Loddon Garden Village

Technical Appendix 11.6 – Veteran Trees

Prepared on behalf of

University of Reading

Final Report

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23/42-10C

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Loddon Garden Village

Technical Appendix 11.6 – Veteran Trees

Contents

MAPS

Annexes

Loddon Garden Village

Technical Appendix 11.6 – Veteran Trees

1. INTRODUCTION

Scope

1.1 This Technical Appendix supports **Chapter 11 (Biodiversity)** of the Environmental Statement (ES). It sets out the detailed methodologies and results of the survey work undertaken to inform:

- The baseline mapping and evaluation of the veteran trees and other trees of ecological interest supported by the Zone of Influence of the Proposed Development;
- The assessment of likely impacts on veteran and other trees of ecological interest;
- The design of impact avoidance and mitigation measures; and
- The design of biodiversity enhancements for veteran and other trees of ecological interest.

1.2 It is separate to, but should be read in conjunction with, the Arboricultural Impact Assessment (Forbes-Laird Arboricultural Consultancy (FLAC, 2025)) submitted with the planning application.

Site and Development Description

1.3 The Site is a large area of land to the west of Wokingham, between the villages of Shinfield, Arborfield and Sindlesham. It is located outside of the Green Belt and includes the University of Reading's Thames Valley Science Park (TVSP). It is largely made up of agricultural land and grasslands, with pockets of woodland and the River Loddon running through the centre of the Site.

1.4 The description of development for the application is as follows:

"Application for the phased development of a new community at Loddon Garden Village, comprising, in outline:

- *up to 2,800 residential units to include up to 100 custom and self-build plots;*
- *2 primary schools (up to 3 forms of entry) to include early years provision and 1 secondary school (up to 12 forms of entry);*
- *one District Centre, to incorporate up to 11,000m2 of Class E (Commercial, business and Service, to include a food store of around 2,500m2), and Class F (Local Community and Learning);*
- *one Local Centre; to incorporate up to 2,400m2 of Class E;*
- *a Sports Hub to include sports pitches and pavilion space;*
- *up to 4,250m2 of further Class E, Class F, and sui generis development to include commercial, health care and public house;*

- *comprehensive green infrastructure including a Country Park, landscaping and public open space, and ecological enhancement measures;*
- *20 gypsy and traveller pitches;*
- *comprehensive drainage and flood alleviation measures to include Sustainable Urban Drainage Systems (SUDS) and engineering measures within Loddon Valley for the River Loddon;*
- *internal road network including spine road with pedestrian and cycle connections and associated supporting infrastructure;*
- *new and modified public rights of way;*
- *associated utilities, infrastructure, and engineering works, including the undergrounding of overhead lines;*
- *Ground reprofiling to accommodate infrastructure, flood alleviation and development parcels;*
- *Up to 0.5ha of land adjoining St Bartholomew's church for use as cemetery;*
- *Electricity substation (up to 1.5ha).*

All matters reserved other than access, incorporating:

- *a new pedestrian, cycle and vehicular access to Lower Earley Way via a new 4th arm to the Meldreth Way roundabout;*
- *a new pedestrian, cycle and vehicular bridge over the M4;*
- *a new pedestrian, cycle and vehicular bridge over the River Loddon;*
- *a new vehicular access to the A327 Reading Road, via a new arm to the Observer Way roundabout;*
- *a new pedestrian, cycle and vehicular access to Thames Valley Science Park;*
- *an initial phase of internal roads with associated drainage, landscape and engineering works and ground reprofiling, between the A327 and the south eastern boundary of the site.*

Application includes full permission for the change of use of 40.4 hectares of agricultural land to Suitable Alternative Natural Greenspace (SANG), 18.35 hectares of SANG link, and provision of Biodiversity Net Gain measures, the demolition and clearance of 20,809 m2 of buildings and structures at the Centre for Dairy Research (CEDAR) and at Hall Farm, the demolition of 3 existing dwellings on Carter's Hill Lane, and the retention of specified buildings at Hall Farm."

Policy and Legislative Context

1.5 Full details of the planning policy and legislation of relevance to ecology and nature conservation in general are included in **Technical Appendix 11.1**, however those of particular relevance to veteran trees are summarised below.

1.6 The definition of what constitutes a 'veteran' tree has been much debated; however those used for this report are the given under the National Planning Policy Framework (NPPF) 2024 and The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024. In both cases, veteran trees are defined as 'Irreplaceable Habitat' though the definitions are slightly different, as set out below.

Legislation

1.7 A minimum 10% net gain in biodiversity, as measured by the Statutory Biodiversity Metric (DEFRA, 2024a,) is now a condition of most types of planning permission in England under the Environment Act 2021 and associated secondary legislation. This is known as Biodiversity Net Gain (BNG).

1.8 The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024 (hereafter BGRR) provide a list in Schedule of irreplaceable habitats, which includes 'ancient and veteran trees', and an associated description in Table 2 of the Schedule, reproduced in **Table 1.1** below.

Table 1.1: Definition of ancient and veteran trees in the BGRR 2024

Habitat	Description
Ancient trees and veteran trees	Ancient and veteran trees can be found as individual trees or collections of trees in any setting.
	Ancient trees have passed beyond maturity into an ancient life stage or are old in comparison with other trees of the same species which exhibit one or more of the following—
	(i) demonstrably great age relative to others of the same species
	(ii) changes to their crown and trunk development indicative of the ancient life stage
	Veteran trees are mature trees that share physical and other characteristics in common with ancient trees, due to their life or environment, but are neither developmentally nor chronologically ancient. All ancient trees are veteran trees, but not all veteran trees are ancient. Veteran and ancient trees which have died are still recognised as such because they retain significant biodiversity value for many decades.
	Veteran trees exhibit one or more of the following—
	(i) significant decay features such as deadwood, hollowing or signs of advanced decay in the trunk or major limbs
	(ii) a large girth, depending on and relative to species, site and management history
	(iii) a high value for nature, especially in hosting rare or specialist fungi, lichens and deadwood invertebrates

1.9 The Regulations and associated guidance require that adverse effects to 'irreplaceable habitat' are minimised and that a bespoke strategy must be agreed with the Local Planning Authority to compensate for any impacts.

Planning Policies and Associated Guidance

National Planning Policy Framework

1.10 The National Planning Policy Framework (NPPF) (2024) sets out the Government's planning policies for England and how they should be applied. With regard to protecting the natural environment, Section 15 of the NPPF requires that planning decisions should enhance the natural environment and provide net gains for biodiversity.

1.11 The main information relevant to veteran trees is under paragraph 186, with additional information in the NPPF Annex 2 Glossary. Paragraph 186 states that:

> *When determining planning applications, local planning authorities should apply the following principles (…)*
>
> > *c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are **wholly exceptional reasons** and a suitable compensation strategy exists (…) [EPR emphasis]*

1.12 The Annex 2 Glossary descriptions of ancient or veteran trees and irreplaceable habitat are as follows:

> *Ancient or veteran tree: A tree which, because of its age, size **and** condition, is of exceptional biodiversity, cultural or heritage value. All ancient trees are veteran trees. Not all veteran trees are old enough to be ancient, but are old relative to other trees of the same species. Very few trees of any species reach the ancient life-stage. [EPR emphasis].*

1.13 Irreplaceable habitat: Habitats which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, considering their age, uniqueness, species diversity or rarity. They include ancient woodland, ancient and veteran trees, blanket bog, limestone pavement, sand dunes, salt marsh and lowland fen.

Guidance from Natural England and Forestry Commission

1.14 Natural England and the Forestry Commission provide 'standing advice' for ancient woodland, ancient trees and veteran trees in their document: Ancient woodland, ancient trees and veteran trees: advice for making planning decisions' published online on 14 January 2024.

1.15 Included in the Guidance is their description of veteran trees:

> *Ancient and veteran trees*
>
> *Ancient and veteran trees can be individual trees or groups of trees within wood pastures, historic parkland, hedgerows, orchards, parks or other areas. They are often found outside ancient woodlands. They are also irreplaceable habitats.*
>
> *Ancient trees*
>
> *An ancient tree is exceptionally valuable. Attributes can include its:*

- *great age*
- *size*
- *condition*
- *biodiversity value as a result of significant wood decay and the habitat created from the ageing process*
- *cultural and heritage value*

Very few trees of any species become ancient.

Veteran trees

A veteran tree may not be very old, but it has significant decay features, such as branch death and hollowing. These features contribute to its exceptional biodiversity, cultural and heritage value.

All ancient trees are veteran trees, but not all veteran trees are ancient. The age at which a tree becomes ancient or veteran will vary by species because each species ages at a different rate.

Keepers of time: ancient and native woodland and trees policy in England

1.16 The 'Keepers of Time' statement (originally published in 2005 and last updated May 2022) updates the government's policy regarding ancient and veteran trees "to recognise the value of England's ancient and native woodlands and ancient and veteran trees. It restates the Government's commitment to evaluate the threats facing these habitats and sets out updated principles and objectives to protect and improve these habitats for future generations."

Local Planning Policy

1.17 The Wokingham Borough Council Adopted Core Strategy: Development Plan Document (January 2010) sets out the framework for the development of the borough, through a series of policies and strategies. Of particular relevance to flora and vegetation is Policy CP7 – Biodiversity, which states:

… Development (…)

*B) Which may harm habitats or species of principal importance in England for nature conservation, **veteran trees** or features of the landscape that are of major importance for wild flora and fauna (including wildlife and river corridors), whether directly or indirectly (…)*

will be only permitted if it has been clearly demonstrated that the need for the proposal outweighs the need to safeguard the nature conservation importance, that no alternative site that would result in less or no harm is available which will meet the need, and;

i) Mitigation measures can be put in place to prevent damaging impacts; or

ii) Appropriate compensation measures to offset the scale and kind of losses are provided."

Implications of Two Descriptions of Veteran Trees

Overview

1.18 The descriptions used to define veteran trees under the NPPF and BGRR are different to each other (see above).

1.19 NPPF veteran trees are, at present, considered to have a higher threshold for selection and this is based on the phrase "…because of its age, size and condition, is of exceptional biodiversity, cultural or heritage value". In contrast, the threshold for BGRR includes mature trees that exhibit one or more of significant decay features, large girth, or high value for nature.

1.20 Given this difference, and the different planning and legislative obligations attached to each category, this report identifies and maps 'NPPF veteran trees' and 'BGRR veteran trees' separately.

1.21 Due to the higher threshold, all NPPF veteran trees are by default also BGRR veteran trees; however not all BGRR veteran trees are NPPF veteran trees.

1.22 For either category – NPPF or BGRR – classifying a tree as a 'veteran', particularly in the early stages of becoming a veteran, includes a certain level of subjective interpretation. This is allowed for in the descriptions of veteran trees in the various legal, policy, and guidance documents listed above. Words and phrases such as '*exceptional*', '*may not be very old*, '*significant decay features*' and '*mature tree*' are not defined; this adds an element of subjective interpretation and thus scope for professional judgement. EPR's methodology for classifying veteran trees is described in more detail in **Section 2**.

Other Trees of Ecological Interest

1.23 Mature trees that were surveyed for veteran status but that did not quite meet EPR's threshold for that status (see **Section 2**) under either the NPPF or BGRR were recorded as 'Other Trees of Ecological Interest' (OTEIs).

1.24 These trees are included in this report in part because of the subjective aspects of the veteran tree classification, and in part because these trees are likely to have an important function in the landscape in supporting the biodiversity associated with veteran trees. They are also likely to form the next generation of veteran trees, and this continuity is important in maintaining the biodiversity supported by the trees at the Site.

EPR Survey and Assessment

1.25 The EPR commission, to survey and assess trees for the Proposed Development began in 2023 and at the time this was done to identify veteran trees as described under the NPPF, according to EPR's survey methodology for NPPF veteran trees at the time. The survey methodology is described in more detail in **Section 2** and **Annex 1**.

1.26 The later introduction (February 2024) of the BGRR veteran tree status and definition required a re-assessment, where possible, of pre-2024 data for BGRR veteran tree status and further surveys to identify additional trees for assessment. The latter made reference to the draft Tree Survey plans and data tables by Forbes-Laird Arboricultural Consultancy (FLAC), discussed

further below, and focused on those trees which were at risk of being impacted by the emerging development proposals.

Collation of Data

1.27 Tree survey work for the Proposed Development has been carried out by both EPR and FLAC. Each survey had different aims and methods, but both shared an objective to identify veteran trees according to the NPPF. The survey areas mostly overlapped but there were areas that FLAC surveyed that EPR did not, and vice versa.

1.28 To present a summary of the understanding of veteran trees in the combined survey areas for evaluation for this report, EPR has collated data from both its work and that from FLAC. The following has been carried out:

- All trees identified by FLAC as NPPF veterans coincide with those identified by EPR and are shown on the relevant maps;
- FLAC provided EPR with a list of the trees that they judged to be BGRR veteran trees, which EPR has taken at face value as EPR surveyed many of these trees prior to the BGRR being published in February 2024. Due to time constraints and in the interests of proportionality, EPR has only resurveyed those trees which are most likely to be impacted by the Proposed Development. FLAC retain the right to re-interpret their data for BGRR veteran tree status; and
- EPR uses its own tree numbering system (as the majority of the EPR surveys were completed prior to FLAC's tree survey). **Annex 2** contains a list of all identified veteran trees and OTEIs with both the EPR and FLAC numbers, for cross-referencing.

Tree Positions

1.29 EPR surveys of tree positions use GPS receivers within mobile phones. These typically are accurate to within +/- 5 to 10m depending on model and reception.

1.30 It is therefore essential to refer to the FLAC arboricultural survey for accurate tree positions. FLAC survey methods enable an accuracy finer than that achievable with hand-held GPS receivers.

2. SURVEY AND ASSESSMENT METHODOLOGY

Introduction

2.1 The approach to ecological impact assessment taken in this report is in line with guidance from the Chartered Institute of Ecology and Environmental Management Guidelines for Ecological Impact Assessment (CIEEM, 2018), as set out in **Technical Appendix 11.2**.

Defining the Zone of Influence

2.2 The area over which the activities associated with the Proposed Development are considered to potentially affect veteran and other trees of ecological interest, the Zone of Influence (ZoI), has been predicted by considering the activities and resultant biophysical changes arising during the construction and operational phases, as summarised below.

Likely Biophysical Changes

2.3 The predicted biophysical changes of relevance to veteran and other trees of ecological interest are as follows:

Activities and Resultant Biophysical Changes During the Construction Phase

- Permanent and/or temporary loss of veteran and other trees of ecological interest due to the erection then removal of temporary fencing, site compounds etc;
- Permanent and/or temporary damage to veteran and other trees of ecological interest through increased levels of human and vehicular activity (e.g. trampling, soil compaction);
- Permanent and/or temporary damage to veteran and other trees of ecological interest and the biodiversity they support due to pollution from dust, chemicals, contaminated water, hydrological changes and/or airborne traffic pollution; and
- Permanent loss of veteran and other trees of ecological interest due to planned vegetation clearance to facilitate the Proposed Development.

Activities and Resultant Biophysical Changes During the Operational Phase

- Permanent and/or temporary damage to veteran and other trees of ecological interest from increased levels of human activity and vehicle movements (e.g. trampling, soil compaction, fire, litter, vandalism, spillages, dog fouling);
- Permanent and/or temporary damage to veteran and other trees of ecological interest due to hydrological changes; and
- Implementation of habitat creation and enhancement measures and long-term management plans.

2.4 Some of the changes that could potentially affect veteran and other trees of ecological interest, such as dust generation, have effects beyond the construction footprint, whilst others are likely to result in more localised changes. With this in mind, the potential ZoI that has been considered within this Appendix includes the Site and the immediately adjacent land.

Desktop Study Methodology

2.5 A biological records search was commissioned from the Thames Valley Environmental Records Centre (TVERC; dated 10/07/24) to gather existing biological records within a 2km radius of the Site, including vascular and non-vascular plant species, lichens, fungi, and any locally designated sites for nature conservation.

2.6 The Woodland Trust's Ancient Tree Inventory was also checked for the records of potential veteran trees within the ZoI, so that these could be ground-truthed.

2.7 A desktop study of the ZoI was carried out to provide physical, biological, and historical information relevant to the trees. The research was based on examining published information and internet resources under the following categories:

- Geographical information held by Multi-Agency Geographic Information for the Countryside (MAGIC);
- Physical Nature of the Site (geology, topography, and hydrology); and
- Landscape and Ecological History.

2.8 Sources consulted included:

- The Multi-Agency Geographic Information for the Countryside (MAGIC);
- The British Geological Survey;
- The Environment Agency;
- Open-source LiDAR imagery;
- Ordnance Survey Drawing 126, dated 1806;
- OS 1 inch to the mile OS map, Sheets 7 and 12, published 1817;
- Enclosure Maps;
- Tithe Maps;
- The 25"/6" to the Mile Ordnance Survey Maps (original issue where available and subsequent revisions, c.1880s-1930s);
- Land Utilisation Survey of Britain c.1937; and
- Aerial imagery from the 1940s onwards.

Field Survey Methodology

Survey Area

2.9 The survey area covered mature trees outside of woodlands within the Site boundary shown on **Map 11.6.1**. As a rule, EPR only surveys for veteran trees on the woodland edge, where the buffer associated with a veteran tree may extend further into the adjacent land than any buffer that is required or recommended for the woodland itself. Exceptions were made where direct loss of woodland – and therefore potentially of veteran trees – was highlighted as a risk during the masterplanning process.

Draft Field Map

2.10 A draft field map showing habitat parcels, hedgerows with trees, and lines of trees mapped during the course of EPR's other habitat and botanical fieldwork (see **Appendices 11.3 Habitats and Landscape and 11.5 Flora and Vegetation**) was prepared in ArcGIS using a combination of the OS MasterMap, LiDAR imagery (DTM and DSM); open-source aerial imagery (ESRI, Google Earth); and landscape history information. Where visible on aerial images, freestanding field trees were added to the draft map to assist with locating these in the field.

Fieldwork

2.11 Surveyors walked along all boundaries and woodland edges to search for mature trees, as well as the individual field trees identified in the desk study work. Upon encountering a mature tree, surveyors initially followed a flowchart to determine whether the tree might have veteran or other tree of ecological interest (OTEI) status – if so, the point was added to the digital field map using GIS software and a detailed survey form was completed. As part of this initial triage process, trees were inspected from all angles (including with binoculars) if possible and girth (breast height) was measured if accessible.

2.12 EPR's standard data collection form for potential veteran and OTEIs is reproduced in **Annex 1**. This includes attributes relating to species, girth, location, tree form, evidence of aging/decay, and evidence of biodiversity. This allows a standardised dataset to be collected for each tree that can be exported to Microsoft Excel for analysis.

Classification

2.13 As mentioned in **Section 1**, the classification of a tree as an NPPF veteran, BGRR veteran or OTEI is largely a matter of professional judgement as the definitions overlap and include words and phrases which leave room for subjective interpretation.

2.14 "Age" is a particularly difficult attribute to assess. Girth measurements are used as a guide, particularly those set out in Lonsdale (2013) which, for example, indicates that Oaks enter the veteran/notable stage from around 470cm. However, many factors influence the growth rate of a tree, including different starting conditions, variation in local physical features (temperature, hydrology, soil type, aspect etc.), and genetics. It is not necessarily the case that the largest trees of a given species are the oldest, and an Oak tree does not automatically become veteran once it ticks over from 469cm to 470cm girth and vice versa. EPR has therefore applied some flexibility when assessing trees against the "age" and "size" criteria in the NPPF and BGRR descriptions.

2.15 In practice, EPR considers all of the data collected on a tree when deciding how to classify that tree – this includes information gathered through the desktop study, in addition to the attributes recorded in the field, and in this case, additional information gathered by FLAC, whose survey methods included using probes and mallets to test for evidence of rot. Reference has been made to FLAC's "Raven 2" method (set out in their Tree Survey Report) which applies a scoring system based on the number of primary and secondary features, though again EPR has used discretion here and considered the attributes of 'borderline' trees on a case-by-case basis.

2.16 The trees which EPR classifies as NPPF veterans are those considered to be truly 'exceptional' examples of veteran trees. These trees score "major" on at least one of the "Major Structural Features" listed in **Annex 2** (extensive decay or hollowing of trunk, crown senescence or retrenchment) and typically also exhibit several of the secondary features of aging/decay or biodiversity evidence, such as dead limbs, loss of bark, water pools, crevices and fungi. They may also have a large size for the species and/or an interesting growth form which contributes to their 'exceptional' status.

2.17 The BGRR definition of veteran trees is particularly open to interpretation in respect of what constitutes a 'significant decay feature'. On a precautionary basis, in this case EPR and FLAC have taken this to include any mature tree with a dead or lost major limb (or major stem in the case of coppice stools), or decay in the trunk. EPR has also included trees which score 'Major' in several of the secondary features of aging/decay or biodiversity evidence, but Minor/None in the Major Structural Features.

2.18 Finally, EPR classifies OTEIs as mature trees which are generally in good condition, but may score 'minor' on some of the secondary features of aging/decay or biodiversity evidence, are of cultural interest as a pollard or stub, and/or are located close to/on a boundary with veteran trees, and are therefore likely to play a supporting role in sustaining the biodiversity associated with those trees, both now and in the future.

Nomenclature

2.19 Nomenclature follows Stace, 4th edition 2019.

Survey Limitations and Constraints

2.20 The majority of the trees were surveyed during the winter months, which is considered optimal as structural and decay features can be obscured when trees are in leaf.

2.21 Access to trees was occasionally constrained by dense undergrowth, watercourses and/or barbed wire fences, meaning that girth measurements were estimated by eye and the trees in question could not be inspected from all angles.

2.22 Some trees were clad in dense Ivy *Hedera helix*, which can obscure decay features but is also a feature in itself.

Evaluation Methodology

2.23 The evaluation of the veteran trees and other trees of ecological interest and vegetation has been undertaken in accordance with the Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Marine (CIEEM, 2018).

2.24 The veteran tree/OTEI assemblage within the ZoI has been assessed as a whole, rather than by looking at each tree individually. Trees are connected in ways we are only beginning to understand through mycorrhizal networks and to some extend depend on each other for their survival. The biodiversity value associated with a veteran tree or OTEI is also rarely isolated to a single tree – together they act as a collective resource for species dispersal and provide different habitat niches at different times of year and at different points in the lifecycle of various species.

2.25 As per the Guidelines the first stage of an Ecological Impact Assessment (EcIA) is to identify "important ecological features" within the ZoI of a proposed scheme and evaluate the relative importance of these on a geographic scale (International, National, Regional, County, Local or Within the ZoI). Typically, only those features of "Local" importance or above are taken forward for full impact assessment.

2.26 The following documents were used to inform an evaluation of the veteran trees and OTEIs within this geographic context:

National

- Guidelines for the Selection of Biological SSSIs Part 2, Chapter 2a: Woodlands, Wood Pasture and Parkland, and Veteran Trees (Latham et al., 2018).

County

- Local Wildlife Sites Selection Criteria Version 7: Berkshire, Buckinghamshire and Oxfordshire (TVERC and BMERC, 2024).

2.27 It is important to note that the purpose of this assessment is not to identify sites that could be considered for selection/notification as Sites of Special Scientific Interest (SSSIs) or Local Wildlife Sites (LWS). Rather, the criteria set out in the resources listed above are used as a tool to inform an objective evaluation of the veteran trees and OTEIs within the ZoI according to CIEEM's geographic frame of reference (2018).

3. ECOLOGICAL BASELINE

Desktop Study Results

TVERC Datasearch

3.1 The records search did not return any records relevant to veteran trees or OTEIs specifically, but the following species associated with trees have been recorded within 2km of the Site:

- Several records of Stag Beetle, associated with deadwood habitats;
- Several species of bat which roost in trees (e.g. Common, Soprano and Nathusius Pipistrelle *Pipistrellus pipistrellus, P.pygmaeus* and *P.nathusii*, Noctule *Nyctalus noctula* and Barbastelle *Barbastellus barbastellus*); and
- Several species of bird which nest in trees such as Barn Owl *Tyto alba* and Stock Dove *Columba oenas*.

Physical Description

Topography

3.2 The ZoI extends across a section of the River Loddon valley and includes the floodplain of the Loddon and associated minor tributary (Barkham Brook), the lower valley sides rising up to a plateau to the southeast of the floodplain, and the lower valley slopes to the northwest.

3.3 The floodplain itself includes localised areas of raised gravel terraces that forcing the watercourses into a different channels across the floodplain. This is described further in **Appendix 11.3 Habitats and Landscape** and illustrated on **Figure 3.1** below.

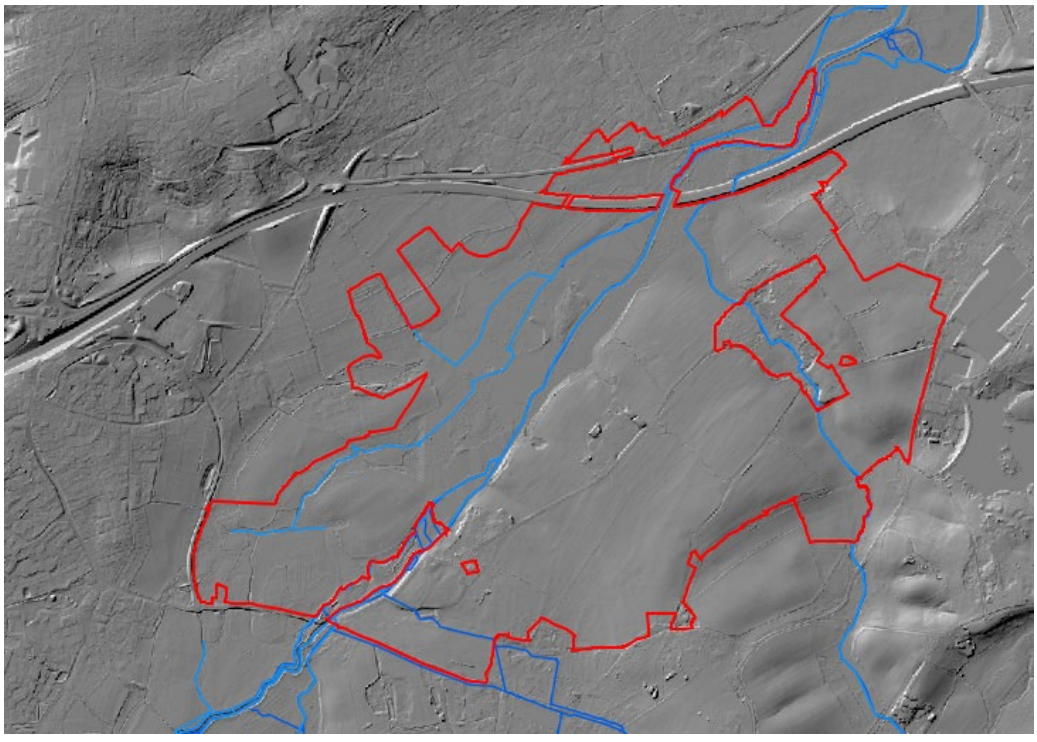

Figure 3.1: DTM Lidar of the Site showing the watercourses of the floodplain and minor tributaries. Blue lines are from Environment Agency rivers data.

Hydrology

3.4 **Figure 3.1** above shows the main river courses within the ZoI and the primary tributaries flowing into the floodplain. There are small watercourses draining southeast onto the floodplain – these appear to be fed by springs/issues from the base of the gravel terrace on the high ground of the valley.

3.5 Some of the main channel appears relatively natural, but there has been extensive modification of the watercourses on the Loddon floodplain. Examples of this are ditching and straightening of watercourses, diverting watercourses, and modification to provide water for mills. Some of these modifications are relatively recent (for example the river modification for the M4 motorway in the 1960s/70s) and those associated with mills are older (pre 18th century). All of these affect the treescape that is now found on the floodplain.

Geology and Soils

3.6 The bedrock under the ZoI is London Clay, most of which is overlain with superficial deposits including a mixture of different types of gravel terrace, some of which are themselves covered by a younger deposit of Brickearth. Those to the west of the river are younger deposits than those to the east, and in some areas the superficial deposits have eroded away to expose the London Clay bedrock beneath. The low ground forming the floodplain is covered with Alluvium, some of which is likely to be over a buried gravel terrace. **Figure 3.2** shows the superficial deposits mapped within the ZoI.

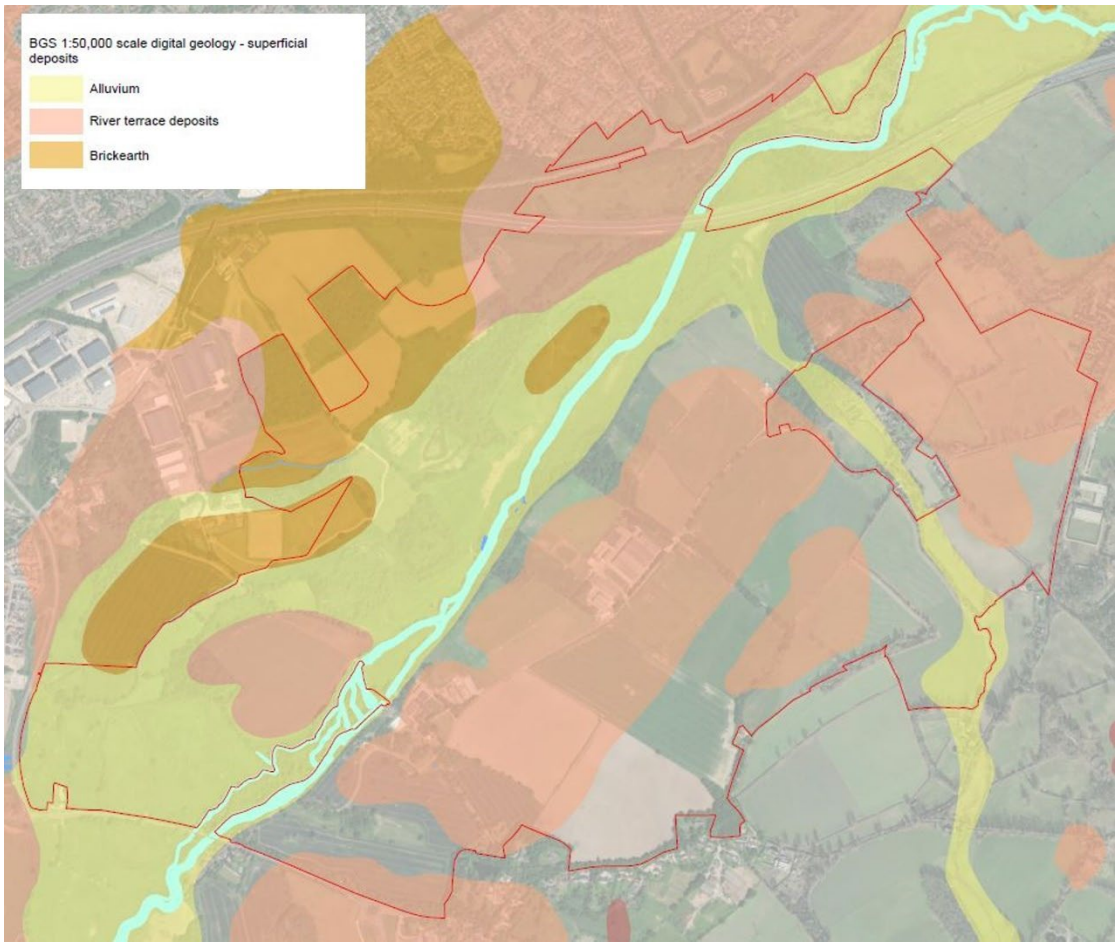

Figure 3.2: Superficial deposits across the ZoI. BGS 1:50,000: Licence No. 2021/3PDL/1018218 British Geological Survey © NERC. All rights reserved.

3.7 The geological, topographical and hydrological features of the landscape, plus the landscape history and other soil forming processes have given rise to different types of soils in the ZoI, all of which influences the treescape found today. These include loamy soils with naturally high groundwater on the valley sides (Soilscape 22), slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils near the eastern boundary (Soilscape 18) and loamy and clayey floodplain soils with naturally high groundwater on the floodplain (Soilscape 20).

Landscape History

Ordnance Survey Drawing OSD, ca. 1800

3.8 The earliest map examined was the Ordnance Survey drawing sheet 126 – see **Figure 3.3** below – and shows the key features of the historic landscape in which the veteran trees and OTEIs found today have developed. Many of the historic boundaries and lanes shown on the OSD are still present today, though the small farmsteads at the end of the lanes which extend into the floodplain have gone. Large parts of the landscape had already been enclosed when this map was drawn, and the parkland associated with Arborfield Hall in shown. This map also shows an unenclosed area known as Sindlesham Common with scattered trees (likely wood pasture) extending into what is now the north-eastern part of the Site.

Figure 3.3: Extract from Ordnance Survey drawing Sheet 126 showing a section of the Loddon Valley from Arborfield Bridge to Loddon Bridge. Copyright British Library, provided by the British Library from its digital collections via Wikicommons. This file is licensed under the OGL v 1.0.

Tithe Maps and Apportionments, ca.1840

3.9 These maps show that the survey area straddles parts of four historic parishes: Arborfield, Hurst, Shinfield and Earley. The boundaries of these historic parishes are still present in the modern landscape though not necessarily supporting a hedgerow or trees today. The landscape has been further enclosed compared to the OSD from around thirty years earlier, including Sindlesham Common.

25/6 inch to the mile Ordnance Survey maps, ca. 1880s-1930s

3.10 The first edition of these maps dating from the late 1800s show trees as being abundant along field boundaries and lanes, many of which are still present today.

Land Utilisation Survey of Britain, ca.1937

3.11 This map shows that in the 1930s, the majority of the floodplain was in use as grassland and the valley slopes and plateaus were in arable cultivation.

Aerial imagery from the 1940s onwards

3.12 Images from the 1940s show that the majority of the old field patterns remain unchanged since the early 1800s. Some individual trees can also be picked out, including field trees which are relicts of former hedged boundaries with the shrub layer removed to create a single larger field. Imagery from the 1970s, covering the construction of the M4 motorway show a well-managed agricultural landscape with trees in hedges.

Field Survey Results

Survey Metadata

3.13 EPR's fieldwork was carried out between 2023 and 2025. The main surveyors were Jodie Southgate, Andrew Cross, Hannah Corrigan with assistance from Laura Gravestock and Katrina Diedericks. The FLAC baseline tree surveys were completed in 2025.

Headline Results

3.14 Of the mature trees surveyed by EPR and FLAC, a total of **188** trees have been characterised as Veteran Trees and a further **135** as Other Trees of Ecological Interest. A full breakdown by species is set out in **Table 3.1** below, followed by a brief description of for each species. A list of each of these trees with their species, status EPR reference number and FLAC reference number (where available) is provided in **Annex 2**.

3.15 All 188 veteran trees are referrable to the description of veteran trees in the BGRR, and of these 17 are referable to the description in the NPPF.

3.16 **Map 11.6.2** shows all of the trees recorded as either NPPF (and BGRR) veterans, BGRR-only veterans or OTEIs, while **Maps 11.6.3 to 11.6.8** break this down by species/groups to allow the distribution of different tree species across the landscape to be visualised.

3.17 A selection of photographs is included in **Annex 3** to show a representation of the range of different veteran trees found within the ZoI.

Table 4.1: Trees recorded in the survey area with Veteran or OTEI status

Species		No. Trees	Veteran Trees		OTEIs	Map No.
			NPPF & BGRR	BGRR only		
Pedunculate Oak	*Quercus robur*	122	12	62	48	11.6.3 – Oak
Ash	*Fraxinus excelsior*	108	2	55	51	11.6.4 – Ash
Field Maple	*Acer campestre*	14	2	10	2	11.6.5 – Maple, Hawthorn, and Elm
Hawthorn	*Crataegus monogyna*	1	1			
Elm	*Ulmus sp.*	1		1		
Alder	*Alnus glutinosa*	24		15	9	11.6.6 – Alder
Goat Willow	*Salix caprea*	2		2		11.6.7 – Willows
Crack Willow	*Salix x fragilis*	29		14	15	
Horse Chestnut	*Aesculus hippocastanum*	4		1	3	11.6.8 – Other trees
Turkey Oak	*Quercus cerris*	4		4		
Red Oak	*Quercus rubra*	1		1		
Giant Sequoia	*Sequoiadendron giganteum*	3		1	2	
Lombardy Poplar	*Populus nigra "italica"*	1			1	
London Plane	*Platanus x hispanica*	1			1	
Hybrid Black Poplar	*Populus x canadensis*	1		1		
Common Lime	*Tilia x europaea*	4		3	1	
Yew	*Taxus baccata*	3		1	2	
Total		**323**	**17**	**171**	**135**	

Species Recorded

3.18 Due to the large number of veteran trees and OTEIs recorded across the ZoI, the descriptions below focus on those meeting the higher threshold for a veteran tree under the NPPF (see **Section 1**). The majority of the trees classified as BGRR-only veterans were considered to meet this definition by either EPR or FLAC due to exhibiting significant decay features, often in respect of deep cavities and/or the loss or death of at least one major limb (or in the case of coppice stools, a major stem).

Pedunculate Oak

3.19 A total of 122 Pedunculate Oak *Quercus robur* trees were recorded as either veteran trees (74) or OTEIs (48), equivalent to 38% of the trees assigned to these categories. The 74 veteran Oaks constitute 39% of the total veteran trees identified across the Site, and account for 12 of the 17 NPPF veteran trees.

3.20 The locations of the Oak trees are shown on **Map 11.6.3.** The largest concentrations are found on the valley slopes and plateau, with some on the floodplain. Most are associated with historic boundaries and lanes.

3.21 Seven of the NPPF veteran Oak trees have a large girth for the species (defined here as around 470cm or above with reference to Lonsdale 2013) and eight are pollards. They have been classified as veteran due to the presence of major decay features such as hollowing and decay in the trunk, crown senescence, loss/death of major limbs, damage to trunk, decay holes, sap runs and crevices, and evidence of fungi and/or invertebrates. A summary of the features recorded on these trees is provided in **Table 3.2**.

Table 3.2: NPPF Veteran Tree data: Pedunculate Oak

EPR ID	FLAC ID	Girth	Location	Features
65	Outside of survey area	458	On old boundary – now the Eastern Relief Road. At junction of floodplain and gravel terrace	Pollard. Minor trunk decay and hollowing. Major crown senescence and retrenchment. Some loss of major limbs and dead limbs. Crevices, fungi and invertebrates present.
85		395	On old boundary at junction of floodplain and Brickearth deposits	Pollard. Major trunk decay, minor hollowing and crown senescence. Some loss of major limbs and trunk damage
86		413	On old green lane and Parish boundary running between floodplain, St John's Copse and Upperwood Farm	Pollard. Major trunk decay and hollowing, some loss of major limbs, dead limbs and trunk damage. Decay holes, sap runs and crevices present including red rot.
87		314		Pollard. Major trunk decay and hollowing, some dead limbs and trunk damage. Decay holes, sap runs, crevices and fungi present including red rot.
88		367		Pollard. Major trunk decay and hollowing, some loss of major limbs, dead limbs and trunk damage. Decay holes, sap runs and crevices present
107	3082	470	On old, curved boundary associated	Pollard. Major trunk decay, some hollowing and dead limbs. Water pools, decay holes,

			with historic Lower Earley Farm, at junction of floodplain and Brickearth deposits	crevices and invertebrate evidence present.
190	9010	470	Within Arborfield Hall parkland.	Maiden. Major trunk decay, senescence and retrenchment and minor hollowing. Loss/death of major limbs, trunk damage and bark loss. Possible lightning strike. Decay holes, sap runs, crevices, fungi and evidence of invertebrates present
191	9022	470	On old boundary within Arborfield Hall parkland.	Maiden. Loss/death of major limbs, dead limbs. Crevices and evidence of invertebrates present.
194	9008	470	Within Arborfield Hall parkland.	Maiden. Loss/death of major limbs, dead limbs. Decay holes present.
202	6004	490	On old lane from Church Lane to Arborfield Hall.	Maiden. Loss/death of major limbs. Bark loss, decay holes, and crevices present plus abundant Ivy.
265	Outside of survey area	505	Old boundary/field corner close to Barkham Brook	Pollard. Loss/death of major limbs, decay holes, sap runs, crevices and evidence of invertebrates present plus abundant Ivy. The largest Oak tree within the ZoI, photographs included in **Annex 2**.
288	2018	495	On boundary bank of Loaders Copse provisional ancient woodland	Pollard. Major trunk decay, hollowing, senescence and retrenchment. Major loss/death of limbs, trunk damage. Decay holes, sap runs and crevices present.

Ash

3.22 A total of 108 Ash *Fraxinus excelsior* trees were recorded as either veteran trees (57) or OTEIs (51), equivalent to 33% of the trees assigned to these categories. The 57 veteran Ash trees constitute 30% of the total veteran trees identified across the Site, and account for two of the 17 NPPF veteran trees.

3.23 The locations of the Ash trees are shown on **Map 11.6.4.** In contrast to Pedunculate Oak, the largest concentrations are found on the floodplain and along the river corridor. Another group is associated with woodland HF53 (Loader's Piddle), which was surveyed in detail due to the potential impacts from the purposed spine road. The latter comprise overstood and partially collapsed coppice stools within a woodland that historic map evidence indicates is no more than 150 years old; these trees have been assessed as meeting the BGRR description of veteran due to "significant decay features (…) such as dead wood in major limbs".

3.24 The NPPF veteran Ash trees (5012 and 5021) are both located east of the Loddon – one on the riverbank, another on the edge of Newbury's Copse, an area of provisional ancient woodland (**Table 3.3**).

Table 3.3: NPPF Veteran Tree data: Ash

EPR ID	FLAC ID	Girth	Location	Features
5012	5012	n/a (coppice stool)	East bank of the Loddon	Coppice stool. One stem remaining, significant storm damage. Major hollowing, deadwood, storm damage, crevices and fungi.
5021	5021	Approx 470	On edge of "The Gorse/Newbury's Copse" – provisional ancient woodland	Pollard. Some hollowing in trunk, rot observed, loss of major limbs, extensive deadwood, crevices and woodpecker holes.

3.25 Pedunculate Oak and Ash collectively make up 71% of the veteran trees and OTEIs within the ZoI. The remaining trees comprise low numbers of a variety of native and non-native species associated with wet and dry habitats, broadly grouped below.

Field Maple, Hawthorn and Elm

3.26 A total of 12 Field Maple *Acer campestre*, one Hawthorn *Crataegus monogyna* and one Elm *Ulmus sp*. were recorded as veteran trees, plus a further two Field Maples were classified as OTEIs. Two of the Field Maples and the Hawthorn are considered to be NPPF veteran trees.

3.27 The Field Maple, Hawthorn and Elm trees are shown on **Map 11.6.5.** The majority are located either in the north-eastern part of the Site above the floodplain, or at the junction of the floodplain with localised Brickearth deposits.

3.28 The Field Maples are predominantly associated with old field boundaries, lanes and woodland edges. The Elm is near the edge of woodland parcel HF53 (Loader's Piddle) and the Hawthorn is located on a historic boundary at the junction of the floodplain and a Brickearth deposit west of the Loddon, along with other veteran trees.

3.29 The two Field Maples classified as NPPF veterans are particularly large individuals – a coppice stool measuring around 575cm, and an old laid specimen measuring around 685cm (both measured from the base). The coppice stool (tree 89) is located on the same historic boundary as the NPPF veteran Oak 85 described in **Table 3.2** above, and has major decay features including trunk hollowing and decay and white rot.

3.30 The second NPPF veteran Field Maple (tree 287) is located in the north-eastern part of the Site on the southern boundary of Loader's Copse, a provisional ancient woodland. This tree is likely to have been laid historically as part of a hedgerow but now resembles a very long and wide coppice stool. It is a unique form of tree in the ZoI and included in the photographs in **Annex 2.**

3.31 The NPPF veteran Hawthorn is located on the same historic boundary as Field Maple 89 and Oak 85. It is a small tree (but large for a Hawthorn) with a girth of approximately 80cm, with major decay features including trunk hollowing, brown rot, crown senescence and loss of major limbs. A summary of the features recorded on the NPPF veteran trees is provided in **Table 3.4**.

Table 3.4: NPPF Veteran Tree data: Field Maple and Hawthorn

EPR ID	FLAC ID	Girth	Location	Features
89	Outside of survey area	575 (at base)	Old boundary at junction of floodplain and Brickearth deposit	Field Maple coppice stool. Major trunk decay and hollowing, some loss of major limbs and deadwood, bark damage and loss, crevices, fungi, white rot and evidence of invertebrates.
287	2019	685 (at base)	Boundary of Loader's Copse provisional ancient woodland	Field Maple – old laid form. Minor hollowing, retrenchment, dead limbs, water pools, decay holes, sap runs and fungi. Notable due to size and form.
315	Outside of survey area	80	Old boundary at junction of floodplain and Brickearth deposit	Hawthorn maiden. Major trunk decay and hollowing, red rot, crown senescence, loss of major limbs.

Alder

3.32 A total of 15 Alder *Alnus glutinosa* trees were recorded as veteran, plus a further nine were classified as OTEIs. None are considered to be NPPF veteran trees.

3.33 These Alder trees are shown on **Map 11.6.6.** This species is strongly associated with the floodplain, with the majority are located along the riparian corridor or on the edges of wet woodland. The majority of the Alders are old coppice stools that have begun to collapse.

3.34 One particular Alder, tree 106 (FLAC 3083) is of note as an unusual pollard form. It is located at the end of on a historic curved boundary associated with the former Lower Earley Farm, which also contains veteran Oak, Ash and Field Maple. This Alder is small, with a girth of around 125cm, flared and hollowed out at the base, with dead limbs, decay holes and water pools. It has been recorded as a BGRR veteran and is an example of tree size not necessarily correlating to age or biodiversity value. A photograph of this tree is included in **Annex 2**.

Goat Willow and Crack Willow

3.35 Two Goat Willow *Salix caprea* and 14 Crack Willow *Salix x fragilis* were recorded as veteran trees, plus a further 15 Crack Willow as OTEIs. None are considered to be NPPF veteran trees.

3.36 The Willows are shown on **Map 11.6.7.** They are strongly associated with the river corridor and secondary watercourses. The majority comprise multi-stemmed trees (possibly former coppice stools) that are starting to collapse and thus exhibit signs of decay, crevices and fungal fruiting bodies. An example tree is included in the photographs in **Annex 3**.

Other Trees

3.37 This category includes a variety of ornamental planted trees, mostly non-native. These are:

- x4 Horse Chestnut *Aesculus hippocastanum* (one veteran, three OTEI);
- x4 Turkey Oak *Quercus cerris* (veteran);
- x4 Common Lime *Tilia x europaea* (three veteran, one OTEI);
- x3 Giant Sequoia/Wellingtonia *Sequoiadendron giganteum* (one veteran, two OTEI);
- x3 Yew *Taxus baccata* (one veteran, two OTEI);

- x1 Lombardy Poplar *Populus nigra "italica"* (OTEI);
- x1 London Plane *Platanus x hispanica* (OTEI);
- x1 Hybrid Black Poplar *Populus x canadensis* (veteran); and
- x1 Red Oak *Quercus rubra* (veteran).

3.38 The majority are located within the former Arborfield Hall parkland area, shown on **Map 11.6.8,** while The Turkey Oak are located along the historic Barrett's Lane, also to the east of the Loddon. None of the trees are considered to be NPPF veteran trees, but are referable to the BGRR description of veteran trees on account of exhibiting features such as extensive deadwood and the presence of crevices, decay holes and/or fungi.

4. DISCUSSION AND EVALUATION

Desktop Study

4.1 The desktop study results set out in **Section 3** have shown that the 'treescape' supported by the ZoI of the Proposed Development is strongly influenced by a wide range of factors including the landscape history, topography, geology, hydrology and soils.

4.2 The landscape within which the veteran trees and OTEIs have developed is highly diverse in many ways. These trees occur within a wide range of historic boundary types of different ages, including old lanes, ancient field boundaries, more modern enclosure boundaries, several Parish boundaries, and ancient woodland boundaries. Others are found in woodlands and along riparian corridors, or as ornamental planted parkland specimens. Some are on alluvial soils, others on London Clay or more freely draining deposits such as gravel terraces and Brickearth, or at the junction between the floodplain and the valley sides. Each of these variables will have their own complex biodiversity associated with them.

4.3 Boundary trees may themselves not be as old as the boundaries within which they have grown, but these features provide stable focal points for many generations of trees to be planted or self-sown over the years. This has ensured a long unbroken continuity of trees in the landscape, which is essential for developing and sustaining the biodiversity they support.

4.4 This variety of locations and conditions in which trees have developed over the centuries also provides a backdrop for a wide range of species, ages, forms, and growth rates to occur – which in turn creates high potential for a very diverse range of decay features and ecological niches associated with veteran trees and OTEIs to be present in the landscape.

Fieldwork

4.5 As set out in **Section 3**, the veteran tree and OTEI resource within the ZoI is dominated by Pedunculate Oak and Ash, largely associated with field boundaries, and as discussed above many generations of these species are likely to have been present in this landscape over the centuries, forming considerable ecological continuity.

4.6 A supporting cast of low numbers of Field Maple, Hawthorn and Elm add diversity on dry ground, and Alder, Goat Willow and Crack Willow contribute further habitat and ecological niches along the riparian corridors.

4.7 It is noted that many Crack Willows have been drawn into the BGRR definition of a veteran tree on account of their natural propensity to break apart and collapse at a relatively young age compared to other species, creating decay features and crevices that can be exploited by invertebrates, fungi and other species. However, Crack Willow is now thought to be a hybrid of White Willow *Salix alba* and the non-native Eastern Crack-Willow *Salix euxina* (BSBI, 2023) and has a tendency to become rather invasive on floodplains, replacing more diverse wetland communities, as can be seen in the central wet woodland and swamp complex on the Loddon floodplain (see **Technical Appendices 11.3 Habitats and Landscape and 11.5 Flora and Vegetation**).

4.8 The ornamental species also contribute to the diversity of the treescape within the ZoI and are attractive landscape features, though the non-native species are of limited ecological value –

particularly for invertebrates and lower plants – as they have not co-evolved alongside our native flora and fauna. They do, however, have some value in providing nesting and roosting features for some bird and potentially bat species.

4.9 The field survey data recorded a range of tree forms across the ZoI including maidens, pollards, stubs and coppice stools, which reflect changes in tree and woodland management practices over the centuries. Different tree forms give rise to different habitat and decay features and ecological niches (such as water pools forming in the boles of pollards and stubs, or collapsed stems of coppice stools).

Veteran Trees and Biodiversity

4.10 Veteran trees form an important part of the biodiversity of a landscape. The aging process leads to an increasing complexity of structures associated with the trees as well as resources that can be consumed by fungi, animals, and/or other plants.

4.11 Most of the biodiversity associated with veteran trees and OTEIs – for example invertebrates – is difficult to survey, particularly at the scale of the ZoI. Decay features are therefore typically used as a proxy for biodiversity value due to the relatively high number of species associated with these features, including specialist fungi, invertebrates, nesting birds and roosting bats. Of these, **Technical Appendices 11.7, 11.10 and 11.12** discuss the invertebrate, breeding bird and bat assemblages associated with the ZoI. In summary:

- The habitat assessment for invertebrates returned favourable values for Specific Assemblage Types (SATs) associated with bark, sapwood and heartwood decay and fungal fruiting bodies;
- A total of 73 bird species were considered to be breeding across the Site, including species which nest in tree cavities such as Barn Owl, Stock Dove, Tawny Owl *Strix aluco*, Jackdaw *Corvus monedula*, Great Spotted Woodpecker *Dendrocopus major* and several red and amber-listed passerines such as Mistle Thrush *Turdus viscivorus*, Song Thrush *Turdus philomelos*, Wren *Troglodytes troglodytes*, Greenfinch *Carduelis chloris* and Redstart *Phoenicurus phoenicurus*; and
- A total of 374 individual trees were considered to be suitable to support roosting bats, including 44 with High suitability and 11 with suitability to support multiple bats, and the assemblage of bats recorded as foraging and/or commuting within the ZoI is assessed as being of regional importance.

4.12 It is likely that the diverse veteran tree resource across the ZoI plays a role in supporting these species assemblages in terms of providing nesting/roosting resources, breeding spaces, shelter, food and dispersal corridors. The OTEIs play a supporting role and crucially, represent the future supply of these resources in the landscape.

4.13 Historic air pollution and current air quality (in the context of modern farming) mean that the ZoI is likely to be of limited interest for epiphytes such as bryophytes and lichens.

Biodiversity of Oaks

4.14 Pedunculate Oaks are highlighted here as the most common species of veteran trees and OTEI across the Site. Oaks are an extremely important part of the landscape for biodiversity.

4.15 The Environmental Information Data Centre (EIDC) (Mitchell *et. al.,* 2019) holds a dataset that "contains a list of all known birds, bryophytes, fungi, invertebrates, lichens and mammals that use oak (*Quercus petraea* and *Quercus robur*) in the UK. In total **2,300** species are listed in the dataset." (EPR emphasis)

4.16 The natural history of some of these 2,300 species is set out Lewington and Streeter's book 'The Natural History of the Oak' (Lewington and Streeter, 1993). The authors, with reference to invertebrates in particular, write that: "More different kinds of insect are found on oak than on any other European plant." A subset of this list of the 2,300 species will be present on the Oaks in the ZoI.

4.17 Understanding the full range of biodiversity associated with Oaks is more complex than the finding and identification of species. The EIDC dataset includes additional information covering how different species use Oak, which structures of the tree are important, and the impact of historic management:

> *For each [of the 2300] species we provide a level of association with oak, ranging from obligate (only found on oak) to cosmopolitan (found on a wide range of other tree species). Data on the ecology of each oak associated species is provided: part of tree used, use made of tree (feeding, roosting, breeding), age of tree, woodland type, tree form (coppice, pollarded, or natural growth form) and season when the tree was used. Data on use or otherwise by each of the 2300 species of 30 other alternative tree species [a list follows] was also collated. A complete list of data sources is provided.*

4.18 The attributes recorded for each species in the dataset points to the potential complexity of ecological webs and networks that could be associated with the Oaks in the ZoI but which are, because of the complexity of survey needs, mostly unstudied and thus unknown.

4.19 Morris, in 'The British Oak' (Morris and Perring, 1974) looks at the Oak as a 'habitat', in this case for invertebrates and includes the soil as a vital part of the Oak tree ecosystem:

> *The tree cannot exist, of course, without the soil in which it grows or the air which surrounds it. But the soil is also essential to a wide range of species which either pupate or overwinter in it, even though they feed on the oak foliage…*

4.20 As discussed above, the desk research for this report identifies a complex range of boundaries and soil types in the ZoI that the Oaks grow in, likely adding further complexity to their associated biodiversity. The fieldwork recorded a diverse and potentially rich mixture of Oaks in different forms (pollards, maidens, stubs) with a variety of decay features (such as hollowing, senescence, deadwood, rot holes and crevices).

4.21 In summary, the Oak veterans and OTEIs are a particularly important component of the biodiversity of the ZoI in the Loddon Valley.

Evaluation

4.22 The assemblage of veteran trees and OTEIs supported by the ZoI is evaluated below in the context of CIEEM's (2018) geographic scale of importance for Ecological Impact Assessment.

National

4.23 The SSSI Selection Guidelines (Latham et al., 2018) provide a veteran tree site assessment protocol for assessing the relative quality of a site with veteran trees. This has been used to evaluate whether the veteran tree resource supported by the ZoI could potentially be of National-level importance.

4.24 EPR's assessment here is based on the NPPF Veteran trees only, as the SSSI Guidelines pre-date the BGRR definition of veteran trees, and note that "the term 'veteran' tree encompasses a wide range of trees which display attributes associated with late maturity such as large trunk girth and trunk hollowing" – as discussed in **Section 1**, the BGRR definition is broader than this in scope.

4.25 The NPPF veteran tree resource within the ZoI scores as follows against Table 4 of the Guidelines:

- Primary Assessment Criteria: Low-Medium value
- Secondary Assessment Criteria: Medium-High value
- Overall: Medium value

4.26 Sites are generally selected for notification where this would significantly increase the range or number of veteran trees protected, the site represents a slightly different aspect of the veteran tree resource, or the site is significantly higher in value than the main sites currently selected.

4.27 In comparison to sites known for their high number and diversity of ancient and veteran trees, such as Windsor Great Park or the New Forest, the relatively small NPPF Veteran tree resource within the ZoI would not typically be considered for selection as an SSSI of National importance.

County

4.28 Reference is made to the LWS Selection Criteria for Berkshire, Buckinghamshire and Oxfordshire (TVERC/BMERC, 2024) to inform an evaluation of whether the veteran tree and OTEI resource within the ZoI may be of County-level importance.

4.29 The Criteria define veteran trees as follows:

- *Trees of interest biologically, aesthetically or culturally because of their age, size and condition*
- *Trees in the ancient stage of their lives*
- *Trees that are old relative to others of the same species*

4.30 The Criteria state that a single veteran trees does not qualify as a LWS in its own right, but groups of at least five veteran trees may be considered for selection if they meet any of the following:

Groupings of veteran trees, each of which meets the girth criteria (Table 27), plus has at least four features of veteran trees described in Table 26 below [EPR note – these include many of the features recorded by EPR and/or FLAC such as

hollowing, rot roles, deadwood, rot, water pools, loose bark, crevices, sap runs, fungi, and unnatural growth forms]

OR

Groupings of trees all of which are known to support characteristic or specialist species of veteran trees, such as fungi, lichens, invertebrates, mammals, birds or bryophytes.

4.31 The relevant minimum girth criteria from Table 27 are:

- Hawthorn = 2.0m;
- Field Maple, Goat Willow, Alder = 2.5m;
- Oak, Ash and Elm = 3.0m; and
- Lime, Sycamore, Horse Chestnut, Poplar species, Crack Willows: 4.5m.

4.32 The majority of the Field Maple, Alder, Oak and Ash trees meet the girth criteria. It is also clear from the survey results set out in **Section 3** that many of the veteran trees exhibit at least four of the features described in the Criteria, and as discussed above, there is also some evidence that the veteran trees – especially the Oaks – are likely to support specialist invertebrates, plus birds and bats.

4.33 This points towards the assemblage of veteran trees and OTEIs within the ZoI being of **County** importance. This is supported by the discussion above regarding the overall diversity of the veteran and OTEI resource in respect of the range of species, ages, origins, growth forms and decay features present, which along with the considerable ecological continuity associated with many of these trees, is likely to be of high value for biodiversity at the landscape scale.

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MAPS

MAP 11.6.1 Site Boundary

KEY

Site boundary

SCALE: 1:11,000 at A3

0 100 200 300 400 500 Metres

N

EPR

CLIENT: University of Reading

PROJECT: Loddon Garden Village

DATE: 01 August 2025

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Aerial Image: Maxar, Microsoft

MAP 11.6.2 Veteran Trees and Other Trees of Ecological Interest (OTEIs)

KEY

- Site boundary
- NPPF (and BGRR) Veteran Trees
- BGRR-only Veteran Trees
- Other Trees of Ecological Interest

SCALE: 1:11,000 at A3

0 100 200 300 400 500 Metres

N

EPR

CLIENT: University of Reading

PROJECT: Loddon Garden Village

DATE: 01 August 2025

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P23/42

Aerial Image: Maxar, Microsoft

MAP 11.6.3 Veteran Trees and OTEIs: Pedunculate Oak

KEY

- Site boundary
- NPPF (and BGRR) Veteran Trees
- BGRR-only Veteran Trees
- Other Trees of Ecological Interest

SCALE: 1:11,000 at A3

0 100 200 300 400 500 Metres

N

EPR

CLIENT: University of Reading

PROJECT: Loddon Garden Village

DATE: 01 August 2025

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Aerial Image: Maxar, Microsoft

MAP 11.6.4 Veteran Trees and OTEIs: Ash

KEY

- Site boundary
- NPPF (and BGRR) Veteran Trees
- BGRR-only Veteran Trees
- Other Trees of Ecological Interest

SCALE: 1:11,000 at A3

0 100 200 300 400 500 Metres

N

EPR

CLIENT: University of Reading

PROJECT: Loddon Garden Village

DATE: 01 August 2025

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Aerial Image: Maxar, Microsoft