# Preliminary Ecological Appraisal (PEA) & Ecological Constraints and Opportunities Plan (ECOP)

**WILLOUGHBY 1, WILLOUGHBY-ON-THE-WOLDS, NOTTINGHAMSHIRE (Four Landholdings / Five Survey Areas: Central OS Grid Reference: SP 624 259)**

Preliminary Ecological Appraisal reports are aimed at quickly and concisely communicating the findings of initial ecological survey work completed on sites so that key ecological opportunities and constraints to the planning process are appropriately considered within the design and planning process. The constraints identified may have an influence over the time required to complete the baseline ecological surveys to inform a planning application and may also inform the site layout and requirements for ecological mitigation within the site. Opportunities for incorporating mitigation habitat and ecological enhancement measures within the design are also most easily achieved when considered at an early stage. This document is not prepared for direct submission to the local authority but rather for circulation amongst key members of the design team so that ecological requirements might be adequately considered.

This document has been produced by Clarkson and Woods Ltd. on behalf of Pegasus Group to provide an outline of the ecological constraints identified at the above site and identify opportunities for incorporating biodiversity enhancements into future development proposals. Note that this document aims to provide design and planning advice, and it is not intended to be submitted with a planning application to develop the Site. However, recommendations have been provided below with a view to support and enhance any future applications.

**Site Survey**

Clarkson and Woods Ltd. have been commissioned by Pegasus Group to complete Extended Phase 1 Habitat Surveys of a large site spread over five survey areas (owned by four landowners) which were completed on the 26 and 27 January 2022. These were referred to as parcels 1.1 to 1.5. Subsequent to the survey, site parcel 1.4 was removed from the proposed study and development area and so this is not considered within this document. The results of the Phase 1 Habitats Survey are included in map form on **Figure 1 - 3** below. Pond locations are shown on **Figure 4 –5**. **Figures 6 - 7** at the end of the report shows the survey areas and identifies key constraints as well as opportunities to avoid, mitigate and enhance key ecological features. **Table 5** provides more detail of issues for consideration. **Figure 8** shows the location of all parcels in relation to each other.

A desk based assessment has also been completed which collates information from various sources including the Nottingham Biological and Geological Records Centre (NBGRC), MAGIC.gov.uk and other resources, including Clarkson and Woods' own in-house database. Any records local to the site which might have a bearing upon the future development identified during this search are also highlighted within this short report.

The survey completed identified a number of further species survey requirements. The details of these, together with the associated time constraints is set out below.

**Further Ecological Survey Work**

The timeline below shows the further ecological survey work that would be expected to accompany a planning application and to inform suitable mitigation. Many of these surveys are seasonally constrained and consultation with the LPAs ecologist is advised.

| TASK | Jan 22 | Feb 22 | Mar 22 | April 22 | May 22 | June 22 | July 22 | Aug 22 | Sept 22 | Oct 22 | Nov 22 | Dec 22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase 1 Ecological Walkover Survey | Completed | | | | | | | | | | | |
| Consultation With LPA Ecologist To Agree Survey Scope. | | | | | | | | | | | | |
| X1 Scoping Wintering Bird Survey | | Completed | | | | | | | | | | |
| eDNA Surveys of x 25 Ponds For Great Crested Newt | | | | | | | | | | | | |
| Scoping Breeding Bird Survey | | | | | | | | | | | | |
| Additional Breeding Bird Surveys X3 *if required* | | | | | | | | | | | | |
| PEA Report | | | Completed | | | | | | | | | |
| Ecological Impact Assessment Report | | | | | | | | | | | | |

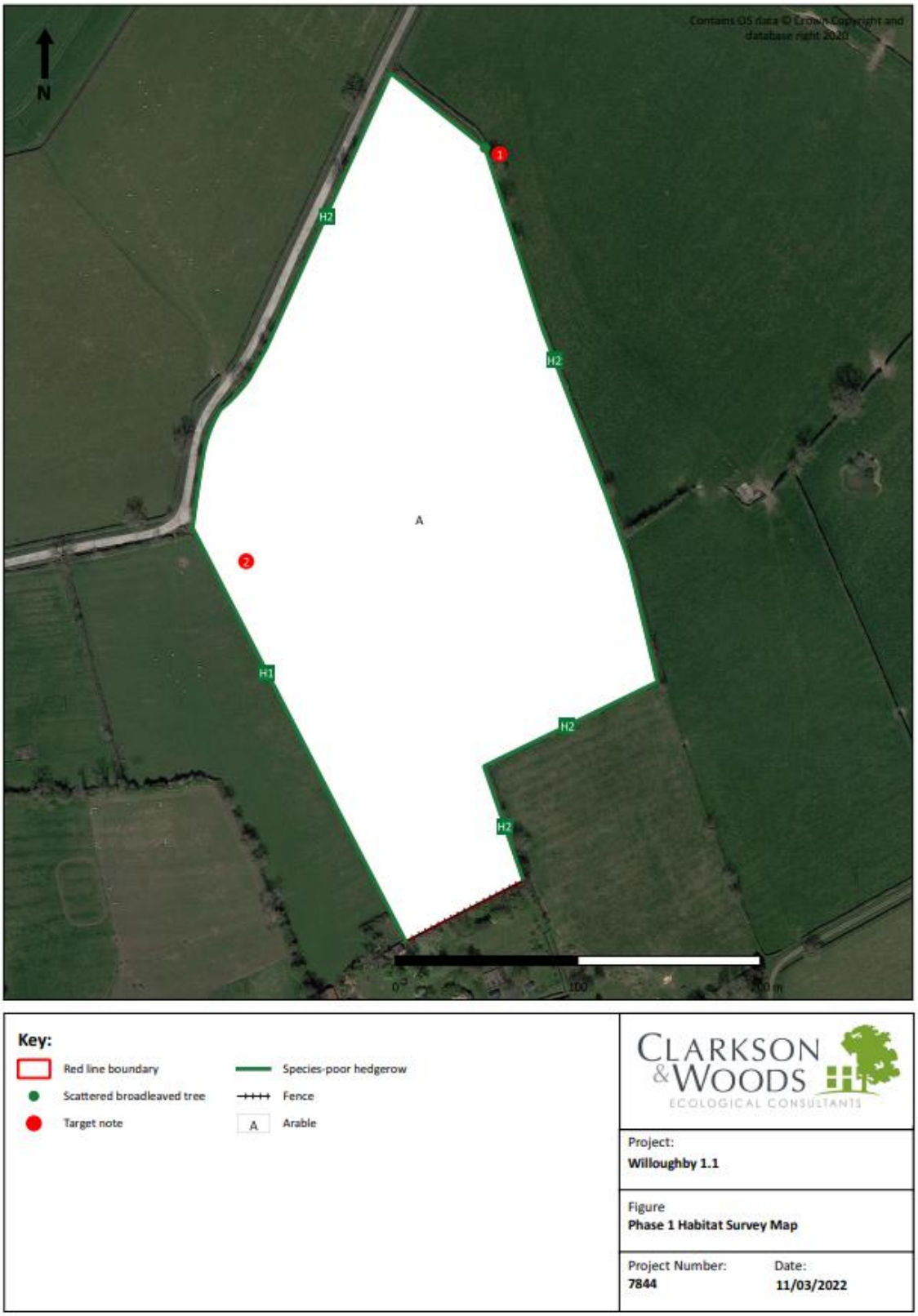



**Figure 1: Extended Phase I Habitat Map (Willoughby 1.1 Far East Survey Area)**

**Table 1: Target Notes (Figure 1, Willoughby 1.1 Far East Survey Area)**

| No. | Description |
|---|---|
| TN1 | Ash tree with small split on underside of rotten / snapped branch, facing south. Moderate potential for bats. |
| TN2 | Badger path crosses field |

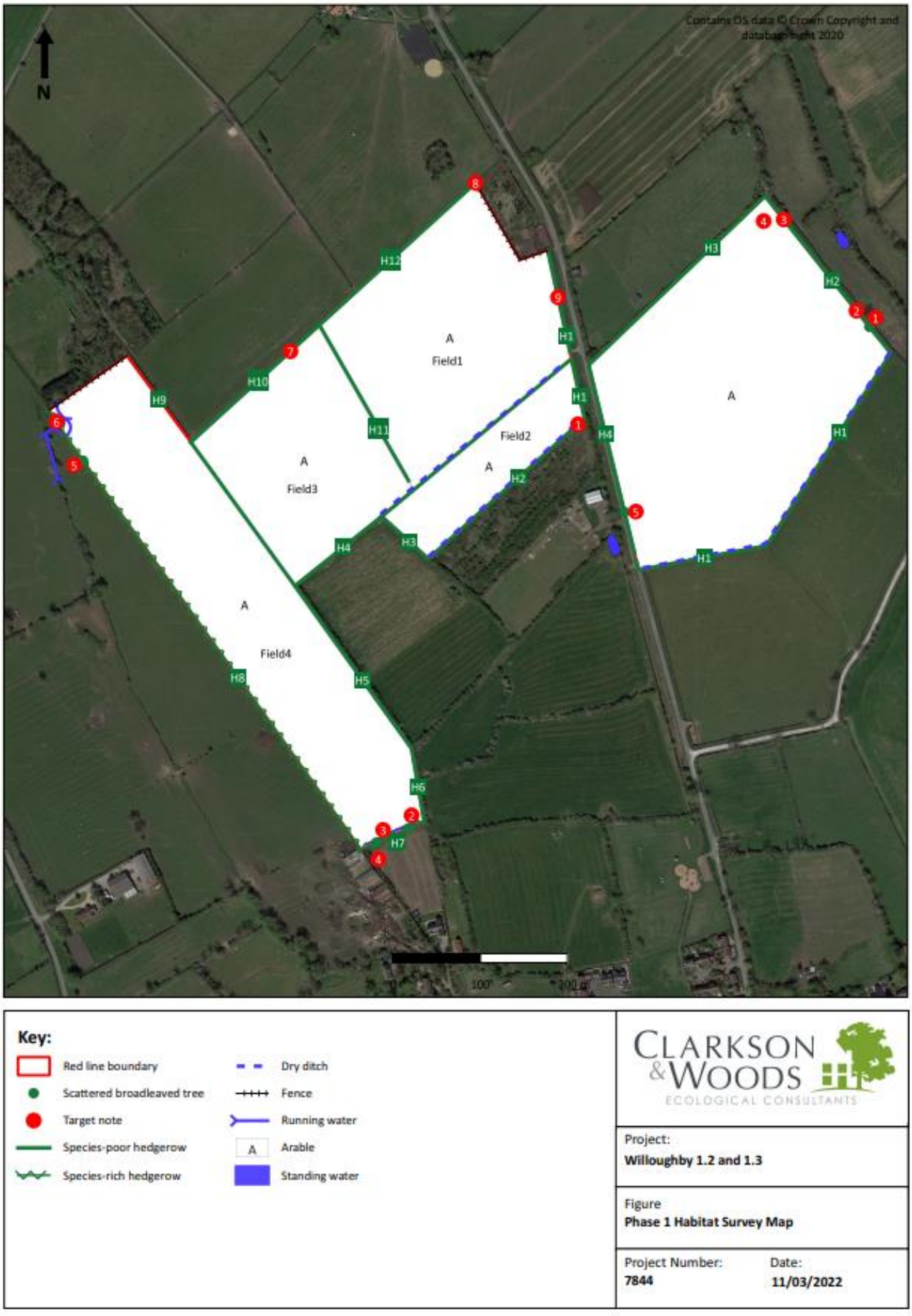



**Figure 2: Extended Phase I Habitat Map (Willoughby 1.2 East Survey Area and Willoughby 1.3 Central East Survey Area Ref: Tables 2 and 3)**

**Table 2: Target Notes (Ref: Figure 2, Willoughby 1.2 East Survey Area)**

| No. | Description |
|---|---|
| TN1 | Ash tree in hedge with potential roosting features including rotten and snapped branches, woodpecker hole x 2 facing NW & SE. High potential. |
| TN2 | Badger outlier under hedge, single partially used entrance facing SW. Old bedding and hair inside entrance as well as leaves and debris. Badger path along field margin nearby. |
| TN3 | Likely subsidiary sett, 3 partially used entrances under hedge. Entrance 1 faces SW, No.2 faces NW, No.3 faces NE. Each approx 1-2 m from each other. Some old bedding and badger hairs. |
| TN4 | Partially used badger sett entrance in grassland corner of field, approx 2.5m from hedge. Entrance faces SW and tunnel goes back towards hedge where there is a collapsed section. Is probably part of the other nearby sett. |
| TN5 | Rotten ash tree, half dead with some crevices in rotten heartwood which may extend in. Cluttered due to hedge. Moderate potential for bats. |

**Table 3: Target Notes (Ref: Figure 2, Willoughby 1.3 Central East Survey Area)**

| No. | Description |
|---|---|
| TN1 | Spoil heap / manmade bank vegetated with colt's foot, broadleaved dock and spear thistle, cut to ground level. Appears to have clumps of common gorse planted. |
| TN2 | Ash tree with knot hole, cluttered. Moderate potential for bats. |
| TN3 | Ditch under hedge holding low level of standing water, 5-10 cm deep. Probably low potential for GCN. |
| TN4 | Ash tree with woodpecker hole and rot, quick cluttered. Moderate potential for bats. |
| TN5 | Large white willow with hollow trunk, DBH 2m, lots of PRFs in cracks of bark. |
| TN6 | Stream skirts edge of Field 4, in corner. Steep banks but stream is shallow and pebbly. Approx 2-3m wide, moderate flow. Potential for water vole. |
| TN7 | Badger latrine under hedge, small amount of fresh dung. |
| TN8 | Badger sett just off site, well used entrance leads into Field 1. Can only see one entrance facing north, under dense bramble scrub - likely just an outlier sett but could not access as outside of site ownership and dense scrub. Badger hair in spoil, old bedding. |
| TN9 | Ditch on roadside of hedge holds water for around 5m stretch, approx 10cm deep x 30 cm wide. Probably dries. Low potential for GCN. Rest of ditch is dry. |

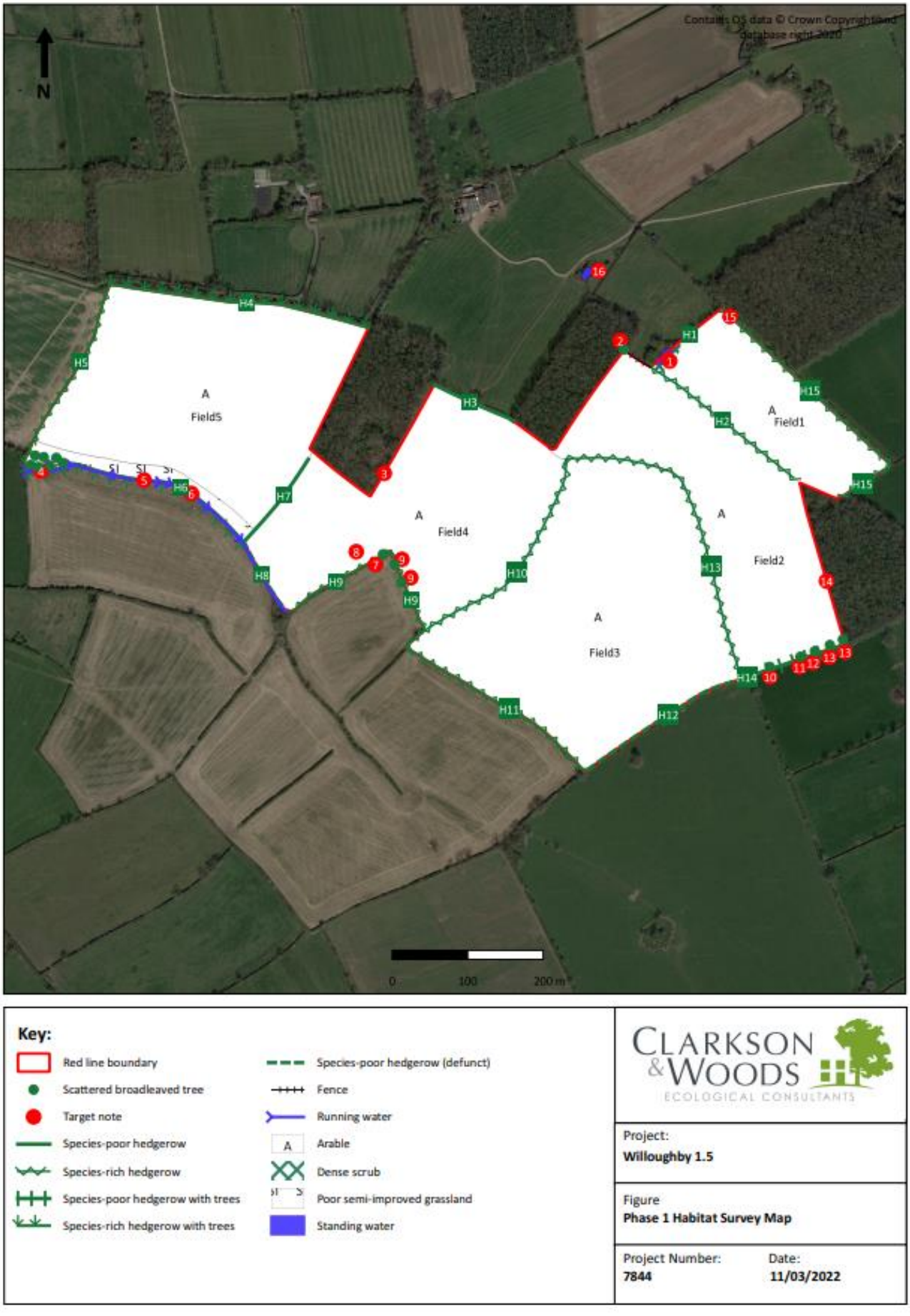
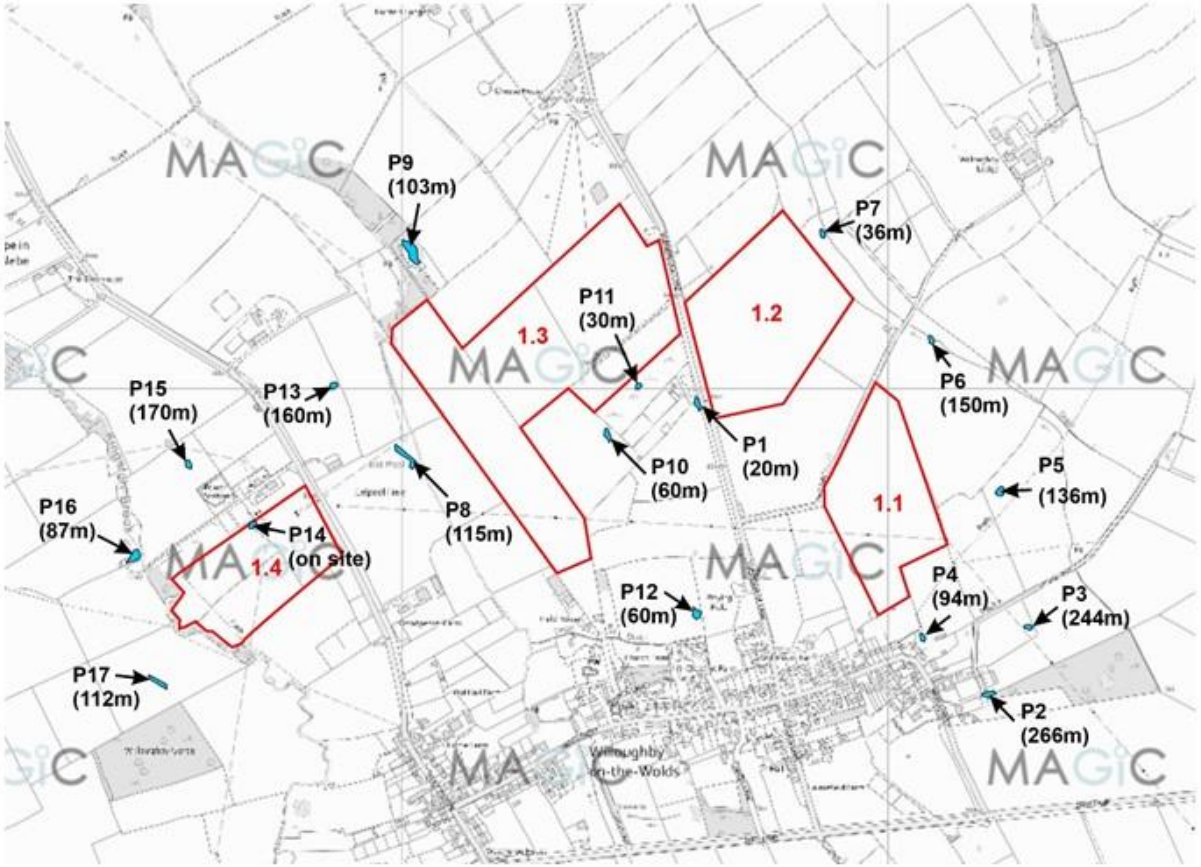



**Figure 3: Extended Phase I Habitat Map (Willoughby 1.5 West Survey Area)**

**Table 4: Target Notes (Ref: Figure 3, Willoughby 1.5 West Survey Area)**

| No. | Description |
|---|---|
| TN1 | Pond 18, completely shaded by dense scrub so can't get close. Can see it holds water. Possible Typha on one margin. Looks quite deep so probably doesn't dry up. No fowl / fish unlikely. May be quite tricky to survey. |
| TN2 | Ash tree, half dead on edge of woodland with woodpecker hole facing site, around 10m from site boundary. |
| TN3 | Badger sett on edge of woodland, 5 disused entrances, 1 partially used entrance. Most entrances face SE. The disused ones are partially blocked with soil and have not been used for some time. The p.u. entrance is under bramble, badger hairs found in spoil. A couple of entrances are near to the edge of the arable field. There could be more in the woodland, but none obviously. |
| TN4 | Pond 20, Small pond, nearly succeeded. Approx 3m x 2m, full of floating sweet-grass but does not look deep. Probably dries up annually. No fish/fowl. Surrounded by scrub and trees, 100% shaded |
| TN5 | Small stream under hedge, approx 0.3m wide. Around 10cm deep. Highly shaded by hedge and scrub for most of it. Banks covered in ivy and bramble. Low potential for water vole. |
| TN6 | Wider arable margin along stream edge, possibly buffer to stream or ground too wet to cultivate. Species poor grassland, approx 20m wide. |
| TN7 | Small ash with hollows in trunk, cluttered, moderate potential for bats. |
| TN8 | Several redwings flushed from hedge into field |
| TN9 | Two ash standards with moderate potential due to rot on limbs. |
| TN10 | Ash with some rotten limbs, knot holes. Moderate potential for bats |
| TN11 | Large ash with woodpecker hole on underside of limb, uncluttered, and rot on higher limbs. High potential for bats. |
| TN12 | Ash with knot hole on trunk which may extend in. Moderate potential for bats. |
| TN13 | Two x ash with knot holes, moderate potential for bats. |
| TN14 | Trees on woodland edge have PRFs, low and moderate potential. |
| TN15 | Ash with dead trunk full of woodpecker holes. Cluttered. Moderate potential. |
| TN16 | Pond 19 in grassland field to north of site (off site), near track. Holds water, surrounded by scrub on one side. |

## Willoughby 1.1 to 1.4 Survey Areas




Key:

- Pond

P2 (10m) - Pond Number and Distance From Site

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Willoughby 1

Ponds requiring eDNA survey with 250 m of Site (Survey Areas 1.1 – 1.4)

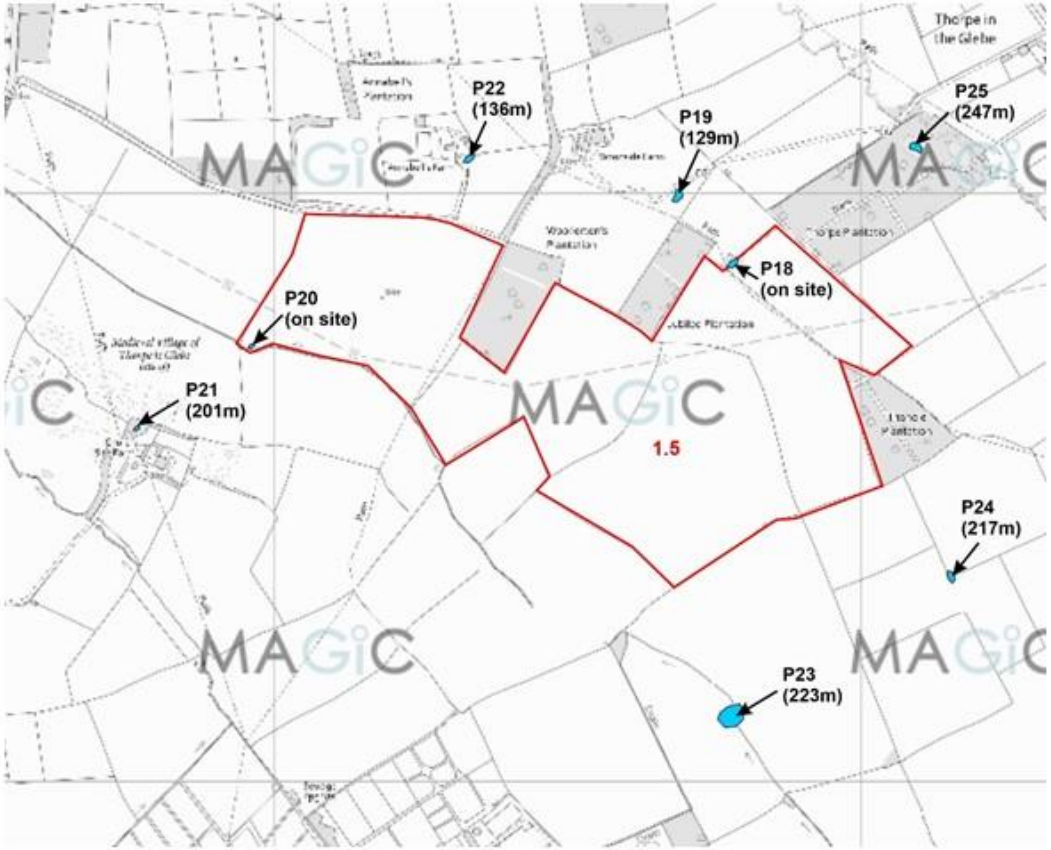
Figure 4

Not to Scale

Date: 4 March 2022

**N.B. Site 1.4 is no longer proposed for development and should be disregarded.**

# Willoughby 1.5 Survey Area




Key:

- Pond

P2 (10m) - Pond Number and Distance From Site

CLARKSON & WOODS
ECOLOGICAL CONSULTANTS

Willoughby 1

Ponds requiring eDNA survey with 250 m of Site (Survey Areas 1.5)

Figure 5

Not to Scale

Date: 4 March 2022

**Table 5: Potential Constraints and Opportunities Related to Development of Site**

| Ecological Receptor | Constraints and Likely Impacts During Construction and Operation. <u>Requirements for further survey are highlighted.</u> | Recommended Mitigation, Opportunities and Enhancements. |
|---|---|---|
| **Designated Sites** | | |
| Statutory and Non-Statutory Sites | • No internationally designated sites lie within 5km.<br>• No nationally or locally designated sites within 2km.<br>• 14 Sites of Importance for Nature Conservation (SINCs) lie within 2km of the Survey Areas.<br>There are three other SINCs in proximity to survey areas. These are:<br>• Woodside Farm Grassland is within 50m of the Willoughby 1.5 West Survey Area, and ranges from unimproved to semi-improved grassland grazed by sheep.<br>• Thorpe in the Glebe Meadow and Thorpe in the Glebe Plantation Grassland are both within 50m of Willoughby 1.5 West Survey Area, and comprise species-rich unimproved grasslands<br>• Woodside Farm Pond SINC is 129m away from the Willoughby 1.5 West Survey Area, and is marked as Pond 19 on Figure 6 (Ponds Map). It supports a range of aquatic and marginal vegetation including water starwort, pink water speedwell, yellow flag iris and brooklime.<br><br>The Kingston Brook SINC is adjacent to the site, and could be affected by any works on the site, if sediment run-off or pollution from construction enters the watercourse.<br><br>The other SINC's are unlikely to be affected by the proposals due to their distance from the site. | • In line with the mitigation hierarchy, consideration should be given to avoidance of impacts on the SINC by removal of panels from this area. Policy 36 of the Rushcliffe Local Plan sets out the protection of local wildlife sites in the district.<br>• Assuming that avoidance of the SINC is not possible then the EcIA will need to assess the potential impacts on Willoughby Border Grassland SINC and propose robust measures for avoiding habitat degradation or loss, enhancing habitats, and ensuring no net loss of biodiversity arises through any development.<br>• A buffer of at least 20m between the site and Kingston Brook SINC is recommended.<br>• A CEMP prepared for the site should outline good practice construction sites measures to prevent impacts on the nearest designated sites, through minimising run-off, dust and spoil pollution.<br>• Potential for green hay cut from nearby species-rich grasslands (e.g. Woodside Farm Grassland SINC, Thorpe in the Glebe Meadow / Plantation Grassland SINCs), using the hay to help establish new species-rich grassland at Willoughby 1.5 |

| Ecological Receptor | Constraints and Likely Impacts During Construction and Operation. <u>Requirements for further survey are highlighted.</u> | Recommended Mitigation, Opportunities and Enhancements. |
|---|---|---|
| **Habitats** | | |
| Trees | • A number of mature trees were identified within the hedgerow network in all the survey areas, which are important ecological features.<br>• Many of the trees had potential to support roosting bats but moderate and high potential trees were identified as Target Notes on Figures 1 - 4 (See 'Bats').<br>• There were no woodlands within the survey areas, although woodland edge forms the boundary to some of the fields in Willoughby 1.5 West Survey Area. | • Retain mature trees where possible – these are likely to be important landscape and ecology features and may contribute to green corridors.<br>• The design will need to take into account root protection zones in accordance with BS 5837: Trees in relation to design, demolition and construction.<br>• Any works needed to the trees (such as removal or de-limbing) should be identified early as these trees may be suitable for roosting bats, nesting birds etc. |
| Hedgerows | • Extensive network of hedgerows present on site, which were mainly species-poor in Survey Areas 1.1 to 1.3, but a high ratio of hedgerows of species-rich in Willoughby 1.5 West Survey Area. The hedgerows included occasional standard trees across the Survey Areas with more frequently occurring standard trees in Willoughby 1.5.<br>• Hedgerows are a Habitat of Principal Importance (S41 of NERC Act) and are listed in the Nottingham Local Biodiversity Action Plan (LBAP) as they are important ecological features.<br>• Hedgerows may be damaged during construction or sections may need to be removed for access. | • Highly recommend that hedgerows are retained wherever possible and an adequately protective buffer (minimum 5m) provided.<br>• Any gaps for access should be minimised with existing gaps utilised where possible.<br>• Protection of hedgerows during construction using security fencing, stock-proof fencing or temporary fencing. Stock-proof fencing would be preferable where security fencing not required as this will protect the hedgerows if sheep grazing takes place during operation.<br>• Enhance retained hedgerows through infilling gaps, bringing hedgerows under favourable management, which maximises biodiversity value.<br>• Should any loss of hedgerow or boundary feature be required, it should be replaced on a 2:1 basis by planting native, species-rich, double-planted hedgerows. |

| Ecological Receptor | Constraints and Likely Impacts During Construction and Operation. <u>Requirements for further survey are highlighted.</u> | Recommended Mitigation, Opportunities and Enhancements. |
|---|---|---|
| Arable land | • The field margins were narrow in most places and species-poor.<br>• Willoughby 1.5 West Survey Area included some wider arable margins (see Grassland below).<br>• Although of low floristic value, the arable land is likely to be valuable for farmland birds (see 'Birds'). This is one of the reasons that arable / improved grassland has a Habitat Action Plan in the Nottingham LBAP. | • Arable land within the array is likely to be replaced by grassland. Measures to maximise the benefits of grassland, such as seeding with wildflower mix, should be set out in a Landscape and Ecology Management Plan (LEMP). This would include grassland management prescriptions to ensure that new grasslands provide significant enhancement for wildlife including farmland birds.<br>• Conservation grazing or mowing regime should be applied to all or some (at least half) of the operational site, with minimal intervention in the summer months to allow establishment of a diverse sward. |
| Grassland | • If this site is confirmed to support species-rich unimproved grassland, which is a Habitat of Principal Importance (S41 of NERC Act), sensitive design will be required to show that the grassland can be retained and managed appropriately, in order to maintain the species diversity and character of the habitat.<br>• If the botanical surveys show that the grassland has become degraded (e.g. due to changes in management) since it was last surveyed for the SINC there may be scope for the development to restore and enhance the habitat through appropriate management, and regain the species diversity that the SINC was designated for.<br>• Willoughby 1.5 West Survey Area included some wide semi-improved grassland strips at the edges of the arable fields. These appeared to be species-poor but may provide habitat for ground nesting birds. | • It is likely that to retain the character and species-diversity of the grassland, management would be through traditional hay cutting but it may be possible to design a sensitive grazing regime<br>• The wide grassland margins on arable land at Willoughby 1.5 West could be retained and enhanced through appropriate management to increase species diversity and potentially provide habitat for wildlife including invertebrates, ground nesting birds and barn owl. |
| Watercourse and Ditches | • A stream skirts the corner of Willoughby 1.3 Central East Survey Area. There is also a wet ditch on this site, and a number of dry ditches.<br>• There is a small stream which runs adjacent to the southern boundary of Willoughby 1.5 West Survey Area.<br>• There is the potential for runoff or pollution events during construction, which may impact watercourses running adjacent to the site (which may in turn affect watercourses downstream of the site).<br>• The streams may be suitable for water vole (see 'Water Voles' below) | • A buffer of at least 20m is recommended between the array and Kingston Brook SINC.<br>• A buffer of at least 10m should be established between the array and other watercourses and at least 5m between the array and any ditches.<br>• A CEMP for the site should contain measures to prevent impacts on the ditches and stream. Site compounds should not be situated within 10m of watercourses. |

| Ecological Receptor | Constraints and Likely Impacts During Construction and Operation. <u>Requirements for further survey are highlighted.</u> | Recommended Mitigation, Opportunities and Enhancements. |
|---|---|---|
| Ponds | • Willoughby 1.5 West Survey Area has two ponds on site<br>• In addition to these three ponds on site, there are a further 22 ponds which have been identified within 250m of the five survey areas, as indicated on Figure 5 & 6 Pond Maps (See 'Great Crested Newts'). | • A buffer of at least 10m should be established between the array and ponds on site. A wider buffer may be recommended if any of the ponds on site are confirmed to support great crested newts.<br>• A CEMP for the site should contain measures to prevent pollution and run-off entering the ponds on and immediately adjacent to the site.<br>• There is scope for enhancing existing ponds and/or creating new ponds on site to help boost biodiversity. |

| Ecological Receptor | Constraints and Likely Impacts During Construction and Operation. <u>Requirements for further survey are highlighted.</u> | Recommended Mitigation, Opportunities and Enhancements. |
|---|---|---|
| **Fauna and Flora** | | |
| **Badgers** | • Protected under WCA 1981.<br>• NBGRC returned nine records of badger with 1km including road casualties and latrines. None of these records were located on or adjacent to the sites.<br>• Willoughby 1.2 East Survey Area supported two setts: A likely subsidiary sett was present at the northern end of the north-east boundary hedgerow, with one entrance in the field itself, and a partially used outlier sett was found further south along the same hedgerow (see Figure 2 for approximate location of the setts).<br>• Willoughby 1.3 Central East Survey Area had an outlier sett just outside the northern-most corner of the site, with the entrance leading into Field 1. A badger latrine was found on site. See Fig 2 for location of sett.<br>• Willoughby 1.5 West Survey Area had a likely subsidiary sett on the edge of Field 4 where it is bordered by Woollerton's Plantation. See Fig 4 for location of sett.<br>• Risk of an offence being committed (killing / injury of badgers or sett damage) during construction works. | • Badger setts should be retained and protected during construction phase by erection of protection fencing, with a suitable buffer width of at least 10-20m (depending on the size and status of the sett).<br>• Further surveys/mitigation may be required should any badger setts require exclusion (i.e. where a suitable buffer cannot be provided).<br>• Given that badgers can create new setts in a relatively short space of time, an update badger survey would be recommended prior to construction commencing. |
| **Wintering Birds** | • A **<u>wintering bird scoping survey</u>** is currently being undertaken and an updated assessment will be provided following completion of this survey.<br>• The initial Phase I recorded occasional redwings at Willoughby 1.5 West Survey Area.<br>• | • Consider incorporating 'winter bird seed habitat' creation in some areas, where arable land is sown with a mixture of crop and other seeds for the benefit of wintering birds and cultivated and reseeded approximately every 2 years.<br>• Lightly manage hedgerows to benefit winter thrushes |

| Ecological Receptor | Constraints and Likely Impacts During Construction and Operation. <u>Requirements for further survey are highlighted.</u> | Recommended Mitigation, Opportunities and Enhancements. |
|---|---|---|
| **Breeding Birds** | • Protected under Wildlife and Countryside Act (WCA) 1981.<br>• WBRC returned a range of notable birds within 2km including farmland species such as skylark, yellowhammer and tree sparrow, all of which could occur on site. Spotted flycatcher was recorded at Thorpe Plantation which borders Field 1 of Willoughby 1.5 West Survey Area.<br>• Potential for offence to be committed by damaging/destroying active birds' nests should ground nesting birds be present during construction or birds be present within trees/hedgerows which require removal.<br>• **<u>Breeding bird scoping survey</u>** in March 2021 in order to assess the species using the site, in particular skylark on the arable fields. The findings of the scoping survey will determine the need for more comprehensive breeding bird surveys between March and June, although this should be discussed with the LPA ecologist. | • Recommend liaising with LPA ecologist early to agree scope of bird surveys.<br>• Depending on the findings, mitigation is likely to be required and would need to be outside the footprint of the array. This may include some area of grassland ley for ground nesting species, or farmland bird seed habitat as described above for wintering birds.<br>• Provide new nesting opportunities through nest boxes on trees. |
| **Bats** | • European Protected Species, Species of Principal Importance (S41 of NERC Act) and bats have a Species Action Plan in the LBAP.<br>• NBGRC returned 7 records of bat roosts within 1km of the Site, since 2010, including brown long-eared *Plecotus auritus*, common pipistrelle *Pipistrellus pipistrellus*, pipistrelle sp. *Pipistrellus sp.* and an unidentified bat species. The closest roost was a brown long-eared and common pipistrelle roost, located approximately 220m south of the Site, recorded in 2015.<br>• NBGRC also returned 78 records of bats within 1km of the Site, species included brown long-eared, common pipistrelle, *Myotis sp.*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus* and unidentified bat species.<br>• Two European Protected Species licences for bats were located within 2km of the Site; these were for common pipistrelle (1.6km to north-west) and brown long-eared bat (1.75km to north-east).<br>• Site boundaries (woodland edges, watercourses and hedgerows) may be important commuting/ foraging routes.<br>• Many trees in the hedgerows had potential roosting features. Any work required (such as felling or delimbing) has the risk of impacting roosting bats.<br>• Consideration should be given over whether any lighting will be required either during construction or operation as this may impact bats on the site. | • Recommend liaising with the LPA ecologist at an early stage to ensure that they are in agreement in terms of the need for further survey.<br>• Retain and enhance 'corridors' (hedgerows). Minimise any gaps created.<br>• Any work to trees within the hedgerows will require ECoW or survey work.<br>• Avoid lighting during construction and operation. Should lighting be required, a strategy should be prepared to reduce impacts on important habitats.<br>• Enhance site with additional roosting opportunities through bat boxes on trees. |

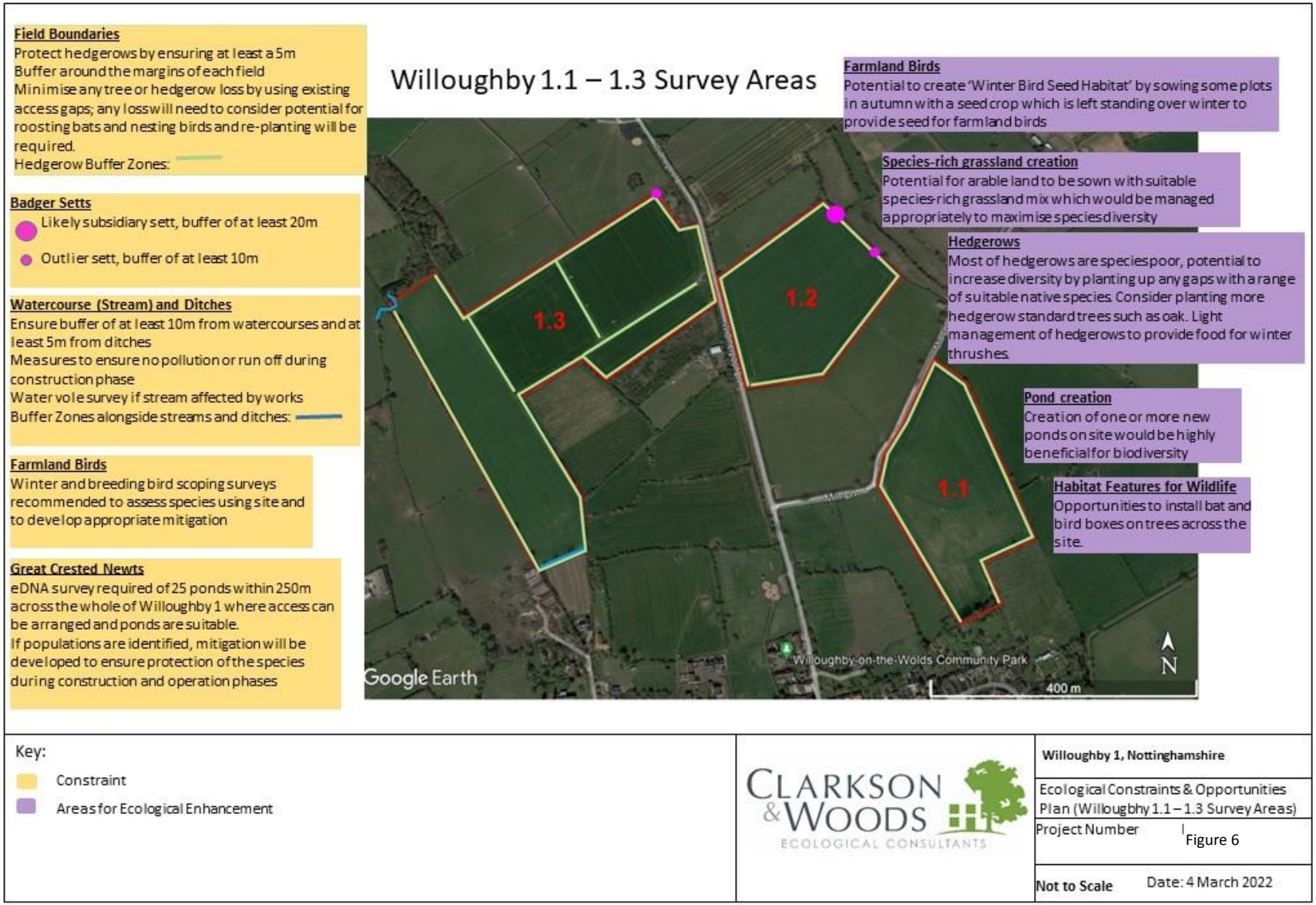
| Ecological Receptor | Constraints and Likely Impacts During Construction and Operation. <u>Requirements for further survey are highlighted.</u> | Recommended Mitigation, Opportunities and Enhancements. |
|---|---|---|
| **Otters and Water Voles** | • NBGRC returned 12 records of water voles within 1km of the Site, all prior to 2010.<br>• There were no records of otters within 1km of the Site.<br>• Willoughby 1.3 and 1.5 also had streams potentially suitable for water vole immediately adjacent to the site. These streams were small but eventually connect to Kingston Brook, so could also support commuting otters.<br>• Potential impacts which could affect otters and water voles include bankside vegetation removal and disturbance, pollution run-off, changes in ground water or drainage levels. If there are any impacts predicted on the watercourses and it's banks (including vegetation removal), an otter and water vole survey will be required. | • Watercourses to be protected with a suitable buffer of at least 10m and provisions included within a CEMP to protect these features.<br>• |
| **Great Crested Newts** | • European Protected Species and local BAP species.<br>• NBGRC returned seven records of great crested newt within 1km of the Site, since 2010.<br>• There are records of GCN in 4 ponds within 250m of the site boundaries; these are P15 (2016), P16 (1992), P19 (2012) and a small field pond located approximately 140m south of Willoughby 1.3 Survey Area, recorded in 2011, although the pond has been found on maps and it is unclear if it still exists.<br>• There are 2 ponds on site: P18 and P20 on Willoughby 1.5 West. P14 and P18 were assessed to have Average suitability for great crested newts, P20 was assessed to be Poor.<br>• An additional 22 ponds have been identified within 250m of the site boundaries, although most of these ponds have not been accessed to check if they still exist and are suitable for great crested newts.<br>• **<u>eDNA survey required</u>** between mid-April and June. Access to all ponds will need to be arranged with relevant landowners for this survey. Habitat Suitability Index surveys should be undertaken at the same time. | • Reversion of arable land to grassland within the array is likely to be of significant benefit for newts during their terrestrial phase (if present).<br>• Further mitigation may be required; to be determined through further surveys.<br>• Potential to enhance the ponds on site for amphibians including great crested newts by simple management such as reducing scrub shading ponds<br>• Potential to enhance site by creating new ponds |

| Ecological Receptor | Constraints and Likely Impacts During Construction and Operation. <u>Requirements for further survey are highlighted.</u> | Recommended Mitigation, Opportunities and Enhancements. |
|---|---|---|
| **Other Species** | • Brown hare – not recorded during the survey but suitable habitat and numerous records within 2km. Risk of injury during construction or fragmentation of habitat with fencing.<br>• Reptiles – grass snake has been recorded close to Willoughby 1.5 West (2011). Reptiles are likely to be restricted to field boundaries and grassland. Risk of killing/injury during ground works particularly if affecting field boundaries or grassland.<br>• Dormice – Hedgerows provide the only habitat on site suitable for dormice. However this species is rare in Nottinghamshire with localised re-introduction sites. There are no records of the species within 2km of the survey area.<br>• Invertebrates – arable land unlikely to support diverse community of invertebrates but typical farmland assemblage likely to include a number of pollinating species. | • Brown hare – allow gaps in fencing (usually via natural undulations in the ground). This species is known to favour solar farms and so would likely benefit from the development.<br>• Reptiles – protection of field boundaries with a buffer of at least 5m would avoid impacts on reptiles, if present. If undertaking ground works on grassland during summer, a method statement should be followed to mow the grassland to a progressively lower height, in warm weather, to encourage any reptiles to temporarily disperse.<br>• Dormice – whilst it is of low risk for this species to occur on site, the hedgerow network will be retained and protected with a suitable buffer of at least 5m and provisions included within a CEMP to protect these features.<br>• Invertebrates - Cessation of intensive arable farming and sowing of a diverse seed mix post construction would enhance the site for invertebrates. |

## Biodiversity Net Gain

- Rushcliffe Local Plan Part 2 requires an assessment of Biodiversity Net Gain (BNG) to be calculated to determine the overall impact of the development on biodiversity (Policy P38, Non-Designated Biodiversity Assets and the Wider Ecological Network). In line with emerging national and local planning policy, a Biodiversity Impact Assessment score will need to be calculated for the Site, using the DEFRA Biodiversity Metric 3.0 Calculation Tool. This metric is used to calculate the biodiversity value of area and linear habitats both before and after development, and is used as a proxy measure to determine if a development is likely to result in an on-site habitat biodiversity net loss or gain.
- A detailed BNG assessment has not been conducted at this stage but will be undertaken as part of the EcIA prepared for this project. For solar developments where the baseline habitat is arable vegetation, this is typically replaced by permanent grassland. On a large solar site of this size, this represents the replacement of a significant area of low grade habitat (arable) with a higher grade of habitat (permanent grassland). The outcome of the assessment is therefore likely to be a net gain in biodiversity. If part or all of the new grassland is also seeded with native wildflower seed mixes the Net gain score would be increased further.

**Figure 7 - 9: Ecological Constraints and Opportunities Maps**



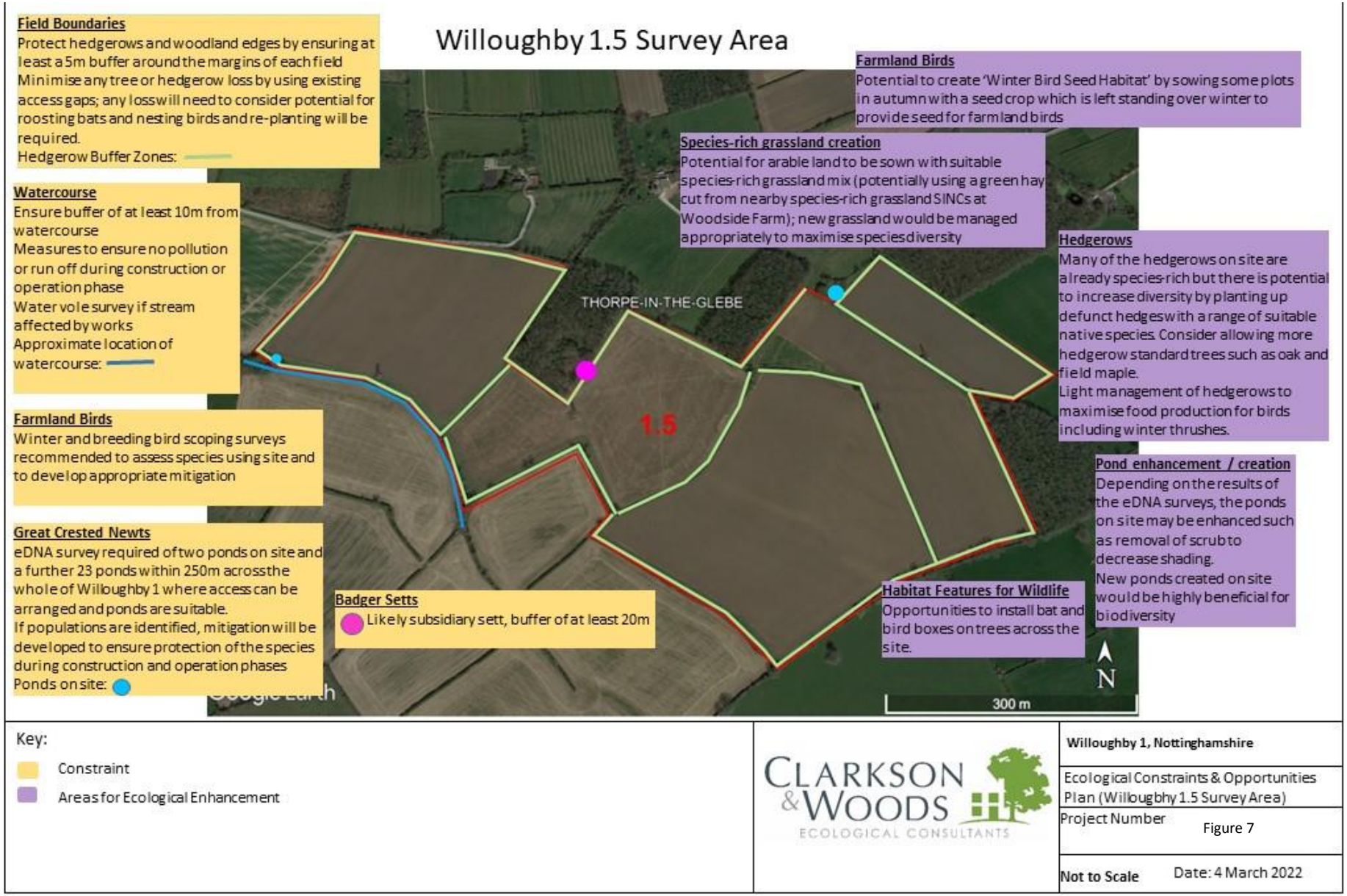

Willoughby 1.5 Survey Area
Field Boundaries
Protect hedgerows and woodland edges by ensuring at least a 5m buffer around the margins of each field
Minimise any tree or hedgerow loss by using existing access gaps; any loss will need to consider potential for roosting bats and nesting birds and re-planting will be required.
Hedgerow Buffer Zones:
Watercourse
Ensure buffer of at least 10m from watercourse
Measures to ensure no pollution or run off during construction or operation phase
Water vole survey if stream affected by works
Approximate location of watercourse:
Farmland Birds
Winter and breeding bird scoping surveys recommended to assess species using site and to develop appropriate mitigation
Great Crested Newts
eDNA survey required of two ponds on site and a further 23 ponds within 250m across the whole of Willoughby 1 where access can be arranged and ponds are suitable.
If populations are identified, mitigation will be developed to ensure protection of the species during construction and operation phases
Ponds on site:
Badger Setts
Likely subsidiary sett, buffer of at least 20m
Farmland Birds
Potential to create 'Winter Bird Seed Habitat' by sowing some plots in autumn with a seed crop which is left standing over winter to provide seed for farmland birds
Species-rich grassland creation
Potential for arable land to be sown with suitable species-rich grassland mix (potentially using a green hay cut from nearby species-rich grassland SINCs at Woodside Farm); new grassland would be managed appropriately to maximise species diversity
Hedgerows
Many of the hedgerows on site are already species-rich but there is potential to increase diversity by planting up defunct hedges with a range of suitable native species. Consider allowing more hedgerow standard trees such as oak and field maple.
Light management of hedgerows to maximise food production for birds including winter thrushes.
Pond enhancement / creation
Depending on the results of the eDNA surveys, the ponds on site may be enhanced such as removal of scrub to decrease shading.
New ponds created on site would be highly beneficial for biodiversity
Habitat Features for Wildlife
Opportunities to install bat and bird boxes on trees across the site.
THORPE-IN-THE-GLEBE
1.5
N
300 m
Key:
Constraint
Areas for Ecological Enhancement
CLARKSON & WOODS
ECOLOGICAL CONSULTANTS
Willoughby 1, Nottinghamshire
Ecological Constraints & Opportunities Plan (Willoughby 1.5 Survey Area)
Project Number
Figure 7
Not to Scale
Date: 4 March 2022


**Figure 8: Location of all Willoughby 1 parcels in relation to one another**

# Summary / Conclusion

Whilst there are certain sensitives relating to this site, it is considered that the development would be able to mitigate any adverse impacts through careful design following the guidance given above. Serious consideration should be given to the avoidance of development within the designated site (Willoughby Border Grassland SINC). Where this designated site cannot be avoided survey evidence will be required to underpin the assessment. Development which will harm a SINC is counter to Local Plan Policy 36 (Designated Nature Conservation Sites). However, it was noted that the grassland within the development site did not appear to be consistent with the habitat for which the SINC is designated. As such surveys may be able to demonstrate that the development would not harm the nature conservation value of the area, and potential for enhancement of the grassland could be incorporated into the development. The proposed scale of the development allows for substantial ecological mitigation areas, which could lead to a net biodiversity gain in the long-term and would in turn be compliant with relevant legislation and policy.

**Contact:**
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Report prepared by Eleanor Weir.

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