



Preliminary Ecological Appraisal - Kingsnorth Strategic Link

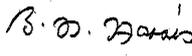
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1 Introduction

1.1 Background

Amey was commissioned by Kent County Council (KCC) to undertake a Preliminary Ecological Appraisal of the Kingsnorth Strategic Link scheme, near Ashford in Kent.

Ashford Borough Council is currently preparing a new Local Plan and Infrastructure Schedule for public consultation in spring 2016. There is a need to identify new land to accommodate in the region of 4,000 new dwellings across the Plan period, along with the possible need for an additional highway link road. A number of potential sites have been identified to the south of Ashford, particularly in the Kingsnorth area. Amey has been commissioned to provide highway design support in respect of the proposed link road. The road design is still in its feasibility stages and a final option has not yet been decided. This report details the preliminary ecological appraisal of the link road site.

1.2 Study Area and Location

The proposed scheme is located southwest of Ashford in the area of Kingsnorth. The Ordnance Survey grid reference of the approximate site centre is TR 00181 39870. Refer to Figure 1 for a map of the scheme location.

The area surveyed is approximately 227,000m² (22.7 ha) and adjacent habitats were also noted. The site is occupied by the East Stour River which cuts across the site from the southwest to the northeast. The land to the north of the river is owned by Ashford Borough Council and mainly consists of tussocky neutral grassland and dense scrub. Refer to Photographs 1-5. The majority of the land south of the river is privately owned and is used for grazing cattle, except for two parcels of land which comprise tussocky neutral grassland and dense scrub with mixed trees. Refer to Photographs 6-9. The site is situated within a flood plain and much of the land immediately surrounding the river was waterlogged at the time of survey.

Please refer to Figure 2 for the results of the Phase 1 Habitat Survey (ecological scoping walkover) which gives an overview of the habitats within the site, and highlights the features of particular ecological interest, which are detailed in the Results section below.

1.3 Objectives

This preliminary ecological (scoping) appraisal of the site is intended to record relevant habitats, including any that are formally designated for nature conservation and to highlight the potential for legally-protected or otherwise notable species. This appraisal also makes recommendations for further, detailed surveys that might be required to confirm the presence of such species. This is in order to ensure that further ecological survey and advice is appropriately targeted and reflects the demands of wildlife legislation and Government nature conservation policy (refer to Appendix A for details).

Where this preliminary survey indicates that there may be impacts to such ecologically-sensitive features, a brief outline indication of likely mitigation requirements is also provided, where appropriate. However, detailed mitigation can only be confirmed once any recommendations for further surveys are completed.

1.4 Limitations

This report highlights the habitats and the potential for notable species evident on the day of the survey visit, combined with recent (unconfirmed) records obtained from third parties such as biological records centres. It does not record any ecological features that may only appear at other times of the year and therefore were not evident at the time of the visit. This includes flowering plants that are not readily identifiable prior to their flowering season.

This report deals with matters of legal significance but does not constitute professional legal advice. The Client may wish to seek professional legal interpretation of the relevant wildlife legislation cited in this document and summarised in Appendix A.

The preliminary ecological appraisal was carried out in accordance with the scheme plans current to that time. Should the plans be revised at any stage prior to or during the works, an ecologist must be informed as any recommendations made in this report will be subject to review.

2 Methodology

2.1 Desk Study

Records of protected or otherwise notable habitats and species were obtained from the Kent and Medway Biological Records Centre (KMBRC) in November 2015. Habitats were searched for within a 2km radius of the project site and species were searched for within a 1km radius. These records were supplemented with internet-based resources and other local consultation where appropriate. The combined records were analysed to determine their relevance to the site and the proposed works, taking into consideration the dates and locations of each record and the sensitivity of the recorded feature to likely impacts. It should be noted that a lack of species records within an area may not reflect an actual absence of that species, but could simply be a function of limited recording/survey effort in that area.

2.2 Field Survey

The site visit was carried out by Amey Ecologists (Beverley Harris MCIEEM and Gemma Costin GradCIEEM) on 16th November 2015. Habitats within and immediately adjacent to the proposed scheme footprint were noted and the potential for protected or otherwise notable species was assessed. Where any incidental sightings or indirect evidence of species presence was seen then this was recorded, but no detailed survey for any species was undertaken.

2.3 Habitat Suitability Index (HSI)

During the site visit (16th November 2015) the accessible waterbodies within 250m of the site and on the proximal side of any effective barriers such as roads or rivers were assessed for their habitat suitability for great crested newts. This assessment was carried out by a licensed ecologist (Beverley Harris MCIEEM) and assisted by a graduate ecologist (Gemma Costin GradCIEEM) in accordance with the guidelines set out by ARG UK (2010) and Oldham *et al*/(2000).The results are detailed in Section 3 and Table 1.



3 Results

<p>SITE: Kingsnorth, near Ashford in Kent O.S. GRID REF. (approximate site centre): TR 00181 39870 FIGURE REF: Figure 1</p>		<p>PROJECT NO. : CO04300417 PROJECT NAME : Kingsnorth Strategic Link SURVEY DATES: 16th November 2015 SURVEYORS: Gemma Costin and Beverley Harris</p>	
<p>Ecological Attributes and Status <i>(see Appendix A for legislation summary)</i></p>	<p>Description: Presence (actual or potential), level of potential (high, medium, low, negligible), distance and direction from site, locations within site, relevant habitat features, connectivity, etc.</p>	<p>Potential Impacts</p>	<p>Recommendations: Requirement for further survey and/or mitigation. See Appendix B for indicative survey timing.</p>
<p>European Sites (e.g. SPA/SAC/Ramsar designated) within 2km Internationally important and protected by law:</p> <ul style="list-style-type: none"> • Conservation Regulations 2010 (as amended) 	<p>There are no European Sites within 2km of the scheme (refer to Figure 3). (The closest European Site is the Wye & Crundale Downs SAC, which is located approximately 8,600m to the north east.)</p>	<p>None predicted.</p>	<p>None required.</p>
<p>Sites of Special Scientific Interest (SSSI) designated sites within 1km Nationally important and protected by law:</p> <ul style="list-style-type: none"> • Wildlife & Countryside Act 1981 (as amended) 	<p>There are no Sites of Special Scientific Interest within 1km of the scheme (refer to Figure 3). (The closest SSSI is Orlestone Forest, which is located approximately 3,500m to the south west.)</p>	<p>None predicted.</p>	<p>None required.</p>



<p>Non-statutory designated sites within 1km. E.g. Local Wildlife Sites (LWS), Roadside Nature Reserves (RNR)</p> <ul style="list-style-type: none"> • Non-statutory designation – local planning consideration 	<p>Within the site, the land to the north west of the East Stour River (including its tributary) is designated as part of a Higher Level Stewardship Scheme (HLSS). Refer to Figure 3.</p> <p>The AS19 South Willborough Dykes Local Wildlife Site (LWS) is situated approximately 150m north east of the site, at its closest point. Refer to Figure 3.</p>	<p>The land which is part of the HLSS will be affected by the planned construction activities</p> <p>It is not anticipated that the works will have a direct impact on the LWS. However the site is hydrologically linked by the East Stour River, and therefore could be affected indirectly.</p>	<p>It is recommended that the land owner of the HLSS be informed of the scheme.</p> <p>It is recommended that the project manager informs the Kent Wildlife Trust, who manages the LWS, about the scheme.</p> <p>Adhere to Environment Agency guidelines on pollution prevention for construction activity near to watercourses (e.g. PPG5).</p> <p>Minimise the area of habitat impacted. Keep construction activities contained within close proximity to the scheme.</p> <p>Where loss or fragmentation of habitat is unavoidable, seek to compensate through sensitive landscaping with native species.</p>
<p>Other notable habitats</p> <p>E.g. those listed under:</p> <ul style="list-style-type: none"> • NERC Act 2006 S.41 	<p>The East Stour River runs north eastwards through the site, from Pound Lane to Ashford Road. A tributary joins the river towards the centre of the site. Refer to Figure 2.</p> <p>There are 2 areas of ancient woodland within 1km of the site</p> <ol style="list-style-type: none"> 1. Park Wood, approx. 515m south east 2. Joy Wood approx. 930m north east <p>Other habitats within the site, including semi-mature trees, scrub, and improved grassland are of lower legislative concern, but may offer suitable habitat for protected or otherwise notable species as described below.</p>	<p>The current design shows that the road crosses the East River Stour river in 3 places. Therefore the river will be affected by the scheme.</p> <p>It is unlikely that the ancient woodland will be affected by the works, due to their distance from the scheme.</p>	<p>Adhere to Environment Agency guidelines on pollution prevention for construction activity near to watercourses (e.g. PPG5).</p> <p>Minimise the area of habitats impacted. Keep construction activities contained within close proximity to the scheme.</p> <p>Where loss or fragmentation of habitat is unavoidable, seek to compensate through sensitive landscaping with native species.</p>



<p>Notable plants</p> <p>Some may be protected under:</p> <ul style="list-style-type: none"> • Wildlife & Countryside Act 1981 (as amended) • Conservation Regulations 2010 (as amended) <p>or listed under:</p> <ul style="list-style-type: none"> • NERC Act 2006 • UK Red Data Book 	<p>No notable plants were seen during the site visit, although this is not indicative of their absence since a botanical survey was not conducted. Further to this, the time of year was not suitable to carry out a comprehensive assessment.</p> <p>Refer to Appendix B for a list of the flora species observed during the site visit.</p> <p>Records of notable plants exist within 1km of the scheme including records of sightings within the nearby Local Wildlife Site (e.g. tubular water dropwort (<i>Oenanthe fistulosa</i>) and true fox sedge (<i>Carex vulpina</i>) among others). However, no records of notable plants were observed within the site footprint.</p>	<p>Vegetation clearance and construction works may have the potential to cause damage to any notable plant species on site, and would result in a permanent loss of habitat.</p>	<p>A botanical survey is recommended between May-July when the plants are in flower (refer to Appendix C), to determine whether or not the notable species listed are present within the scheme footprint.</p> <p>Vigilance for rare flora species should be maintained, following a briefing on identification to site personnel.</p> <p>Minimise the area impacted. Keep construction activities contained within close proximity to the scheme.</p>
<p>Notable plants - Invasive non-native species (INNS)</p> <p>Those listed under:</p> <ul style="list-style-type: none"> • Wildlife & Countryside Act 1981 (as amended) Schedule 9 	<p>No INNS were seen during the site visit, although this is not indicative of their absence since a botanical survey was not conducted. Horsetail (<i>Equisetum sp.</i>) was noted along the East Stour River but this is not a Schedule 9 species.</p> <p>Records of INNS plant species within a 1km radius of the site were returned from the desk study; however no INNS were recorded within site footprint.</p>	<p>Organisations have a legal responsibility to prevent any invasive non-native plants listed in Schedule 9 of the Wildlife & Countryside Act 1981 that are growing on their premises from spreading beyond their land.</p>	<p>Maintain vigilance for INNS and undertake an inspection of working areas prior to any vegetation clearance. Adhere to appropriate procedures / guidance including reference to contaminated waste disposal requirements (where applicable) and methods to handle the plants safely.</p>
<p>Notable invertebrates / assemblages</p> <p>Some may be protected or listed under:</p> <ul style="list-style-type: none"> • NERC Act 2006 • UK Red Data Book 	<p>Habitats within the scheme footprint are relatively common and therefore the potential for notable invertebrate species is considered to be low. However due to its proximity to a Local Wildlife Site which consists of neutral grassland and the neutral grassland being recorded within the scheme footprint, this may increase the likelihood of notable terrestrial or aquatic invertebrates being present on site.</p> <p>The desk study returned numerous records of rare invertebrates within 1km of the scheme, including a record of a cinnabar moth (<i>Tyria jacobaeae</i>) observed in 2000 at Pound Lane, Kingsnorth (within the scheme footprint).</p>	<p>Vegetation clearance and construction works may have the potential to cause damage to any notable invertebrates on site, and would result in a permanent loss of habitat.</p>	<p>Minimise the area impacted. Keep construction activities contained within close proximity to the scheme.</p> <p>Where loss or fragmentation of habitat is unavoidable, seek to compensate through sensitive landscaping with native species.</p>



<p>Bats</p> <p>Protected by law:</p> <ul style="list-style-type: none"> • Conservation Regulations 2010 (as amended) • Wildlife & Countryside Act 1981 (as amended) <p>Listed under:</p> <ul style="list-style-type: none"> • NERC Act 2006 	<p>There are a number of trees within the scheme footprint that have the potential to support roosting bats. In particular;</p> <ul style="list-style-type: none"> • Two mature oaks with ivy cover situated along Pound Lane on the south west boundary, both offer low bat roosting potential. See Photograph 10. • A tree line along the south east tributary of the East Stour River offers low-medium levels of bat roosting potential. Trees include an ash (<i>Fraxinus excelsior</i>) and an oak (<i>Quercus robur</i>). See Photograph 11. • A tree lined footpath/cycle route between Britannia Lane and Caesar Avenue, offers low roosting potential and foraging opportunities. See Photograph 12. • A small wooded area believed to be an old hedgerow on the north east boundary along Ashford Road, approaching the Britannia Lane roundabout. Ivy (<i>Hedera spp.</i>) covered hawthorn (<i>Crataegus monogyna</i>) and hazel (<i>Corylus avellana</i>) trees could offer low bat roosting potential. See Photograph 13. • A line of mature willow (<i>Salix sp.</i>) trees with thick ivy cover adjacent to the scheme footprint, situated along the western edge of the arable field to the east of the Ashford Road/Britannia Lane roundabout. These trees could offer low to medium bat roosting potential, however a close inspection could not be carried out during the scoping survey as they are situated on private land. See Photograph 14. <p>A comprehensive tree assessment was not carried out. Refer to Figure 2 for locations of trees with bat roost potential.</p> <p>The tree lines and hedgerows along the boundaries of the fields and along the river are likely to offer commuting routes and foraging possibilities for bats.</p> <p>Records of bats exist within a 5km radius of the site. Ten species of bat have been recorded in this area. The closest observations are 3 records of flying bats 0.4km away (common pipistrelle, soprano pipistrelle and serotine), and an unknown roost 0.5km away.</p>	<p>Trees with bat potential may need to be cleared to carry out construction works, which could result in damage or destruction of a potential bat roost which would be an offence under the legislation.</p> <p>A new road may have an indirect impact on bat roosts due to additional light & noise.</p> <p>Features used by bats for navigation and foraging are not legally protected, but are nonetheless important for bat conservation. Removal of habitat may have an impact on these features.</p>	<p>Any potentially impacted trees with bat roost potential should be subject to a daytime close inspection with torch and endoscope and should include tree-climbing if necessary.</p> <p>If this cannot confirm that the feature isn't a bat roost but it still has potential, then further surveys will be required. This is likely to include both dusk and dawn surveys to identify emergence and/or re-entry to a roost, and the species concerned (refer to Appendix C for survey timings).</p> <p>Should roosting bats be discovered, a European Protected Species (EPS) licence may be required for the development to proceed where it impacts the roost.</p> <p>Road lighting should be designed with wildlife in mind so that it can be kept to a minimum to avoid additional disturbance to foraging or commuting bats in the vicinity.</p> <p>Minimise the area impacted. Keep construction activities contained within close proximity to the scheme. Where loss or fragmentation of habitat is unavoidable, seek to compensate through sensitive landscaping with native species.</p>
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<p>Hazel dormouse (<i>Muscardinus avellanarius</i>)</p> <p>Protected by law:</p> <ul style="list-style-type: none"> • Conservation Regulations 2010 (as amended) • Wildlife & Countryside Act 1981 (as amended) <p>Listed under:</p> <ul style="list-style-type: none"> • NERC Act 2006 	<p>The wooded areas within the scheme have limited potential to support dormice; this is due to the lack of the connectivity to other areas of more extensive and established woodland. Therefore it is considered that the potential for dormice to be present within the scheme footprint is negligible.</p> <p>No records of dormice within a 1km radius of the site were returned from the desk study.</p>	<p>In the unlikely event that dormice are present on site, the proposed development has potential to cause death or injury to dormice during vehicle/plant movements and site clearance.</p> <p>In addition to negative biodiversity effects, this is an offence under the legislation.</p>	<p>Minimise the area impacted. Keep construction activities contained within close proximity to the scheme.</p> <p>In the unlikely event that a dormouse is found during construction, works must stop immediately and advice must be sought from an ecologist.</p>
<p>Otter (<i>Lutra lutra</i>)</p> <p>Protected by law:</p> <ul style="list-style-type: none"> • Conservation Regulations 2010 (as amended) • Wildlife & Countryside Act 1981 (as amended) <p>Listed under:</p> <ul style="list-style-type: none"> • NERC Act 2006 	<p>The aquatic habitats throughout the site have potential for otter occupation. However, otters are known to be very scarce in Kent and there is limited evidence that they are currently present within this area.</p> <p>The desk study did not return any records of otters within a 1km radius of the scheme. However there have been unconfirmed sightings of otter signs made by consultant ecologists working within the Great Stour catchment at Canterbury and Ashford. This would indicate that otters may be showing some recovery in the catchment, but remain relatively scarce.</p>	<p>Construction works would involve excavation next to the river bank, meaning that any active otter holts that may be present could be damaged or destroyed and individual animals using these places of shelter could be disturbed.</p> <p>All of these outcomes are an offence under legislation.</p>	<p>A search for signs of otters (spraint, footprints, slides, etc.) by an experienced otter surveyor should be made in conjunction with the water vole survey recommended below (refer to Appendix C for survey timings).</p> <p>Any structures that appear to be used by otters for sheltering should be noted in particular. If such structures are likely to be damaged or disturbed then a European Protected Species licence may be required for such works.</p>



<p>Great crested newt (GCN) (<i>Triturus cristatus</i>)</p> <p>Protected by law:</p> <ul style="list-style-type: none"> • Conservation Regulations 2010 (as amended) • Wildlife & Countryside Act 1981 (as amended) <p>Listed under:</p> <ul style="list-style-type: none"> • NERC Act 2006 	<p>There are 10 ponds within a 250m radius of the site. There is also a very slow flowing, almost still, stream which is a tributary of the East Stour River. It is choked by willow trees further downstream and has thus created a pond-like waterbody. Refer to Photograph 15. For the purposes of this report it will be referred to as Ditch 1.</p> <p>Three of the ponds were on private land however one pond (at the Britannia Lane /Ashford Road roundabout) was accessible, see Photographs 16 & 17. For the purposes of this report it will be referred to as Pond 1. Ditch 1 and Pond 1 were assessed for their HSI. The scores are as follows;</p> <p>Pond 1 = 0.67 Average Ditch 1 = 0.83 Excellent</p> <p>The terrestrial habitats within the site are suitable for GCN, providing opportunity for sheltering and foraging. These habitats are detailed in the reptile section below.</p> <p>Records provided by the Kent Reptile and Amphibian Group (KRAG) and KMBRC show that GCN have been recorded within a 1km radius of the site. The closest observation was located at a private residence grid ref: TQ 99795 39729, in 2012. This is approximately 120m from Ditch 1.</p> <p>Amphibian survey effort in the local area is considered to be relatively high and KRAG have rated the likelihood of GCN presence as high.</p>	<p>The development of this site could impact great crested newts in a number of ways. Site clearance and other movements of plant and vehicles have potential to kill or injure individual animals. Pollution of water bodies could have similar impacts.</p> <p>Habitat removal during site clearance and drainage carries the risk of destroying resting and breeding places for great crested newts.</p> <p>These impacts, alone or in combination, could negatively affect a great crested newt population at the local scale and would constitute offences under the legislation.</p>	<p>It is recommended that an HSI assessment be carried out on the remaining ponds within a 250m radius of the scheme footprint.</p> <p>Any suitable waterbodies together with Pond 1 and Ditch 1 will need to be subject to detailed surveys during the breeding season March-June (refer to Appendix C).</p> <p>These surveys involve four separate visits to the waterbodies to determine presence or likely absence of GCN. Two of these must take place between mid-April and mid-May. Where GCN are found through these four visits, then another two visits are required for a population size-class estimate. One of these must be in mid-April to mid-May.</p> <p>If great crested newts are present and likely to be impacted, then a detailed mitigation strategy will need to be developed to inform an EPS licence application to Natural England. Licenced mitigation may involve trapping and translocation of great crested newts to pre-prepared receptor site in the wider locality. Such trapping may require up to 30, 60 or 90 nights during suitable weather, depending on the population size.</p> <p>It is also recommended that an HSI assessment is carried out on the ponds on private land. If they are found to rate average or above they will also need to be subject to detailed surveys, as above.</p>
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<p>Reptiles</p> <p>Protected by law:</p> <ul style="list-style-type: none"> • Wildlife & Countryside Act 1981 (as amended) <p>Listed under:</p> <ul style="list-style-type: none"> • NERC Act 2006 	<p>Areas within and adjacent to the site have high potential to support common reptile species, such as common lizard (<i>Zootoca vivipara</i>), slow worm (<i>Anguis fragilis</i>) and grass snake (<i>Natrix natrix</i>).</p> <p>The areas of scrub, tall herbs, rough grass, the East Stour River and its tributaries all offer shelter, foraging, commuting and basking opportunities for reptiles. There are also occasional wood piles (refer to Photograph 17) which make ideal hibernacula for reptiles and GCN, see above.</p> <p>Reptile records supplied by KRAG and KMBRC indicate the presence of the three common species within 2km of the site. The closest recorded reptile observation is for Viviparous Lizard, located 0.3 km to the west (private residence) in 2006.</p> <p>Reptile survey effort in the area is considered to be relatively high and KRAG have rated the likelihood of presence of common lizard, slow worm, and grass snake as 'high' and adder as 'unlikely'.</p>	<p>The proposed development has potential to cause death or injury to common reptiles during vehicle/plant movements and site clearance.</p> <p>In addition to negative biodiversity effects, this could be an offence under the legislation if done with the knowledge of such impacts being likely.</p>	<p>A reptile survey should be undertaken to determine the presence or likely absence of reptile species during the period April to June and/or September. This requires placement of artificial refuges and then a minimum of seven subsequent survey visits to check these for reptile presence. If present, a further eight visits will be required to estimate relative population size.</p> <p>This survey would inform a detailed mitigation strategy for reptiles. Such a strategy is likely to involve securing and enhancing a suitable receptor site for the translocation of animals which have been trapped from parts of the development site.</p>
<p>Nesting birds</p> <p>Protected by law:</p> <ul style="list-style-type: none"> • Wildlife & Countryside Act 1981 (as amended) <p>Some may be listed under:</p> <ul style="list-style-type: none"> • NERC Act 2006 • RSPB Birds of Conservation Concern 	<p>There is high potential for nesting birds to be present within various areas of tree cover, scrub and suitable ground habitat within and immediately adjacent to the site.</p> <p>Many birds were observed during the scoping survey. These included a kestrel (<i>Falco tinnunculus</i>), a jay (<i>Garrulus glandarius</i>), blue tits (<i>Cyanistes caeruleus</i>), a wren (<i>Troglodytes troglodytes</i>), goldfinches (<i>Carduelis carduelis</i>), blackbirds (<i>Turdus merula</i>), carrion crows (<i>Corvus corone</i>) and woodpigeons (<i>Columba palumbus</i>), amongst others.</p> <p>The desk study returned numerous bird records within a 1km radius of the scheme, particularly from the Kingsnorth area, although an exact location could not be identified from the OS grid references given in the records.</p>	<p>Removal of habitat or vegetation clearance during the period March to August inclusive risks damaging active bird nests of common species during the main breeding season.</p>	<p>Nesting habitat clearance should ideally take place in the months September-February, outside of the main bird breeding season.</p> <p>The extent of tree and shrub clearance should be minimised to only the area absolutely required.</p> <p>If any unforeseen active birds' nests are discovered during this time then works should stop and an ecologist contacted for advice.</p> <p>If such clearance activity is required during the breeding season (March-August) then an inspection for active nests must be made within 48 hours prior to starting works. If a nest is found, works will need to be delayed at this location until the chicks have fledged.</p> <p>Where loss or fragmentation of habitat is unavoidable, seek to compensate through sensitive landscaping with native species.</p>



<p>Water vole (<i>Arvicola amphibius</i>)</p> <p>Protected by law:</p> <ul style="list-style-type: none"> • Wildlife & Countryside Act 1981 (as amended) <p>Listed under:</p> <ul style="list-style-type: none"> • NERC Act 2006 	<p>The East Stour River and its tributaries offer suitable habitat for water voles. Mammal burrows were observed along the bank of the stream (refer to Photographs 18 & 19), however it was not determined what species these belonged to during the scoping visit. The banks are vegetated which is ideal for water voles; however there was evidence of vegetation management which lowers the habitat suitability.</p> <p>Five records of water vole within a 1km radius of the site were returned from the data search. Most noteworthy was the closest observation (OS grid ref: TQ99453985) recorded just upstream of the East River Stour at Court Lodge Dyke in 2012, near Pound Lane. The most recent records are dated 2014 and were observed near Magpie Hall Road (OS grid ref: TQ99693853).</p>	<p>Road construction works would involve excavation next to the river bank, meaning that any burrows which may be present could be damaged or destroyed, and individual animals could be disturbed, injured or killed.</p> <p>All of these outcomes are an offence under legislation.</p>	<p>It is recommended that a water vole survey be undertaken along the river. This should take place during the water vole breeding season (April to September) when field signs are most abundant. Two survey visits may be required due to seasonal fluctuations in water vole distribution and water levels. At least one of the visits should be from July to September when water vole distribution is at its maximum extent.</p>
<p>White-clawed Crayfish (<i>Austropotamobius pallipes</i>)</p> <p>Protected by law:</p> <ul style="list-style-type: none"> • Wildlife & Countryside Act 1981 (as Amended) <p>Listed under:</p> <ul style="list-style-type: none"> • NERC Act 2006 	<p>The East Stour River is part of the Great Stour river catchment where a population of white-clawed crayfish is known to be present. The East Stour may also offer suitable habitat for white-clawed crayfish, due to the calcareous substrate -Weald clay formation (British Geological Survey 2015), slow flowing water, tree roots and the soft muddy riverbanks.</p> <p>A historic record of a white-clawed freshwater crayfish within a 1km radius of the site was returned from the desk study. It was recorded at Godington Park (Great Stour River) in 1989.</p>	<p>Road construction works would involve excavation next to the river bank/bed, which could have a direct impact on white clawed crayfish. Habitat could be damaged or destroyed, and individual animals could be disturbed, injured or killed.</p>	<p>It is recommended that a white-clawed crayfish survey be undertaken along the river. This should take place in April and/or mid-July to mid-September. It should be carried out by a NE class license holder or accredited agent and is likely to involve a manual search survey and a torch survey.</p> <p>Adhere to Environment Agency guidelines on pollution prevention for construction activity near to watercourses (e.g. PPG5).</p>



<p>Badger (<i>Meles meles</i>)</p> <p>Protected by law:</p> <ul style="list-style-type: none"> • Protection of Badgers Act 1992 	<p>The site has potential to support badgers in terms of setts, foraging and commuting routes.</p> <p>No obvious signs of active badger setts were noted during the survey, although it is probable that badgers are active in the wider area.</p> <p>Seven records of badger within a 1km radius of the Scheme were returned from the desk study, including two from Kingsnorth in 2001 and 2007. The most recent sighting was in 2013 at Park Farm, Ashford.</p>	<p>Badgers are not considered to be a biodiversity priority, but their active setts and the animals themselves are protected under UK legislation for welfare reasons.</p> <p>If any habitat clearance or excavation works are to be carried out within 30m of the bank this could result in destruction of an active badger sett and has the potential to cause death or injury to badgers.</p>	<p>Given the tendency for badgers to create new out-lying setts within their territories, a pre-construction survey for badger setts within 30m of the site is recommended.</p> <p>If an active badger sett is found and is within close proximity to the works, mitigation under licence may be required.</p>
<p>Brown Hare (<i>Lepus europaeus</i>)</p> <p>Listed under:</p> <ul style="list-style-type: none"> • NERC Act 2006 	<p>It is possible that the site has potential to support brown hares; however their distribution is mostly limited to North Kent and the Romney Marshes.</p> <p>Six records of brown hare were returned from the desk study, including one from Kingsnorth in 2007, and three from Ashford in 2010 (most recent).</p>	<p>Adult hares are highly mobile and likely to be able to escape injury during site operations. Their young (leverets) are more vulnerable during initial site clearance.</p>	<p>Maintain vigilance during site clearance operations to avoid injuring young hares. If found during operations, seek advice on avoidance from an ecologist.</p>
<p>Hedgehog (<i>Erinaceus europaeus</i>)</p> <p>Listed under:</p> <ul style="list-style-type: none"> • NERC Act 2006 	<p>There is potential for hedgehogs to be present in the habitats within the site.</p> <p>Eleven records of hedgehog within 1km of the site were returned from the desk study, including one from Kingsnorth in 2000. The most recent sighting was in Ashford in 2012.</p>	<p>There is some limited potential to injure hedgehogs during habitat clearance operations.</p>	<p>Maintain vigilance during site clearance operations to avoid injuring hedgehogs. If found during operations, seek advice from an ecologist on moving them to safe habitat nearby.</p>

4 Summary Recommendations

The following recommendations have been made in Section 3 based on the results of this preliminary study. These should be implemented with full consideration of wildlife legislation described in Appendix A and seasonal restrictions shown in Appendix B.

Non-statutory designated sites - It is recommended that the land owner of the HLSS be informed of the scheme.

It is recommended that the project manager informs the Kent Wildlife Trust, who manages the LWS, about the scheme.

Adhere to Environment Agency guidelines on pollution prevention for construction activity near to watercourses (e.g. PPG5).

Minimise the area of habitat impacted. Keep construction activities contained within close proximity to the scheme.

Where loss or fragmentation of habitat is unavoidable, seek to compensate through sensitive landscaping with native species.

Other notable habitats - Adhere to Environment Agency guidelines on pollution prevention for construction activity near to watercourses (e.g. PPG5).

Minimise the area of habitats impacted. Keep construction activities contained within close proximity to the scheme.

Where loss or fragmentation of habitat is unavoidable, seek to compensate through sensitive landscaping with native species.

Notable plants - A botanical survey is recommended between May-July when the plants are in flower (refer to Appendix C), to determine whether or not the notable species listed are present within the scheme footprint.

Vigilance for rare flora species should be maintained, following a briefing on identification to site personnel.

Minimise the area impacted. Keep construction activities contained within close proximity to the scheme.

Notable plants - Invasive non-native species (INNS) - Maintain vigilance for INNS and undertake an inspection of working areas prior to any vegetation clearance. Adhere to appropriate procedures / guidance including reference to contaminated waste disposal requirements (where applicable) and methods to handle the plants safely.

Notable invertebrates / assemblages - Minimise the area impacted. Keep construction activities contained within close proximity to the scheme.

Where loss or fragmentation of habitat is unavoidable, seek to compensate through sensitive landscaping with native species.

Bats - Any potentially impacted trees with bat roost potential should be subject to a daytime close inspection with torch and endoscope and should include tree-climbing if necessary.

If this cannot confirm that the feature isn't a bat roost but it still has potential, then further surveys will be required. This is likely to include both dusk and dawn surveys to identify emergence and/or re-entry to a roost, and the species concerned (refer to Appendix C for survey timings).

Should roosting bats be discovered, a European Protected Species (EPS) licence may be required for the development to proceed where it impacts the roost.

Road lighting should be designed with wildlife in mind so that it can be kept to a minimum to avoid additional disturbance to foraging or commuting bats in the vicinity.

Minimise the area impacted. Keep construction activities contained within close proximity to the scheme. Where loss or fragmentation of habitat is unavoidable, seek to compensate through sensitive landscaping with native species.

Hazel dormouse – Minimise the area impacted. Keep construction activities contained within close proximity to the scheme.

In the unlikely event that a dormouse is found during construction, works must stop immediately and advice must be sought from an ecologist.

Otter – A search for signs of otters (spraint, footprints, slides, etc.) by an experienced otter surveyor should be made in conjunction with the water vole survey recommended below (refer to Appendix C for survey timings).

Any structures that appear to be used by otters for sheltering should be noted in particular. If such structures are likely to be damaged or disturbed then a European Protected Species licence may be required for such works.

Great crested newt - It is recommended that an HSI assessment be carried out on the remaining ponds within a 250m radius of the scheme footprint.

Any suitable waterbodies together with Pond 1 and Ditch 1 will need to be subject to detailed surveys during the breeding season March-June (refer to Appendix C).

These surveys involve four separate visits to the waterbodies to determine presence or likely absence of GCN. Two of these must take place between mid-April and mid-May. Where GCN are found through these four visits, then another two visits are required for a population size-class estimate. One of these must be in mid-April to mid-May.

If great crested newts are present and likely to be impacted, then a detailed mitigation strategy will need to be developed to inform an EPS licence application to Natural England. Licenced mitigation may involve trapping and translocation of great crested newts to pre-prepared receptor site in the wider locality. Such trapping may require up to 30, 60 or 90 nights during suitable weather, depending on the population size.

It is also recommended that an HSI assessment is carried out on the ponds on private land. If they are found to rate average or above they will also need to be subject to detailed surveys, as above.

Reptiles – A reptile survey should be undertaken to determine the presence or likely absence of reptile species during the period April to June and/or September. This requires placement of artificial refuges and then a minimum of seven subsequent survey visits to check these for reptile presence. If present, a further eight visits will be required to estimate relative population size.

This survey would inform a detailed mitigation strategy for reptiles. Such a strategy is likely to involve securing and enhancing a suitable receptor site for the translocation of animals which have been trapped from parts of the development site.

Nesting birds – Nesting habitat clearance should ideally take place in the months September-February, outside of the main bird breeding season.

The extent of tree and shrub clearance should be minimised to only the area absolutely required.

If any unforeseen active birds' nests are discovered during this time then works should stop and an ecologist contacted for advice.

If such clearance activity is required during the breeding season (March-August) then an inspection for active nests must be made within 48 hours prior to starting works. If a nest is found, works will need to be delayed at this location until the chicks have fledged.

Where loss or fragmentation of habitat is unavoidable, seek to compensate through sensitive landscaping with native species.

Water vole – It is recommended that a water vole survey be undertaken along the river. This should take place during the water vole breeding season (April to September) when field signs are most abundant. Two survey visits may be required due to seasonal fluctuations in water vole distribution and water levels. At least one of the visits should be from July to September when water vole distribution is at its maximum extent.

White-clawed crayfish - It is recommended that a white-clawed crayfish survey be undertaken along the river. This should take place in April and/or mid-July to mid-September. It should be carried out by a NE class license holder or accredited agent and is likely to involve a manual search survey and a torch survey.

Adhere to Environment Agency guidelines on pollution prevention for construction activity near to watercourses (e.g. PPG5).

Badger – Given the tendency for badgers to create new out-lying setts within their territories, a pre-construction survey for badger setts within 30m of the site is recommended.

If an active badger sett is found and is within close proximity to the works, mitigation under licence may be required.

Brown hare - Maintain vigilance during site clearance operations to avoid injuring young hares. If found during operations, seek advice on avoidance from an ecologist.

Hedgehog - Maintain vigilance during site clearance operations to avoid injuring hedgehogs. If found during operations, seek advice from an ecologist on moving them to safe habitat nearby.

5 References

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6 Figures

Figure 1 – Site Location

FIGURE 1

Site Location:
Kingsnorth Strategic Link

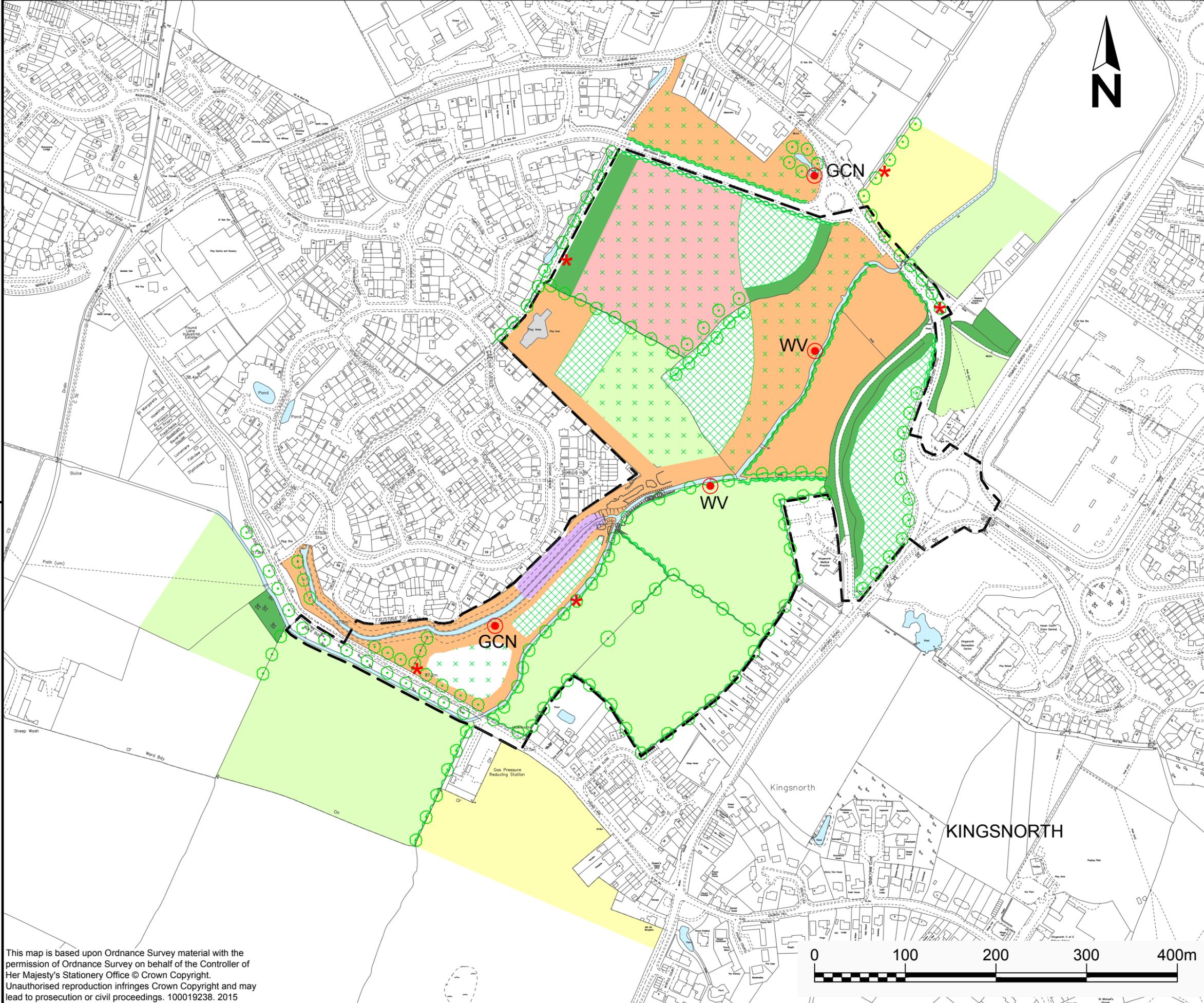
Project Number:
CO04300417



Google Maps (2015)

Figure 2 – Phase 1 Habitat Survey Results

0 100



- KEY**
- Scheme Footprint
 - Mixed Trees & Scrub
 - Dense Scrub
 - Scattered Scrub
 - Grazed Pasture
 - Arable
 - Tussocky Neutral Grassland
 - Tussocky Neutral Grassland & Grazing
 - Open Standing Water
 - Tree Line
 - Hedge and Trees
 - Hedge
 - Section of river choked with willow
 - WV Water Vole Potential
 - GCN Great Crested Newt Potential
 - Trees with Bat Potential
 - Childrens Play Area

Rev	Revision details	Chkd	Appd	Date
Drawn: TMW				Preliminary
Design: -				For comment
Chkd: GMC				For tender
Appd: BH				For construction
Date: 10 Dec 2015				As constructed
				Other



Client

Project Name
Kingsnorth Strategic Link

Drawing Title
Phase 1 Habitat Survey

Original Drg Size : A3 Dimensions : m
Scale : Not to Scale Copyright © Amey

Drawing No
FIGURE 2 Rev
0

0 100 200 300 400m

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File ref - p:\d - projects\co4300417 - kingsnorth strategic link\102.drawings\01_working\000 non contract\phase 1 habitat survey - figure 2.dwg

Figure 3 – Designated Sites Map, provided by the Kent & Medway Biological Records Centre (KMBRC)

Kent & Medway Biological Records Centre

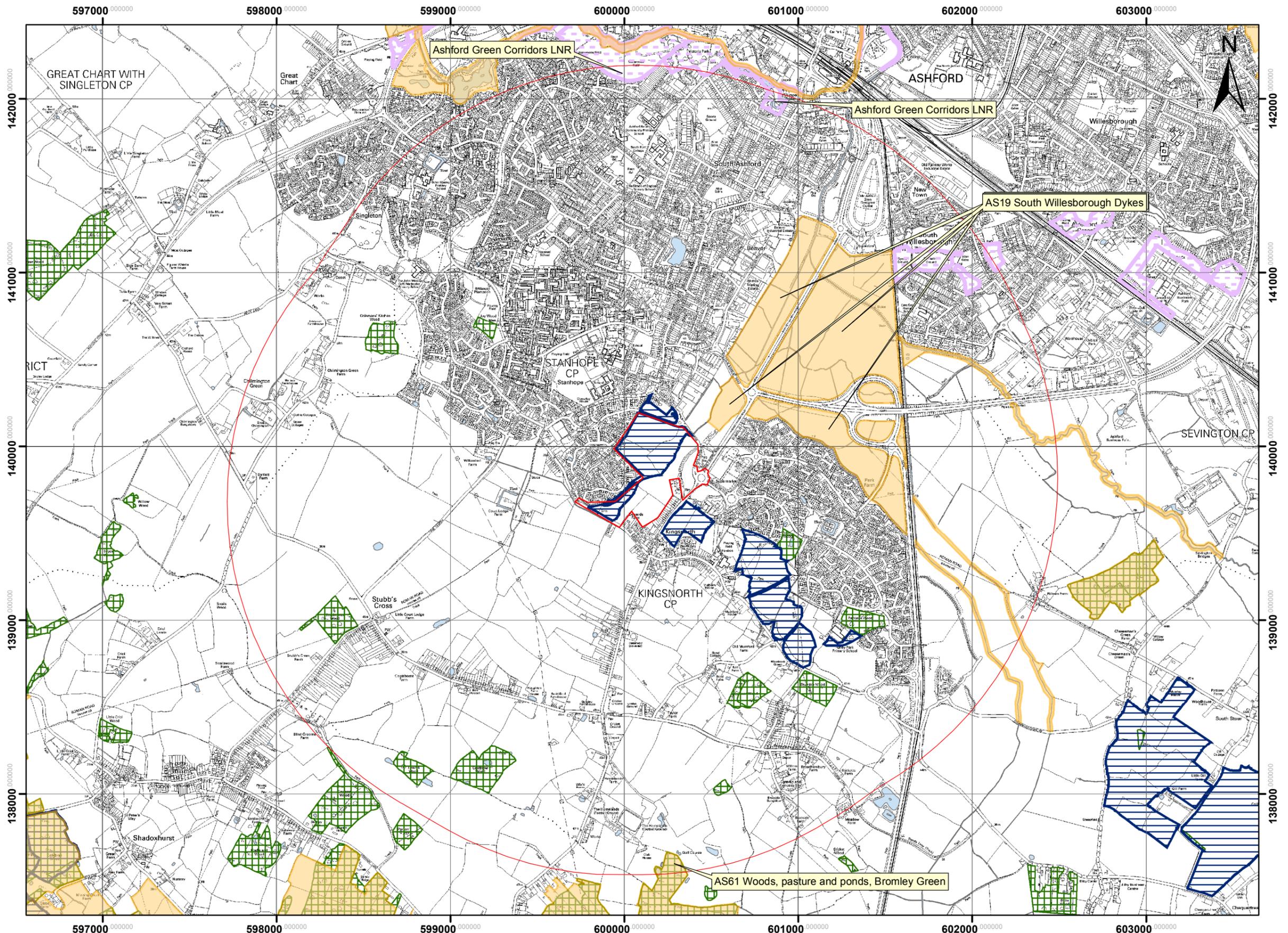
Map showing the statutory and non-statutory designated sites, ancient woodland, higher level stewardship and water features at Kingsnorth Strategic Link.

Gemma Costin, Amey Consulting Ltd.
ENQ/15/514 13/11/2015

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Kent & Medway Biological Records Centre would like to acknowledge, where appropriate: Natural England for Ramsar, SAC, SPA, NNR, SSSI, Higher Level Stewardship and Ancient Woodland data; Kent County Council for AONB, Heritage Coast, LNR, Country Park and County Boundary data; Kent Wildlife Trust for LWS, RNR and Reserve data; Kent RIGS group for RIGS data; and the National Trust, the RSPB and the Woodland Trust for Reserve data used in this map.

0 0.5 1 2 Kilometres



KEY

- Study Area
- Local Wildlife Site
- Local Nature Reserve
- Higher Level Stewardship Scheme
- Ancient Woodland
- Water Feature



7 Photographs

Photograph 1 – View from Britannia Lane looking south over land owned by Ashford Borough Council. Habitat comprises tussocky neutral grassland interspersed with scrub; used for grazing livestock.



Photograph 2 – View looking east from footway/cycle route between Britannia Lane and Ceasar Avenue. Note tussocky grass, tall ruderal herbs, scrub, hedgerow and children's play area to the right.



Photograph 3 - Fenced off grazing area, looking east towards the river, in same parcel of land as Photograph 2. Note tussocky neutral grassland, scattered scrub and footpath to the right (south) of the stock fence, and scattered scrub within the grazed land. At the time of survey the land was waterlogged closer to the river.



Photograph 4 – View looking north along the East Stour River from the bridge on Pound Lane. This area of land is where a section of one of the proposed road options may cut through.



Photograph 5 – View looking west along Pound Lane. Note tree lined edges and hedgerow that separates the road from the footpath. The proposed new road would be connected to this road.



Photograph 6 – Looking south from Ashford Road over privately owned land. Note tussocky neutral grassland, hedgerow and trees, plus the East Stour River with reeds in the foreground. This habitat is within one option for the proposed road route.



Photograph 7- View from Ashford Road/Romney Marsh Road roundabout, looking north towards Ashford Road. Note line of semi-mature trees, paved footway and cycle route, amenity grassland and scrub habitat to the west.



Photograph 8 – View from Ashford Road, looking west over dense scrub and sapling trees within privately owned land (also shown in Photograph 7). This area is where one option of the proposed road route will cut through.



Photograph 9 - View of the East Stour River looking north east from Ashford Road. Note grazing to the east and fallow arable field to the west. Land is immediately adjacent to the scheme footprint and hydrologically linked.



Photograph 10 – Two mature oaks offering bat roosting potential, situated within the edge of the field adjacent to Pound Lane.



Photograph 11 – View looking south west at land between the East Stour River and its tributary. Note ivy covered mature trees offering bat roost potential on the left hand side of the picture, and the willow trees choking the tributary on the right hand side of the picture.



Photograph 12 – Section of pedestrian footway and cycle path between Britannia Lane and Caesar Avenue. Tree line and hedgerow offer low bat roosting potential as well as foraging opportunities for bats.



Photograph 13– Mature hawthorn with thick ivy cover, offering low bat roosting potential. Situated on the northern side of Ashford Road.



Photograph 14 – Line of mature willow trees with thick ivy cover offering bat roosting potential, situated along the western edge of the arable field in Photograph 9, adjacent to the scheme footprint.



Photograph 15 – View of the East Stour River tributary looking north. Slow water flow due to section downstream choked by willow trees. The habitat suitability for great crested newt was rated as excellent.



Photograph 16 – Pond located next to the Britannia Lane/Ashford Road roundabout, immediately adjacent to the scheme footprint. Note culvert to the right (northwest end of the pond). The habitat suitability for great crested newt was rated as average.



Photograph 17 – Same pond as is shown in Photograph 16 but the view is from the southeast end. Note surrounding scrub habitat and wood pile in the left of the picture, offering suitable hibernacula and foraging habitat for reptiles and amphibians.



Photograph 18 – View of the south bank of the East Stour River and grazing pasture in background. Mammal burrows are present here, potentially water vole, see Photograph 19. At the time of survey the land was waterlogged next to the river and along the footpath.



Photograph 19 – Close up of mammal burrows, potentially belonging to water vole.



8 Tables

Table 1: GCN Habitat Suitability Index (HSI) Results

Waterbody Ref:	Pond 1- Britannia Ln/ Ashford Rd Roundabout	Ditch 1 - East Stour River
SI1 - Location	1	1
SI2 - Pond area	0.4	0.95
SI3 - Pond drying	0.9	0.5
SI4 - Water quality	0.67	1
SI4 - Shade	0.6	1
SI6 - Fowl	1	1
SI7 - Fish	0.67	0.67
SI8 - Ponds	0.8	0.8
SI9 - Terrestrial habitat	0.67	0.67
SI10 - Macrophytes	0.35	0.95
HSI	0.67	0.83

Table 2: Scores/Suitability Ratings

Habitat suitability	H.S.I	Waterbody Reference
Poor	<0.5	
Below average	0.5-0.59	
Average	0.6-0.69	Pond 1
Good	0.7-0.79	
Excellent	>0.8	Ditch 1

Appendix A **Wildlife Legislation and Policy**

The Wildlife & Countryside Act 1981 (as amended)

Provides for designation and protection of Sites of Special Scientific Interest (SSSI), these are areas that represent the most valuable habitats in the UK for nature conservation.

The Act creates the following offences:

- To intentionally kill, injure, or take any wild bird or their eggs or nests (with exception to species listed in Schedule 2). Special penalties are available for offences related to birds listed on Schedule 1, for which there are additional offences of disturbing these birds at their nests, or their dependent young.
- To intentionally kill, injure, or take, possess, or trade in any wild animal listed in Schedule 5, and interference with places used for shelter or protection, or intentionally disturbing animals occupying such places.
- Certain methods of killing, injuring, or taking wild animals listed in Schedule 6.
- To pick, uproot, trade in, or possess (for the purposes of trade) any wild plant listed in Schedule 8, and prohibits the unauthorised intentional uprooting of such plants.
- The release of certain non-native animals and the planting of plants listed in Schedule 9.

It also provides a mechanism making any of the above offences legal through the granting of **licences** by the appropriate authorities.

Conservation of Habitats and Species Regulations 2010 (as amended)

The principal means by which the European Habitats Directive is transposed in England and Wales.

Provide for the **designation** and protection of a network of 'European Sites' (also termed Natura 2000), including Special Areas of Conservation (SAC) and Special Protection Areas (SPA).

Regulation 41 creates the following **offences** relating to European Protected Species (EPS):

- deliberately capture, injure or kill any wild animal of a European Protected Species;
- deliberately disturb animals of any such species in such a way as to be likely to:
 - impair their ability to survive, breed, rear or nurture their young, hibernate or migrate, or
 - significantly affect the local distribution or abundance of the species to which they belong;
- deliberately take or destroy the eggs of such an animal; or
- damage or destroy a breeding site or resting place of such an animal

The Regulations also make it an offence (subject to exceptions) to deliberately pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 5.

However, the actions listed above can be made lawful through the granting of **licences** (European Protected Species Licence) by the appropriate authorities (Natural England in England). Licences may be granted for a number of purposes, but only after the appropriate authority has determined that the following regulations are satisfied:

- the works under the licence are being carried out for the purposes of 'preserving public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment'.
- there is 'no satisfactory alternative'
- the action 'will not be detrimental to the maintenance of the population of the species concerned at favourable conservation status in their natural range'

To apply for a licence, the following information is required:

- The species concerned.
- The relative size of the population at the site (note this may require a survey to be carried out at a particular time of the year).
- The impact(s) (if any) that the development is likely to have upon the populations.
- What measures will be conducted to mitigate for the impact(s).

Natural Environment & Rural Communities (NERC) Act 2006

Section 40 of NERC carries an extension of the earlier CRoW Act biodiversity **duty to public bodies and statutory undertakers** to ensure due regard to the conservation of biodiversity. Section 41 requires the Secretary of State, as respects England, to publish a list of species and habitats which are of 'principal importance for the purpose of conserving biodiversity'. These lists generally reflect the species and habitats previously listed under the UK Biodiversity Action Plan.

The Protection of Badgers Act 1992

This makes it an offence to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so and to intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it.

Under Section 10 (1)(d) of the Protection of Badgers Act 1992, a licence may be granted by Natural England to interfere with a badger sett for the purpose of development, as defined by Section 55(1) of the Town & Country Planning Act 1990.

The Wild Mammals (Protection) Act 1996

The Wild Mammals (Protection) Act 1996 makes it an offence for any person to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

The Animal Welfare Act 2006

This imposes a duty of care on anyone responsible for an animal to take reasonable steps to ensure that the animal's needs are met. This means that a person has to look after the animal's welfare and ensure that it does not suffer. The Act says that an animal's welfare needs include:

- a suitable environment
- a suitable diet
- the ability to exhibit normal behaviour patterns
- any need it has to be housed with, or apart from, other animals
- protection from pain, suffering, injury and disease

With regards to development, this may have implications when capture and translocations of animals are proposed.

The Hedgerows Regulations 1997

The Hedgerows Regulations 1997 were introduced to protect important hedgerows from destruction. However the legislation does not apply to any hedgerow that is within or marking the boundary of the curtilage of a dwelling house.

For the Regulations to be applicable, the hedgerow must be at least 20 metres in length or, if less than 20 metres, it must meet another hedgerow at each end. A hedgerow is deemed to be important if it is more than thirty years old and meets at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

If a hedgerow which qualifies under the Regulations is to be removed, the landowner must contact the Local Planning Authority (LPA) in writing by submitting a hedgerow removal notice. The LPA then has a period of 42 days to decide whether or not the hedgerow meets the importance criteria of the regulations.

National Planning Policy Framework

This framework replaces Planning Policy Statement 9: Biodiversity and Geological Conservation (PPS 9) (ODPM 2005b) and sets out the view of central Government on how planners should balance nature conservation with development. One of the key principles of the NPPF is:

The NPPF states that development plan policies and planning decisions should be based upon up-to-date information about the environmental characteristics of their areas, including biodiversity. It also states that the aim of planning decisions should be to prevent harm to biodiversity conservation interests and to 'promote the preservation, restoration and re-creation of priority habitats, ecological networks and the recovery of priority species'.

Where determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principals; 'if significant harm 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'; and, 'planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss'.

This means that full ecological surveys should be carried out and suitable mitigation measures proposed prior to any planning application being submitted.

Biodiversity 2020: A strategy for England's wildlife and ecosystem services

This biodiversity strategy for England builds on the Natural Environment White Paper and the earlier UK Biodiversity Action Plan. It provides a comprehensive picture of how Government is implementing our international and EU commitments and sets out the strategic direction for biodiversity policy up to 2020. Its mission is to:

"halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people."

In relation to planning and development its priority is to:

"take a strategic approach to planning for nature within and across local areas. This approach will guide development to the best locations, encourage greener design and enable development to enhance natural networks. We will retain the protection and improvement of the natural environment as core objectives of the planning system".

Appendix B List of flora species observed during site visit

Common Name	Latin Name
Creeping buttercup	<i>Ranunculus repens</i>
Clover	<i>Trifolium spp.</i>
Dock	<i>Rumex sp.</i>
Club rush	<i>Schoenoplectus lacustris</i>
Willow herb	<i>Epilobium spp.</i>
Common vetch	<i>Vicia sativa</i>
Creeping thistle	<i>Cirsium arvense</i>
Teasel	<i>Dipsacus spp.</i>
Bramble	<i>Rubus fruticosus agg</i>
Stinging nettle	<i>Urtica dioica</i>
Spindle	<i>Euonymus europaeus</i>
Common water starwort	<i>Callitriche stagnalis</i>
Horsetail	<i>Equisetum sp.</i>
Spindle	<i>Euonymus europaeus</i>
Dogwood	<i>Cornus sp.</i>
Blackthorn	<i>Prunus spinosa</i>
Hawthorn	<i>Crataegus monogyna</i>
Dog-rose	<i>Rosa canina</i>
Elder	<i>Sambucus nigra</i>
Ash	<i>Fraxinus excelsior</i>
Hazel	<i>Corylus avellana</i>
Field maple	<i>Acer campestre</i>
Oak	<i>Quercus robur</i>
Poplar	<i>Populus sp.</i>
Sycamore	<i>Acer pseudoplatanus</i>
Willow	<i>Salix sp.</i>



Appendix C Ecology Survey Timing - Indicative Calendar

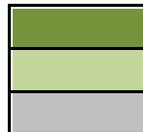
Species	Months											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Badger	Limited sett/ bait surveys	Bait marking & sett surveys			Sett surveys				Sett surveys			Limited sett/ bait surveys
Bats	Hibernation roost survey				Summer roost & activity surveys							Hibernation roost survey
	Roost potential and close inspections of roosts possible all year. Trees are best inspected (for potential) in winter.											
Birds - Nesting	No to low nesting activity		Nesting activity						No to low nesting activity			
Botanical				Reduced flowering	Main flowering season			Reduced flowering				
Great Crested Newt	Hibernation		Pond surveys	Pond surveys		Pond surveys	Habitat Suitability Assessment only				Hibernation	
Otter	Field-sign surveys		Field-sign surveys		Field-sign surveys							
Reptiles	Hibernation		Limited activity	Artificial refuge surveys			Reduced basking time		Pond surveys	Limited activity	Hibernation	
Water voles	Reduced activity			Field-sign surveys							Reduced activity	
White-clawed crayfish					trapping restricted							

Key to timing:

Optimal survey period

Sub-optimal survey period

Surveys unreliable



NOTE: Timing shown is indicative and may vary depending on weather and region. Some surveys may require licences.