities.

Community 8

D.1.86 MG13 *Agrostis stolonifera* - *Alopecurus geniculatus* grassland community; damp habitat (likely to be periodically inundated).

Table D.48 NVC10 Ruskins Communities 1-8

Scientific name	Common name	Community DAFOR							
		1	2	3	4	5	6	7	8
Epilobium ciliatum	American willowherb							R	
Poa annua	Annual meadow-grass			F					
Fraxinus excelsior	Ash	R							
Solanum dulcamara	Bittersweet				O				O
Ballota nigra	Black horehound	R							
Prunus spinosa	Blackthorn	R							
Rubus fruticosus agg.	Bramble	O, LD		R					

Scientific name	Common name	Community DAFOR							
		1	2	3	4	5	6	7	8
Helminthotheca echioides	Bristly oxtongue			O					
Rumex obtusifolius	Broadleaved dock	F	O	O			R		
Ranunculus sceleratus	Celery-leaved buttercup					O			O
Galium aparine	Cleavers	F	F				O	F	
Rumex conglomeratus	Clustered dock	R							O
Dactylis glomerata	Cock's-foot	O							
Symphytum sp.	Comfrey sp.								
Lotus corniculatus	Common bird's-foot-trefoil			R					
Veronica persica	Common field-speedwell			R					
Pulicaria dysenterica	Common fleabane	R							
Malva sylvestris	Common mallow	R							
Cerastium fontanum	Common mouse-ear			R					
Urtica dioica	Common nettle	F, LD	F	R	O			A	
Senecio jacobaea	Common ragwort	O		O				R	
Phragmites australis	Common reed		D						
Bromus hordeaceus subsp. hordeaceus	Common soft-brome			R					
Anthriscus sylvestris	Cow parsley	O, LF		R					
Agrostis stolonifera	Creeping bent	O, LF	F	O	O	A	A	F	F
Ranunculus repens	Creeping buttercup	R							
Potentilla reptans	Creeping cinquefoil	R		F LA					

Scientific name	Common name	Community DAFOR							
		1	2	3	4	5	6	7	8
Cirsium arvense	Creeping thistle	F, LA	O	O	O	O, LF	F	O	
Rumex crispus	Curled dock	R	R			R			O
Geranium dissectum	Cut-leaved crane's-bill	R		O					
Rosa canina	Dog-rose	O		R					
Geranium molle	Dove's-foot crane's-bill			F					
Sambucus nigra	Elder	R							
Carex otrubae	False fox-sedge	R						O	
Arrhenatherum elatius	False oat-grass	F, LD	O	O					
Chenopodium album	Fat-hen				O				
Myosotis arvensis	Field forget-me-not			R					
Chenopodium sp.	Goosefoot sp.					F, LA			
Epilobium hirsutum	Great willowherb	R, LF					O, LF	A, LD	
Glechoma hederacea	Ground-ivy	O							
Lycopus europaeus	Gypsywort							R, LF	
Juncus inflexus	Hard rush	R					A	O, LF	R
Crataegus monogyna	Hawthorn	R							
Calystegia sepium	Hedge bindweed	O						F	
Stachys sylvatica	Hedge woundwort	R							
Conium maculatum	Hemlock	O, LF	O		R				
Plantago media	Hoary plantain			R					
Matthiola sinuata	Sea stock	R, LF							

Scientific name	Common name	Community DAFOR							
		1	2	3	4	5	6	7	8
Heracleum sphondylium	Hogweed	O							
Trifolium campestre	Hop trefoil	R							
Barbarea verna	American winter-cress							R	R
Ranunculus flammula	Lesser spearwort								F
Stellaria graminea	Lesser stitchwort	R							
Trifolium dubium	Lesser trefoil			O					
Alopecurus geniculatus	Marsh foxtail								F, LA
Galium palustre	Marsh-bedstraw								O
Artemisia vulgaris	Mugwort	R							
Carex pendula	Pendulous sedge							R	
Lolium perenne	Perennial rye-grass	O		O					
Hypericum perforatum	Perforate St John's-wort	R							
Sonchus asper	Prickly sow-thistle	R	R	O				O	
Silene dioica	Red campion	R							
Trifolium pratense	Red clover			R					
Persicaria maculosa	Redshank					O			O, LA
Plantago lanceolata	Ribwort plantain			R					
Poa trivialis	Rough meadow-grass	O		R	O			F	
Anagallis arvensis subsp. arvensis	Scarlet pimpernel			R					
Bolboschoenus maritimus	Sea club-rush				D				
Elytrigia atherica	Sea couch	R, LF			O				R

Scientific name	Common name	Community DAFOR							
		1	2	3	4	5	6	7	8
Vicia tetrasperma	Smooth tare	O						R	
Juncus effusus	Soft-rush							O	F, LD
Cirsium vulgare	Spear thistle	R		O					
Asperula cynanchica	Squinancywort			R					
Vulpia bromoides	Squirreltail fescue			R, LF					
Phleum pratense	Timothy								
Vicia cracca	Tufted vetch	R							
Carduus crispus	Welted thistle			R					
Lamium album	White dead-nettle	R							
Reseda lutea	Wild mignonette			R					
Dipsacus fullonum	Wild teasel	O		O					
Achillea millefolium	Yarrow								
Iris pseudacorus	Yellow iris							R	
Holcus lanatus	Yorkshire-fog		O					F	F

NVC11.1 and 11.3 - Ancient woodland around M25 junction 29

Community 1

D.1.87 Woodland blocks surrounding M25 junction 29. Mostly heavily shaded with few clearings. Ride habitat within south-western block of woodland is more open with scrub and grass/herbaceous layer vegetation. Dead wood habitats present.

D.1.88 The nearest NVC community for community 1 is W10 *Quercus robur* - *Pteridium aquilinum* - *Rubus fruticosus* woodland.

Table D.49 NVC11 Ancient Woodland around M25 junction 29 Community 1

Scientific name	Common name	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Frequency	Domin range
Canopy layer												
Betula pendula	Silver birch									2	I	2
Carpinus betulus	Hornbeam					9	9	9	9	9	V	9
Fraxinus excelsior	Ash	1	2								II	1-2
Malus sylvestris	Crab apple	1		1							II	1
Quercus robur	Pedunculate oak	8	6	5							III	5-8
Quercus rubra	Red oak					3	3	3	1		IV	1-3
Salix fragilis	Crack-willow									2	I	2
Ulmus procera	English elm				7						I	7

Scientific name	Common name	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Frequency	Domin range
Shrub layer																		
Acer campestre	Field maple	3	2				2		3		1						V	1-3
Acer pseudoplatanus	Sycamore		2														IV	2
Carpinus betulus	Hornbeam											2	3	1	2	1	V	1-3
Cornus sanguinea	Dogwood	2															I	2
Crataegus laevigata	Midland hawthorn								3								I	3
Crataegus monogyna	Hawthorn	6	6	8	6	8	6	9		5	5			1	2	1	XII	1-9
Euonymus europaeus	Spindle	2															I	2
Fraxinus excelsior	Ash		2			2											II	2

Scientific name	Common name	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Frequency	Domin range
Ilex aquifolium	Holly											2			1		II	1-2
Lonicera periclymenum	Honeysuckle	3													2		II	2-3
Malus sp.	Apple				1		1										II	1
Prunus cerasifera	Cherry plum	2		3						4							III	2-4
Prunus spinosa	Blackthorn	3	7	4			6	4		5	7						VII	3-7
Quercus robur	Pedunculate oak		1			1	1	4									IV	1-4
Quercus rubra	Red oak										1						I	1
Ribes rubrum	Red currant									3							I	3
Rosa canina	Dog-rose		3							4							II	3-4
Rubus fruticosus agg.	Bramble	4			4	5		5		7	7						VI	4-7
Salix caprea	Goat willow	2															I	2
Sambucus nigra	Elder								3								I	3
Sorbus torminalis	Wild service-tree														1		I	1
Ulmus procera	English elm	2															I	2
Leaf litter		7															I	7

Scientific name	Common name	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Frequency	Domin range
Ground flora																	
Acer campestre	Field maple	2				2										II	2
Acer platanoides	Norway maple		1													I	1

Latin name	Common name	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Frequency	Domin range
Ground flora																	
Agrostis stolonifera	Creeping bent		2	3												II	2-3
Alliaria petiolata	Garlic mustard	2			3		2	7								IV	2-7
Allium sp.	Garlic sp.	2	3		3											III	2-3
Anemone nemorosa	Wood anemone										3		2	4	4	IV	2-4
Anthriscus sylvestris	Cow parsley	3						3								II	3
Arum maculatum	Lords-and-ladies	3	2	2	1	3		4		2						VII	1-4
Cardamine hirsuta	Hairy bitter-cress						3		3	3						III	3
Carpinus betulus	Hornbeam		1													I	1
Cerastium fontanum	Common mouse-ear									1						I	1
Chamerion angustifolium	Rosebay willowherb								2	2						II	2
Cirsium vulgare	Spear thistle						1		1	1						III	1
Crataegus monogyna	Hawthorn	4	3	5												III	3-5
Deschampsia cespitosa	Tufted hair-grass			1												I	1

Latin name	Common name	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Frequency	Domin range
Ground flora																	
subsp. cespitosa																	
Dryopteris filix-mas	Male-fern	1	3	2												III	1-3
Epilobium ciliatum	American willowherb			1												I	1
Euonymus europaeus	Spindle			1												I	1
Fraxinus excelsior	Ash	4		2												II	2-4
Galium aparine	Cleavers	3	2	4			3	3		2						VI	2-4
Geum urbanum	Wood avens	2	3	2	4		3	3								VI	2-4
Glechoma hederacea	Ground-ivy							3		3						II	3
Hedera helix	Common Ivy	7														I	7
Heracleum sphondylium	Hogweed	3						2		1						III	1-3
Hyacinthoides non-scripta	Bluebell										4		2	7	8	IV	2-8
Ilex aquifolium	Holly		1													II	1
Lonicera periclymenum	Honeysuckle	3									1	2	2	1		VI	1-3

Latin name	Common name	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Frequency	Domin range
Ground flora																	
Milium effusum	Wood millet											3				I	3
Myosotis arvensis	Field forget-me-not				2		3									II	2-3
Poa nemoralis	Wood meadow-grass				3											I	3
Potentilla reptans	Creeping cinquefoil									2						I	2
Prunus spinosa	Blackthorn		3			3										II	3
Quercus robur	Pedunculate oak			2												I	2
Rosa arvensis	Field-rose	2	2													II	2
Rosa canina	Dog-rose		2													I	2
Rubus fruticosus agg.	Bramble		4	7	3	2		3			7	6	6	4		IX	2-7
Rumex sanguineus	Wood dock		2		4	2										III	2-4
Rumex sp.	Dock sp.						3	3	4							III	3-4
Taraxacum officinale agg.	Dandelion			1												I	1
Urtica dioica	Common nettle				2		3		2	3						IV	2-3
Viola riviniana	Common dog-violet		1	2												II	1-2
	Leaf litter	8	9	7		8	8			5	9	9	9	9	9	XII	5-9

Latin name	Common name	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Frequency	Domin range
Ground flora																	
	Dead wood											3	4	3	3	IV	3-4
	Byrophytes								6	4		4	3			IV	3-6

NVC25 - Hall Farm Moat

Community 1

D.1.89 Fishing pond with little emergent vegetation. The pond was adjacent to an arable field.

D.1.90 The nearest NVC community for the wetland habitats within community 1 is S12 *Typha latifolia* swamp with some S14 *Sparganium erectum* swamp.

Table D.50 NVC Hall Farm Moat Community 1

Scientific name	Common name	Community DAFOR
Typha latifolia	Bulrush	O
Sparganium erectum	Branched Bur-reed	O
Lycopus europaeus	Gypsywort	R
Epilobium hirsutum	Great Willowherb	R
Juncus inflexus	Hard Rush	R
Solanum dulcamara	Bittersweet	R
Persicaria amphibia	Amphibious Bistort	R
Scrophularia auriculata	Water Figwort	R

Community 2

D.1.91 Large pond with very little emergent vegetation.

D.1.92 The nearest NVC community for the wetland habitat of community 2 is S4 *Phragmites australis* swamp.

Table D.51 NVC Hall Farm Moat Community 2

Scientific name	Common name	Community DAFOR
Phragmites australis	Common Reed	R
Nymphaea sp	Water-lily	R

NVC26 – Thames Chase Forest Centre

Community 1

D.1.93 Hobbs Hole pond. An active fishing pond with limited vegetation apparent consisting of small emergent stands of yellow Iris and bulrush, some marginal soft rush.

D.1.94 The nearest NVC community for the wetland habitats in community 1 is M28 *Iris pseudacorus - Filipendula ulmaria* mire with some areas of M23 *Juncus effusus/acutiflorus - Galium palustre* rush pasture.

Table D.52 Thames Chase Community 1

Scientific name	Common name	Community DAFOR
Iris pseudacorus	Yellow Iris	O
Juncus effusus	Soft-rush	O
Sparganium erectum	Branched Bur-reed	O
Scrophularia auriculata	Water Figwort	R
Carex pendula	Pendulous Sedge	R
Typha latifolia	Bulrush	R

Community 2

D.1.95 A ditch with several inline ponds. Sections of the ditch dry, wet sections have very little aquatic vegetation.

D.1.96 The nearest NVC community for the wetland habitats within community 2 is M28 *Iris pseudacorus - Filipendula ulmaria* mire

Table D.53 Thames Chase Community 2

Scientific name	Common name	Community DAFOR
Cladophora sp	Algae	F
Persicaria amphibia	Amphibious Bistort	R
Iris pseudacorus	Yellow Iris	R

Community 3

D.1.97 Small moderately flowing stream on edge of golf course and Thames chase.

D.1.98 The nearest NVC community for the wetland habitats of community 3 is a mixture of M23 *Juncus effusus/acutiflorus - Galium palustre* rushpasture and S28 *Iris pseudacorus - Filipendula ulmaria mire.*

Table D.54 Thames Chase Community 3

Scientific name	Common name	Community DAFOR
Sparganium erectum	Branched Bur-reed	F
Helosciadium nodiflorum	Fool's-water-cress	F
Phalaris arundinacea	Reed Canary-grass	O
Typha latifolia	Bulrush	F
Juncus effusus	Soft-rush	O

Annex E Desk study data

E.1.1 Key to tables in Annex D:

a. **EU Designation**: Categorised as follows:

i. CITES refers to species that are protected under the Convention on International Trade in Endangered Species (CITES) of Wild Fauna and Flora (CITES Secretariat, 1963).

ii. HSD5 refers to species that are protected under Annex V of the Habitats Directive which ensures that their exploitation and taking in the wild is compatible with maintaining them in a favourable conservation status.

b. **WCA (1981) Sch 8:** Wildlife and Countryside Act 1981, Schedule 8 – Plant species that are protected from intentionally picking, uprooting and destroying under section 13(1) of the Wildlife and Countryside Act 1981 (as amended).

c. **NERC Act 2006 section 41:** SoPI listed under section 41 of the Natural Environment and Rural Communities Act 2006

d. **Red List (GB or England):** Great Britain or England Red Listed Species based on the IUCN Red List Categories and Criteria (IUCN Species Survival Commission, 2012). Statuses are categorised as follows:

i. 'Critically Endangered' (CR) refers to a species that are considered to be facing an extremely high risk of extinction in the wild.

ii. **'**Endangered' (EN) refers to a species that are considered to be facing a very high risk of extinction in the wild.

iii. 'Vulnerable' (VU) refers to species that are not Critically Endangered or Endangered but are facing a high risk of extinction in the wild in the medium-term future.

iv. 'Near Threatened' (NT) refers to species that do not qualify for Lower Risk (conservation dependent), but that are close to qualifying for Vulnerable. In Britain, this category includes species that occur in 15 or fewer hectads but do not qualify as Critically Endangered, Endangered or Vulnerable.

v. 'Data Deficient' (DD) refers to where there is inadequate information to make a direct, or indirect, assessment of a species' risk of extinction.

e. **GB Status: ‘**Nationally Rare’ (NR) refers to species that have been recorded in 1–15 10km squares of the National Grid (hectads) in Great Britain. ‘Nationally Scarce’ (NS) refers to species that have been recorded in 16–100 10km squares of the National Grid (hectads) in Great Britain (Dines *et al*., 2005).

f. **Kent Rare Plant Register:** Species that are listed on the Kent Rare Plant Register (Kent Botanical Recording Group, 2015). ‘Relatively Frequent’ (RF) refers to species that are considered rare in Kent but may be found at a greater abundance than others.

g. **Kent BAP:** Species that are listed on the Kent Biodiversity Action Plan (Kent Biodiversity Action Plan Steering Group, 1997) and are categorised as follows:

   i. KRDB1 refers to species that have been found in 1–2 tetrads only.

   ii. KRDB2 refers to species that have been found in between 3–5 tetrads or, if more than this, where the species is considered to be undergoing a significant decline.

   iii. KRDB3 refers to species that have been recorded in 6–10 tetrads.

h. **Essex BAP:** Species that are listed on the Essex Biodiversity Action Plan (Essex Biodiversity Project, 2011).

i. **Essex Red List**: Species that are listed on the Essex Red Data List (Essex Field Club, undated).

j. **London BAP Priority Species**: Species that are listed on the London Biodiversity Action Plan (London Biodiversity Partnership, 2007a).

k. **London Species of Conservation Concern**: Species of conservation concern occurring in London, listed by the London Biodiversity Partnership (London Biodiversity Partnership, 2007b).

Table E.1 Protected and notable plant species recorded provided by Kent & Medway Biological Records Centre to south of the River Thames within 2km of the Order Limits

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Kent Rare Plant Register	Kent BAP
Ajuga chamaepitys	Ground-pine	26		Y	Y	EN (GB)	NR	Y	
Anacamptis pyramidalis	Pyramidal Orchid	106	CITES						
Battarrea phalloides	Sandy stiltball	2			Y				
Bupleurum tenuissimum	Slender hare's-ear	2			Y	VU (GB)	NS	Y(RF)	
Carex divisa	Divided sedge	10			Y	VU (GB)	NS	Y(RF)	
Centaurea cyanus	Cornflower	4	CITESD		Y			Y	Kent RDB1

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Kent Rare Plant Register	Kent BAP
Cephalanthera damasonium	White helleborine	25			Y	VU (GB)		Y(RF)	
Clinopodium acinos	Basil thyme	7			Y				
Cyclamen coum	Eastern Sowbread	2	CITES						
Cyclamen hederifolium	Sowbread	4	CITES						
Dactylorhiza fuchsii	Common Spotted-orchid	70	CITES						
Dactylorhiza fuchsii x praetermissa = D. x grandis	Dactylorhiza fuchsii x praetermissa = D. x grandis	1	CITES						
Dactylorhiza praetermissa	Southern marsh-orchid	1	CITES						
Ephemerum cohaerens	Clustered earth-moss	2			Y		NR		
Epipactis helleborine	Broad-leaved helleborine	15	CITES						
Epipactis purpurata	Violet helleborine	4	CITES						
Euphrasia pseudokerneri	Chalk eyebright	2			Y				

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Kent Rare Plant Register	Kent BAP
Filago pyramidata	Broad-leaved cudweed	30		Y	Y	EN (GB)	NS	Y	Kent RDB1
Galanthus nivalis	Snowdrop	10	CITES						
Galanthus plicatus subsp. byzantinus	Galanthus plicatus subsp. byzantinus	1	CITES						
Gnaphalium luteoalbum	Jersey cudweed	1		Y					Ken RDB1
Gymnadenia conopsea	Common fragrant-orchid	1	CITES						
Himantoglossum hircinum	Lizard orchid	10		Y					
Hordeum marinum	Sea barley	8			Y	VU (GB)	NS	Y(RF)	
Hyacinthoides non-scripta	Bluebell	91		Y					
Hypopitys monotropa	Yellow bird's-nest	4			Y				
Hypopitys monotropa subsp.hypophege	1			Y		NS			
Juniperus communis	Juniper	4			Y				

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Kent Rare Plant Register	Kent BAP
Malva setigera	Rough marsh-mallow	12		Y					
Menyanthes trifoliata	Bogbean	1							
Muscari neglectum	Grape-hyacinth	1			Y		NR		
Neottia nidus-avis	Bird's-nest orchid		CITES						
Neottia ovata	Common twayblade	14	CITES						
Oenanthe fistulosa	Tubular water-dropwort	3			Y				
Hyacinthoides non-scripta	Bluebell	91		Y					
Hypopitys monotropa	Yellow bird's-nest	4			Y				
Hypopitys monotropa subsp.hypophege		1			Y		NS		
Juniperus communis	Juniper	4			Y				
Malva setigera	Rough marsh-mallow	12		Y					
Menyanthes trifoliata	Bogbean	1							

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Kent Rare Plant Register	Kent BAP
Muscari neglectum	Grape-hyacinth	1			Y		NR		
Neottia nidus-avis	Bird's-nest orchid		CITES						
Neottia ovata	Common twayblade	14	CITES						
Oenanthe fistulosa	Tubular water-dropwort	3			Y				
Ophrys apifera	Bee orchid	45	CITES						
Ophrys insectifera	Fly orchid	23			Y	VU (GB)		Y(RF)	
Orchis anthropophora	Man orchid	50			Y	EN (GB)	NS	Y(RF)	
Orchis mascula	Early-purple orchid	19	CITES						
Orchis purpurea	Lady Orchid	30	CITES						
Platanthera chlorantha	Greater Butterfly-orchid	1	CITES						
Ruscus aculeatus	Butcher's-broom	14	HSD5						
Salvia pratensis	Meadow Clary	10		Y					
Sarcosphaera coronaria	Violet crowncup	2			Y				

Table E.2 Protected and notable plant species records provided by Essex Wildlife Trust Biological Records Centre to north of the River Thames within 2km of the Order Limits

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status
Adiantum capillus-veneris	Maidenhair fern	1					NS
Anacamptis morio	Green-winged orchid	1	CITESB			VU (ENG)	
Anacamptis pyramidalis	Pyramidal orchid	28	CITESB				
Anthemis arvensis	Corn chamomile	2				EN (ENG)	
Brassica oleracea	Wild cabbage	1					NS
Briza media	Quaking-grass	1				NT (ENG)	
Bupleurum tenuissimum	Slender hare's-ear	1			Y	VU (GB)	NS
Buxus sempervirens	Box	2				DD (GB)	NR
Calluna vulgaris	Heather	1				NT (ENG)	
Cardamine bulbifera	Coralroot	2					NS
Cardamine impatiens	Narrow-leaved bitter-cress	1				NT (GB)	NS
Carex divisa	Divided sedge	2			Y	VU (GB)	NS
Carex elata	Tufted-sedge	1				NT (ENG)	
Carlina vulgaris	Carline thistle	16				NT (ENG)	
Cerastium arvense	Field mouse-ear	2				NT (ENG)	
Chamaemelum nobile	Chamomile	1			Y	VU (GB)	
Chenopodium chenopodioides	Saltmarsh goosefoot	1					NS
Cichorium intybus	Chicory	7				VU (ENG)	

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status
Clinopodium calamintha	Lesser calamint	10				VU (GB)	NS
Colchicum autumnale	Meadow saffron	1				NT (ENG)	
Cyclamen hederifolium	Sowbread	1	CITESB				
Dactylorhiza fuchsii	Common spotted-orchid	39	CITESB				
Dactylorhiza praetermissa	Southern marsh-orchid	1	CITESB				
Epipactis phyllanthes	Green-flowered helleborine	8	CITESB				NS
Epipactis phyllanthes var. degenera		5	CITESB				NS
Euphorbia	Spurge	2	CITESB				
Euphorbia amygdaloides	Wood spurge	6	CITESB				
Euphorbia amygdaloides subsp. amygdaloides	Spurge	1	CITESB				
Euphorbia amygdaloides subsp. robbiae	Spurge	1	CITESB				
Euphorbia characias	Mediterranean spurge	1	CITESB				
Euphorbia cyparissias	Cypress spurge	1	CITESB				
Euphorbia helioscopia	Sun spurge	2	CITESB				
Euphorbia lathyris	Caper spurge	2	CITESB				
Euphorbia oblongata	Balkan spurge	1	CITESB				
Euphorbia peplus	Petty spurge	5	CITESB				
Euphorbia serrulata	Upright spurge	1	CITESB				NR
Festuca longifolia	Blue fescue	1					NR
Filago pyramidata	Broad-leaved cudweed	2		Y	Y	EN (GB)	NS

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status
Filago vulgaris	Common cudweed	7				NT (GB)	
Fragaria vesca	Wild strawberry	19				NT (ENG)	
Fritillaria meleagris	Fritillary	1					NS
Galanthus sp.	Snowdrop	1	CITESB				
Galanthus nivalis	Snowdrop	2	CITESB				
Galanthus plicatus subsp. plicatus	Snowdrop	1	CITESB				
Genista tinctoria	Dyer's greenweed	1				VU (ENG)	
Gentianella amarella subsp. amarella	Autumn gentian	2				NT (ENG)	
Groenlandia densa	Opposite-leaved pondweed	1				VU (GB)	
Helianthemum nummularium	Common rock-rose	3				NT (ENG)	
Hordeum marinum	Sea barley	2			Y	VU (GB)	NS
Hyacinthoides non-scripta	Bluebell	58		Y			
Hypochaeris glabra	Smooth cat's-ear	2				VU (GB)	
Iberis amara	Wild candytuft	1			Y	VU (GB)	NS
Inula crithmoides	Golden-samphire	1					NS
Knautia arvensis	Field scabious	4				NT (ENG)	
Lathyrus aphaca	Yellow vetchling	2				VU (GB)	NS
Lepidium latifolium	Dittander	3					NS
Meconopsis cambrica	Welsh poppy	2					NS
Melampyrum pratense	Common cow-wheat	1				NT (ENG)	

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status
Mentha arvensis	Corn mint	2				NT (ENG)	
Moenchia erecta	Upright chickweed	1				VU (ENG)	
Monotropa hypopitys	Yellow bird's-nest	3			Y	EN (GB)	
Muscari neglectum	Grape-hyacinth	1			Y	VU (GB)	NR
Neottia nidus-avis	Bird's-nest orchid	14	CITESB			VU (ENG)	
Neottia ovata	Common twayblade	23	CITESB				
Nymphoides peltata	Fringed water-lily	1					NS
Onobrychis viciifolia	Sainfoin	9				VU (ENG)	
Ononis spinosa	Spiny restharrow	1				NT (ENG)	
Ophrys apifera	Bee orchid	18	CITESB				
Orchis anthropophora	Man orchid	21	CITESB		Y	EN (GB)	NS
Oxalis acetosella	Wood-sorrel	6				NT (ENG)	
Pinus sylvestris	Scots pine	10					NS
Plantago media	Hoary plantain	7				NT (ENG)	
Poa infirma	Early meadow-grass	1					NS
Polemonium caeruleum	Jacob's-ladder	1					NR
Polygonatum odoratum	Angular solomon's-seal	1					NS
Polypogon monspeliensis	Annual beard-grass	5					NS
Potentilla argentea	Hoary cinquefoil	6				NT (GB)	
Potentilla erecta	Tormentil	3				NT (ENG)	

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status
Puccinellia rupestris	Stiff saltmarsh-grass	1					NS
Pyrola rotundifolia subsp. rotundifolia	Wintergreen	1				VU (ENG)	NS
Rhinanthus angustifolius	Greater yellow-rattle	1		Y			NR
Ruscus aculeatus	Butcher's-broom	5	HSD5				
Salvia verbenaca	Wild clary	4				NT (ENG)	
Sanicula europaea	Sanicle	2				NT (ENG)	
Scilla autumnalis	Autumn squill	2					NS
Silene flos-cuculi	Ragged-robin	1				NT (ENG)	
Sorbus domestica	Service-tree	1				CR (GB)	NR
Tilia platyphyllos	Large-leaved lime	1					NS
Trifolium glomeratum	Clustered clover	4					NS
Trifolium ochroleucon	Sulphur clover	2				VU (ENG)	NS
Veronica officinalis	Heath speedwell	3				NT (ENG)	

Table E.3 Protected and notable plant species records provided by Essex Field Club to north of the River Thames within 2km of the Order Limits

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Essex BAP	Essex Red List
Achillea ptarmica	Sneezewort	5							Y
Adiantum capillus-veneris	Maidenhair fern	1					NS		
Agrostemma githago	Corncockle	4				WL (ENG/GB)			Y
Agrostis canina	Velvet bent	4							Y
Agrostis vinealis	Brown bent	6							Y
Aira caryophyllea	Silver hair-grass	3							Y
Allium schoenoprasum	Chives	7					NS		Y
Althaea officinalis	Marsh-mallow	1				NT (ENG)	NS		Y
Anacamptis morio	Green-winged orchid	18	CITES			NT (GB)			
Anacamptis pyramidalis	Pyramidal orchid	26							Y
Anthemis arvensis	Corn chamomile	3				EN (GB)			Y
Anthyllis vulneraria subsp. vulneraria	Kidney vetch	4							Y
Apera spica-venti	Loose silky-bent	1				NT (GB)			Y

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Essex BAP	Essex Red List
Arenaria serpyllifolia subsp. serpyllifolia	Thyme-leaved sandwort	1				WL (ENG/GB)			
Arum italicum subsp. italicum	Italian lords-and-Ladies	10							Y
Asplenium adiantum-nigrum	Black spleenwort	5							Y
Asplenium ruta-muraria	Wall-rue	7							Y
Astragalus glycyphyllos	Wild liquorice	5							Y
Athyrium filix-femina	Lady-fern	7							Y
Atropa belladonna	Deadly nightshade	3							Y
		2							Y
Battarrea phalloides	Scaley-stalked puffball	1		Y	Y				Y
Betula pubescens subsp. pubescens	Downy birch	3				WL (ENG/GB)			
Blechnum spicant	Hard-fern	4							Y
Briza media	Quaking-grass	14				NT (ENG)			

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Essex BAP	Essex Red List
Bromus hordeaceus subsp. longipedicellatus	Soft-brome	2				WL (ENG/GB)			
Bromus hordeaceus subsp. thominei	Sand soft-brome	1					NS		
Bromus racemosus	Smooth brome	3							Y
Bromus secalinus	Rye brome	3				NT (ENG)	NS		Y
Buxus sempervirens	Box	13				DD (ENG/GB)	NR		
Calluna vulgaris	Heather	5				NT (ENG)			
Campanula glomerata	Clustered bellflower	1							Y
Campanula rotundifolia	Harebell	7				NT (ENG)			Y
									Y
Cardamine bulbifera	Coralroot	1					NS		
Cardamine impatiens	Narrow-leaved bitter-cress	1				NT (ENG)	NS		
Carex divulsa subsp. leersii	Many-leaved sedge	2							Y

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Essex BAP	Essex Red List
Carex filiformis	Downy-fruited sedge						NR		
Carex nigra	Common sedge	1							Y
									Y
Carex paniculata	Greater Tussock-sedge	1							Y
Carlina vulgaris	Carline thistle	15				NT (ENG)			Y
Catapodium rigidum	Fern-grass	50				WL (ENG/GB)			
Centaurium pulchellum	Lesser centaury	2							Y
Cerastium semidecandrum	Little mouse-ear	18							Y
Chaenorhinum minus	Small Toadflax	1							Y
Chamaemelum nobile	Chamomile				Y	VU (GB)			
Chenopodium chenopodioides	Saltmarsh goosefoot	4					NS		Y
									Y
									Y
Chenopodium glaucum	Oak-leaved Goosefoot	2				VU (GB)	NS		
Cichorium intybus	Chicory	43				VU (ENG)			

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Essex BAP	Essex Red List
Cirsium acaule	Dwarf thistle	1							Y
Clinopodium ascendens	Common calamint	1							Y
Clinopodium calamintha	Lesser calamint	22					NS		Y
Cochlearia anglica	English scurvygrass	6							Y
Colchicum autumnale	Meadow saffron	1				NT (GB)			
Convallaria majalis	Lily-of-the-valley	6							Y
Crepis biennis	Rough hawk's-beard	11							Y
Cyclamen hederifolium	Sowbread	5	CITES						
Cynodon dactylon	Bermuda-grass	1				WL (ENG/GB)	NR		Y
Cynoglossum officinale	Hound's-tongue	5				NT (ENG)			Y
Cyperus longus	Galingale	6				NT (ENG/GB)	NS		Y
Dactylorhiza incarnata subsp. incarnata	Early marsh-orchid	7				WL (ENG/GB)			
									Y

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Essex BAP	Essex Red List
Dactylorhiza praetermissa	Southern marsh-orchid	2							Y
Dipsacus pilosus	Small Teasel	1							Y
Dryopteris carthusiana	Narrow buckler-Fern	4							Y
Eleocharis acicularis	Needle Spike-rush	1							Y
Epilobium lanceolatum	Spear-leaved willowherb	2							Y
Epilobium obscurum	Short-fruited willowherb	21							Y
Epilobium palustre	Marsh willowherb	1							Y
Epipactis helleborine	Broad-leaved helleborine	6							Y
Epipactis palustris	Marsh Helleborine	3	CITES			NT			Y
Equisetum fluviatile	Water Horsetail	3							Y
Erodium moschatum	Musk stork's-bill	26							Y
Euphorbia hyberna	Irish spurge	2	CITES			VU (ENG/GB)	NR		
Filago minima	Small cudweed	3				NT (ENG)			

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Essex BAP	Essex Red List
Filago vulgaris	Common cudweed	28				NT (ENG/GB)			
Filipendula vulgaris	Dropwort	1							Y
Fragaria vesca	Wild strawberry	23				NT (ENG)			
Frangula alnus	Alder buckthorn	5							Y
Fritillaria meleagris	Fritillary	2				WL (ENG/GB)	NS		Y
Fumaria capreolata	White Ramping-fumitory	1							Y
Fumaria densiflora	Dense-flowered fumitory	1							Y
Galium odoratum	Woodruff	4							Y
									Y
Ganoderma resinaceum	A bracket fungus	1							Y
Geranium columbinum	Long-stalked crane's-bill	1							Y
Geranium pratense	Meadow Crane's-bill	9							Y
Geranium purpureum	Little-robin	1					NR		Y

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Essex BAP	Essex Red List
Geranium rotundifolium	Round-leaved crane's-bill	63							Y
Geranium sanguineum	Bloody crane's-bill	3				NT (ENG)			Y
Geum rivale	Water Avens	2							Y
Glebionis segetum	Corn marigold	3				VU (ENG/GB)			
Gnaphalium luteoalbum	Jersey cudweed	9		Y					Y
Gymnadenia conopsea	Chalk fragrant-orchid	9							Y
Helianthemum nummularium	Common rock-rose	1				NT (ENG)			Y
Helleborus foetidus	Stinking hellebore	8					NS		Y
Hieracium aggregatum	Aggregate-headed hawkweed	1					NR		
Hieracium lepidulum	Irregular-toothed hawkweed	2							Y
									Y
Hieracium scotostictum	Dappled hawkweed	1							Y

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Essex BAP	Essex Red List
Himantoglossum hircinum	Lizard orchid	1	CITES	Y			NS		
Hippophae rhamnoides	Sea-buckthorn	9					NS		Y
Hottonia palustris	Water-violet	1				VU (ENG/GB)			Y
Hyacinthoides non-scripta	Bluebell	65		Y					
Hydrocharis morsus-ranae	Frogbit	2				VU (ENG/GB)			Y
Hyoscyamus niger	Henbane	1				VU (ENG/GB)			Y
Hypericum pulchrum	Slender St John's-wort	1							Y
Hypochaeris glabra	Smooth cat's-ear	1				VU (ENG/GB)			Y
Inula conyzae	Ploughman's-spikenard	33							Y
Inula crithmoides	Golden-samphire	16					NS		Y
Inula helenium	Elecampane	1				NT (ENG)			
Juncus subnodulosus	Blunt-flowered Rush	1							Y

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Essex BAP	Essex Red List
Juniperus communis	Juniper	1			Y	NT (ENG)			
Knautia arvensis	Field scabious	17				NT (ENG)			
Lathraea clandestina	Purple toothwort	3							Y
Lathraea squamaria	Toothwort	1							Y
Lathyrus aphaca	Yellow vetchling	5				VU (ENG/GB)	NS		Y
Lathyrus hirsutus	Hairy vetchling	1				VU (ENG)	NR		Y
Lathyrus linifolius	Bitter-vetch	1							Y
Lathyrus sylvestris	Narrow-leaved everlasting-pea	1							Y
Lepidium campestre	Field pepperwort	15				NT (ENG)			
Lepidium latifolium	Dittander	25					NS		Y
Limonium vulgare	Common sea-lavender	2				NT (ENG)			
Linum bienne	Pale flax	3							Y
Lotus angustissimus	Slender bird's-foot-trefoil	1				NT (ENG/GB)	NS		
Luzula sylvatica	Great wood-rush	1							Y

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Essex BAP	Essex Red List
Lysimachia vulgaris	Yellow loosestrife	4							Y
Lythrum portula	Water-purslane	1							Y
Meconopsis cambrica	Welsh poppy	3					NS		Y
Medicago polymorpha	Toothed medick	4					NS		Y
Medicago sativa	Alfalfa	2							Y
Mentha arvensis	Corn mint	6				NT (ENG)			
Mentha suaveolens	Round-leaved mint	1					NS		
Menyanthes trifoliata	Bogbean	5	CITES						Y
Mycelis muralis	Wall lettuce	1							Y
Myosotis discolor	Changing forget-me-not	5							Y
Myosotis ramosissima	Early forget-me-not	45							Y
Neottia nidus-avis	Bird's-nest orchid	3	CITES			NT (ENG)			Y
Nepeta cataria	Cat-mint	2				VU (ENG/GB)			Y
Oenanthe lachenalii	Parsley water-dropwort	2				NT (ENG)			

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Essex BAP	Essex Red List
Oenanthe pimpinelloides	Corky-fruited water-dropwort	21							Y
Onobrychis viciifolia	Sainfoin	9				VU (ENG/GB)			
Ononis spinosa	Spiny restharrow	3				NT (ENG)			
Ophioglossum vulgatum	Adder's-tongue	2							Y
Ophrys apifera	Bee orchid	26	CITES						
Orchis anthropophora	Man orchid	8			Y	EN (ENG/GB)	NS		Y
Origanum vulgare	Wild marjoram	19							Y
Orobanche crenata	Bean broomrape	4							Y
Osmunda regalis	Royal fern	1							Y
Oxalis acetosella	Wood-sorrel	3				NT (ENG)			
Papaver argemone	Prickly poppy	4				EN (ENG)			Y
Parapholis incurva	Curved hard-grass	7					NS		Y
Parietaria officinalis	Eastern pellitory-of-the-wall	2							Y

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Essex BAP	Essex Red List
Persicaria bistorta	Common bistort	2							Y
Pinus sylvestris	Scots pine	28				WL (ENG)	NS		
Plantago media	Hoary plantain	18				NT (ENG)			
Poa bulbosa	Bulbous meadow-grass	3					NS		Y
Poa compressa	Flattened meadow-grass	3							Y
Poa infirma	Early meadow-grass	3							Y
Polemonium caeruleum	Jacob's-ladder	1					NS		
Polycarpon tetraphyllum	Four-leaved allseed	5					NR		Y
Polygonatum odoratum	Angular solomon's-seal	1					NS		Y
Polygonum rurivagum	Cornfield knotgrass	2							Y
Polypodium vulgare	Polypody	1							Y
Polypogon monspeliensis	Annual beard-grass	16					NS		Y
Polystichum aculeatum	Hard shield-fern	3							Y

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Essex BAP	Essex Red List
Polystichum setiferum	Soft shield-fern	12							Y
Populus nigra subsp. betulifolia	Black poplar	12						Y	Y
Potamogeton trichoides	Hairlike pondweed	1							Y
Potentilla anglica	Trailing tormentil	1							Y
Potentilla argentea	Hoary cinquefoil	8				NT (ENG/GB)			Y
Potentilla fruticosa	Shrubby cinquefoil	1				NT (ENG/GB)	NR		
Puccinellia rupestris	Stiff Saltmarsh-grass								Y
Pyrola rotundifolia subsp. rotundifolia	Round-leaved Wintergreen	1				NT (ENG/GB)			
Ranunculus flammula	Lesser spearwort	6				VU (ENG)			
Ranunculus parviflorus	Small-flowered buttercup	2							Y
Rhinanthus minor	Yellow-rattle	26							Y
Rhinanthus minor subsp. minor	Yellow-rattle	9				WL (ENG/GB)			

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Essex BAP	Essex Red List
Rhodotus palmatus	Rosy veincap	5							Y
Ribes nigrum	Black currant	7							Y
Rorippa amphibia	Great yellow-cress	1							Y
Rosa micrantha	Small-flowered sweet-briar	2							Y
Rosa sherardii	Sherard's downy-rose	1							Y
Rumex hydrolapathum	Water dock	2							Y
Rumex maritimus	Golden dock	2							Y
Rumex palustris	Marsh dock	3							Y
Rumex pulcher	Fiddle dock	8							Y
Ruscus aculeatus	Butcher's-broom	13	HSD5						
Sagina maritima	Sea pearlwort	1							Y
Salicornia fragilis	Yellow glasswort	1					NS		
Salicornia obscura	Glaucous glasswort	2				DD (ENG/GB)	NR		
Salix aurita	Eared willow	1							Y
Salix pentandra	Bay willow	2							Y
Salix purpurea	Purple willow	5							Y

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Essex BAP	Essex Red List
Salvia verbenaca	Wild glary	9				NT (ENG)			Y
Samolus valerandi	Brookweed	1							Y
Sanicula europaea	Sanicle	1				NT (ENG)			
Saxifraga granulata	Meadow saxifrage	6							Y
Saxifraga tridactylites	Rue-leaved saxifrage	4							Y
Scabiosa columbaria	Small scabious	2							Y
Scilla autumnalis	Autumn squill	1					NS		Y
Scirpus sylvaticus	Wood club-rush	1							Y
Scleranthus annuus	Annual knawel	2			Y	EN (ENG/GB)			
Senecio vulgaris	Groundsel	148				WL (ENG)			
Silaum silaus	Pepper-saxifrage	2							Y
Solidago virgaurea	Goldenrod	1							Y
Sorbus domestica	Service-tree	1				CR (ENG/GB)	NR		
Sparganium emersum	Unbranched bur-reed	1							Y

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Essex BAP	Essex Red List
Spergula arvensis	Corn spurrey	2				VU (ENG/GB)			
Spiranthes spiralis	Autumn lady's-tresses	18				NT (ENG/GB)			Y
Stellaria pallida	Lesser chickweed	46							Y
Stratiotes aloides	Water-soldier	14					NR		Y
Succisa pratensis	Devil's-bit scabious	7				NT (ENG)			Y
Symphytum officinale subsp. officinale	Common comfrey	13				WL (ENG/GB)			
Thalictrum minus subsp. minus	Lesser meadow-rue	3							Y
Thymus polytrichus subsp. britannicus	Wild thyme	2							Y
Thymus pulegioides	Large thyme	1							Y
Thyselium palustre	Milk-parsley	3				VU (ENG/GB)			
Tilia platyphyllos	Large-leaved lime	8					NS		Y

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Essex BAP	Essex Red List
Trifolium fragiferum	Strawberry clover	22				VU (ENG/GB)			
Trifolium glomeratum	Clustered clover	14					NS		Y
Trifolium ochroleucon	Sulphur clover	4				VU (ENG/GB)	NS		Y
Trifolium ornithopodioides	Bird's-foot clover	1							Y
Trifolium resupinatum	Reversed clover	1							Y
Trifolium squamosum	Sea clover	10					NS		Y
Trifolium subterraneum	Subterranean clover	4							Y
Ulex minor	Dwarf gorse	3							Y
Ulmus plotii	Plot's elm	1							Y
Urtica dioica subsp. galeopsifolia	Stingless nettle	6				WL (ENG/GB)			
Utricularia australis	Bladderwort	1							Y
Valeriana officinalis	Common valerian	1							Y
Valerianella locusta	Common cornsalad	9							Y

Scientific name	Common name	Number of records within 2km of the Order Limits	EU designation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	Essex BAP	Essex Red List
Verbena officinalis	Vervain	17							Y
Veronica officinalis	Heath speedwell	11				NT (ENG)			
Veronica serpyllifolia subsp. humifusa	Thyme-leaved speedwell	1				NT (ENG/GB)			
Vicia bithynica	Bithynian vetch	1							Y
Vicia lutea	Yellow-vetch	1				NT (ENG/GB)	NS		Y
Vicia orobus	Wood bitter-vetch	1				NT (ENG/GB)	NS		
Vicia sativa subsp. nigra	Narrow-leaved vetch	16				WL (ENG/GB)			
Vicia sativa subsp. sativa	Common vetch	118				WL (ENG/GB)			
Viscum album	Mistletoe	6							Y

Table E.4 Protected and notable plant species records provided by Greenspace Information for Greater London to north of the River Thames within 2km of the Order Limits

Scientific name	Common name	Number of records within 2km of the Order Limits	EU design ation	WCA 1981 Sch 8	NERC Act 2006 section 41	Red List (GB or England)	GB status	BAP Priority London	Local Species of Conservation Concern
Angelica archangelica	Garden angelica	2				RE (GB)			
Tilia platyphyllos	Large-leaved lime	40					NS		

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