

Habitat Regulations Assessment

in respect of

Land at LEA Castle Farm, Wolverley, Kidderminster

for

NRS Aggregates LTD

Prepared By

Heatons

February 2022

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CONTENTS

Page Numbers

1. Introduction	1
2. The Habitat regulations of England and Wales	6
3. Stages of Habitat Regulations Assessment	8
4. Ecologically Designated Sites	10
5. Effects on Designated Sites	21
6. Conclusions	28
7. References	29

Appendices

Appendix 1 – Preliminary Ecological Appraisal

Appendix 2 – BCL Hydro Consultants report

Appendix 3 – Air Quality and Dust Assessment

Appendix 4 – ECIA

Appendix 5 – Assessment of Ancient Woodland

Appendix 6 – County Ecologist Response

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1.0 INTRODUCTION

Baseline Information

- 1.1 Heatons have been commissioned to undertake a Habitat Regulations Assessment (HRA) to determine whether the proposed extraction at LEA Castle Farm (hereafter referred to as the site) would have any adverse effects on the integrity of a number of sites designated under the Conservation of Habitats and Species Regulations 2017 (as amended). The HRA has been requested under Regulation 25 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 in relation to planning application ref: 19/000053/CM.
- 1.2 This HRA screening will determine whether the proposed development presents any likely significant effects (LSEs) on the qualifying interests of the Severn Estuary SPA and SAC and also whether or not an Appropriate Assessment for adverse effects for these sites will be required.

Regulation 25 Request

- 1.3 The application site is located approximately 70 kilometres north-east of the Severn Estuary SPA and SAC which are European sites (also commonly referred to as Natura 2000 sites), which is also notified as a Ramsar Site (of international importance) and at a national level as the Upper Severn SSSI. The River Wye SAC is located about 40 kilometres south-west of the site. Despite the distance from these European sites, the River Stour is located in close proximity to the application site (within 135 metres of the application site) and are hydrologically linked to these European sites. In view of this, and due to the nature and location of proposed project, the Mineral Planning Authority (MPA) consider there is potential the proposal may affect the interest features of these European designated sites through functional hydrological connectivity and the potential presence of migratory species within the upper River Severn catchment. European sites are afforded protection under the Conservation of Habitats and Species Regulations 2017, as amended (the 'Habitats Regulations').
- 1.4 In particular the MPA consider the shadow HRA screening should consider the impacts of the proposal on:
- **Water quality / quantity of functionally linked habitats** – The Severn Estuary SPA and Ramsar site is hydrologically linked to the River Severn and its

tributaries (including the River Stour). The qualifying bird species of the European site are reliant on estuarine and coastal habitats within the SPA / Ramsar boundary which have the potential to be susceptible to changes in water quality and quantity as a result of water abstraction, nutrient enrichment, or one-off pollution events. In addition, the qualifying bird species are reliant on non-estuarine habitats within functionally linked watercourses of the Severn Estuary SPA / Ramsar within the River Severn hydrological catchment. There is the potential for run-off of surface water, pollutants and chemical spills at the application site to result in impacts on the water courses which are functionally linked to the Severn Estuary (e.g., The River Stour). Such water courses or their adjacent habitats could be of importance to the qualifying bird species of the SPA / Ramsar. Any changes in water quality or quantity within the River Severn or its tributaries due to mineral extraction at the application site, therefore, has the potential to result in likely significant effects on the Severn Estuary SPA / Ramsar.

Particular issues that could affect water quality include dissolved oxygen, which may result in changes to vegetation and invertebrate prey communities for SPA / Ramsar bird species and leaching and runoff from the application site, which is likely to affect nutrient levels. Water quantity could also be affected by water abstraction for minerals processing and disposal of water used in the mineral extraction process.

As above for birds, hydrological connectivity between the Severn Estuary SAC and Ramsar site and the application site could result in impacts on the qualifying fish species due to changes in water quality and quantity as a result of nutrient enrichment, or one-off pollution events.

There is potential for run-off of surface water, pollutants and chemical spills, and changes in the below-ground water connectivity to result in impacts on the water courses which are functionally linked to the Severn Estuary. Such water courses support habitats of importance for the qualifying fish species of the SACs / Ramsar.

- **Non-toxic contamination** – Non-toxic contamination can include the creation of airborne dust which can contribute to nutrient enrichment which can lead to changes in the rate of vegetative succession and habitat composition. Particular issues arising from non-toxic contamination from airborne dust

include smothering of habitats leading inhibiting natural processes and increased suspended sediment within the water resulting in reduced levels of dissolved oxygen which may act as a barrier to migrating qualifying fish species.

- **Air Quality** – Air pollution, in particular nitrogen deposition, has been highlighted as a priority issue in Natural England’s Site Improvement Plan for the Severn Estuary SPA / Ramsar. Nitrogen deposition has the potential to result in eutrophication of habitats, which can result in a change in water quality and lead to successional changes to plant communities. Therefore, any development proposal which could result in a significant increase in traffic along a road situated within 200 metres of the SPA / Ramsar or its functionally linked habitats has the potential to adversely affect the integrity of the SPA / Ramsar. There are no strategic or primary roads within a 30 mile radius of Worcestershire that are within 200 metres of the Severn Estuary SPA / Ramsar boundary. However, there may be functionally linked habitat (e.g., River Stour) within 200 metres of the routes most likely to be used by HGVs going to and from the application site.

Natural England’s Site Improvement Plan for the Severn Estuary SAC / Ramsar lists twaite shad, sea lamprey and river lamprey as being susceptible to the effects of air pollution and nitrogen deposition. Allis shad are also known to regularly hybridise with twaite shad. Due to the possibility of some crossover in the population of twaite shad, allis shad and sea lamprey from the River Wye SAC and the River Severn, effects on the River Wye SAC should also be considered.

Site Description

- 1.5 The site is approximately 45.7ha and comprises arable farmland with semi-improved and improved grassland headlands. A hardstanding track separates the Site from south to north that is delineated by standards of beech (*Fagus sylvatica*) and lime (*Tilia sp.*). The field boundaries of the Site include post and wire fencing, hedgerows containing native species, woodland edge and estate boundary brick wall. Occasional standard trees were present within the fields, including oak (*Quercus robur*), sweet chestnut (*Castanea sativa*) and non - native conifers.
- 1.6 The surrounding area includes the River Stour approximately 100m to the north-west of the site, as well as extensive arable land to the north, east and west and blocks of

broadleaved woodland to the north, west and south. Wolverley lies 1km to the west of the site and Cookley lies 800m to the north.

Proposed development

- 1.7 Application ref: 19/000053/CM is for the extraction, processing and sale of ~300,000 tonnes of sand and gravel per annum, which would provide ten years of supply into local and Midlands markets. The development will also include the enhancement of the site and the local landscape setting, including: agricultural parkland; the provision of new routes of public bridleways; pocket parks; strengthening of the existing woodland planting; and diversifying habitats to promote biodiversity. Management agreements will be established to ensure the restoration and enhancement measures are financially sustainable and permanent.
- 1.8 The development will involve a temporary new vehicle access onto the B4189 Wolverley Road, the establishment of a plant site for mineral processing along with progressive phased working and restoration.
- 1.9 The proposed hours of working will be restricted to between 0700 to 1900 Monday to Friday, and between 0700 to 1300 on Saturdays. There will be no Sunday or Bank Holiday working.
- 1.10 0.6 million m³ of inert materials will be brought into the Site e.g. soils and clay to help create the final restoration levels.
- 1.11 Eleven full time jobs will be created with a further 20+ work opportunities provided in connection with transportation and employment of local trades.

Project need

- 1.12 The National Planning Policy Framework (NPPF) acts as the overarching national guidance for the planning system. It emphasises the importance of minerals and ensuring that there is a significant supply to provide the infrastructure, buildings, energy and goods that the country needs.
- 1.13 The NPPF identifies that minerals can only be worked where they are found and provides guidance on assessing the potential for environmental impact from development.
- 1.14 The landbank of mineral in Worcestershire (the permitted tonnage available) is currently at/or below the minimum 7 years reserve figure required. It is currently

further depleting and looking forward there will be a significant under allocation or shortfall.

- 1.15 There are a very limited number of alternative sand and gravel and solid sand quarries within Worcestershire. The closest quarry supplying sand and gravel in the county is located ~ 24 miles away at Clifton Quarry (operated by Tarmac), near Severn Stock in the south of the county. The closest supplies of potential solid sand are at Wildmoor, ~ 10 miles to the east of Kidderminster. The quarry is operated by Salop Sand and Gravel (SS&G), with the majority of the sand being utilised internally by this company. SS&G have recently had planning approval for a new quarry at Chadwich Lane, located in proximity to, and to supply to, Wildmoor Quarry. Cemex have a quarry further south at Ryall.
- 1.16 There is also an existing demand for mineral in the local area, which is currently having to be supplied from distance with associated economic and environmental costs. Alternative supply quarries are very limited.
- 1.17 Lea Castle Farm also offers an ideal location to supply mineral to meet future demand, including helping to meet construction materials requirements for a number of permitted residential sites within the local area. This includes the former Lea Castle Hospital site, and also proposed residential/commercial developments at Lea Castle Village and Kidderminster East.
- 1.18 In terms of a need for inert waste, there is an anticipated increase likely to be generated from large infrastructure projects in north Worcestershire and the West Midlands over the next 10 years. There is an identified inert waste capacity gap in Worcestershire, placing ever increasing need for sites, such as Lea Caste Farm, which would be appropriately engineered, deliverable and accessed sustainably, to meet this increasing need.
- 1.19 The applicant is confident that market demand, growth projects in the area and increased housing demand will support the need for inert void at Lea Castle Farm over and above that permitted for the life of the site. Given the above, the deliverability of the restoration scheme at Lea castle Farm with the importation of 60,000m3 per annum is considered achievable.

2.0 THE HABITAT REGULATIONS ENGLAND AND WALES

2.1 The Conservation of Habitats and Species Regulations 2017 (as amended) (the 'Habitats Regulations') transposes the requirements of European Council Directive 92/43/EEC 'the Habitats Directive' into English law. The Habitats Regulations apply to plans and projects that may have significant effects on sites designated under the Habitats Directive and the Wild Birds Directive (Council Directive 79/409/EEC). Sites designated under the Directives include Special Protection Areas (SPAs) and Special Areas of Conservation (SACs).

2.2 Prescribed 'Competent Authorities' must assess plans and projects for their potential to cause Likely Significant Effects (LSE) on the above designated sites. Should LSE be identified by the initial screening process, it is necessary to further consider the effects by way of an 'Appropriate Assessment' (AA). Where the plan or project may lead to LSE, it must be subject to an AA to determine whether there will be adverse effects to any such sites. Any plan or project that would lead to adverse effects on the integrity of these site(s) cannot be permitted without meeting strict additional tests.

2.3 Overall, this process of assessment is known as Habitats Regulations Assessment and further details of the applicable legislative context are summarised below.

2.4 Following the UK's exit from the European Union (EU), The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 has resulted in amendments to the Habitats Regulations. Defra guidance (2021) states that Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) in the UK no longer form part of the EU's Natura 2000 ecological network. The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 have created a national site network on land and at sea, including both the inshore and offshore marine areas in the UK. The national site network includes:

- Existing SACs and SPAs; and
- New SACs and SPAs designated under these Regulations.

2.5 Any references to Natura 2000 in the 2017 Regulations and in guidance now refers to the new national site network. Maintaining a coherent network of protected sites with overarching conservation objectives is still required in order to:

- Fulfil the commitment made by government to maintain environmental protections; and

- Continue to meet our international legal obligations, such as the Bern Convention, the Oslo and Paris Conventions (OSPAR), Bonn and Ramsar Conventions.

2.6 It is also a matter of government policy that Ramsar sites are considered in the HRA process, as described in part 181 of the National Planning Policy Framework. Where it is anticipated that a development could affect the integrity of a Special Protection Area (SPA), Special Area of Conservation (SAC) or Ramsar site, either individually or cumulatively with other development, a Habitat Regulation Assessment under the Habitats Regulations will be undertaken. If adverse impacts on the integrity of the site and its qualifying features are predicted, measures to mitigate for these effects will be implemented. If it is not possible to mitigate satisfactorily for adverse effects, the development will not be permitted. If there is no alternative solution, the consideration of imperative reasons of overriding public interest (IROPI), despite a potentially negative effect on site integrity, can be considered.

2.7 This report presents information to enable the screening assessment required as part of Stage 1 of the HRA process, to establish whether or not the proposed scheme will have any LSE upon the national site network and Ramsar sites, referred to hereafter as 'Habitats sites'.

3.0 STAGES OF HABITAT REGULATIONS ASSESSMENT

3.1 Guidance on the Habitats Directive (European Commission, 2000) sets out the staged approach that should be followed to enable Competent Authorities to discharge their duties under the Habitats Directive and provides further clarity on the interpretation of Articles 6 (3) and 6 (4). The process used is usually summarised in four distinct stages of assessment:

3.2 Stage 1: Screening - the process that identifies whether effects upon a habitat site as a consequence of a plan or project are possible, either alone or in combination with other plans or projects, and considers whether these effects are likely to be significant;

3.3 Stage 2: Appropriate Assessment - the detailed consideration of the effect on the integrity of the habitat site as a consequence of the plan or project, either alone or in combination with other plans or projects, with respect to the site's conservation objectives and its structure and function;

3.4 Stage 3: Assessment of alternative solutions - the process that examines alternative ways of achieving the objectives of the plan or project that avoid adverse effects on the integrity of the Habitats site; and

3.5 Stage 4: Assessment where no alternative solutions exist and where adverse effects remain - an assessment of whether the development is necessary for IROPI and, if so, of the compensatory measures needed to maintain the overall coherence of the Habitats site.

Guidance

3.6 Department for Communities and Local Government (August 2006) Planning for the protection of European Sites: Appropriate Assessment. Guidance for Regional Spatial Strategies and Local Development Documents. Draft.

3.7 European Commission (2000a). Managing Natura 2000 Sites, the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC. Available online: http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision_of_art6_en.pdf. Accessed [09/12/2021]

3.8 European Commission (2000b). Communication from the Commission on the Precautionary Principle;

- 3.9 European Commission (2018). Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC; and
- 3.10 Joint Nature Conservation Committee (JNCC) (2016). SAC and SPA Standard Data Forms and Ramsar Information Sheets. Available online: <http://www.jncc.gov.uk/>. Accessed [09/12/2021].

HRA Policy

- 3.11 Council of the European Union (1992). Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora. Available online: <http://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:31992L0043>. Accessed: [09/12/2021];
- 3.12 Council of the European Union (2009). Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds. Available online: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV:ev0024>. Accessed: [09/12/2021];
- 3.13 European Communities (2007). Guidance document on Article 6 (4) of the ‘Habitats Directive’ 92/43/EEC; Available online: http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/guidance_art6_4_en.pdf Accessed: [09/12/2021]; and Her Majesty’s Stationery Office (2017). The Conservation of Habitats and Species Regulations 2017/490.
- 3.14 This report (the ‘HRA Screening Report’) details the HRA Stage 1 Screening Assessment.

4.0 ECOLOGICALLY DESIGNATED SITES

Desk Study

- 4.1 In order to obtain information on sites of nature conservation interest in the area, the Multi-Agency Geographical Information for the Countryside (MAGIC) website was searched for ecological statutory and non-statutory designated sites and ancient woodland within a 3km radius around the central point of the site.
- 4.2 A 3km search radius was conducted from the central point of the site to ensure that a 2km radius from the boundaries of the site was covered.
- 4.3 In addition, Worcestershire Biological Records Centre (WBRC) was commissioned to undertake a data search for all protected and notable species and all sites of conservation importance within 3km of central grid reference SO834789. For relevant information please see the Preliminary Ecological Appraisal Report (submitted for application ref: 19/000053/CM – attached at Appendix 1).
- 4.4 Reference was also made to Ordnance Survey maps and aerial photography, which were used to determine the presence of open water and ponds in the area and to provide information on land use and habitat connectivity throughout the area.
- 4.5 The woodland Trust Ancient Tree Inventory and the Worcestershire Council Habitat inventory was also accessed in order to obtain further information on Ancient Woodland habitat within the site and within adjacent habitats.

Severn Estuary SPA and SAC

- 4.6 As stated within the regulation 25 request, 'The application site is located approximately 70 kilometres north-east of the Severn Estuary SPA and SAC which are European sites (also commonly referred to as Natura 2000 sites), which is also notified as a Ramsar Site (of international importance) and at a national level as the Upper Severn SSSI. The River Wye SAC is located about 40 kilometres south-west of the site. Despite the distance from these European sites, the River Stour is located in close proximity to the application site (within 135 metres of the application site) and are hydrologically linked to these European sites'.
- 4.7 The Severn Estuary lies on the south west coast of Britain at the mouth of four major rivers (the Severn, Wye, Usk, and Avon). The immense tidal range (the second highest in the world) and classic funnel shape make the Severn Estuary unique in Britain and

very rare worldwide. This tidal range creates strong tidal streams and high turbidity, producing communities characteristic of the extreme physical conditions of liquid mud and tide-swept sand and rocks.

- 4.8 The Estuary includes a wide diversity of habitats including Sandbanks which are slightly covered by sea water all the time, Mudflats and sandflats not covered by sea water at low tide, Atlantic salt meadows, and Reefs, which are identified as Annex I habitat types in their own right.
- 4.9 The intertidal zone of mudflats, sand banks, rocky platforms and saltmarsh is one of the largest and most important in Britain. The estuary has a diverse geological setting and a wide range of geo-morphological features, especially sediment deposits. It is important for the interpretation of coastline dynamics and land-forms, and also past changes, in sea level, sediment supply, climate and river flow. The estuary's overall interest depends on its large size, and on the processes and interrelationships between the intertidal and marine habitats and its fauna.
- 4.10 The fluctuating salinity and highly mobile sediments with consequent high turbidity limits the benthic invertebrates of the mud and sandflats to relatively few species. Those which are tolerant of such conditions occur in very high densities on the more stable mudflats. Beds of eel-grass *Zostera* spp. also occur on some mudflats. A greater variety of invertebrates occurs on the intertidal rock platforms, a more stable habitat with rock pools and a relatively high cover of seaweeds.
- 4.11 The estuary fringes have large areas of saltmarsh. These are often grazed by sheep and/or cattle, a significant factor determining the plant communities. A range of saltmarsh types is present, with both gradual and stepped transitions between bare mudflat and upper marsh.
- 4.12 The estuarine fauna includes: invertebrate populations of importance (especially as a food resource for a wide range of bird and fish species), internationally important populations of waterfowl; and large populations of migratory fish, including Sea lamprey *Petromyzon marinus*, River lamprey (*Lampetra fluviatilis*) (both of which spawn in freshwater but complete part of their life cycle in the sea), Twaites shad *Alosa fallax* and the nationally rare and endangered Allis Shad (*Alosa alosa*).
- 4.13 Qualifying habitats: The site is designated under Article 4(4) of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- Estuaries
- Sandbanks which are slightly covered by sea water all the time. (Subtidal sandbanks)
- Mudflats and sandflats not covered by seawater at low tide. (Intertidal mudflats and sandflats)
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
- Reefs Qualifying species: The site is designated under Article 4(4) of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:
- Sea Lamprey (*Petromyzon marinus*)
- River Lamprey (*Lampetra fluviatilis*)
- Twait Shad (*Alosa fallax*)

4.14 The Severn Estuary SPA supports overwintering Bewick's swan (*Cygnus columbianus bewickii*); on passage ringed plover (*Charadrius hiaticula*) and overwintering curlew (*Numenius arquata*), dunlin (*Calidris alpina alpina*), pintail (*Anas acuta*), redshank (*Tringa tetanus*), and shelduck (*Tadorna tadorna*). It also regularly supports at least 20,000 waterfowl.

4.15 The Wye, on the border of England and Wales, is a large river with a geologically mixed catchment, including shales and sandstones. There is a clear transition between the upland reaches, with characteristic bryophyte-dominated vegetation, and the lower reaches, with extensive water crow-foot (*Ranunculus beds*). There is a varied water-crowfoot flora; stream water-crowfoot (*R. penicillatus ssp.* pseudofluitans) is abundant, with other species – including the uncommon river water-crowfoot *R. fluitans* – found locally. Other species include flowering-rush (*Butomus umbellatus*), lesser water-parsnip (*Berula erecta*) and curled pondweed (*Potamogeton crispus*). There is an exceptional range of aquatic flora in the catchment including river jelly-lichen (*Collema dichotum*). The river channel is largely unmodified and includes some excellent gorges, as well as significant areas of associated woodland.

4.16 The Wye has a range of nutrient conditions and aquatic habitats and generally good water quality for fish species. It represents most of the habitat conditions in which bullhead *Cottus gobio* occurs in Britain. The site provides exceptionally good quality habitat for lampreys and supports healthy populations. The sea lamprey *Petromyzon*

marinus population is found in the main stem below Llyswen, whilst river (*Lamptera fluviatilis*) and brook lampreys (*L. planeri*) are widely distributed in the catchment. The Wye also contains highquality spawning grounds and juvenile habitat for Atlantic salmon (*Salmo salar*) in both the main channel and tributaries. Twait shad (*Alosa fallax*) have long been abundant in the Wye. Twait shad often spawn at or just above the tidal limit, but in the Wye they migrate over 100 km upstream, the highest spawning site being at Builth Wells. The river has relatively good water quality, adequate flows through an unobstructed main channel and a wide range of aquatic habitats conducive to supporting this fish species. In particular, there are a number of deep pools essential for congregation before spawning. The river also supports allis shad (*A. alosa*).

4.17 The Wye holds a dense and well-established otter (*Lutra lutra*) population. The bank-side vegetation cover, abundant food supply, clean water and undisturbed areas of dense scrub suitable for breeding, make it particularly favourable as otter habitat. The tributaries are the main haven for white-clawed crayfish (*Austropotamobius pallipes*), particularly at the confluences of the main river and the Edw, Dulas Brook, Sgithwen and Clettwr Brook.

4.18 Qualifying habitats: The site is designated under article 4(4) of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- Transition mires and quaking bogs. (Very wet mires often identified by an unstable 'quaking' surface)
- Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche Batrachion* vegetation. (Rivers with floating vegetation often dominated by watercrowfoot).

4.19 Qualifying species: The site is designated under article 4(4) of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- Allis shad
- Atlantic salmon
- Brook lamprey
- Bullhead
- Otter

- River lamprey
- Sea lamprey
- Twaite shad
- White-clawed (or Atlantic stream) crayfish

Statutory Designated Sites

4.20 No internationally designated statutory nature conservation sites (such as Special Areas of Conservation (SAC) or Special Protection Areas) are present within a 3km radius of the Site. There is one internationally designated site within 15km of the site. This is Fen Pools SAC which is located approximately 11.5km to the north-east of the site. This SAC is designated due to the presence of great crested newts (*triturus cristatus*). It is considered that this SAC is sufficiently distant from the site and therefore a likely significant effect is not anticipated.

4.21 There are no statutory designated sites present on the Site; however there are seven statutory designated sites within 3km of the centre of the Site.

4.22 These are:

- Hurcott and Podmore Pools Site of Special Scientific Interest (SSSI), located 670m to the south of the Site, designated due to its pools with rich riparian vegetation zones and woodland which is an important wetland complex containing the largest area of wet valley alder carr in the county;
- Hurcott Pasture SSSI, located 680m to the south of the Site, designated for its seminatural acidic and neutral grassland and locally uncommon or rare plant species
- Stourvale Marsh SSSI, located 800m to the south-west of the Site, designated due to its wetland habitats including damp grassland, tall fen, tall rank vegetation and carr woodland as well as being important for insects;
- Puxton Marshes SSSI, located 920m to the south-west of the Site, designated due to its large area of unimproved marshy grassland with associated damp woodland and open water and being one of the largest and most important areas of marshland remaining in the county;

- Hurcott Wood Local Nature Reserve (LNR), located 620m to the south-east of the Site, designated for habitat including pools, woodland and wet valley alder carr which is the largest in Worcestershire;
- Kingsford Forest Park LNR, located 1.9km to the north-west of the Site, designated for habitats including heathland, sandy tracks, pine forests and broad-leaved woodland; and
- Blake Marsh LNR, located 2.3km to the south-west of the Site, designated for its marshland habitat with rare flora including southern marsh orchid (*Dactylorhiza praetermissa*). The LNR is surrounded by areas of woodland at different stages of development and is used as an important site for environmental education for 5 local schools.

Non-Statutory Designated Sites

4.23 There are fifteen non-statutory designations which were returned from WBRC within 3km of the Site.

4.24 These are:

- Staffordshire and Worcestershire Canal Local Wildlife Site (LWS), located 0.16km to the north-west of the Site, consisting of open standing water with marshland and woodland;
- River Stour LWS, located 190m to the north-west of the Site, consisting of habitats of principal importance including rivers and streams as well as marshland and grassland;
- Gloucester Coppice LWS, located 320m to the north-west of the Site, comprising grassland and broadleaved woodland and including three notable Worcestershire vascular plant species: common calamint, (*Clinopodium ascendens*), fiddle dock, (*Rumex pulcher*), and wild clary, (*Salvia verbenacea*) as well as other important plant species;
- Wolverley Court Lock Carr LWS, located 550m to the south-west of the Site, comprising wet woodland, broadleaved woodland, marsh and swamp and notable Worcestershire vascular plant species;

- Wolverley Marsh LWS, located 590m to the west of the Site, comprising marsh/mire and swamp with a core area of swamp on deep silt, fragments of carr-woodland – willow (*Salix sp.*) and alder (*Alnus glutinosa*) and scrub;
- Bishops Field Wildlife Trust Reserve, located 610m to the west of the Site, comprising wetland habitat with peaty soils and a host of wetland flora;
- Hurcott and Podmore Pools (Pastures) LWS, located 640m to the south of the Site, comprising grassland and broadleaved/wet woodland and notable plant records;
- Puxton Marsh LWS, located 760m to the south-west of the Site, comprising marsh, swamp, wet woodland, wet grassland and unimproved acid grassland and notable vascular plants;
- The Island Pool LWS, located 1.4km to the north-east of the Site, comprising broad-leaved and wet woodland with open water and swamp/marsh with notable vascular plants;
- Caunsall Marsh LWS, located 1.8km to the north-east of the Site, comprising wet woodland and a network of drains, ditches and springs with fragments of alder and willow woodland and notable plant species;
- Kingsford Heath LWS, located 2km to the west of the Site, comprising remnant heathland, birch coppice and remnant open heath with a number of rare plant species present;
- Honeytop Farm Pastures LWS, located 2.3km to the west of the Site, comprising unimproved acid grassland with calcareous elements and rare and notable plant species as well as a breeding site for the hornet robber-fly (*Asilus crabroniformis*);
- Easthams Coppice LWS, located 2.4km to the west of the Site, comprising semi-natural ancient woodland and neutral/acid grassland supporting notable grassland plants;
- Cornhill Coppice LWS, located 2.7km to the west of the Site, comprising ancient semi-natural secondary woodland and plantations; and
- Parkatt Wood and Honeybottom LWS, located 2.9km to the west of the Site, comprising woodland and grassland with varied geology.

Ancient Woodland

4.25 There are six areas of ancient woodland within 3km of the central point of the Site, which comprised both ancient and semi-natural woodland and ancient re-planted woodland. These were:

- Gloucester Coppice, located 280m to the north-west of the Site and comprising ancient and semi-natural woodland;
- Axborough Wood, located 990m to the north of the Site and comprising ancient replanted woodland;
- Cookley Wood, located 1.1km to the north of the Site and comprising ancient and seminatural woodland;
- An un-named ancient and semi-natural woodland, located 1.3km to the north-west of the Site;
- An un-named ancient replanted woodland, located 1.4km to the north-west of the Site; and
- The Hollies Wood, located 2.4km to the south-west of the Site and comprising ancient and semi-natural woodland.

4.26 In addition, thirty one records of ancient trees were returned from the data search with the closest being 690m to the south-west of the Site.

4.27 Table 1 below provides a summary of statutory and non-statutory site designations within a 3km radius of the central point of the site.

Level of Importance	Site	Area (ha)	Reason for Designation	Proximity to the Site
National	Deciduous woodland Habitat of principal Importance	8.41 (ha)	This site is not listed as an Ancient woodland on Magic, however is listed as an Ancient Woodland Under the Worcestershire Local Inventory	Adjacent to the site boundary

Level of Importance	Site	Area (ha)	Reason for Designation	Proximity to the Site
National	Gloucester Coppice Ancient and Semi-Natural Woodland (ASNW)	8.07 (ha)	Ancient Woodland	280m to the north- west
National	Hurcott Wood Local Nature Reserve (LNR)	37.20 (ha)	Botanical	620m to the south-east
National	Hurcott and Podmore Pools Site of Special Scientific Interest (SSSI)	21.65 (ha)	Botanical	670m to the south
National	Hurcott Pasture SSSI	4.69 (ha)	Botanical	680m to the south
National	Stourvale Marsh SSSI	9.28 (ha)	Botanical	800m to the south-west
National	Puxton Marshes SSSI	12.81 (ha)	Botanical	920m to the south-west
National	Axborough Wood, Ancient Replanted Woodland (ARW)	3.65 (ha)	Ancient Woodland	990m to the north
National	Cookley Wood ASNW	1.64 (ha)	Ancient Woodland	1.1km to the north
National	Un-named ASNW	4.94 (ha)	Ancient woodland	1.3km to the north-west
National	Un-named ASNW	3.77 (ha)	Ancient woodland	1.4km to the north-west
National	Kingsford Forest park LNR	80.76 (ha)	Botanical	1.9km to the north-west
National	Blake Marsh LNR	4.36 (ha)	Botanical	2.3km to the south-west
National	The Hollies Wood	2.03 (ha)	Ancient woodland	2.4km to the south-west
County	Staffordshire and Worcestershire Canal Local Wildlife Site	14.7km (linear)	Botanical	160m to the north-west

Level of Importance	Site	Area (ha)	Reason for Designation	Proximity to the Site
	(LWS)			
County	River Stour LWS	18.75km (linear)	Botanical	190m to the north-west
County	Gloucester Coppice LWS	12.53 (ha)	Botanical	320m to the north-west
County	Wolverley Court Lock Carr LWS	5.24 (ha)	Botanical	550m to the south-west
County	Wolverley Marsh LWS	1.84 (ha)	Botanical	590m to the west
County 610m to the west	Bishops Field Wildlife Trust Reserve	1.50 (ha)	Botanical	610m to the west
County	Hurcott and Podmore Pools (pastures) LWS	6.87 (ha)	Botanical	640m to the south
County	Puxton Marsh LWS	8.89 (ha)	Botanical	760m to the south-west
County	The Island Pool LWS	3.54 (ha)	Botanical	1.4km to the north-east
County	Caunsall Marsh LWS	6.63 (ha)	Botanical	1.8km to the north-east
County	Kingsford Heath LWS	28.79 (ha)	Botanical	2km to the west
County	Honeytop Farm Pastres LWS	2.98 (ha)	Botanical and Invertebrate	2.3km to the west
County	Easthams Coppice LWS	21.45 (ha)	Botanical	2.4km to the west
County	Cornhill Coppice LWS and Ancient Woodland	30.55 (ha)	Botanical	2.7km to the west
County	Parkatt Wood and Honeybottom LWS	47.38 (ha)	Botanical	2.9km to the west

5.0 EFFECTS ON DESIGNATED SITES

5.1 Severn Estuary SPA and SAC and River Wye SAC

5.2 Although the Severn Estuary SPA and SAC designated site is located approximately 70km from the site boundary and the River Wye SAC is located about 40km south-west of the site, the River Stour tributary to this designated is located approximately 190m to the north-west of the site boundary.

5.3 It is assessed that the habitats present within the site boundary are not suitable to support any of the qualifying species listed within these designations and therefore there will be no direct impacts on these designated sites.

5.4 Although the site is located 190m from the River Stour, located between the two sites is a canal network and two separate areas of broad-leaved woodland. In addition, the River Stour valley is located at a much lower level than the site, therefore is it considered that the River Stour is sufficiently screened from any impacts that the proposed development may cause.

5.5 This can be further supported in the Hydrological Assessment Response of the Regulation 25 request of 5 June 2020 (See Appendix 2), which states ' Both the Site derived and EA datasets indicate groundwater levels will reside at approximately 38maOD beneath the Site (EA dataset slightly lower). The EA have advised that the contour plot provided is expected to be indicative of 'average' groundwater elevation conditions for the locality and the regional flow pattern. This notwithstanding, the Ordnance Survey mapping data for the valley to the south of the Site (in proximity to the Hurcott and Podmore Pool SSSI and Hurcott Pasture SSSI) indicates an elevation of some 42maOD within the valley i.e. above the groundwater level expected at the Site. On this basis, groundwater beneath the Site is located down hydraulic gradient of the protected areas and hence will not be contributing to flows through the aforementioned protected sites'.

5.6 The potential for the proposed development to impact on the protected sites in the locality has been discussed above. Groundwater within the aquifer beneath the Site is not expected to be contributing to flows through the identified protected areas (being located down hydraulic gradient of the areas associated with the Wannerton Brook and separated from the areas associated with the River Stour by the Staffordshire and Worcestershire Canal. The foregoing factors, coupled with the standoff for working from the water table and drainage measures incorporated into the Site design

(returning incident rainfall to the aquifer within the Site boundary), indicate the development is not expected to result in any negative impact at the identified sites’.

- 5.7 In relation to the Air Quality and Dust Assessment submitted for application ref: 19/000053/CM (see Appendix 3), the report states ‘As shown above, the impact on air quality from potential dust emissions is expected at all but two receptors to be negligible effect. No. 10 Castle Barns and The Bungalow could potentially be Slight Adverse Effect / Moderate Adverse Effect if dust mitigation and control measures are not implemented. If the dust control measures identified in Section 3.0 and are effectively implemented, this will effectively mitigate any potential dust impact’.

Due to the evidence provided above, it is therefore considered that the proposed development will have no negative impact on any of the qualifying features for the Severn Estuary SPA , SAC or the River Wye SAC.

Statutory Designated Sites within zone of influence

- 5.8 There are seven statutory designated sites within 3km of the central point of the Site. These are located between 0.62km and 2.4km from the Site. There are five sites within 1km of the Site which may be subject to impacts from changes to noise, dust and hydrology. None of these statutory designated sites would be subject to any direct habitat removal as a result of the development. With reference to Appendix 2 showing the hydrological assessment and appendix 3 showing the air quality assessment, there are considered to be negligible impacts on any of these designated sites due to the distance of the sites from the proposed development, therefore a likely significant effect is not anticipated

Non - Statutory Designated Sites within zone of influence

- 5.9 There are fifteen non-statutory designated sites within 3km of the central point of the Site. Eight of these are present within 1km of the Site and therefore may be subject to impacts from changes to noise, dust and hydrology. None of these non-statutory designated sites would be subject to any direct habitat removal as a result of the development. With reference to Appendix 2 showing the hydrological assessment and Appendix 3 showing the air quality assessment, there are considered to be negligible impacts on any of these designated sites due to the distance of the sites from the proposed development, therefore a likely significant effect is not anticipated.

Ancient woodland within zone of influence

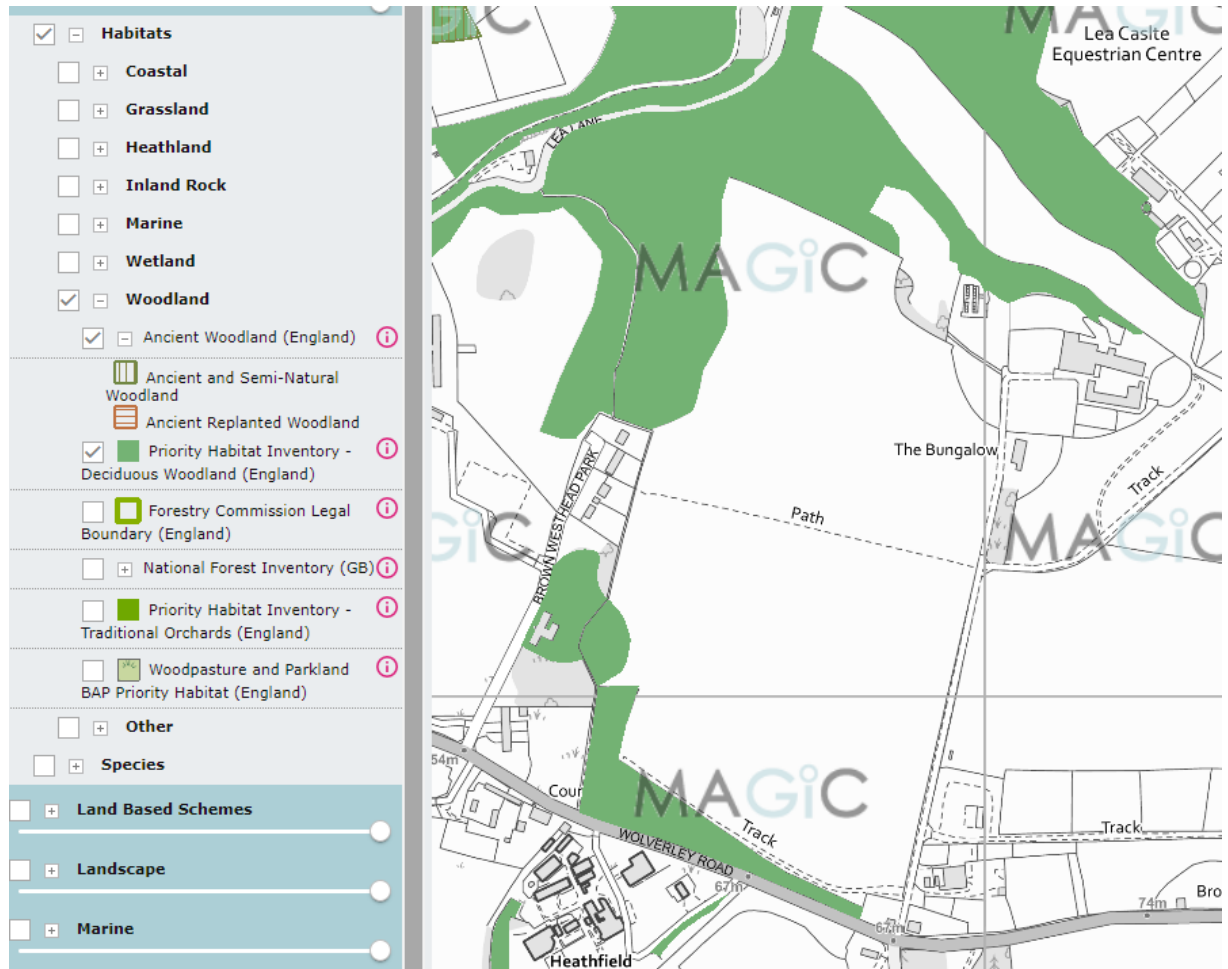
5.10 Within the initial Ecological Impact assessment submitted for application ref: 19/000053/CM (Appendix 4), there were a total of six areas of ancient woodland identified within 3km of the site boundary. Two of these are present within 1km of the Site and therefore may be subject to impacts from changes to noise, dust and hydrology, there are considered to be negligible impacts on any of these areas of ancient woodland due to the distance of these woodlands from the proposed development, therefore a likely significant effect is not anticipated.

5.11 The woodland surrounding the site boundary was initially assessed as a habitat of principal importance, assessed as broad-leaved semi natural woodland. This assessment was made as this woodland is not listed as ancient woodland on MAGIC or within the woodland trust ancient tree inventory. Figure 1 below shows the search from the woodland trust ancient tree inventory and figure 2 shows the MAGIC search.

Figure 1 – Search from woodland trust ancient tree inventory



Figure 2 – Search From Magic



5.12 Within the ECIA (Appendix 4), the assessment states that in the absence of mitigation the woodland would be impacted in the form of noise, dust and hydrological impacts which were considered negative, temporary, reversible, short-term impacts. This assessment went on to say further that with mitigation controlling noise, dust and hydrological changes the impact would be negligible and not significant.

Habitat description of woodland

5.13 The north, west and south of the site is bordered by a combination of mixed plantation woodland and broad-leaved semi-natural woodland. The northern and north-western boundary of the site is comprised of mixed plantation woodland. Species recorded include elder, (*Sambucus nigra*), yew, (*Taxus baccata*), box (*Buxus sempervirens*), field maple, (*Acer campestre*), rowan, (*Sorbus aucuparia*), oak, hawthorn (*Crataegus monogyna*), sycamore (*Acer pseudoplatanus*), silver birch, (*Betula pendula*), beech, sweet chestnut, ivy, (*Hedera helix*), holly, (*Ilex aquifolium*), cherry (*Prunus sp.*), nettle,

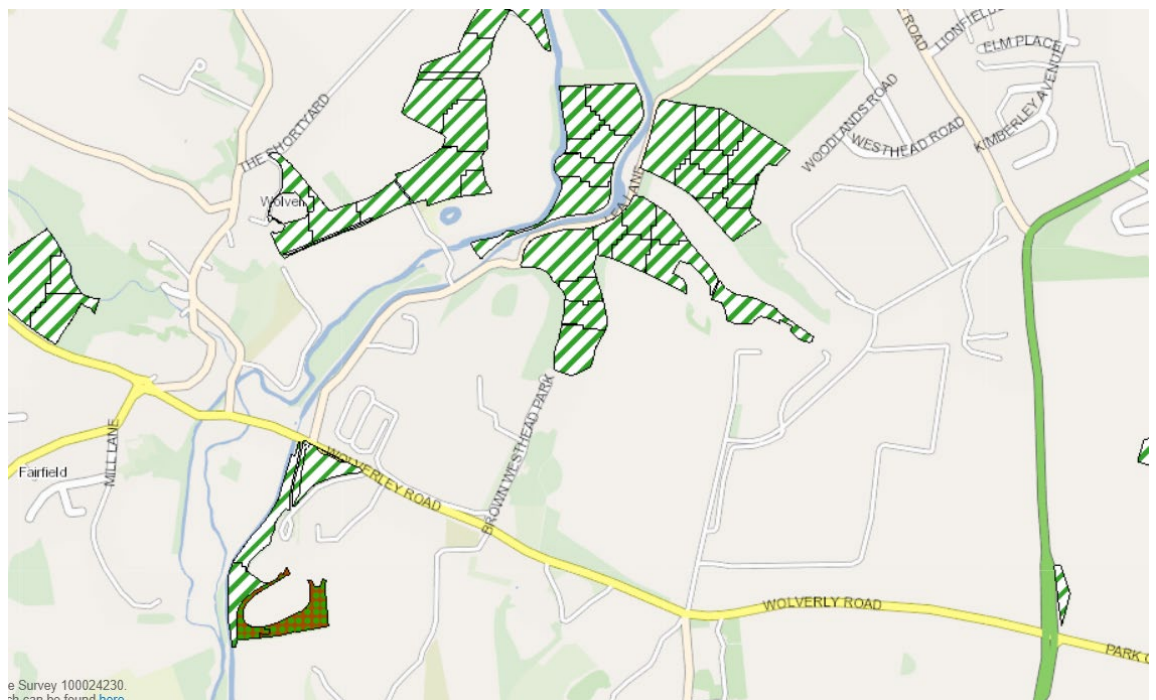
(*Urtica dioica*), ground ivy, (*Glechoma hederacea*), wood avens, (*Geum urbanum*), bramble (*Rubus fruticosus*) and rhododendron, (*Rhododendron ponticum*). It is not known whether the box in this area of the woodland is planted or native. Should it be native, this is a very rare species in the county. One record of box was returned from the data search. This was recorded in Gloucester Coppice in 2007 approximately 655m to the north-west of the site. Due to the uniform size of the dominant sycamore trees it is suspected that the woodland here has been clear-felled and replanted at some point in the past. This may be because of a requirement for timber or as a result of disease.

- 5.14 The north-eastern boundary of the western part of the site is bordered by broad-leaved semi-natural woodland, with species recorded including wych elm, (*Ulmus glabra*), small-leaved lime, (*Tilia cordata*), oak, sycamore, hawthorn, ash (*Fraxinus excelsior*) and broom, (*Cytisus scoparius*).
- 5.15 The south-western boundary of the site is bordered by broad-leaved semi-natural woodland, with species recorded including small-leaved lime, sycamore, oak, box, beech, willow, (*Salix sp.*), and elm. Ground flora in this area included herb Robert, (*Geranium robertianum*), ground ivy, common vetch, (*Vicia sativa*), white dead-nettle, (*Lamium album*), bramble and nettle.
- 5.16 The woodland that borders the southern boundary of the site was dominated by common lime, (*Tilia x europaea*) and also included silver birch, sycamore, horse chestnut, (*Aesculus hippocastanum*), fig, (*Ficus carica*), elm, yew, holly, ivy, cherry laurel, (*Prunus laurocerasus*), bramble, common nettle, herb Robert and foxglove, (*Digitalis purpurea*).

Assessment of Boundary Woodland

- 5.17 Response from Worcestershire County Council in August 2021 identified that “The Worcestershire Habitat Inventory identifies 'Wolverley Lodge' (site reference 87023, contiguous on the north-west of the site) and Wolverley Carr (site reference 87026, located just beyond Wolverley Lodge, on the banks of the Staffordshire and Worcester Canal) as part of the local Ancient Woodland Catalogue, and so should be treated as an irreplaceable ancient woodland habitat. Figure 3 below shows the mapping data from the local Ancient Woodland Catalogue.

Figure 3 – Worcestershire local Ancient Woodland catalogue showing the ancient woodland to the north of the site



5.18 Upon further consultation with the council, an assessment of the Ancient Woodland status adjacent to the site was conducted in October 2021 by Mark Singlehurst and submitted for application ref: 19/000053/CM (Appendix 5). This assessment concluded “In summary, the Habitat Inventory would appear to be a rather unreliable source as to what is truly ancient woodland, in the sense defined by Natural England and the Woodland Trust. I suspect that the Council’s ecologists lack the necessary map or documentary evidence to prove that the woodland around the former Lea Castle really did exist before 1600, so it would be interesting to know what evidence they think they have for drawing that conclusion. Whilst it is clear that extensive woodland did exist in this area by the 9th century, we cannot now be sure of its exact location and extent, since Wolverley is quite a large parish and includes more than one settlement. Nor can we be sure that all the existing woodland is ancient; in fact, some of it clearly isn’t, such as the area now called ‘Wolverley Carr’”.

5.19 Worcestershire Council’s Ecological advisor Cody Levine responded to Mark Singlehurst’s assessment on 21st October 2021 (Appendix 6). This set out that “My colleagues have provided some interpretation of the additional evidence held in WCC’s archives. This indicates that the three woodlands in question are likely to have been established by the early 19th century; despite a complicating factor of designed landscape features around Lea Castle Farm, the woodland’s irregular shape (in

contrast to the more regular-shaped field boundaries to the east around the new Lea Castle development) is indicative of a pattern of land use characterised during the medieval period and which persisted to the 17th century, where unenclosed land was converted to piecemeal enclosure and managed for arable or pastoral use, with marginal land subsequently managed as woodland or retained for unenclosed grazing. LIDAR imagery indicates a number of deeply incised trackways, with some limited quarrying within the northern part of the woodland; which is a pattern of woodland land use which I understand is consistent with many of our historic woodlands, including the Wyre Forest. Nevertheless, the additional evidence received doesn't appear to provide further corroboration of the existence of these three woodlands to a date any earlier than 1822 (Greenwood Map, RGS) and therefore, at this stage, I do not wish to contest the challenge presented by Mr Singlehurst as to the ancient woodland status of Wolverley Lodge or Reservoir Woods, and I am grateful for the due diligence in this matter.

- 5.20 The status of Wolverley Carr may be more complex to determine, carr being a wet woodland habitat which may well have been mapped as wetland or marsh in early maps, but equally may only have succeeded to a wet woodland community more recently. Nevertheless, I am content that the location of Wolverley Carr, at c.100m from the excavation site boundaries, and effectively sheltered by Wolveley Lodge and Reservoir Woods, means that damage or deterioration of that woodland from effects of mineral development is not considered to be of particular concern.”
- 5.21 Given this assessment, it is therefore considered that this boundary woodland is not therefore assessed as Ancient and the existing assessment from the ECIA provided remains applicable.

6.0 CONCLUSIONS

- 6.1 Heatons have been commissioned to undertake a Habitat Regulations Assessment (HRA) assessment to determine whether the proposed extraction at LEA Castle Farm in isolation and in combination with other development would result in likely significant effects upon the Severn Estuary SPA / SAC / Ramsar and River Wye SAC.
- 6.2 The Regulation 25 request states ‘the application site is located approximately 70 kilometres north-east of the Severn Estuary SPA and SAC which are European sites (also commonly referred to as Natura 2000 sites), which is also notified as a Ramsar Site (of international importance) and at a national level as the Upper Severn SSSI. The River Wye SAC is located about 40 kilometres south-west of the site. Despite the distance from these European sites, the River Stour is located in close proximity to the application site (within 135 metres of the application site) and are hydrologically linked to these European sites. In view of this, and due to the nature and location of proposed project, the Mineral Planning Authority (MPA) consider there is potential the proposal may affect the interest features of these European designated sites through functional hydrological connectivity and the potential presence of migratory species within the upper River Severn catchment’ .
- 6.3 The application is for the extraction, processing and sale of ~300,000 tonnes of sand and gravel per annum, which would provide ten years of supply into local and Midlands markets.
- 6.4 It is not anticipated the proposed development will present any likely significant effects on the qualifying interest of any relevant designated sites for the Severn Estuary SPA, SAC and the River Wye SAC. It is also not anticipated that the proposed works will have any impact on the Statutory, Non-Statutory and Ancient woodland sites within the site Zone of Influence.

7.0 REFERENCES

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