

Great North Road Solar and Biodiversity Park

Environmental Statement

Volume 4 – Technical Appendices

Technical Appendix A8.3 – Habitats and Vegetation Baseline

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A8.3.1 INTRODUCTION

A8.3.1.1 INTRODUCTION

- 1 This Technical Appendix (TA) presents the methods and results of baseline habitat and vegetation studies in relation to the Great North Road Solar and Biodiversity Park (the Development). The Development is bounded by the Order Limits.
- 2 The scope of the studies was determined through a combination of a Preliminary Ecological Appraisal (PEA), comprising a desk study and site walkover, and professional judgement with reference to prevailing good practice.
- 3 This TA includes no valuation or assessment of potential effects. These aspects are presented in the Environmental Statement (ES) Chapter 8 Ecology and Biodiversity [EN010162/APP/6.2.8].
- 4 This TA is supported by the following appendices:
 - Appendix A – Figures;
 - Appendix B – Species Lists by Habitat; and
 - Appendix C – Summary of Local Records Centre Rare Plant Records.

A8.3.1.2 LEGISLATION AND POLICY

A8.3.1.2.1 Legislation

- 5 The Wildlife and Countryside Act 1981¹ (as amended), makes it an offence to pick or uproot any wild plant listed in Schedule 8 of the Act. Section 14 of the Wildlife and Countryside Act prohibits the introduction into the wild of any species of plant listed in Schedule 9, principally invasive non-native species.
- 6 The NERC Act 2006² places a duty on local planning authorities to have due regard for biodiversity and nature conservation during their operations and thus ensures that biodiversity is a key consideration in the planning process. The Act also establishes a list of species and habitats of principal importance ('Priority' Species and Habitats) for the conservation of biodiversity.

A8.3.1.2.2 Policy

- 7 Sections 192a and 192b (respectively) of the National Planning Policy Framework (NPPF)³ state that plans should:
 - 8 *"Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity⁶⁸; wildlife corridors and stepping stones that connect them; and areas identified by*

¹ Available at: <https://www.legislation.gov.uk/ukpga/1981/69> [accessed 13/05/2025]

² Available at: <https://www.legislation.gov.uk/ukpga/1981/69/contents> [accessed 13/05/2025]

³ Available at:

https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf
https://assets.publishing.service.gov.uk/media/669a25e9a3c2a28abb50d2b4/NPPF_December_2023.pdf [accessed on 13/05/2025]

- national and local partnerships for habitat management, enhancement, restoration or creation⁶⁹; and*
- 9 *promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity”*
 - 10 Core Policy 12 of the Newark and Sherwood Local Development Framework Core Strategy⁴ state that the District Council will:
 - 11 *“Expect proposals to take into account the need for continued protection of the District’s ecological, biological and geological assets. With particular regard to sites of international, national and local significance, Ancient Woodlands and species and habitats of principal importance identified in Section 41 of the Natural Environment and Rural Communities Act 2006 and in the Nottinghamshire Local Biodiversity Action Plan;*
 - 12 *Seek to secure development that maximises the opportunities to conserve, enhance and restore biodiversity and geological diversity and to increase provision of, and access to, green infrastructure within the District;*
 - 13 *Promote the appropriate management of features of major importance for wild flora and fauna;”.*

A8.3.1.2.3 Conservation Status

- 14 The Nottinghamshire Local Biodiversity Action Plan (LBAP)⁵ refers to the local-level implementation of the UK Biodiversity Action Plan (UKBAP) principles and identifies aims and objectives and conservation targets for priority species and habitats at a local level. The Nottinghamshire LBAP identifies individual Species Action Plans (SAPs) for species with specific requirements where Habitat Action Plans (HAPs) are not sufficient to ensure their conservation.
- 15 The Nottinghamshire Rare Plant Register⁶ lists a number of rare, scarce or threatened plant species in Vice County⁷ 56 Nottinghamshire, which covers the Order Limits.

A8.3.1.3 AIMS AND OBJECTIVES

- 16 The aim of the study was to provide a robust set of baseline habitats and vegetation data against which the effects of the Development could be assessed. A combination of desk study and field surveys have been undertaken to meet this aim by addressing the following objectives:
 - Classify and map the habitats within the Study Area; and
 - Identify potential priority habitats and notable plant species.

⁴ Available at: <https://www.newark-sherwooddc.gov.uk/amendedcorestrategy/> [accessed 13/05/2025]

⁵ Nottinghamshire BAG (1998) Local Biodiversity Action Plan. Available at: <https://nottsbag.org.uk/lbap/> [accessed 13/05/2025]

⁶ Wood, D. and Woods, M. (2021). The Rare and Scarce Vascular Plants of Nottinghamshire Vice County 56.

⁷ A historical geographic area now used for biological recording.

- 17 Notable plant species include those that are: legally protected; recognised as rare and scarce; priorities for conservation; or invasive non-native species controlled by legislation.

A8.3.1.4 STUDY AREA

- 18 The Study Area for surveys includes all land within the Order Limits (Figure A8.3.1).

A8.3.2 METHODS

A8.3.2.1 DESK STUDY

- 19 A desk study was undertaken to obtain pre-existing ecological data and information relevant to the assessment. The desk study included:
- An assessment of aerial imagery and Ordnance Survey mapping;
 - A search of the MAGIC website⁸ for priority habitats within the Study Area and from within a 2 km of the Order Limits; and
 - A request (in January 2024) to the Nottinghamshire Biological and Geological Records Centre (NBGRC) for records of protected or notable plant species within 2 km of the Order Limits.
- 20 Two consented developments identified in the cumulative short-list (TA A2.1 Cumulative Assessment Stages 1 and 2 [EN010162/APP/6.4.2.1]) are within the Order Limits and will be considered as part of the operational baseline. Consequently, the proposed 'as built' landscape designs, rather than current, pre-development baselines, have been used to provide baseline habitat data for these areas have been integrated into the baseline for the Development without distinguishing them. The two developments are:
- A Battery Energy Storage System (BESS) near Staythorpe [22/01840/FULM]; and
 - A cable connection between the BESS and the National Grid Staythorpe Electricity Substation [24/01261/FULM].
- 21 Data and information for these schemes have been sourced from the following planning documents:
- Staythorpe Cable Route Biodiversity Net Gain Statement and Assessment⁹; and
 - Staythorpe Landscape and Ecology Management Plan (LEMP)¹⁰.

A8.3.2.2 SURVEY

- 22 Habitats and vegetation were surveyed in accordance with both Phase 1 habitat survey¹¹ and UK Habitat Classification V2.0¹² (UKHab) methods, but

⁸ Available at: www.magic.gov.uk [accessed 13/05/2025]

⁹ Biodiverse Consulting Limited (2024). Staythorpe Cable Route Biodiversity Net Gain Statement and Assessment (v2.0).

¹⁰ Tir Collective Limited (2024). Staythorpe Landscape and Ecology Management Plan (LEMP) (rev. 3).

¹¹ Joint Nature Conservation Committee [JNCC] (2010). Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit. JNCC, Peterborough.

¹² UKHab Ltd (2023). UK Habitat Classification Version 2.0. Available at: <https://www.ukhab.org> [accessed 13/05/2025]

all results are presented in the UKHab classification. A Phase 1 habitat survey of much of the Study Area was conducted between January and October 2022 and surveys of the remaining areas was undertaken in June to August 2023 and August and September 2024 (Table A8.3.1).

Table A8.3.1: Survey Dates (week commencing)

Phase 1 habitat	UKHab
01/02/2021	05/06/2023
19/04/2021	03/07/2023
24/01/2022	03/08/2023
31/01/2022	01/09/2023
07/02/2022	26/08/2024
21/03/2022	02/09/2024
18/04/2022	09/09/2024
09/05/2022	16/09/2024
10/10/2022	23/09/2024

- 23 UKHab is a relatively new habitat classification and has become more widely adopted since the initiation of habitat surveys in 2022, largely because it provides the necessary data to populate the Defra biodiversity metric¹³, but also because it provides a finer level of detail and more readily identifies priority habitats.
- 24 The two methods classify habitats in different ways but it is possible to translate between them using the UKHab correspondence relationship spreadsheets, recorded information about structure and species composition, and professional judgment. In addition, the majority of habitats in the Study Area are common and widespread which facilitates a relatively straightforward translation.
- 25 Some of the 2022 surveys were undertaken outside the optimal survey season, generally recognised as April to September, and therefore some plants will not have been evident and habitat classifications and condition assessments potentially less accurate. However, the majority of habitats in the agricultural landscape are relatively common and widespread and can be identified with a high degree of confidence regardless of the time of year that they were surveyed. Furthermore, surveys undertaken in the optimal survey period across all years provide data from which it is possible to make reliable inferences about habitats across the Study Area. These surveys also included revisiting areas surveyed at sub-optimal times to validate earlier results.
- 26 Watercourses which classify as Rivers and Streams were subject to River Condition Assessment (RCA) surveys in 2024 using the Modular River Physical (MoRPh)¹⁴ survey methodology to assess condition.

¹³ Available at: <https://www.gov.uk/guidance/biodiversity-metric-calculate-the-biodiversity-net-gain-of-a-project-or-development> [accessed 13/05/2025]

¹⁴ Gurnell, A. and Shuker, L. (2022) The MoRPh Survey Technical Reference Manual.

A8.3.3 RESULTS

A8.3.3.1 DESK STUDY

A8.3.3.1.1 Priority Habitats

- 27 The desk study identified several priority habitats in the Study Area although most of them are not based on field surveys and so they are considered to be potential priority habitats until confirmed otherwise. The priority habitats are shown in Figure A8.3.2 and include: Good Quality Semi-Improved Grassland; Coastal and Floodplain Grazing Marsh; Deciduous Woodland; and Wood-pasture and Parkland. These areas were subjected to UKHab survey to determine their value and potential to qualify as priority habitats.
- 28 Arable Field Margins are a Habitat of Principal Importance and included in the Nottinghamshire Farmland Habitat Action Plan and, although records were not returned by the desk study, are likely to present throughout the Study Area.
- 29 The wider landscape, outside the Order Limits, includes a range of priority habitats including: Coastal and Floodplain Grazing Marsh, Lowland Meadows, Good Quality Semi-Improved Grassland, Reedbeds, Lowland Fen, Deciduous Woodland, Wood-pasture and Parkland, Traditional Orchard, and Open Mosaic Habitats on Previously Developed Land. Areas of Ancient and Semi-Natural Woodland and Ancient Replanted Woodland border the Study Area and are patchily distributed in the wider area.

A8.3.3.1.2 Nottinghamshire Rare Plant Register

- 30 The NBGRC returned 827 records of rare, scarce or threatened plant species listed in the Nottinghamshire Rare Plant Register. A summary of the records is provided in Appendix C.
- 31 Records of ten species of rare, scarce or threatened plants were returned from within the Study Area from within the last ten years and these are highlighted in Appendix C. The majority of these species appear to originate from field margins and watercourses, although the spatial accuracy of the records is variable. Of particular note is the record of the endangered and locally scarce shepherd's-needle *Scandix pecten-veneris* recorded in a field margin between Field 162 and 164 in 2015 and 2018. None of the rare plants were recorded during the baseline surveys.

A8.3.3.1.3 Invasive Non-Native Species

- 32 The NBGRC returned 124 records of Schedule-9 invasive plant species. Species include: water fern *Azolla filiculoides*, New Zealand pygmyweed *Crassula helmsii*, giant hogweed *Heracleum mantegazzianum*, Himalayan balsam *Impatiens glandulifera* and Japanese knotweed *Fallopia japonica*. Only one record of Himalayan balsam, originated from within the Study Area

A8.3.3.2 SURVEY

- 33 Only the common, vernacular names of species are used in habitat descriptions below. If necessary, scientific names are presented to help disambiguation, but otherwise are provided only in the Appendices.

A8.3.3.2.1 Priority Habitats

- 34 Lowland Mixed Deciduous Woodland was confirmed to be present within the Study Area, however all other potential priority habitats identified in the desk study did not meet the UKBAP definitions of the respective habitat types. Arable Field Margins were widespread throughout the Order Limits in various forms, typically as a form of Modified Grassland and subject to inter-annual changes in distribution subject to the prevailing agricultural land use.

A8.3.3.2.2 UKHab

- 35 Habitats are shown in Figure A8.3.1. Field number references are provided to facilitate cross referencing between the figure and the habitat descriptions below. Despite its large extent, the Study Area comprised a relatively limited range of habitats and exhibited a degree of homogeneity at a landscape scale. A summary of the habitats is provided in Table A8.3.2.

Table A8.3.2: Summary of UKHab Habitats

UKHab Habitat Type ¹⁵	Area (ha)
Other Neutral Grassland (g3c)	31.9
Modified Grassland (g4)	182.9
Lowland Mixed Deciduous Woodland (w1f)	18.9
Other Broadleaved Woodland (w1g)	4.8
Other Woodland Mixed (w1h)	6.1
Other Coniferous Woodland (w2c)	0.2
Dense Scrub (h3)	5.2
Cereal Crops (c1c)	1,481.7
Bare Ground (510)	1.7
Built-up Areas and Gardens (u1)	32.1
Other Standing Water; Ponds (r1g; 42)	0.3

A8.3.3.2.3 Other Neutral Grassland (g3c)

- 36 Other Neutral Grassland (31.9 ha) was recorded mostly around arable field boundaries, in larger or more established set-aside areas, along road verges, as well as being recorded in less improved areas along watercourses and ditches. The Other Neutral Grassland areas also included areas of Tall Forb vegetation.
- 37 Other Neutral Grassland around field boundaries comprised abundant grass species included perennial rye-grass, false-oat grass and cock's-foot, with frequently occurring species including Yorkshire fog, bent, crested dog's tail and meadow foxtail, as well as occasional wild oat and creeping soft-grass.

¹⁵ UKHab codes are provided in parentheses.

- 38 Forb species frequently recorded included bird's-foot trefoil, willowherbs, yarrow, red campion, white campion, nipplewort, red dead-nettle, white dead-nettle, creeping cinquefoil, speedwells and vetches.
- 39 Scattered scrub was noted in areas and included bramble, dog-rose, goat willow and hawthorn.
- 40 Other Neutral Grassland encompassing less modified grass verges along roads. These habitats were typically coarse in structure and comprised Yorkshire fog, cock's-foot, false oat-grass, perennial rye-grass, crested dog's tail and timothy with forbs including creeping buttercup, willowherbs and occasional bird's-foot trefoil, yarrow, red campion, common knapweed and meadow vetchling. Sward height and forb coverage varied across the habitat with species richness typically 6–7 species per m², though with up to 12 species per m² recorded along less improved road verges.
- 41 Unmanaged or low-input areas of grassland were recorded around field boundaries or as larger fields (e.g., Fields 27 and 294). These areas of grassland were typically species-poor with a tall sward and a composition comprising coarse grass species such as false oat-grass and cock's-foot, with common nettle, common hogweed, docks, common ragwort, as well as invading scrub including blackthorn and bramble and locally dominant areas of tall forb vegetation.
- 42 Tall Forb (16) vegetation was common around field boundaries and in set-aside areas and was typically species-poor and characterised by species including willowherbs, common nettle, broad-leaved dock, white campion, red campion, green alkanet and cow parsley.

A8.3.3.2.4 Modified Grassland (g4)

- 43 This habitat (totalling 182.9 ha) comprised predominantly permanent pasture and arable field boundaries. Species richness was low, typically less than 6 per m², and with fewer than 9 per m² throughout. Grasses dominated the habitat with forb coverage 10–30%.
- 44 The habitat comprised mostly short, livestock-grazed pasture dominated by rye-grasses with frequent creeping thistle, broad-leaved dock, dandelion and white dead-nettle. Other species, recorded occasionally but never present together, included hogweed, white clover, Yorkshire fog, common mouse-ear, common nettle, timothy, crested dog's tail, false-oat grass, common ragwort, cow parsley, fat-hen and common mallow.
- 45 The Modified Grassland recorded along road verges was typically dominated by perennial rye-grass and Yorkshire fog with forbs including dove's-foot crane's-bill, creeping buttercup and white clover. Species richness was typically 4–5 per m².
- 46 Modified Grassland included localised patches of Tall Forbs comprising dominant, single-species patches of species such as common nettle.
- 47 The desk study identified an area of Coastal and Floodplain Grazing Marsh priority habitat near Maplebeck, centred on Field 68. This comprised sheep-grazed Modified Grassland fields, with an average species richness of 6 per m², with occasional standing water and rush-dominated areas, but lacking any ditches. Species included abundant perennial rye-grass, white

clover and crested dog's-tail, with occasional Yorkshire-fog, cock's-foot and timothy. The grassland had limited bare ground and a grass to forb ratio that varied depending on white clover coverage. The grassland does not meet the definitions or criteria of Floodplain Grazing Marsh^{16,17}.

A8.3.3.2.5 Lowland Mixed Deciduous Woodland (w1f)

- 48 Most woodland has been excluded from the Order Limits and so the total area of Lowland Mixed Deciduous Woodland habitat was relatively limited (18.9 ha). This habitat comprised established semi-natural broadleaved woodland parcels adjacent to watercourses and scattered throughout the arable-dominated landscape.
- 49 The discrete areas of Lowland Mixed Deciduous Woodland along Ossington Road within the Study Area (Field 598) had a fairly open canopy, approximately 20 m high, with a scrubby understorey and dense scrub habitat around the boundaries. The canopy comprised predominantly common lime, sycamore, beech and horse-chestnut. The understorey comprised wild privet and snowberry with hawthorn, blackthorn and bramble.
- 50 Areas of Lowland Mixed Deciduous Woodland along The Beck watercourse (running south-east from Field 218) comprised a canopy of mature ash and willow trees approximately 25 m high with occasional hawthorn in the understorey and nettle and false oat-grass abundant in the field layer.
- 51 Woodland along the watercourses at the Study Area boundary (Field 457; Hagley's Dumble) comprised willow, ash and occasional alder and pedunculate oak, and had a relatively diverse ground layer comprising cow parsley, ground elder, ivy, lesser celandine, bluebell, lords-and-ladies, greater stitchwort, male fern, yellow archangel, white dead-nettle and garlic mustard.
- 52 Several discrete Lowland Mixed Deciduous Woodland parcels were recorded in the south-west corner of the Study Area (Fields 264, 265 and 460), situated along farm tracks and bound by hawthorn hedgerows. The canopy was up to 30 m high and dominated by ash with birch, pedunculate oak, sycamore, field maple and horse chestnut, and with an understorey predominantly comprising blackthorn, with goat willow, holly, hawthorn, elder, hazel, dog-rose and cherry laurel. Ground flora comprised frequent bramble, common nettle, and ivy, with occasional cow parsley, cleavers, curled dock and lords and ladies.
- 53 Field 458 comprised a small boundary strip of Lowland Mixed Deciduous Woodland along a ditch and included abundant mature field maple and sycamore with occasional pedunculate oak, blackthorn, dogwood and hazel.
- 54 The woodland to the north of Field 180, to the west of the East Coast Main Line, comprised abundant poplar and sycamore, with occasional horse chestnut, field maple, wild cherry and ash, with an established understory comprising occasional elder, holly, hazel, blackthorn and hawthorn, and

¹⁶ Maddock, A. (ed) 2008 UK Biodiversity Action Plan Priority Habitat Descriptions: Coastal and Floodplain Grazing Marsh, in UK Biodiversity Action Plan; Priority Habitat Descriptions. Available at: <https://data.jncc.gov.uk/data/82b0af67-d19a-4a89-b987-9dba73be1272/UKBAP-BAPHabitats-07-CoastFloodGrazingMarsh.pdf> [accessed on 12/01/2026].

¹⁷ Available at: <https://floodplainmeadows.org.uk/> [accessed on 12/01/2026]

frequent bramble. The ground flora included abundant common ivy, frequent common nettle, occasional herb-Robert. Other ground flora were relatively rarely encountered and included red campion, wood avens, enchanter's-nightshade, broad-leaved willowherb and ground-ivy. The woodland was relatively open with some fallen and standing deadwood.

- 55 Throughout the Study Area, the typical canopy height of Lowland Mixed Deciduous Woodland Areas ranged from 15 to 35 m with species typically including pedunculate oak, sycamore, ash and field maple, although common lime, poplar, wild cherry and horse chestnut were sometimes present.
- 56 The typical woodland understorey comprised hawthorn, elder, willows, blackthorn, dog-rose, hazel, elm and holly, with some regeneration of canopy species evident. The understorey vegetation was particularly well established around boundaries and in woodlands with a more open canopy. Wild privet and invasive species such as snowberry and cherry laurel were recorded as locally frequent to abundant.
- 57 Ground flora typically included common nettle and ivy, often accompanied by cleavers, hogweed, cock's-foot, dandelion, creeping bent, red campion, creeping buttercup, broad-leaved dock, white dead-nettle and bramble.

A8.3.3.2.6 Other Broadleaved Woodland (w1g)

- 58 This habitat (totalling 4.8 ha) included areas of plantation and secondary woodland, many of which were bounded by hedgerows, and was recorded predominantly as discrete parcels scattered throughout the arable landscape, as well as being recorded along watercourses and roads.
- 59 The Other Broadleaved Woodland areas had relatively uniform age structures indicating their plantation origins.
- 60 Woodland canopies predominantly comprised semi-mature trees. The most frequently recorded canopy tree species comprised pedunculate oak, sycamore, lime and ash, with occasional areas dominated by willow, and with occasional conifers including Scots pine, larch and spruce. Understorey species included hawthorn, elder, hazel and dog-rose. Bramble and cherry laurel was frequent throughout some woodlands. The ground flora was typically dominated by common nettle and cleavers and other species included ivy, hogweed, cock's-foot, dandelion, creeping bent, red campion, creeping buttercup, spear thistle, white dead-nettle and wood avens.

A8.3.3.2.7 Other Woodland Mixed (w1h)

- 61 This habitat (totalling 6.1 ha) comprised woodland parcels in which neither broadleaved nor coniferous species were dominant.
- 62 A larger patch of Other Woodland Mixed was identified within the network of Lowland Mixed Deciduous Woodland in the north of the Study Area (Field 551) but differed by having a uniform age structure with areas dominated by conifer species indicating that the woodland was plantation.
- 63 Scots pine, field maple and lime were the most frequently recorded canopy species and others included birch, sycamore, beech, white poplar and elm. The understorey comprised species such as hawthorn, elder and wild privet.

Ground flora were dominated by common nettle and cleavers with occasional hogweed, ivy, false oat-grass and creeping bent.

A8.3.3.2.8 Other Coniferous Woodland (w2c)

- 64 This habitat was represented by a small area (0.2 ha) of plantation woodland in the south-east of the Study Area (Field 34). The woodland was dominated by closed-canopy sitka spruce with little ground flora present. Bramble scrub was noted frequently with occasional blackthorn.

A8.3.3.2.9 Dense Scrub (h3)

- 65 Scrub habitats (totalling 5.2 ha) included areas of Mixed Scrub (h3h) and Bramble Scrub (h3d) which had colonised around fields, road and railway boundaries and ponds.
- 66 Bramble Scrub was dominated by bramble and accompanied by a variety of common forbs including common nettle, white dead-nettle, garlic mustard, red dead-nettle, dandelion and self-heal.
- 67 Mixed Scrub included areas dominated by hawthorn and blackthorn, sometimes with dog-rose and ash, as well as areas of willow scrub composed of goat willow and osier.

A8.3.3.2.10 Cereal Crops (c1c)

- 68 Cereal Crops were the most extensive habitat (1,477.7 ha) and comprised mostly wheat, barley, and oilseed rape, with occasional maize, legume and cover crops. This habitat also included recently ploughed and drilled fields as well as post-harvest crops, such as wheat stubble. The majority of the fields were bounded by native hedgerows and variable-width grass margins.
- 69 Post-harvest and fallow areas comprised bare ground with patchy coverage of typical arable species including groundsel, scentless mayweed, common poppy and broad-leaved willowherb.
- 70 A large area of potential Wood-pasture and Parkland priority habitat was identified by the Desk Study (Fields 151, 152 and 155) towards the north of the Order Limits. The part of the Wood-pasture and Parkland within the Order Limits is entirely Cereal Crops (rather than pasture) with trees noted only in field boundaries, and so does not meet the criteria for or contribute to this priority habitat.

A8.3.3.2.11 Bare Ground (510)

- 71 Bare Ground (totalling 1.7 ha) was present in the form of unsealed areas of land frequented by farm traffic around farmyards and field tracks. This habitat is characterised by a near-absence of plants.

A8.3.3.2.12 Built-up Areas and Gardens (u1)

- 72 This habitat (totalling 32.1 ha) included residential and farm properties, roads and other built infrastructure.

A8.3.3.2.13 Other Standing Water; Ponds (r1g; 42)

- 73 There are 11 ponds in the Order Limits. Ponds were present in a range of situations including areas of set-aside land, field boundaries,

woodland/scrub, and gardens and residential areas. The ponds varied in size from < 30 m² to approximately 1,000 m². The total area of pond habitat within the Study Area was 0.26 ha. Evidence of waterfowl was evident in many. Summary descriptions are provided based on the prevailing habitats in which ponds were recorded.

- 74 Modified Grassland fields and margins included two ponds in Field 218 and one pond in Field 235 within the Coastal and Floodplain Grazing Marsh habitat. These comprised shallow ponds dominated by hard rush and grazed by sheep within pastures. A large pond was present to the east of the Study Area in a set-aside area of an arable field (Field 16), no aquatic or emergent vegetation were recorded but marginal vegetation included rushes, creeping buttercup and yellow iris.
- 75 Ponds were present in woodlands in Field 265. This pond was in a clearing in the woodland and therefore heavily vegetated with rushes and grasses, as well as bramble scrub surrounding the perimeter.
- 76 Field 391, either side of the railway line, included three small ponds associated with scrub. These ponds tended to be heavily shaded by the surrounding scrub, resulting in a lack of macrophytes and a build-up of organic material. The southwestern pond in Field 391 was less shaded and supported abundant reeds and rushes.

A8.3.3.2.14 Line of Trees (33)

- 77 Tree lines were recorded frequently along field boundaries and watercourses, many of which are likely to have been remnant hedgerows. Tree ages ranged from young and recently planted to mature, and scattered scrub was often associated with this habitat. The total length of habitat was 7.8 km. A wide range of tree species was recorded including ash, horse chestnut, elm, elder, common lime, field maple, hawthorn, blackthorn, cherry, hazel, sycamore, alder, poplar and willows.

A8.3.3.2.15 Hedgerows

- 78 Hedgerows were predominantly intact and managed although many were defunct or gappy in places. Hedgerows totalled 147.3 km and are divided into the categories in Table A8.3.3. The majority of the hedgerows were well-established, dense, and were 1.5–5.0 m in height and up to 4.0 m wide. Hawthorn was the dominant species throughout, but some hedgerows were dominated by blackthorn and field maple. Mature trees, predominantly ash and pedunculate oak, were frequently recorded within hedgerows throughout the Study Area with hedgerows often transitioning into tree lines and woodland.

Table A8.3.3: Summary of Hedgerows

UKHab Hedgerow Type	Length (km)
Native Hedgerow (h2a6)	76.26
Native Hedgerow with Trees (h2a6 11)	30.07
Native Hedgerow – Associated with Bank or Ditch (h2a6 50)	6.09

UKHab Hedgerow Type	Length (km)
Native Hedgerow with Trees – Associated with Bank or Ditch (h2a6 11 50)	2.23
Native Species-Rich Hedgerow (h2a5)	18.53
Native Species-Rich Hedgerow with Trees (h2a5 11)	11.17
Native Species-Rich Hedgerow – Associated with Bank or Ditch (h2a5 50)	0.77
Native Species-Rich Hedgerow with Trees – Associated with Bank or Ditch (h2a5 11 50)	0.46
Non-Native and Ornamental Hedgerow (h2b)	<0.1
Total	145.6

A8.3.3.215.1 Native Hedgerow (h2a6)

- 79 This habitat (totalling 80.7 km) was dominated by typical hedgerow species including hawthorn and blackthorn and had < 5 woody species recorded per 30 m section, and so are generally species-poor. Hedgerows were present across a range of land uses from tall, wide and often less managed hedgerows associated with agricultural fields to more frequently managed native hedgerows often associated with gardens and comprising species such as beech.
- 80 Other species noted included dogwood, hazel, elm, pedunculate oak, alder, holly, field maple, elder and ash. Bramble and climbers such as ivy, clematis, black bryony and white bryony were frequently noted.

A8.3.3.215.2 Native Hedgerow with Trees (11)

- 81 This habitat (totalling 30.5 km) included native hedgerows in which ≥ 2 prominent trees were present within 20 m sections over most of the length of the hedgerow. The hedgerow trees recorded spanned a range of age classes from young to mature and were up to 30 m in height. Tree species most commonly recorded included pedunculate oak and ash, with sycamore, field maple, elm, crab apple, whitebeam, and common lime occasionally recorded.

A8.3.3.215.3 Native Hedgerow – Associated with Bank or Ditch (50)

- 82 This habitat (totalling 7.6 km) included native hedgerows present along the banks of watercourses, ditches and hedge banks. Hawthorn and blackthorn dominated these hedgerows, and other woody species were also frequently recorded including bramble, field maple, dogwood and dog-rose. The associated ditches and banks were predominantly dry and dominated by grasses and tall forbs, wetter sections of ditch are discussed within the watercourses section of this report.

A8.3.3.215.4 Native Species-Rich Hedgerow (h2a5)

- 83 This habitat (totalling 30.4 km) included hedgerows in which ≥ 5 woody species were recorded. Woody species included hawthorn, blackthorn, apple, dogwood, hazel, elm, pedunculate oak, alder, holly, field maple, wild privet, rose, elder, damsons and ash. Climbers including bramble, clematis,

black bryony, white bryony, ivy and honeysuckle were frequent amongst the woody species. Typical ground flora included hedge bindweed, common nettle, great willowherb and mugwort.

A8.3.3.2.15.5 Non-Native and Ornamental Hedgerow (h2b)

- 84 This habitat (totalling 0.1 km) included hedgerows in which >20% of the canopy cover comprised non-native woody species. These hedgerows were predominantly recorded around private gardens and species included Leyland cypress and cherry laurel.

A8.3.3.2.16 Watercourses

A8.3.3.2.16.1 Rivers and Streams (r2)

- 85 Several rivers and streams flow through the Study Area, the most notable of which are The Beck (around Field 218), Moorhouse Beck (around Fields 23 and 27) and Pingley Dyke (Field 300), all of which have confluences with the River Trent beyond the eastern boundary of the Study Area. The Beck and Moorhouse Beck are considered to be of moderate ecological status, and the Pingley Dyke of good ecological status, according to Environment Agency data¹⁸. The Study Area also runs parallel to a section of the River Trent (around Field 130) in South Muskham.
- 86 The stretches of The Beck to the east of the Study Area were assessed as being in moderate condition according to the MoRPh survey. The watercourse had an average width of 3–5 m. Trace amounts of Himalayan balsam were recorded along much of the length with an extensive area (>33% cover) recorded along The Beck to the west of Field 207. In the west of the Study Area, The Beck was also 3–5 m wide and was assessed as being in moderate condition. Habitat types along The Beck included tall forbs, Mixed Scrub and with small areas of Other Neutral Grassland.
- 87 Moorhouse Beck in the north of the Study Area was assessed as being in moderate condition according to the MoRPh survey, with a width of 1–3 m. Moorhouse Beck extended through a diverse mix of Arable Fields, Modified and Other Neutral Grassland, and Lowland Mixed Deciduous Woodland.
- 88 The stretch of the River Trent parallel to the Study Area was assessed as being in moderate condition according to the MoRPh survey. The stretch was approximately 50 m wide with a 4 m bank height. Coverage of Himalayan balsam along this stretch was 5–33% for five of the 15 modules. The northern boundary was largely treeless except for occasional crack willow, with tall forbs and grasses making up the vegetation.
- 89 The total length of Other Rivers and Steams within or immediately adjacent to the Study Area was 9.1 km. This total length comprised many smaller tributaries and streams and encompassed a range of types from culverts and canalised sections to more semi-natural stretches with pools and fast-flowing sections. Many watercourses supported narrow strips of riparian woodland and trees comprising willows, alder, ash, sycamore and hazel.
- 90 The majority of the bankside vegetation comprised coarse grassland consisting of species such as false-oat grass, cock's-foot, perennial rye-

¹⁸ Available at: <https://environment.data.gov.uk/catchment-planning> [accessed 13/05/2025]

grass and Yorkshire fog with tall forbs and rushes including willowherb, common nettle and meadowsweet. Scrub habitat was frequent along watercourses with typical species including bramble, goat willow, dog-rose and hawthorn.

- 91 Emergent and marginal macrophytes frequently recorded included willowherbs, hemlock, yellow iris, sweet-grasses, burweed, and greater reed mace. Limited submerged or floating aquatic vegetation was recorded along the rivers and streams, though occasional floating sweet-grass, brooklime, common duckweed and fool's watercress were noted.

A8.3.3.2.16.2 Ditch (50)

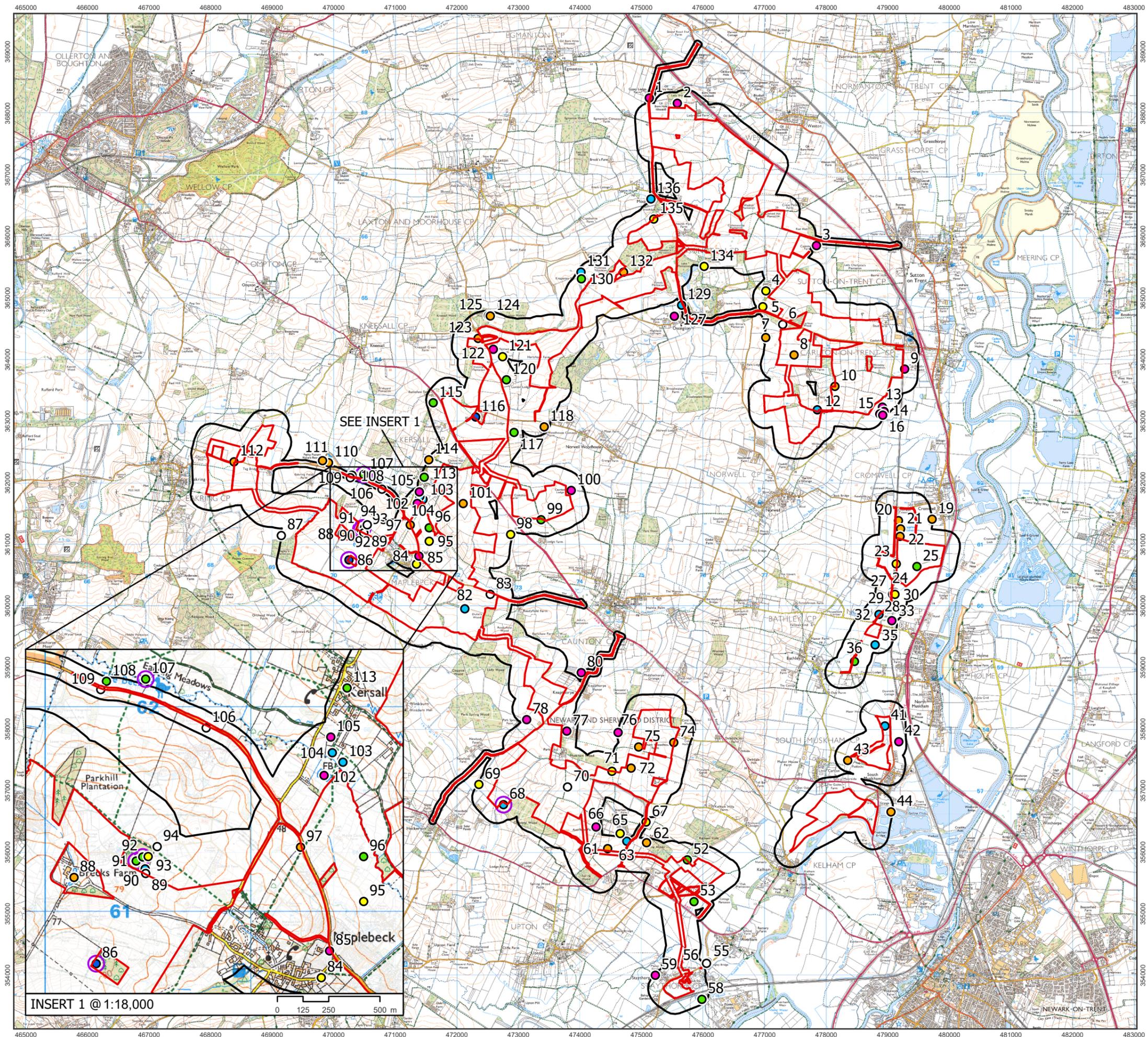
- 92 Wet ditches, which comprised either running or standing water were widespread (total length = 37.3 km). Most appeared to be only seasonally inundated and tended to be colonised by grasses and ruderal plant species such as common nettle, cleavers, great willowherb and red campion with occasional areas of abundant duckweed and blanket weed in areas of open water. Bramble-dominated scrub was frequently recorded around the boundaries of ditches.
- 93 Ditches with more sustained water levels supported a higher diversity of macrophytes including frequent and locally dominant fool's watercress, rushes, burweed, greater reedmace, bittersweet, great willowherb and common reed, and with occasional or frequent rosebay willowherb, false fox-sedge, common duckweed and hard rush.

A8.3.3.2.17 Invasive Non-Native Species

- 94 Three invasive non-native plant species were recorded: giant hogweed, Himalayan balsam and Japanese knotweed. Himalayan balsam was identified in several locations along The Beck and the River Trent. A possible stand of Japanese knotweed was identified along Kelham Lane adjacent to the River Trent (Field 302). Giant hogweed was identified in six locations in the north of the Study Area (Field 54).



APPENDIX A – FIGURES



- Order Limits
 - Great Crested Newt Study Area
 - Positive eDNA Result
- HSI Survey Results
- Excellent
 - Good
 - Average
 - Below average
 - Poor
 - N/A
 - No access

1:60,000 Scale @ A3

0 0.5 1 2 km

Ref: 026-ES-A8.7.1 Rev2 | Date: 13/01/2026

Great Crested Newt Survey Results
Figure A8.7.1

Great North Road Solar and Biodiversity Park Environmental Statement

APPENDIX B – SPECIES LISTS BY HABITAT

Other Neutral Grassland

Common Name	Scientific Name
Annual meadow grass	<i>Poa annua</i>
Ash	<i>Fraxinus excelsior</i>
Bent	<i>Agrostis</i> sp.
Bird's-foot trefoil	<i>Lotus corniculatus</i>
Black Medick	<i>Medicago lupulina</i>
Blackthorn	<i>Prunus spinosa</i>
Bramble	<i>Rubus fruticosus</i> agg.
Bristly oxtongue	<i>Helminthotheca echioides</i>
Broad-leaved Dock	<i>Rumex obtusifolius</i>
Broad-leaved Willowherb	<i>Epilobium montanum</i>
Cleavers	<i>Galium aparine</i>
Cock's-foot	<i>Dactylis glomerata</i>
Common Couch	<i>Elymus repens</i>
Common Knapweed	<i>Centaurea nigra</i>
Common Nettle	<i>Urtica dioica</i>
Common ragwort	<i>Jacobaea vulgaris</i>
Common Vetch	<i>Vicia sativa</i>
Cow Parsley	<i>Anthriscus sylvestris</i>
Creeping Bent	<i>Agrostis stolonifera</i>
Creeping Buttercup	<i>Ranunculus repens</i>
Creeping cinquefoil	<i>Potentilla reptans</i>
Creeping soft-grass	<i>Holcus mollis</i>
Creeping Thistle	<i>Cirsium arvense</i>
Crested dog's tail	<i>Cynosurus cristatus</i>
Curled Dock	<i>Rumex crispus</i>
Dandelion	<i>Taraxacum</i> sp.
Dog-rose	<i>Rosa canina</i>
False Oat-grass	<i>Arrhenatherum elatius</i>
Field Bindweed	<i>Convolvulus arvensis</i>
Goat willow	<i>Salix caprea</i>

Common Name	Scientific Name
Great Willowherb	<i>Epilobium hirsutum</i>
Greater Plantain	<i>Plantago major</i>
Green Alkanet	<i>Pentaglottis sempervirens</i>
Groundsel	<i>Senecio vulgaris</i>
Hawthorn	<i>Crataegus monogyna</i>
Hedge Woundwort	<i>Stachys sylvatica</i>
Herb-Robert	<i>Geranium robertianum</i>
Hoary Willowherb	<i>Epilobium parviflorum</i>
Hogweed	<i>Heracleum sphondylium</i>
Italian Rye-grass	<i>Lolium multiflorum</i>
Lesser Burdock	<i>Arctium minus</i>
Lesser Trefoil	<i>Trifolium dubium</i>
Meadow Crane's-bill	<i>Geranium pratense</i>
Meadow fescue	<i>Schedonorus pratensis</i>
Meadow Foxtail	<i>Alopecurus pratensis</i>
Meadow Vetchling	<i>Lathyrus pratensis</i>
Meadowsweet	<i>Filipendula ulmaria</i>
Mugwort	<i>Artemisia vulgaris</i>
Nipplewort	<i>Lapsana communis</i>
Perennial Rye-grass	<i>Lolium perenne</i>
Perforate St John's-wort	<i>Hypericum perforatum</i>
Red Bartsia	<i>Odontites vernus</i>
Red Campion	<i>Silene dioica</i>
Red Clover	<i>Trifolium pratense</i>
Red dead-nettle	<i>Lamium purpureum</i>
Ribwort Plantain	<i>Plantago lanceolata</i>
Rosebay Willowherb	<i>Chamaenerion angustifolium</i>
Rough Meadow-grass	<i>Poa trivialis</i>
Scentless mayweed	<i>Tripleurospermum inodorum</i>
Selfheal	<i>Prunella vulgaris</i>
Smooth Meadow-grass	<i>Poa pratensis</i>
Smooth Sow-thistle	<i>Sonchus oleraceus</i>
Soft-brome	<i>Bromus hordeaceus</i>

Common Name	Scientific Name
Spear Thistle	<i>Cirsium vulgare</i>
Speedwell	<i>Veronica</i> sp.
Star Sedge	<i>Carex echinata</i>
Tall Melilot	<i>Melilotus altissimus</i>
Tansy	<i>Tanacetum vulgare</i>
Timothy	<i>Phleum pratense</i>
Tufted Hair-grass	<i>Deschampsia cespitosa</i>
Tufted Vetch	<i>Vicia cracca</i>
Upright Hedge-parsley	<i>Torilis japonica</i>
Vetch	<i>Vicia</i> sp.
Weld	<i>Reseda luteola</i>
White campion	<i>Silene latifolia</i>
White Clover	<i>Trifolium repens</i>
White dead-nettle	<i>Lamium album</i>
Wild oat	<i>Avena fatua</i>
Wild Teasel	<i>Dipsacus fullonum</i>
Willow	<i>Salix</i> sp.
Willowherb	<i>Epilobium</i> sp.
Wood Small-reed	<i>Calamagrostis epigejos</i>
Yarrow	<i>Achillea millefolium</i>
Yorkshire fog	<i>Holcus lanatus</i>

Modified Grassland

Common Name	Scientific Name
Alsike Clover	<i>Trifolium hybridum</i>
Annual Meadow-grass	<i>Poa annua</i>
Ash	<i>Fraxinus excelsior</i>
Beaked Hawk's-beard	<i>Crepis vesicaria</i>
Blackthorn	<i>Prunus spinosa</i>
Bramble	<i>Rubus fruticosus</i> agg.
Bristly oxtongue	<i>Helminthotheca echioides</i>
Broad-leaved Dock	<i>Rumex obtusifolius</i>
Cleavers	<i>Galium aparine</i>

Common Name	Scientific Name
Cock's-foot	<i>Dactylis glomerata</i>
Common Bent	<i>Agrostis capillaris</i>
Common Ivy	<i>Hedera helix</i>
Common Knapweed	<i>Centaurea nigra</i>
Common mallow	<i>Malva sylvestris</i>
Common mouse-ear	<i>Cerastium fontanum</i>
Common Nettle	<i>Urtica dioica</i>
Common ragwort	<i>Jacobaea vulgaris</i>
Cow Parsley	<i>Anthriscus sylvestris</i>
Creeping Bent	<i>Agrostis stolonifera</i>
Creeping Buttercup	<i>Ranunculus repens</i>
Creeping Cinquefoil	<i>Potentilla reptans</i>
Creeping Thistle	<i>Cirsium arvense</i>
Crested Dog's-tail	<i>Cynosurus cristatus</i>
Curled Dock	<i>Rumex crispus</i>
Daisy	<i>Bellis perennis</i>
Dandelion	<i>Taraxacum</i> sp.
Dove's-foot crane's-bill	<i>Geranium molle</i>
False-oat grass	<i>Arrhenatherum elatius</i>
Fat-hen	<i>Chenopodium album</i>
Field Maple	<i>Acer campestre</i>
Garlic Mustard	<i>Alliaria petiolata</i>
Great Willowherb	<i>Epilobium hirsutum</i>
Greater Burdock	<i>Arctium lappa</i>
Greater Plantain	<i>Plantago major</i>
Hard Rush	<i>Juncus inflexus</i>
Hedge Bindweed	<i>Calystegia sepium</i>
Hoary Willowherb	<i>Epilobium parviflorum</i>
Hogweed	<i>Heracleum sphondylium</i>
Italian Rye-grass	<i>Lolium multiflorum</i>
Jointed Rush	<i>Juncus articulatus</i>
Lesser Burdock	<i>Arctium minus</i>
Lesser Hawkbit	<i>Leontodon saxatilis</i>

Common Name	Scientific Name
Lesser Trefoil	<i>Trifolium dubium</i>
Meadow Crane's-bill	<i>Geranium pratense</i>
Meadow Foxtail	<i>Alopecurus pratensis</i>
Mugwort	<i>Artemisia vulgaris</i>
Pedunculate Oak	<i>Quercus robur</i>
Perennial Rye-grass	<i>Lolium perenne</i>
Pineappleweed	<i>Matricaria discoidea</i>
Red Bartsia	<i>Odontites vernus</i>
Red Campion	<i>Silene dioica</i>
Red Clover	<i>Trifolium pratense</i>
Reed Canary-grass	<i>Phalaris arundinacea</i>
Ribwort Plantain	<i>Plantago lanceolata</i>
Rosebay Willowherb	<i>Chamaenerion angustifolium</i>
Rough Meadow-grass	<i>Poa trivialis</i>
Rush sp.	<i>Juncus</i> sp.
Selfheal	<i>Prunella vulgaris</i>
Shepherd's-purse	<i>Capsella bursa-pastoris</i>
Soft-brome	<i>Bromus hordeaceus</i>
Sorbus sp.	<i>Sorbus</i> sp.
Spear Thistle	<i>Cirsium vulgare</i>
Sycamore	<i>Acer pseudoplatanus</i>
Timothy	<i>Phleum pratense</i>
Tufted Hair-grass	<i>Deschampsia cespitosa</i>
Vetch	<i>Vicia</i> sp.
White Clover	<i>Trifolium repens</i>
White Dead-nettle	<i>Lamium album</i>
Wild Cherry	<i>Prunus avium</i>
Wood Small-reed	<i>Calamagrostis epigejos</i>
Yarrow	<i>Achillea millefolium</i>
Yorkshire fog	<i>Holcus lanatus</i>

Lowland Mixed Deciduous Woodland

Common Name	Scientific Name
Ash	<i>Fraxinus excelsior</i>
Beech	<i>Fagus sylvatica</i>
Blackthorn	<i>Prunus spinosa</i>
Bluebell	<i>Hyacinthoides non-scripta</i>
Bramble	<i>Rubus fruticosus</i> agg.
Broad-leaved dock	<i>Rumex obtusifolius</i>
Cherry laurel	<i>Prunus laurocerasus</i>
Cleavers	<i>Galium aparine</i>
Cock's-foot	<i>Dactylis glomerata</i>
Common Ivy	<i>Hedera helix</i>
Common lime	<i>Tilia x europaea</i>
Common Nettle	<i>Urtica dioica</i>
Cow parsley	<i>Anthriscus sylvestris</i>
Crab apple	<i>Malus sylvestris</i>
Crack willow	<i>Salix fragilis</i>
Creeping bent	<i>Agrostis stolonifera</i>
Creeping buttercup	<i>Ranunculus repens</i>
Curled Dock	<i>Rumex crispus</i>
Dandelion	<i>Taraxacum officinale</i> agg.
Dog-rose	<i>Rosa canina</i>
Dog's Mercury	<i>Mercurialis perennis</i>
Elder	<i>Sambucus nigra</i>
Elm sp.	<i>Ulmus</i> sp.
Field Maple	<i>Acer campestre</i>
Garlic mustard	<i>Alliaria petiolate</i>
Goat Willow	<i>Salix caprea</i>
Great Willowherb	<i>Epilobium hirsutum</i>
Greater stitchwort	<i>Rabelera holostea</i>
Grey Willow	<i>Salix cinerea</i>
Ground elder	<i>Aegopodium podagraria</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Hogweed	<i>Heracleum sphondylium</i>

Common Name	Scientific Name
Holly	<i>Ilex aquifolium</i>
Horse-chestnut	<i>Aesculus hippocastanum</i>
Ivy	<i>Hedera helix</i>
Lesser celandine	<i>Ficaria verna</i>
Lords-and-Ladies	<i>Arum maculatum</i>
Male fern	<i>Dryopteris filix-mas</i>
Pedunculate Oak	<i>Quercus robur</i>
Privet	<i>Ligustrum vulgare</i>
Red campion	<i>Silene dioica</i>
Snowberry	<i>Symphoricarpos albus</i>
Sycamore	<i>Acer pseudoplatanus</i>
Tufted Hair-grass	<i>Deschampsia cespitosa</i>
White dead-nettle	<i>Lamium album</i>
White willow	<i>Salix alba</i>
Wild Privet	<i>Ligustrum vulgare</i>
Wood Avens	<i>Geum urbanum</i>
Yellow archangel	<i>Lamium galeobdolon</i>
Yew	<i>Taxus baccata</i>

Other Broadleaved Woodland

Common Name	Scientific Name
Alder	<i>Alnus glutinosa</i>
Ash	<i>Fraxinus excelsior</i>
Bittersweet	<i>Solanum dulcamara</i>
Black Bryony	<i>Tamus communis</i>
Blackthorn	<i>Prunus spinosa</i>
Bramble	<i>Rubus fruticosus agg.</i>
Bush Vetch	<i>Vicia sepium</i>
Cherry laurel	<i>Prunus laurocerasus</i>
Cleavers	<i>Galium aparine</i>
Cock's-foot	<i>Dactylis glomerata</i>
Common Ivy	<i>Hedera helix</i>
Common lime	<i>Tilia x europaea</i>

Common Name	Scientific Name
Common Nettle	<i>Urtica dioica</i>
Common Whitebeam	<i>Sorbus aria</i>
Crab Apple	<i>Malus sylvestris</i>
Crack willow	<i>Salix fragilis</i>
Creeping bent	<i>Agrostis stolonifera</i>
Creeping buttercup	<i>Ranunculus repens</i>
Curled Dock	<i>Rumex crispus</i>
Dandelion	<i>Taraxacum officinale agg.</i>
Dog-rose	<i>Rosa canina</i>
Elder	<i>Sambucus nigra</i>
Elm	<i>Ulmus sp.</i>
False-brome	<i>Brachypodium sylvaticum</i>
Field Maple	<i>Acer campestre</i>
Garlic Mustard	<i>Alliaria petiolata</i>
Great Willowherb	<i>Epilobium hirsutum</i>
Ground-ivy	<i>Glechoma hederacea</i>
Guelder-rose	<i>Viburnum opulus</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Hedge Mustard	<i>Sisymbrium officinale</i>
Hogweed	<i>Heracleum sphondylium</i>
Holly	<i>Ilex aquifolium</i>
Horse-chestnut	<i>Aesculus hippocastanum</i>
Ivy	<i>Hedera helix</i>
Larch	<i>Larix decidua</i>
Nipplewort	<i>Lapsana communis</i>
Pedunculate Oak	<i>Quercus robur</i>
Poplar	<i>Populus sp.</i>
Red Campion	<i>Silene dioica</i>
Rowan	<i>Sorbus aucuparia</i>
Scots pine	<i>Pinus sylvestris</i>
Silver Birch	<i>Betula pendula</i>
Spear thistle	<i>Cirsium vulgare</i>

Common Name	Scientific Name
Spruce	<i>Picea</i> sp.
Sycamore	<i>Acer pseudoplatanus</i>
Upright Hedge-parsley	<i>Torilis japonica</i>
White Bryony	<i>Bryonia dioica</i>
White dead-nettle	<i>Lamium album</i>
Wild Cherry	<i>Prunus avium</i>
Wild Teasel	<i>Dipsacus fullonum</i>
Willow	<i>Salix</i> sp.
Wood avens	<i>Geum urbanum</i>

Other Woodland Mixed

Common Name	Scientific Name
Cleavers	<i>Galium aparine</i>
Common nettle	<i>Urtica dioica</i>
Creeping bent	<i>Agrostis stolonifera</i>
Beech	<i>Fagus sylvatica</i>
Birch	<i>Betula</i> sp.
Elder	<i>Sambucus nigra</i>
Elm	<i>Ulmus</i> sp.
False oat-grass	<i>Arrhenatherum elatius</i>
Field maple	<i>Acer campestre</i>
Hawthorn	<i>Crataegus monogyna</i>
Hogweed	<i>Heracleum sphondylium</i>
Ivy	<i>Hedera helix</i>
Privet	<i>Ligustrum vulgare</i>
Scots pine	<i>Pinus sylvestris</i>
Sycamore	<i>Acer pseudoplatanus</i>
White poplar	<i>Populus alba</i>

Other Coniferous Woodland

Common Name	Scientific Name
Ash	<i>Fraxinus excelsior</i>
Blackthorn	<i>Prunus spinosa</i>

Common Name	Scientific Name
Bramble	<i>Rubus fruticosus</i> agg.
Dog-rose	<i>Rosa canina</i>
Hedge bindweed	<i>Calystegia sepium</i>
Pedunculate oak	<i>Quercus robur</i>
Sitka spruce	<i>Picea sitchensis</i>
Sorrel	<i>Rumex acetosa</i>

Dense Scrub

Common Name	Scientific Name
Ash	<i>Fraxinus excelsior</i>
Blackthorn	<i>Prunus spinosa</i>
Bramble	<i>Rubus fruticosus</i> agg.
Common Ivy	<i>Hedera helix</i>
Common Nettle	<i>Urtica dioica</i>
Dandelion	<i>Taraxacum officinale</i> agg.
Dog-rose	<i>Rosa canina</i>
Dogwood	<i>Cornus sanguinea</i>
Elder	<i>Sambucus nigra</i>
False Oat-grass	<i>Arrhenatherum elatius</i>
Field Maple	<i>Acer campestre</i>
Garlic mustard	<i>Alliaria petiolate</i>
Goat willow	<i>Salix caprea</i>
Gorse	<i>Ulex europaeus</i>
Hawthorn	<i>Crataegus monogyna</i>
Hoary Willowherb	<i>Epilobium parviflorum</i>
Hogweed	<i>Heracleum sphondylium</i>
Lesser Burdock	<i>Arctium minus</i>
Osier	<i>Salix viminalis</i>
Pedunculate Oak	<i>Quercus robur</i>
Red dead-nettle	<i>Lamium purpureum</i>
Rosebay Willowherb	<i>Chamaenerion angustifolium</i>
Scots Pine	<i>Pinus sylvestris</i>
Self-heal	<i>Prunella vulgaris</i>

Common Name	Scientific Name
White dead-nettle	<i>Lamium album</i>
Wild Teasel	<i>Dipsacus fullonum</i>

Cereal Crops

Common Name	Scientific Name
Annual Meadow-grass	<i>Poa annua</i>
Black Nightshade	<i>Solanum nigrum</i>
Common Cudweed	<i>Filago germanica</i>
Broad-leaved Dock	<i>Rumex obtusifolius</i>
Broad-leaved willowherb	<i>Epilobium montanum</i>
Chamomile	<i>Chamaemelum nobile</i>
Cock's-foot	<i>Dactylis glomerata</i>
Common Field-speedwell	<i>Veronica persica</i>
Common Poppy	<i>Papaver rhoeas</i>
Common Toadflax	<i>Linaria vulgaris</i>
Creeping Bent	<i>Agrostis stolonifera</i>
Creeping Thistle	<i>Cirsium arvense</i>
False Oat-grass	<i>Arrhenatherum elatius</i>
Greater Plantain	<i>Plantago major</i>
Groundsel	<i>Senecio vulgaris</i>
Hedge Mustard	<i>Sisymbrium officinale</i>
Knotgrass	<i>Polygonum aviculare</i>
Perennial Rye-grass	<i>Lolium perenne</i>
Prickly Sow-thistle	<i>Sonchus asper</i>
Scarlet pimpernel	<i>Lysimachia arvensis</i>
Scentless Mayweed	<i>Tripleurospermum inodorum</i>
Shepherd's-purse	<i>Capsella bursa-pastoris</i>
Toad Rush	<i>Juncus bufonius</i>
Willowherb	<i>Epilobium spp.</i>
Yarrow	<i>Achillea millefolium</i>

Other Standing Water; Ponds

Common Name	Scientific Name
Bittersweet	<i>Solanum dulcamara</i>
Brooklime	<i>Veronica beccabunga</i>
Common duckweed	<i>Lemna minor</i>
Common reed	<i>Phragmites australis</i>
Greater reed mace	<i>Typha latifolia</i>
Hard rush	<i>Juncus inflexus</i>
Reed canary grass	<i>Phalaris arundinacea</i>
Soft rush	<i>Juncus effusus</i>
Sweet-grass spp.	<i>Glyceria</i> spp.
Willow sp.	<i>Salix</i> sp.
Willowherb spp.	<i>Epilobium</i> spp.
Yellow iris	<i>Iris pseudacorus</i>

Line of Trees

Common Name	Scientific Name
Alder	<i>Alnus glutinosa</i>
Ash	<i>Fraxinus excelsior</i>
Birch	<i>Betula</i> sp.
Blackthorn	<i>Prunus spinosa</i>
Cherry	<i>Prunus avium</i>
Common lime	<i>Tilia x europaea</i>
Elder	<i>Sambucus nigra</i>
Elm	<i>Ulmus</i> sp.
Field maple	<i>Acer campestre</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Horse chestnut	<i>Aesculus hippocastanum</i>
Pedunculate oak	<i>Quercus robur</i>
Poplar	<i>Populus</i> sp.
Rowan	<i>Sorbus aucuparia</i>
Sycamore	<i>Acer pseudoplatanus</i>
Willow sp.	<i>Salix</i> sp.

Hedgerows

Common Name	Scientific Name
Alder	<i>Alnus glutinosa</i>
Apple	<i>Malus</i> sp.
Ash	<i>Fraxinus excelsior</i>
Black bryony	<i>Dioscorea communis</i>
Blackthorn	<i>Prunus spinosa</i>
Bramble	<i>Rubus fruticosus</i> agg.
Cherry laurel	<i>Prunus laurocerasus</i>
Common nettle	<i>Urtica dioica</i>
Crab apple	<i>Malus</i> sp.
Cypress sp.	<i>Cupressus</i> sp.
Damson	<i>Prunus insititia</i>
Dog-rose	<i>Rosa canina</i>
Dogwood	<i>Cornus sanguinea</i>
Elder	<i>Sambucus nigra</i>
Elm	<i>Ulmus</i> sp.
Field maple	<i>Acer campestre</i>
Great willowherb	<i>Epilobium hirsutum</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Hedge bindweed	<i>Calystegia sepium</i>
Holly	<i>Ilex aquifolium</i>
Honeysuckle	<i>Lonicera periclymenum</i>
Ivy	<i>Hedera helix</i>
Leyland cypress	<i>Cupressus x leylandii</i>
Mugwort	<i>Artemisia vulgaris</i>
Pedunculate oak	<i>Quercus robur</i>
Privet	<i>Ligustrum vulgare</i>
Sycamore	<i>Acer pseudoplatanus</i>
Traveller's Joy	<i>Clematis vitalba</i>
Whitebeam	<i>Sorbus aria</i>
White bryony	<i>Bryonia dioica</i>

Rivers and Streams

Common Name	Scientific Name
Alder	<i>Alnus glutinosa</i>
Ash	<i>Fraxinus excelsior</i>
Bittersweet	<i>Solanum dulcamara</i>
Bramble	<i>Rubus fruticosus</i> agg.
Brooklime	<i>Veronica beccabunga</i>
Burweed	<i>Sparganium</i> spp.
Cock's-foot	<i>Dactylis glomerata</i>
Common duckweed	<i>Lemna minor</i>
Common nettle	<i>Urtica dioica</i>
Dog-rose	<i>Rosa canina</i>
False-oat grass	<i>Arrhenatherum elatius</i>
Floating sweet-grass	<i>Glyceria fluitans</i>
Fool's watercress	<i>Helosciadium nodiflorum</i>
Goat willow	<i>Salix caprea</i>
Greater reed mace	<i>Typha latifolia</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Hemlock	<i>Conium maculatum</i>
Meadowsweet	<i>Filipendula ulmaria</i>
Perennial rye-grass	<i>Lolium perenne</i>
Sweet-grass spp.	<i>Glyceria</i> spp.
Sycamore	<i>Acer pseudoplatanus</i>
Willow sp.	<i>Salix</i> sp.
Willowherb spp.	<i>Epilobium</i> spp.
Yellow iris	<i>Iris pseudacorus</i>
Yorkshire fog	<i>Holcus lanatus</i>

Ditch

Common Name	Scientific Name
Bittersweet	<i>Solanum dulcamara</i>
Bramble	<i>Rubus fruticosus</i> agg.
Burweed	<i>Sparganium</i> spp.

Common Name	Scientific Name
Cleavers	<i>Galium aparine</i>
Common nettle	<i>Urtica dioica</i>
Common reed	<i>Phragmites australis</i>
Fool's watercress	<i>Helosciadium nodiflorum</i>
Great reedmace	<i>Typha latifolia</i>
Great willowherb	<i>Epilobium hirsutum</i>
Red campion	<i>Silene dioica</i>
Rush spp.	<i>Juncus</i> spp.



APPENDIX C – SUMMARY OF LOCAL RECORDS CENTRE RARE PLANT RECORDS

Scientific Name ¹⁹	Common Name	Records	Most Recent Record
<i>Allium oleraceum</i>	Field Garlic	6	19/09/2015
<i>Alnus incana x cordata</i>	Alder hybrid	2	30/10/2013
<i>Anacamptis morio</i>	Green-winged Orchid	7	23/05/2019
<i>Anthemis cotula</i>	Stinking Chamomile	6	28/04/2019
<i>Aquilegia vulgaris</i>	Columbine	9	15/08/2015
<i>Blechnum spicant</i>	Hard-fern	1	24/07/2012
<i>Blitum bonus-henricus</i>	Good King Henry	4	08/06/2013
<i>Brachypodium x cugnacii</i>	Brome hybrid	1	28/07/2014
<i>Briza media</i>	Quaking-grass	16	28/06/2019
<i>Bromus racemosus</i>	Smooth Brome	5	28/07/2015
<i>Bromus secalinus</i> *	Rye Brome	15	23/08/2019
<i>Callitriche truncata</i> *	Short-leaved Water-starwort	10	23/03/2019
<i>Campanula trachelium</i>	Nettle-leaved Bellflower	1	28/04/2019
<i>Carduus x dubius</i>	Thistle hybrid	2	15/08/2015
<i>Carex distans</i>	Distant Sedge	5	16/06/2016
<i>Carex divulsa</i> subsp. <i>divulsa</i>	Grey Sedge	4	16/06/2016
<i>Carex pallescens</i>	Pale Sedge	1	30/05/2012
<i>Catabrosa aquatica</i>	Whorl-grass	18	30/10/2013
<i>Centaurea cyanus</i>	Cornflower	7	09/06/2019
<i>Chenopodium bonus-henricus</i>	Good-King-Henry	2	08/06/2013
<i>Chenopodium glaucum</i>	Oak-leaved Goosefoot	23	24/09/2016
<i>Cichorium intybus</i> *	Chicory	15	09/07/2019
<i>Clinopodium acinos</i>	Basil Thyme	2	19/09/2015
<i>Cystopteris fragilis</i>	Brittle Bladder-fern	5	03/06/2019
<i>Dactylorhiza incarnata</i> subsp. <i>incarnata</i>	Early Marsh-Orchid	12	16/06/2016

¹⁹ Species marked with an asterisk include records from within the Study Area (i.e., within the Order Limits)

Scientific Name ¹⁹	Common Name	Records	Most Recent Record
<i>Epilobium x subhirsutum</i>	Willowherb hybrid	3	22/07/2018
<i>Epilobium interjectum</i>	Willowherb hybrid	1	14/06/2015
<i>Erigeron x huelsenii</i>	Fleabane hybrid	1	08/10/2015
<i>Erysimum cheiri</i>	Wallflower	8	06/06/2014
<i>Euphorbia exigua</i>	Dwarf Spurge	25	25/06/2014
<i>Ficus carica</i>	Fig	2	02/07/2012
<i>Filago germanica*</i>	Common Cudweed	48	27/10/2019
<i>Fumaria muralis</i>	Common Ramping-fumitory	3	02/07/2012
<i>Geranium rotundifolium</i>	Round-leaved Crane's-bill	1	11/06/2015
<i>Glebionis segetum*</i>	Corn Marigold	17	13/07/2018
<i>Hottonia palustris*</i>	Water-violet	26	18/09/2019
<i>Hyoscyamus niger</i>	Henbane	3	23/09/2019
<i>Hypericum androsaemum</i>	Tutsan	6	19/09/2015
<i>Hypochaeris glabra</i>	Smooth Cat's-ear	14	15/08/2018
<i>Juncus compressus</i>	Round-fruited Rush	18	08/07/2019
<i>Knautia arvensis</i>	Field Scabious	18	23/05/2019
<i>Lathyrus linifolius</i>	Bitter-vetch	3	22/05/2019
<i>Lathyrus nissolia</i>	Grass Vetchling	5	03/06/2014
<i>Lepidium campestre</i>	Field Pepperwort	6	22/05/2019
<i>Limosella aquatica</i>	Mudwort	27	15/08/2018
<i>Logfia minima</i>	Small Cudweed	15	15/08/2018
<i>Mentha arvensis</i>	Corn Mint	8	08/07/2019
<i>Myosurus minimus</i>	Mousetail	4	03/05/2018
<i>Narcissus pseudonarcissus ssp. major</i>	Wild Daffodil	1	23/03/2014
<i>Nepeta cataria</i>	Cat-mint	2	19/09/2015
<i>Nymphaea alba</i>	White Water-lily	22	02/10/2015
<i>Oenanthe fistulosa*</i>	Tubular Water-dropwort	28	18/09/2019
<i>Ononis spinosa</i>	Spiny Restharrow	4	11/07/2013
<i>Oxalis acetosella*</i>	Wood-sorrel	22	18/08/2019
<i>Oxybasis glauca</i>	Oak-leaved Goosefoot	28	24/09/2016
<i>Persicaria mitis</i>	Tasteless Water-pepper	87	15/08/2018

Scientific Name ¹⁹	Common Name	Records	Most Recent Record
<i>Polygonatum multiflorum</i> agg.	Solomon's Seal	1	21/05/2014
<i>Polypogon monspeliensis</i>	Annual Beard-grass	8	10/09/2017
<i>Potentilla erecta</i>	Tormentil	11	30/05/2018
<i>Prunus padus</i>	Bird Cherry	2	02/05/2016
<i>Ranunculus flammula</i>	Lesser Spearwort	6	23/06/2017
<i>Ribes alpinum</i>	Mountain Currant	8	16/05/2018
<i>Rumex x heteranthos</i>	Dock hybrid	3	15/08/2018
<i>Salix cinerea</i> subsp. <i>cinerea</i>	Grey Willow	1	11/08/2012
<i>Salix x forbyana</i>	Willow hybrid	5	04/05/2015
<i>Salix x multinervis</i>	Willow hybrid	1	02/10/2015
<i>Salvia verbenaca</i>	Wild Clary	1	17/06/2018
<i>Sanicula europaea</i>	Sanicle	27	19/08/2017
<i>Scandix pecten-veneris</i> *	Shepherd's-needle	24	09/06/2019
<i>Silene flos-cuculi</i> *	Ragged Robin	30	06/07/2019
<i>Silene uniflora</i>	Sea Campion	1	13/05/2019
<i>Spergula arvensis</i>	Corn Spurrey	7	12/11/2018
<i>Spirodela polyrhiza</i>	Greater Duckweed	3	07/09/2013
<i>Stachys x ambigua</i>	Hybrid Woundwort	4	05/09/2013
<i>Succisa pratensis</i>	Devil's-bit Scabious	11	15/08/2018
<i>Tilia platyphyllos</i>	Large-leaved Lime	16	22/05/2019
<i>Triglochin palustris</i>	Marsh Arrowgrass	2	31/05/2016
<i>Valeriana officinalis</i>	Common Valerian	14	08/07/2019
<i>Verbascum nigrum</i>	Dark Mullein	3	19/09/2015
<i>Viola tricolor</i> subsp. <i>tricolor</i>	Wild Pansy	3	05/05/2019