



**DALCOUR
MACLAREN**

Preliminary Ecological Appraisal

Kirkstead, Timberland Drove
Cadent Gas Limited
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Project Details

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1 Executive Summary

Dalcour Maclaren (DM) commissioned Archer Ecology Ltd, on behalf of Cadent Gas Limited to complete a Preliminary Ecological Appraisal (PEA) in support of a planning application for the installation of new regulators and kiosk. The application site is situated 5.6km north-east of the rural village of Timberland and lies within the North Kesteven district of Lincolnshire.

As part of the commission, an Extended Phase 1 Habitat survey of the application site was carried out by Ecologist Elizabeth Fenn BSc (Hons) on 12th June 2023. The survey findings were supplemented by historical records of protected species and non-statutory designated nature conservation sites falling within 2km of the site; these were obtained through consultation with Lincolnshire Environmental Record Centre. A summary of the mitigation advice, pertaining to ecological receptors, is given in Table 1, below. This advice would require revising should the location, nature and/or extent of the works be altered from those stipulated in this report

Table 1: Overview of findings and recommendations

Biodiversity
In order for the works to meet the requirements of a 10% 'net gain' in biodiversity, it is proposed that a biodiversity assessment is undertaken. Using the latest DEFRA Biodiversity Metric calculator (version 4.0), the assessment would examine the changes in the pre-works and post-works biodiversity units scoring for the site and make realistic recommendations to achieve net gain by means of habitat creation, retention and/or succession.
Safeguarding Trees
Precautionary measures should be followed to avoid any adverse impacts to retained trees established on and adjacent to the application site. Following advice contained within British Standard (BS) 5837 - Trees in Relation to Construction, protective barrier fencing could be installed immediately outside of the Root Protection Areas (RPAs) pertaining to individual trees. This should remain in situ during all phases of the construction works. Further advice could be sought from a suitably experienced and qualified arborist.
Safeguarding Watercourse
Strict procedures and control measures will need to be implemented to ensure that pollution incidences are minimised and adequately avoided. These measures should be set out by the contractors prior to the commencement of the works and may need to be agreed with the Local Planning Authority and/or other statutory consultees (including the Environment Agency) in advance. These measures would also protect the integrity of interest features pertaining to Timberland Delph LWS. Access for plant and vehicles during the works must also remain to existing routes to avoid encroaching into this LWS. Furthermore, general pollution prevention and biosecurity measures should also be followed (see Appendix IV).
Herpetofauna
As a precautionary measure to mitigate the potential to harm single and/or small populations of amphibians and reptiles during the site preparatory works, it is advised that a bespoke Amphibian and Reptile and Method Statement is followed (see Appendix V).

Nesting Birds

As a precautionary measure, any required vegetation removal should be completed outside of the main nesting bird season (nesting season runs March to August, inclusive), where practicable.

Alternatively, should the works be scheduled during the main nesting bird season, all suitable habitats should be firstly checked by a suitably experienced ecologist in advance.

If active nests are found, these must be safeguarded and left undisturbed until all chicks have fledged.

Foraging and Roosting Bats

In order to avoid impacts upon nocturnal bat activity, dark and unlit corridors should be maintained around and across the site, allowing bats to pass through the site unhindered by artificial light.

Should any artificial lighting be introduced on the site, this should be directed away from potential foraging features, including tree lines and arable drains established within/beyond the site and along the site peripheries. Introduced lighting should be positioned at a minimum of 7m from these habitats.

Mercury or metal halide lamps must also be avoided. The hours of illumination could be restricted to provide a minimum of 8 hours of darkness per night. Introduced lighting should further comprise a maximum of 1 lux which is comparable to moonlight conditions. Depending on the extent of vegetation removal required to facilitate the works, and the roosting status of on-site trees, it may be necessary to undertake additional planting to compensate the potential loss of foraging features for local bats. With reference to BCT guidance, the planting scheme should incorporate linearly distributed trees and shrubs of greatest value to locally foraging and commuting bats.

Badgers

All excavations should be covered at night to avoid the accidental trapping of badgers and other terrestrial mammals, such as otter and hedgehogs.

2 Introduction

2.1 Background

- 2.1.1 Archer Ecology Ltd was commissioned by Dalcour Maclaren to complete a Preliminary Ecological Appraisal (PEA) in support of a planning application for the installation of new regulators which require a kiosk to house them in. The application site is situated 5.6km northeast of the rural village of Timberland and lies within the North Kesteven district of Lincolnshire.
- 2.1.2 The location of the study area - centered at Ordnance Survey Grid Reference (OSGR) TF 17721 60132 - in context with the local landscape is shown in Figure 1, below.



Figure 1: Location of the site in context with the local landscape

2.2 Objectives

- 2.2.1 The purpose of this report is to identify any potential ecological receptors occurring within or adjacent to the proposed works areas. These include protected species, habitats and designated nature conservation sites.
- 2.2.2 This report also details any potential ecological constraints to the works (e.g., invasive plants), the requirement for any further ecological survey and/or monitoring works and provides details of proportionate mitigation measures, where appropriate.

3 Planning Policy and Legislation

3.1 Natural Environment and Rural Communities Act

- 3.1.1 The Natural Environment and Rural Communities (NERC) Act includes a list under Section 41 (S41) of England's rarest and most threatened species and habitats. These are considered to be of 'principal importance' in England.
- 3.1.2 There is a requirement under Section 40(1) and (2) for each Secretary of State to take steps 'to be reasonably practicable to further the conservation of the living organisms and types of habitat' included in the list and there is a legal obligation on public bodies in England to have regard to these organisms and habitats whilst carrying out their functions. Currently, there are 56 habitats and 943 species of principal importance included on the S41 list.

3.2 Biodiversity Compliance

- 3.2.1 The United Nations Conference on Environment and Development (UNCED), also known as the Earth Summit, was held in Rio de Janeiro in 1992 and produced the 'Biodiversity: The UK Biodiversity Action Plan (BAP) (UK Biodiversity Partnership, 2007¹) which lists priority species and habitats in the UK requiring conservation action.
- 3.2.2 The goal of the UK BAP is to '*Conserve and enhance biological diversity within the UK and contribute to the conservation of global biodiversity through all appropriate mechanisms.*' The UK BAP now includes 1,150 species and 65 habitats; these are allocated individual action plans for conservation known as Species Action Plans (SAPs) and Habitat Action Plans (HAPs). As a signatory to the Convention on Biological Diversity (CBD) which was opened at the Earth Summit and entered into force in 1993, Local Biodiversity Action Plans (LBAPs) were developed by local authorities and counties to conserve fauna, flora and habitats at a local level.

3.3 National Planning Policy Framework

- 3.3.1 National Planning Policy Framework (NPPF) is the top tier of planning policy and sets out the government's planning policies for England and how these should be applied. NPPF also sets guidance to local authorities on planning policy within the planning system.
- 3.3.2 Section 15 relates to 'Conserving and enhancing the natural environment'. Relevant policies in relation to planning applications include:

¹ UK BAP. UK Biodiversity Action Plan – Priority Species and Habitats [online]. Available at: <https://webarchive.nationalarchives.gov.uk/20110303145245/http://www.ukbap.org.uk/newprioritylist.aspx> [Accessed June 2023].

- Paragraph 174. Planning policies and decisions should contribute to and enhance the natural and local environment by:
 - a) *protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);*
 - b) *recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;*
 - c) *maintaining the character of the undeveloped coast, while improving public access to it where appropriate;*
 - d) *minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
 - e) *preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*
 - f) *remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate*

 - Paragraph 179. *“To protect and enhance biodiversity and geodiversity, plans should:*
 - a) *Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity⁶¹; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation⁶²; and*
 - b) *Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.”*

 - Paragraph 180. *“When determining planning applications, local planning authorities should apply the following principles:*

If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
-

- a) *development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*
 - b) *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 reasons⁶³ and a suitable compensation strategy exists; and*
 - c) *development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.”*
- Paragraph 181. *The following should be given the same protection as habitats sites:*
 - a) *Potential Special Protection Areas and possible Special Areas of Conservation;*
 - b) *Listed or proposed Ramsar sites⁶⁴; and*
 - c) *Sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.”*
 - Paragraph 182. The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

3.4 Central Lincolnshire Local Plan

3.4.1 The Central Lincolnshire Local Plan is a suite of Development Plan Documents (DPDs) which set out the local planning policy for the area. Policies of particular relevance to this PEA include:

Policy LP21: Biodiversity and Geodiversity

All development should:

- *Protect, manage and enhance the network of habitats, species and sites of international, national and local importance (statutory and non-statutory), including sites that meet the criteria for selection as a Local Site;*
- *Minimise impacts on biodiversity and geodiversity; and*

- *Seek to deliver a net gain in biodiversity and geodiversity.*

Development proposals that will have an adverse impact on a European Site or cause significant harm to a Site of Special Scientific Interest, located within or outside Central Lincolnshire, will not be permitted, in accordance with the NPPF.

Planning permission will be refused for development resulting in the loss, deterioration or fragmentation of irreplaceable habitats, including ancient woodland and aged or veteran trees, unless the need for, and benefits of, the development in that location clearly outweigh the loss or harm.

Proposals for major development should adopt an ecosystem services approach, and for large scale major development schemes (such as Sustainable Urban Extensions) also a landscape scale approach, to biodiversity and geodiversity protection and enhancement identified in the Central Lincolnshire Biodiversity Opportunity Mapping Study.

Development proposals should create new habitats, and links between habitats, in line with Biodiversity Opportunity Mapping evidence to maintain a network of wildlife sites and corridors to minimise habitat fragmentation and provide opportunities for species to respond and adapt to climate change. Development should seek to preserve, restore and re-create priority habitats, ecological networks and the protection and recovery of priority species set out in the Lincolnshire Biodiversity Action Plan and Geodiversity Action Plan.

Where development is within a Nature Improvement Area (NIA), it should contribute to the aims and aspirations of the NIA.

Development proposals should ensure opportunities are taken to retain, protect and enhance biodiversity and geodiversity features proportionate to their scale, through site layout, design of new buildings and proposals for existing buildings.

Mitigation

Any development which could have an adverse effect on sites with designated features and / or protected species, either individually or cumulatively, will require an assessment as required by the relevant legislation or national planning guidance.

Where any potential adverse effects to the biodiversity or geodiversity value of designated sites are identified, the proposal will not normally be permitted. Development proposals will only be supported if the benefits of the development clearly outweigh the harm to the habitat and/or species.

In exceptional circumstances, where adverse impacts are demonstrated to be unavoidable, developers will be required to ensure that impacts are appropriately mitigated, with compensation measures towards loss of habitat used only as a last resort where there is no alternative. Where any mitigation

and compensation measures are required, they should be in place before development activities start that may disturb protected or important habitats and species.

4 Methodology

NB: Detailed methodologies pertaining to protected species are included under Appendix 1.

4.1 Overview

4.1.1 A PEA was undertaken of the site following guidance produced by the Chartered Institute of Ecology and Environment Management (CIEEM)². The assessment included:

- An ecological walkover survey of the proposed works area (shown in Figure 1). The study area was extended beyond the works area, where appropriate, e.g., to undertake species-specific surveys;
- Identification of invasive non-native species; and
- Assessment of the potential impacts of the proposed works on habitat and floral/faunal receptors, as well as designated sites.

4.2 Desk Study

4.2.1 To supplement the ecological walkover survey, a desktop study was undertaken in June 2023. This included a search of data, including statutory designated nature conservation sites, using the following resources:

- Lincolnshire Environmental Records Centre (LERC);
- Multi Agency Geographic Information for the Countryside (MAGIC)³; and
- Aerial imagery.

4.2.2 The following geographical extents of the search area for potential zones of influence for nature conservation sites were considered to be appropriate:

- 10km from the site for sites of International Importance (e.g., Special Area of Conservation (SAC)); and
- 2km from the site for sites of National or Regional Importance (e.g., Sites of Special Scientific Interest (SSSI)).
- 2km from the site for protected/notable species (including biological records, post-2000) and non-statutory designated sites (e.g. Local Wildlife Sites (LWS)).

² CIEEM (2017) Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

³ www.magic.gov.uk accessed June 2023

4.3 Field Survey

- 4.3.1 An Extended Phase 1 Habitat Survey was completed on 12th June 2023 by Ecologist Elizabeth Fenn BSc (Hons) who is a qualifying member of CIEEM and has three years' experience working as a consultant ecologist.
- 4.3.2 The survey was completed in accordance with 'Extended Phase 1' methodology⁴ and involved identifying notable/protected habitats and evidence of protected species on or adjacent to the application site, as well as determining the potential of the application site for protected species inhabitancy based on habitat suitability and the availability of field signs.
- 4.3.3 All photographs taken during the survey, as referenced within Section 4.2 of this report, are shown under Appendix II. A detailed JNCC Phase 1 Habitat Survey Map is included under Appendix III and features of particular ecological interest are denoted as Target Notes (TN).

4.4 Survey Limitations

- 4.4.1 An absence of desk study records cannot be relied upon to infer the absence of a species/habitat as a lack of records may be a result of under-recording within a given search area.
- 4.4.2 Phase 1 Habitat survey aims to characterise the habitat on site and is not intended to give a complete list of plant species present.

4.5 Scoped out

- 4.5.1 Given a lack of suitable habitat opportunities for white-clawed crayfish *Austropotamobius pallipes* this protected species has been scoped out of this assessment

⁴ Joint Nature Conservation Committee (2010) Handbook for Phase 1 Habitat Survey. A Technique for Environmental Audit.

5 Results

5.1 Statutory Designated Nature Conservation Sites

European/Internationally designated sites for nature conservation

5.1.1 The application site does not fall within the boundary of any European or international statutory designated nature conservation sites, nor do such sites exist within a 10km radius. Subsequently, European/Internationally statutory designated nature conservation sites are not considered potential receptors with respect to the proposed works.

Nationally designated sites for nature conservation

5.1.2 One nationally designated site for nature conservation occurs within a 2km radius of the application site. Tattershall Old Gravel Pit SSSI lies 1.8km south-east of the application site. Considering the localised nature of the proposed works and wide level of separation between the application site and Tattershall Old Gravel Pits SSSI, there is no mechanism identified for the works to result in direct impacts upon interest features forming this statutory designated site. Subsequently, nationally designated sites are not considered to be potential receptors with respect to the proposed works.

Non-statutory designated sites for nature conservation

5.1.3 LERC identified two non-statutory designated nature conservation sites within a 2km radius of the application site. Details of the location, interest features and proximity of these non-statutory designated sites, relative to the application site, are given in Table 2, below.

Table 2: Non-statutory designated nature conservation sites

LWS	Interest Features	Proximity to Site
Timberland Delph	Coarse or rank grassland, drain and scattered scrub.	10m north
Witham Way	Coarse grassland, woodland, scrub, species-rich, hedgerows, drain, marsh and ruderal	905m east

5.1.4 Considering the close proximity of the application site to Timberland Delph LWS, this locally designated site could be a potential receptor with respect to the proposed works in absence of mitigation. Whilst the works are expected to be confined entirely to the footprint of the application site, as shown in Figure 1, the works are not expected to directly impact upon the

interest features which form this LWS, which include the watercourse itself and terrestrial/semi-aquatic habitats along the bankside.

- 5.1.5 Measures should be secured to ensure that access routes for plant/vehicles during either the construction or preparatory phases of the development do not incidentally encroach into this LWS. Given the close proximity of the application site to this watercourse, appropriate pollution prevention measures must also be followed to ensure that pollution incidents are avoided.
- 5.1.6 In view of the localised nature of the proposed works, and lack of habitat connectivity between the application site and Witham Way LWS, the works are not expected to adversely impact upon the integrity of interest features which form this designated site. Subsequently, Witham Way LWS is not considered to be a potential receptor with respect to the proposed works.

Priority Habitats

- 5.1.7 LERC has indicated the presence of the Priority Habitat 'Reed Beds' within significant proximity to the application site, occurring >10m north beyond Timberland Drove. This also occupies the footprint of Timberland Delph LWS.
- 5.1.8 The proposed works are expected to be confined entirely to within the boundaries of the application site (as shown in Figure 1) and are also expected to utilise existing roads for plant and vehicle access. The site activities are not expected to encroach into this area. Provided that no indirect impacts upon this habitat arise as a result of completing the works, this Priority Habitat is not considered to be a potential receptor with respect to the proposed works.

5.2 Extended Phase 1 Habitat Survey

- 5.2.1 The study area is located 5.6km north-east of the rural village of Timberland in the North Kesteven district of Lincolnshire. The majority of land occurring beyond the peripheries of the application site comprises expanses of arable land intersected by arable drains.
- 5.2.2 All habitats recorded within the immediate proposed area of works (and/or within significant proximity) are described under the following sub-headings.

A3.1 – Scattered trees – broadleaved

- 5.2.3 A number of scattered, broadleaved trees are established within the site, occurring along the peripheries (see Photograph 1, Appendix II). These comprise a combination of sub-mature and mature specimens including ash

Fraxinus excelsior, willow *Salix sp.*, alder *Alnus glutinosa* and hawthorn *Crataegus monogyna*.

5.2.4 Considering the maturity and scattered distribution of these trees, this habitat was appraised as having potentially moderate nature conservation value on a site/local level, with some specimens also offering nesting opportunities for raptors and inherent features with the potential to sustain roosting bats.

B2.2 – Neutral grassland – semi-improved

5.2.5 Neutral, semi-improved grassland occurs on the site and appeared to be managed to form a short sward (see Photograph 2, Appendix II). This is chiefly dominated by perennial rye-grass *Lolium perenne* together with occasional dandelion *Taraxacum officinale agg.*, clover *Trifolium pratense*, cleavers *Galium aparine*, broad-leaved dock *Rumex obtusifolius*, cock's foot *Dactylus glomerata*, dove's-foot crane's-bill *Geranium molle* and common hogweed *Heracleum sphondylium*.

5.2.6 In view of the species diversity and highly managed nature of neutral grassland, this habitat was appraised as having low nature conservation value on a site scale.

G1.2 – Standing water – mesotrophic

5.2.7 The northern periphery of the application site is partly denoted by a continuous drain which occurs along the southern roadside verge of Timberland Drove. This is of a narrow profile and supports low levels of standing water (see Photograph 3, Appendix II). The drain is further dominated by an assemblage of common reed *Phragmites australis*, which may indicate regular inundation, and is flanked by tall ruderal vegetation. This drain was appraised as having low to moderate nature conservation value on a site scale.

J1.1 – Cultivated/disturbed land – arable

5.2.8 The southern, eastern and western peripheries of the application site comprise an arable field which appears to be in regular production (see Photograph 4, Appendix II) and sustain a single mono-crop. Considering the modified nature and limited species diversity, this arable field was typically appraised as having low nature conservation value on a local scale only.

J2.4 – Fencing

5.2.9 The boundaries of the application site are denoted by wooden post and rail fencing (see Photograph 5, Appendix II). These do not sustain any significant assemblages of vegetation and are, subsequently, appraised as having negligible nature conservation value.

J3.6 – Buildings

- 5.2.10 The application site includes three, detached buildings which are located amongst hardstanding within the central extent of the site (see Photograph 6, Appendix II). These are small, single-storey units clad with metal sheet panelling.
- 5.2.11 In view of the simplistic architecture and construction of these buildings, these were appraised as having negligible-low nature conservation value on a site level only.

J4 – Hardstanding

- 5.2.12 The central areas of the application site consist of gravel hardstanding (see Photograph 7, Appendix II) together with lidded cable troughing. These did not support any significant assemblages of vegetation and were, subsequently, assessed as having negligible nature conservation value.

5.3 Species

Amphibians

- 5.3.1 A number of amphibian records were returned by LERC from within a 2km radius of the application site, including common toad *Bufo bufo*, common frog *Rana temporaria*, smooth newt *Lissotriton vulgaris* and great crested newt *Triturus cristatus*. The closest record for great crested newt was obtained 1.85km north of the application site, dated 2014.
- 5.3.2 The understories of scattered trees surrounding the existing compound were not considered to be of optimal density to promote amphibian inhabitancy. Furthermore, expanses of semi-improved grassland appeared to be routinely managed to form a short sward and were not considered optimal for amphibian foraging and dispersal.
- 5.3.3 The application site does not support any waterbodies considered suitable for sustaining breeding populations of great crested newt. With the exception of very occasional, shallow water, the drain occurring along the northern site periphery was predominantly dry and suboptimal for supporting breeding newts. A network of arable drains occurs within the local vicinity of the application site, including Timberland Delph LWS. All drains occurring within a 500m radius of the site (and not separated by potential barriers to newt migration) were also predominantly dry and dominated by reeds.
- 5.3.4 Taken together with a lack of recent records for this species locally, and the small footprint of terrestrial habitats expected to be disturbed as part of the scheme, great crested newts are not expected to be significantly impacted by the proposed works. However, the probability of encountering single

and/or small populations of commonly occurring amphibians during site preparatory activities should not be discounted.

Reptiles

- 5.3.5 A number of records of reptiles were returned by LERC from within a 2km radius of the application site, including common lizard *Zootoca vivipara*, grass snake *Natrix helvetica* and slow worm. The closest reptile record represents grass snake, which was obtained 2km southeast of the application site, dated 2008.
- 5.3.6 The understories of scattered trees surrounding the existing compound were not considered to be of optimal density to promote reptile inhabitancy. Furthermore, expanses of semi-improved grassland on the site appeared to be routinely managed to form a short sward and were not considered optimal for reptile foraging and dispersal.
- 5.3.7 Therefore, the probability of the site sustaining notable populations of reptiles is considered to be sufficiently low to avoid the need for dedicated reptile surveys. However, the potential for single and/or small numbers of reptiles to be encountered during the site preparatory works should not be discounted.



Birds

- 5.3.8 LERC identified numerous records of bird species listed under Schedule 1 of the Wildlife and Countryside Act (1981, as amended) within 2km of the application site, including kingfisher *Alcedo atthis*, red kite *Milvus milvus* and fieldfare *Turdus pilaris* amongst a few.
- 5.3.9 General and passerine bird activity was recorded during the walkover which included sedge warbler *Acrocephalus schoenobaenus*, cuckoo *Cuculus canorus* and robin *Erithacus rubecula*. All bird activity was focused within scattered trees and common reed established on the site. Red kites were also observed during the walkover.
- 5.3.10 Four, large nests (typical of raptors) were identified within mature trees on the site (see Photographs 6, 7, 8 and 9 under Appendix II; represented as TN5, TN6, TN11 and TN12 under Appendix III), together with a number of redundant passerine nests (see Photographs 10 and 11 under Appendix II; represented as TN14, TN15 and TN16 under Appendix III). Scattered trees, arable fields and tall reeds established both on and immediately beyond the application site could provide opportunities for nesting birds.
- 5.3.11 In absence of mitigation, nesting birds could be impacted by any vegetation removal activities required to facilitate the proposed works.




Roosting Bats – Trees




5.3.12 The site supports a number of mature tree specimens which have the potential to support roosting bats, with numerous trees exhibiting Potential Roosting Features (PRFs), as described in Table 3, below. All other trees occurring within the application site boundary were appraised as having ‘negligible’ Bat Roosting Potential (BRP) in line with roosting categories contained within current Bat Conservation Trust (BCT) guidelines⁵.




Table 3: Tree locations, Bat Roost Potential (BRP) and Potential Roosting Features (PRFs)

Target Note	Description	BRP	Photograph
TN3	<p>Mature willow tree with multiple knotholes potentially leading to hollowed branches.</p> <p>There is also a possibility that PRFs could be present on the upper extents of the tree which could not clearly be observed</p>	Moderate	
TN4	<p>Mature willow tree with loose bark.</p> <p>There is also a possibility that PRFs could be present on the upper extents of the tree which could not be closely observed.</p>	Low	

⁵ Collins (2016) Bat Surveys for Professional Ecologists, Good Practice Guidelines, 3rd Edition. BCT

<p>TN5</p>	<p>Mature willow tree with multiple knotholes, potentially leading to hollowed branches.</p> <p>There is also a possibility that PRFs could be present on the upper extents of the tree which could not be closely observed. Raptor nest identified here also.</p>	<p>Moderate</p>	
<p>TN6</p>	<p>Mature willow with a possibility that PRFs could be present on the upper extents of the tree which could not be closely observed.</p>	<p>Low</p>	
<p>TN7</p>	<p>Sub-mature alder with a single knothole.</p>	<p>Low</p>	

<p>TN8</p>	<p>Sub-mature alder with a single knothole.</p>	<p>Low</p>	
<p>TN9</p>	<p>Sub-mature alder with a single knothole.</p>	<p>Low</p>	
<p>TN10</p>	<p>Mature ash with a possibility that PRFs could be present on the upper extents of the tree which could not be closely observed. Raptor nest also identified here.</p>	<p>Low</p>	

<p>TN11</p>	<p>Mature ash with a possibility that PRFs could be present on the upper extents of the tree which could not be closely observed.</p> <p>Raptor nest also identified here.</p>	<p>Low</p>	
<p>TN12</p>	<p>Mature ash with a possibility that PRFs could be present on the upper extents of the tree, which could not be closely observed.</p>	<p>Low</p>	
<p>TN13</p>	<p>Sub-mature alder with tear-out wound.</p>	<p>Low</p>	

5.3.13 Any arboricultural activities associated with the proposed works, which could result in removal of, or disturbance to trees identified in Table 3 as

having potential roosting features, could incur significant and adverse impacts to roosting bats in absence of mitigation.

Foraging bats

5.3.14 Linearly distributed scattered trees and ditches established within and immediately beyond the site peripheries provide potential foraging opportunities for local bat species. These habitats also retain a level of connectivity to the wider landscape. Subsequently, the application site was appraised as having ‘moderate’ potential to support foraging and commuting activity in line with (BCT)⁶ guidelines.

5.3.15 Taken together with the potential for a number of trees on the site to support roosting bats, any activities associated with the enabling/preparatory phases of the proposed works, which could result in removal of/disturbance to potential foraging and commuting habitats for bats, could incur significant and adverse impacts to local bat activity in absence of mitigation.

Badger

5.3.16 Eight recent records of badger *Meles meles* were returned by LERC from within a 2km radius of the application site.

5.3.17 The study area is surrounded by expanses of arable land and supports steep-sided ditches which were considered to be of a suitable profile for badger inhabitancy. No evidence of badger was recorded on the site; However, it is likely that local badger clans could forage and/or commute onto the site at night.

Otter

5.3.18 A number of records of otter *Lutra lutra* were returned by LERC from within a 2km radius of the application site.

5.3.19 Arable drains occurring within and adjacent to the application site lacked any substantial bodies of water and were, thus, considered unsuitable as a feeding resource for foraging otter. Furthermore, no evidence of otter activity was recorded during the walkover. Currently, otters are not considered to be a potential receptor with respect to the proposed works.

Water Vole

5.3.20 A small number of records of water vole were returned by LERC from within a 2km radius of the application site. The closest record to the site was obtained 1.93km north, dated 2014.

⁶ Collins (2016) Bat Surveys for Professional Ecologists, Good Practice Guidelines, 3rd Edition. BCT

5.3.21 No evidence of water vole inhabitancy was recorded during the walkover. Arable drains occurring within and adjacent to the application site lacked any substantial bodies of water and were, thus, considered unsuitable for water vole inhabitancy. Subsequently, water voles are not considered to be a potential receptor with respect to the proposed works.

Invasive non-native species

5.3.22 No evidence of invasive non-native species (INNS) was identified within the application site. Subsequently, INNS are not considered to be a potential constraint with respect to the proposed works.

6 Conclusion and Recommendations

6.1 Habitats and Biodiversity

6.1.1 The ecological walkover did not identify any habitats of significant value to nature conservation (on a county, regional or national scale) within the footprint of the works. The majority of habitats identified were appraised as having either 'negligible', 'low' or 'moderate' nature conservation value on a site or local scale.

Biodiversity

6.1.2 In order for the works to meet the requirements of a 10% 'net gain' in biodiversity, it is proposed that a biodiversity assessment is undertaken. Using the latest DEFRA Biodiversity Metric calculator (Version 4.0), the assessment would examine the changes in the pre-works and post-works biodiversity units scoring for the site and make realistic recommendations to achieve net gain by means of habitat creation, retention and/or succession.

Safeguarding Trees

6.1.3 Precautionary measures should be followed to avoid any adverse impacts upon retained trees established on and adjacent to the application site.

6.1.4 Following advice contained within British Standard (BS) 5837 – Trees in Relation to Construction, protective barrier fencing could be installed immediately outside of the Root Protection Areas (RPAs) pertaining to individual trees. This should remain in situ during all phases of the construction works. Further advice should be sought from a suitably experienced and qualified arborist.

Safeguarding Watercourses

6.1.5 Strict procedures and control measures will need to be implemented to ensure that pollution incidences are minimised and adequately avoided. These measures should be set out by the contractors prior to the commencement of the works and may need to be agreed with the Local Planning Authority and/or other statutory consultees (including the Environment Agency) in advance.

6.1.6 These measures would also protect the integrity of interest features pertaining to Timberland Delph LWS. Access for plant and vehicles during the works must also remain to existing routes to avoid encroaching into this LWS.

6.1.7 Furthermore, general pollution prevention and biosecurity measures should also be followed (see Appendix IV).

6.2 Species

Amphibians

- 6.2.1 Commonly occurring amphibians are protected under the Wildlife and Countryside Act (1981, as amended) against trade. Great crested newts are further protected by British and European law which also makes it an offence to capture or disturb them and to damage or destroy their habitat.
- 6.2.2 As a precautionary measure to mitigate the potential to harm single and/or small populations of amphibians during site preparatory works, it is advised that a bespoke Amphibian and Reptile and Method Statement is followed (see Appendix V).

Reptiles

- 6.2.3 All four of the common species of native reptiles, that is common lizard *Zootoca vivipara*, grass snake *Natrix helvetica*, slow worm *Anguis fragilis* and adder *Vipera berus*, are given partial protection under the Wildlife and Countryside Act 1981 (as amended) which prohibits the intentional killing, injuring or taking of these species. Permitted development or a development which has received planning permission is clearly a lawful activity, but the law does require that a reasonable effort is made to avoid killing or injury of these animals during the implementation of this permission.
- 6.2.4 As a precautionary measure to mitigate the potential to harm single and/or small populations of reptiles during site preparatory works, it is advised that a bespoke Amphibian and Reptile Method Statement is followed (see Appendix V)

Birds

- 6.2.5 All nesting birds and active nests are protected under the Wildlife and Countryside Act (1981, as amended) which makes it an offence to take, damage or destroy the nest of any wild bird while it is in use or being built, and to take or destroy the egg of any wild bird. Certain birds, listed under Schedule 1 of the Act, are also protected against disturbance whilst building a nest, or when on or near a nest containing eggs and unfledged young.
- 6.2.6 Any required vegetation removal should be completed outside of the main nesting bird season (nesting season runs March to August, inclusive), where practicable. Alternatively, should these works be scheduled during the main nesting bird season, all suitable habitats should be firstly checked by a suitably experienced ecologist in advance. If active nests are found, these must be safeguarded and left undisturbed until all chicks have fledged.

Bats

6.2.7 Bats receive protection under the Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981 (as amended). It is an offence to take, kill or injure a bat, damage or destroy a resting place of a bat, or disturb a bat whilst it is occupying a place of shelter.

Foraging and Roosting Bats

6.2.11 In order to avoid impacts upon nocturnal bat activity, dark and unlit corridors should be maintained around and across the site, allowing bats to pass through the site unhindered by artificial light.

6.2.12 Should any artificial lighting be introduced on the site, this should be directed away from potential foraging features, including tree lines and arable drains established within/beyond the site and along the site peripheries. Introduced lighting should be positioned at a minimum of 7m from these habitats.

6.2.13 Mercury or metal halide lamps must also be avoided. The hours of illumination could be restricted to provide a minimum of 8 hours of darkness per night. Introduced lighting should further comprise a maximum of 1 lux which is comparable to moonlight conditions.

6.2.14 Depending on the extent of vegetation removal required to facilitate the works, and the roosting status of on-site trees, it may be necessary to undertake additional planting to compensate the potential loss of foraging features for local bats. With reference to BCT guidance, the planting scheme should incorporate linearly distributed trees and shrubs of greatest value to locally foraging and commuting bats.

Badger

6.2.15 Badgers are protected and so are the setts (burrows) they live in under the Protection of Badgers Act 1992 making it is an offence to; willfully kill, injure or take a badger (or attempt to do so), cruelly ill-treat a badger, dig for a badger, intentionally or recklessly damage or destroy a badger sett, or obstruct access to it, cause a dog to enter a badger sett or disturb a badger when it is occupying a sett. Badgers are highly mobile and could commute onto and through the site during night.

6.2.16 All excavations should be covered at night to avoid the accidental trapping of badgers and other terrestrial mammals, such as otter and hedgehogs.

Appendix I - Species Methodology

The fauna included within this assessment is based on the habitats present, data from the desk-based searches, and the following legislation⁷:

- Wildlife and Countryside Act 1981 (as amended);
- The Protection of Badgers Act 1992;
- The Conservation of Habitats and Species Regulations 2017, and
- The NERC Act 2006 - S41 Species of Principal Importance (SPI) for the conservation of biodiversity.

Amphibians

Where accessible, waterbodies within 500m of the site boundary were identified using online Ordnance Survey maps and aerial imagery⁸ and were assessed for their suitability to support great-crested newts using a Habitat Suitability Index (HSI).

The HSI is a numerical index, between 0 and 1. Values close to 0 indicate unsuitable habitat, 1 represents optimal habitat (Oldham et al., 2000)⁹.

Reptiles

An assessment of the suitability of the habitats present to support common reptile species was undertaken¹⁰.

In accordance with current guidance this assessment involved a review of habitats and habitat structure for suitable shelter for reptiles such as areas of scrub and woodpiles, grassland with well-developed and varied structure, areas suitable for basking and large tussocks etc.

Birds

Based upon vegetation maturity, structure and density, an assessment of habitats was undertaken to determine the likely value to breeding and foraging birds. Buildings and built structures were also examined for the presence of horizontal surfaces and crevices with the potential to support nest sites.

Bats

Tree and building assessments were undertaken from ground level with the aid of a torch and binoculars, where required. During the survey, Potential Roosting Features (PRF) for bats were recorded following current best practice^{11, 12, 13}.

⁷ See www.legislation.gov.uk

⁸ www.bing.com/maps accessed June 2023

⁹ Oldham et al., (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal* 10, 143-15

¹⁰ Froglife (1999). *Froglife Advice Sheet 10: reptile survey*. Froglife, London.

¹¹ Collins (2016). *Bat Surveys for Professional Ecologists, Good Practice Guidelines, 3rd Edition*. BCT

¹² Mitchell-Jones, A.J., & McLeish, A.P. Ed. (2004). *Bat Workers' Manual 3rd Edition*

¹³ BCT (2015) *Surveying for Bats in Trees and Woodland - Guide*. BC

The potential for the site and immediate surroundings to support foraging and commuting bats was also assessed, with particular regard given to the presence of continuous tree lines, watercourses and hedgerows providing good connectivity in the landscape, and the presence of varied habitat such as scrub, woodland, grassland and open water in the vicinity.

Badger

Areas of suitable habitat were surveyed for evidence of badger activity, such as mammal paths, setts, snuffle holes or latrines¹⁴.

Riparian Mammals

Watercourses were assessed for their potential to provide suitable habitat for otters and water vole. For water voles, the standard Environmental Assessment field survey method outlined in Dean et al.¹⁵ was used which involved identifying water vole field signs including burrows, latrines, lawns and footprints. Otter surveys followed guidance produced by RSPB¹⁶; and Chanin¹⁷. These involved examining banks and prominent features for spraints (droppings), footprints as well as possible holt and couch (resting) sites.

Legally Controlled Species

Evidence of species listed on Schedule 9 of the Wildlife and Countryside Act (1981) as amended was recorded as seen.

¹⁴ Natural England (2015) Badgers: surveys and mitigation for development projects. Natural England

¹⁵ Dean, M., Strachan, R., Gow, D. and Andrew, R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.

¹⁶ SPB (1994). The New Rivers and Wildlife Handbook. The Royal Society for the Protection of Birds, Sandy

¹⁷ Chanin, P., (2003). Monitoring the Otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No.10. English Nature, Peterborough

Appendix II – Photographs



Photograph 1 – Broadleaved scattered trees



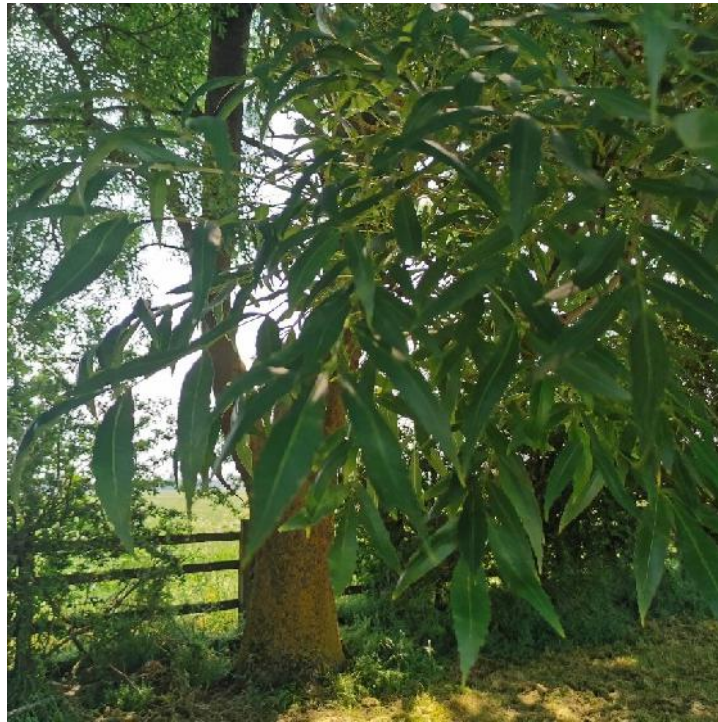
Photograph 2 – Semi-improved grassland



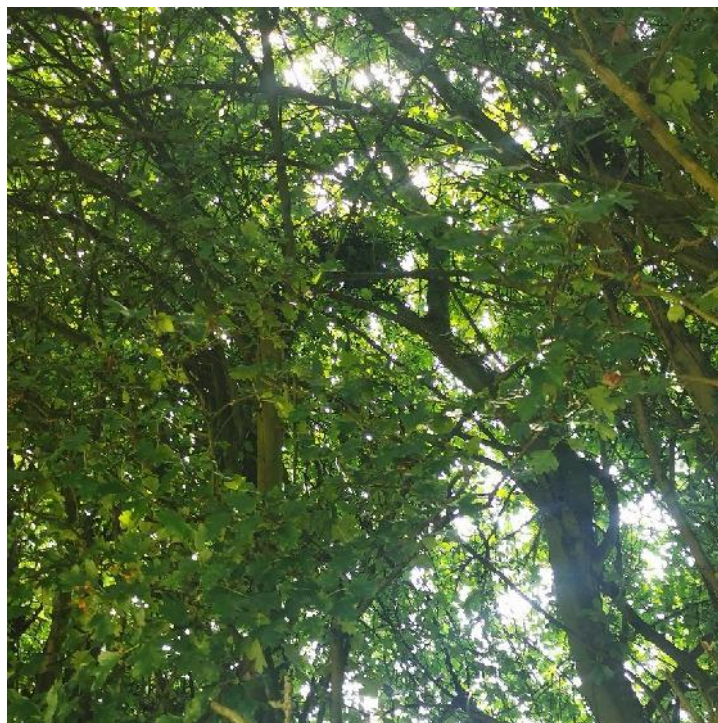
Photograph 3 – Ditch



Photograph 4 – Arable field



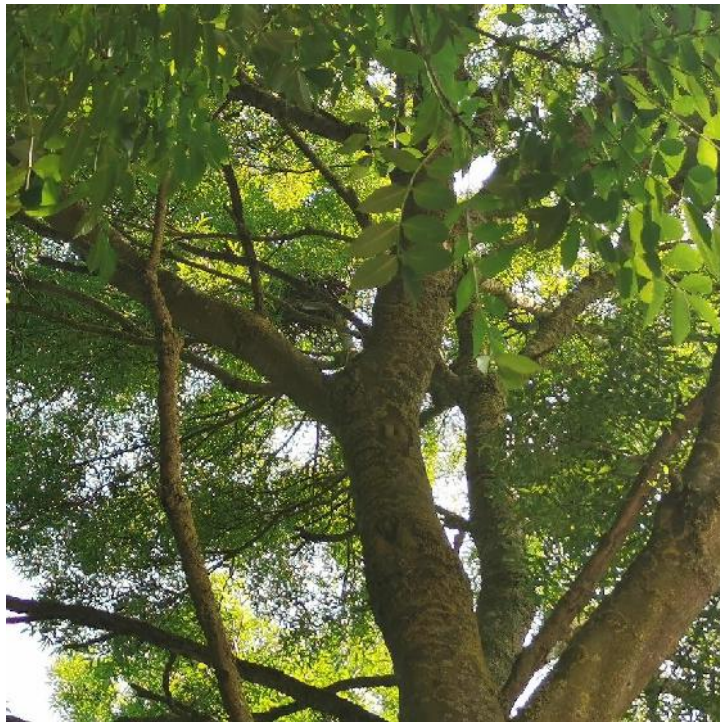
Photograph 5 – Fence



Photograph 6 – Raptor nest at TN5



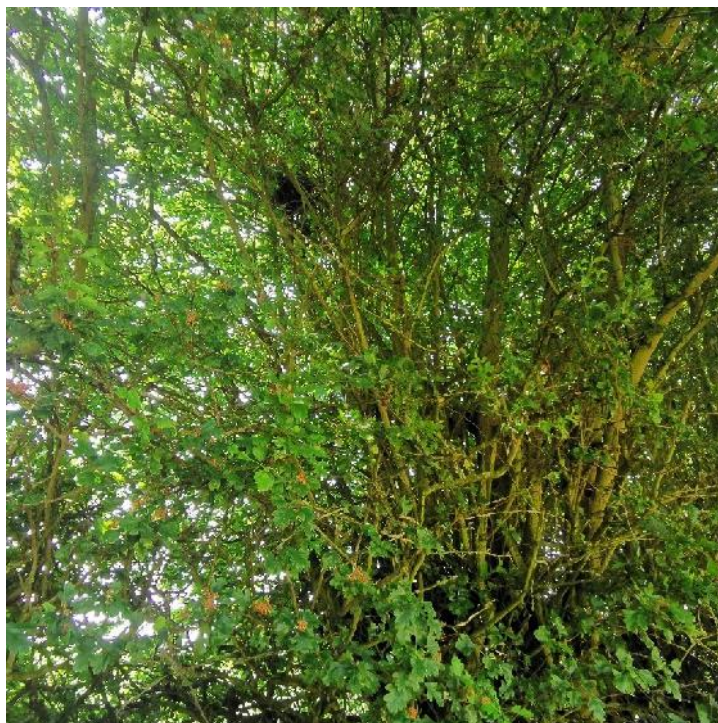
Photograph 7 – Raptor nest at TN6



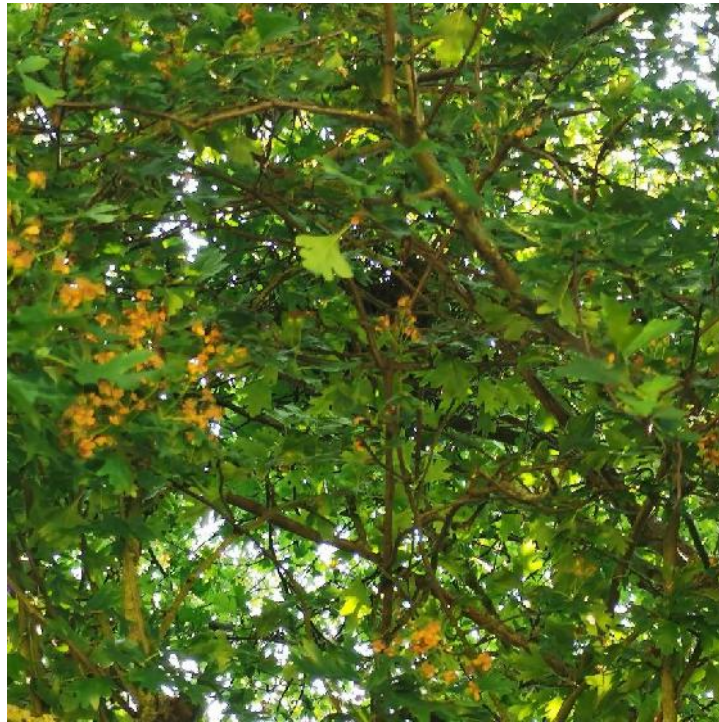
Photograph 8 – Raptor nest at TN11



Photograph 9 – Raptor nest at TN12



Photograph 10 – Redundant passerine nest



Photograph 11 – Redundant passerine nest



Photograph 12 – Buildings on the application site



Photograph 13 – Gravel hardstanding with cable troughing

Appendix III – JNCC Phase 1 Habitat Map



Appendix V – Amphibian and Reptile Method Statement

Amphibians

Legal Protection

Common amphibian species are protected under the Wildlife and Countryside Act 1981 (as amended) against trade.

In England great crested newts *Triturus cristatus* are fully protected under the Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way (CROW) Act 2000. They are also protected by European legislation; the EC Habitats Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2017. This has recently been amended by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019, which continue the same provision for European protected species, licensing requirements, and protected areas after Brexit. Taken together, this legislation makes it illegal to:

- Intentionally or recklessly kill, injure or capture a great crested newt
- Damage or destroy habitat which a great crested newt uses for shelter or protection
- Deliberately disturb a great crested newt when it is occupying a place it uses for shelter
- and protection

Identification

There are seven species of native amphibian within the UK, of these seven, there is potential for the following species to be encountered during the works:

- great crested newt
- common frog *Rana temporaria*
- common toad *Bufo*
- smooth newt *Lissotriton vulgaris*
- palmate newt *Lissotriton helveticus*

Common frog

Adults 6-7 cm.
Smooth skin, which appears moist.

Coloration variable, includes brown, yellow and orange. Some females have red markings on lower body.

Usually has a dark 'mask' marking behind the eye.

Breeding male
Grey/pale blue throat.
Thick front legs.
Dark (nuptial) pad on inner toes of the front feet.

Markings also variable, including varying amounts of black spots and stripes.

Spawn is laid in gelatinous clumps.

Young froglets look like smaller versions of the adults.

Palmate newt Grows to 9 cm. Breeding male has a ridge running along the back, rather than a crest. Dark, webbed hind feet, and tail ends in filament.

Non-breeding male

There are two pale coloured nodules on the underside of the hind feet of the female.

Breeding male

Female

Female looks similar to smooth newt.

Palmate **Smooth**

Throat of palmate newt has no pigment (looks pink). Throat of smooth newt is off-white and usually spotted.

Underside (male)

Juveniles live on land.

Juvenile (eft)

Great crested newt

Grows to 16 cm, but usually smaller. Crest in male has break at base of tail. Silvery-white stripe towards rear of tail conspicuous.

Both sexes have rough, granular skins and yellow/orange bellies with irregular black spots.

Female has no crest and an orange/yellow stripe running along the lower edge of the tail.

Outside the breeding season the male's crest shrinks to a ridge along the back.

Juveniles look like smaller versions of the female and may live on land or in the water.

Orange/yellow coloration on underside extends to flanks (not confined to central stripe). This continues along lower edge of tail in females.

Strictly protected species, requiring a licence to handle or disturb.

Juveniles are similar to females but without any cloacal swelling.

Smooth newt

A widespread species which breeds in a variety of water bodies. Often found in garden ponds.

Grows to about 10 cm. Breeding male has an undulating crest running from head to tail tip.

Non-breeding adults live mostly on land. Juveniles live entirely on land.

Both sexes have an orange or yellow belly stripe and rounded spots, which are larger in the male.



Reptiles

Legal Protection

All native reptiles are protected under Wildlife and Countryside Act (1981, as amended) from:

- Killing or injuring and
- Trading/selling

Identification

There are six species of native reptile within the UK. Of these six, there is potential for the following species to be encountered during the works:

- common European adder *Vipera berus*
- grass snake *Natrix natrix*
- common lizard *Lacerta vivipara* and
- slow worm *Anguis fragilis*

Common European Adder:



Grass Snake:



Common Lizard:



Slow Worm:



- Site preparatory works, including disturbances to habitats of value to reptiles and amphibians, and disturbances to any potential refugia, should avoid the period in which reptiles and amphibians are hibernating (between November and March, inclusive).
- For the initial stages of the development, the clearance of the above habitats/features should be undertaken in a phased manner and preferably under the supervision of an experienced ecologist. Ground vegetation clearance should follow a detailed search around all potential refugia, in a careful and controlled manner, with constant vigilance for any sheltering newts and reptiles.
- Any building materials should be stored on pallets to deter amphibians taking shelter underneath them.
- All site operatives will stay vigilant for the presence of reptiles and amphibians, particularly great crested newts, during the works.
- If great crested newts are found at any point, the works should stop immediately, and an ecologist be appointed to advise the way forward.
- Any amphibians or reptiles if found, will be carefully gathered up by hand by a suitable licensed ecologist and placed in a suitable holding receptacle for safe transportation away from the area of site clearance operations and released. This rescue method will also be extended to any other amphibian species or reptiles found.
- The ecology contact for this activity is Helen Archer (Principal Ecologist) 07583 802069.

Appendix IV – Pollution Prevention Guidelines

It is advised that the following mitigation actions are undertaken to avoid pollution incidents:

- Any chemical, fuel and oil stores should be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels should be used, where possible.
- Drip trays should be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Where practicable, refuelling of vehicles and machinery should be carried out on an impermeable surface in one designated area well away from any watercourse or drainage (at least 10m).
- Emergency spill kits should be available on site and staff trained in their use.
- Operators should check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages should be reported immediately. Daily checks should be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded.
- Any items of plant machinery found to be defective should be removed from site immediately or positioned in a place of safety until such time that it can be removed.

Silt run off should be prevented during the works by incorporating the following actions:

- Visual monitoring to see if water colour has changed or if a plume is visible, indicating sediment input.
- Exposed, bare earth should be covered as soon as possible to prevent soil erosion and silt run-off. Alternatively, geotextile coverings can be used to cover any exposed earth and prevent soil erosion.
- Environmentally sensitive products should be used, where possible.
- Water quality downstream/adjacent to the works should be monitored regularly to detect any changes in water quality that could indicate a pollution incident. Should monitoring indicate potential pollution from the construction activities, works should be stopped, and a solution found to prevent the pollution source entering the watercourse.
- Monitoring could include water quality meter measurements for Dissolved Oxygen and pH



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