

APPENDIX 12.1
ECOLOGICAL APPRAISAL



envirotech

Ecological Consultants
Environmental and Rural Chartered Surveyors

Ecological Appraisal

Lancashire Central



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ACCURACY OF REPORT

This report has been compiled based on the methodology as detailed and the professional experience of the surveyor. Whilst the report reflects the situation found as accurately as possible, all of the protected species this survey covers are wild and can move freely from site to site. Their presence or absence detailed in this report does not entirely preclude the possibility of a different past, current or future use of the site surveyed.

We would ask all clients acting upon the contents of this report to show due diligence when undertaking work on their site and/or in their interaction with protected species. If protected species are found during a work programme, and continuing the work programme could result in their disturbance, injury or death, either directly or indirectly an offence may be committed.

If in doubt, stop work and seek further professional advice.

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1. INTRODUCTION

1.1 Background

1.1.1 In September 2021 Envirotech NW Ltd were commissioned to carry out an Ecological Appraisal of land at Lancashire Central, Cuerden, central grid reference SD553246 (Figure 1).

1.1.2 Initially it was proposed only that scoping assessments would be required. Following pre-application consultations with third parties, full ecology surveys were requested to inform an EIA.

1.1.3 The aims of this ecological assessment were:

- To provide clear advice to the client, the Local Planning Authority and third parties at the discretion of the client, on the nature conservation value of the site and surrounding area.
- To confirm the presence or absence of protected species, such as badgers, bats, great crested newts, otter, etc) within the proposed development site.
- To enable the client to comply with legislation afforded to protected sites and species.
- To highlight the presence of any habitats or species of ecological importance, including Habitats and Species of Principal Importance (NERC Act, 2006).
- To identify any ecological constraints on development.
- To establish the need for any further surveys and assessments.
- To make nature conservation recommendations.

1.1.4 To achieve this, an ecological appraisal of the habitats and any protected species on the site was undertaken over several visits during the Winter and Spring months of 2021 and 2022.

1.1.5 This submission describes the survey methods and presents the results of the ecological surveys at the site.

1.1.6 Extensive field survey were undertaken to inform a previous planning application at the site and master planning exercise, which has been partly implemented. Simply Ecology, of Lancaster undertook surveys in the Spring and Summer months of 2012. These were

followed up with additional surveys in 2016 and 2019. Simply Ecology (2012), Simply Ecology (2017) and Simply Ecology (2019).

- 1.1.7 Reliance is made on these previous surveys to provide context for the current surveys and acknowledgement is made to this previous survey work.
- 1.1.8 Where appropriate reference numbers used to describe habitats such as ponds and hedgerows in Simply Ecology (2012), Simply Ecology (2017) and Simply Ecology (2019) are duplicated in this report in order to provide continuity.
- 1.1.9 Where appropriate descriptors of the site and habitats have also been duplicated in this report in order to provide continuity.
- 1.1.10 Cuerden Strategic Site - henceforth referred to as 'the site' - is located in Lancashire, 2.5km south of Bamber Bridge. It comprises the hamlet of Cuerden Green and land surrounding it, covering an area of approximately 46 hectares. It is bounded to the west, north and east by roads and to the south by field margins: To the west is the A5083 Stanifield Lane, to the north the A582 Lostock Lane, A6 and M65 and to the east the A49 Wigan Road. An irregular line following field boundaries, to the south of which is Lydiate Lane Sand Quarry and the A49 forms the southern site boundary. The terrain is generally flat and the land slopes gently towards the north west, being 55m above sea level at it's highest and 35m at it's lowest.
- 1.1.11 Two roads cross the site. The first being Stoney Lane which is a metalled, single-track road entering the site from the A5083. This road is approximately 300m long and ends at Stoney Lane Farm from where it becomes a narrow track following an older road route. The second road is Old School Lane which enters the site from the north and heads south for 450m before meeting Stoney Lane at Cuerden Green. The hamlet consists of a small number of farms and houses along these two lanes.
- 1.1.12 Land use across the site is dominated by agriculture, particularly permanent pasture for horses and cattle, much of which is currently unused. The field margins are a mixture of hedgerows, post-and-wire fencing, a drain network and lines of trees of varying age. The majority of these trees are to be found in the southern half of the site.
- 1.1.13 This report will be used to inform an EIA and planning proposal to develop the site to increase local and regional economic growth. The surveys encompassed the entire site and immediately surrounding land which could sustain any habitats or species which could fall within the influence of the site.



□ Boundary

Figure 1
Site Location



2. METHODOLOGY AND SOURCES OF INFORMATION

2.1 *Data Search*

- 2.1.1 A records search via Lancashire Environment Record Network (LERN) was undertaken within 2km of the site centre, LERN maintain the most comprehensive and up-to-date commercially available biological records for the county.
- 2.1.2 The Envirotech dataset was search. The Envirotech dataset is compiled from extensive field surveys from the period 2004-present, as well as records obtained from third parties during this time.
- 2.1.3 In order to identify the presence of nationally or internationally important sites receiving statutory protection, an online search of the Multi Agency Geographical Information Centre (www.magic.gov.uk) and Natural England's Nature on the Map (www.natureonthemap.org.uk) was undertaken. This included sites designated under the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2019. This covers Sites of Special Scientific Interest (SSSI), Special Protection Areas (SPA) and Special Areas of Conservation (SAC) all of which have legal protection.
- 2.1.4 Biological Action Plan Habitats mapped by Natural England were obtained from its online data portal.
- 2.1.5 Google Earth and Google Street View were consulted to establish the presence of any features of ecological importance within the local area.
- 2.1.6 Simply Ecology (2012), Simply Ecology (2017) and Simply Ecology (2019) were referenced for past history of the site this includes data searches via the RSPB and Preston Naturalists Union.
- 2.1.7 The NBN was searched in accordance with its commercial data protection policy.

2.2 *Vegetation and Habitats*

- 2.2.1 A drone was overflown in April 2022 to provide upto date high resolution imagery of the current site.
- 2.2.2 A vegetation and habitat map was then produced for the site by ground truthing this imagery and the immediate surrounding area. The mapping is based on the Joint Nature Conservation Committee Phase 1 Habitat Survey methodology (JNCC 2003).
- 2.2.3 Searches were made for uncommon, rare and statutorily protected plant species, those species listed as protected in the Wildlife and Countryside Act (1981) and indicators of important and uncommon plant communities. All plant nomenclature follows Stace (2019).

- 2.2.4 Searches were carried out for the presence of invasive species, including those listed on Schedule 9 of the Wildlife and Countryside Act (1981), namely Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*) on terrestrial habitat and aquatic species such as floating pennywort (*Hydrocotyle ranunculoides*), water hyacinth (*Eichhornia crassipes*) and New Zealand pygmyweed (*Crassula helmsii*).
- 2.2.5 The survey was also informed by questioning the landowner/site agent to ascertain the recent history of the site and reviewing past ecology surveys for the site.

3. SPECIES SURVEY METHODOLOGY

3.1 Amphibian

- 3.1.1 Great crested newts (*Triturus cristatus*) are protected under Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and Schedule 5 of the Wildlife & Countryside Act (1981). Common Toad (*Bufo bufo*) are a UK BAP species.
- 3.1.2 Water-bodies located within or adjacent to the study area were identified and where access was possible were assessed for their potential to support great crested newts and other amphibians.
- 3.1.3 Extensive surveys have previously been undertaken by Simply Ecology and included full presence/ absence surveys as well as eDNA testing and are reported in Simply Ecology (2012) and Simply Ecology (2017).
- 3.1.4 eDNA testing was repeated in 2022 following Biggs J et al (2014) of all ponds within 250m of the site boundary which provide stable water levels. It was noted an active sand quarry is present to the South and East boundary of the site. This site contains several temporary water bodies as a result of short term mineral extraction. These ponds were not assessed.
- 3.1.5 eDNA testing of waterbodies was considered sufficient to establish presence and or absence of GCN.
- 3.1.6 Inspections for Frog (*Rana temporaria*) and Common Toad spawn and tadpoles were undertaken as well as newt eggs.
- 3.1.7 Amphibian species in terrestrial habitat were recorded during other field surveys undertaken.

3.2 Badger

- 3.2.1 Badgers (*Meles meles*) and their setts are protected under the Protection of Badgers Act (1992). This legislation arises from animal welfare issues (rather than on the basis of nature conservation grounds) and protects badgers from being killed, injured or disturbed whilst occupying a sett.

- 3.2.2 A disturbance to badgers in their setts may occur as a result of construction operations. Natural England recommends that the use of heavy machinery in proximity of a sett entrance should be avoided, with a 'disturbance free-zone' being established.
- 3.2.3 The degree of disturbance attributed to construction activity is a function of the background level of activity badgers are accustomed to and that which will be attributed to a proposed activity. The "disturbance free zone" is therefore site specific.
- 3.2.4 The survey for badgers comprised an assessment of all suitable habitat within and outside the study area boundary (where this was possible) to a distance of 30m for indications of use by badgers.
- 3.2.5 Signs of badgers which were searched for included:
- Setts - 'D' shaped entrances at least 25cms wide and wider than they are high with large spoil mounds
 - Discarded bedding at sett entrances (this includes grass and leaves)
 - Scratching posts on shrubs and trees close to a sett entrance
 - The presence of badger hairs which are coarse, up to 100mm long with a long black section and a white tip
 - Dung pit latrines and footprints
 - Habitual runs through vegetation and beneath fences
 - Hedgehog carcasses
- 3.2.6 Surveys were also undertaken at night, during the bat surveys, by scanning the study area with a torch and infrared binoculars.
- 3.2.7 Simply Ecology (2012) and Simply Ecology (2019) report on additional badger surveys.

3.3 Bats

- 3.3.1 All British bat species are fully protected under Schedule 5 of the Wildlife and Countryside Act (1981), and are included on Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, as a Protected Species. Taken together, these pieces of legislation make it an offence to:
- Intentionally or recklessly kill, injure or capture bats;
 - Deliberately or recklessly disturb bats (whether in a roost or not);
 - Damage, destroy or obstruct access to bat roosts.
- 3.3.2 The Bat Conservation Trust (Hundt (2012) and Collins, J. (ed) (2016) issued guidelines on bat survey methodology, a key feature of their recommendation is for the undertaking of a pre-survey assessment - an initial desk-study and a walkover assessment of the survey area and its surrounding area to identify the relative value of the habitats present for bats and likely commuting routes. This is to be followed by a survey program that is

appropriate to the likely level of bat activity within the survey area to be determined by and based on the experience of the surveyor.

- 3.3.3 The potential value of the survey area for foraging bats was assessed through consideration of two main factors: professional knowledge of bat ecology and foraging behaviour in combination with the geographical location, topography and habitats present within the survey area and surrounds.
- 3.3.4 As a result of the potential suitability of the habitat on site and along its boundaries for foraging bats, bat activity survey was deemed necessary. The surveys were based upon standard guidelines Hundt (2012), Collins, J. (ed) (2016) and NCC (1987) and Mitchell-Jones (2004) and was undertaken in suitable weather conditions by suitably qualified and experienced personnel.
- 3.3.5 The survey methods comprised a transect route which was walked in order to cover all on-site habitats from sunset until light levels dropped to the extent that bat flight heights could not be determined and walking over the site in the dark was judged to be unsafe. Activity during the hours immediately prior to sunset through to one hour after sunset was detected using Wildlife Acoustics Echo Touch Pro time expansion bat detectors
- Activity Survey: Night-time visits were undertaken to determine general levels of bat activity. Activity was detected along a walked transect which criss-crossed the site making sure all habitats were recorded.
 - During the activity survey the observers walked across all parts of the site and stopped every 100m to record the number of bat passes within a 5minute period. This would give the best record of bat activity at the site and the observer would be expected to hear and also see any bats flying across the site.
 - During all surveys the observers stood at locations, which were judged to provide the best coverage of the site and any potential trees roosts. From these locations, observers would be expected to hear and also see any bats emerging/returning to roosts.
- 3.3.6 In addition to the activity survey, trees on and within the survey area boundary were assessed for their potential to support roosting or hibernating bats. This comprised a close inspection of all trees on the site to allow an assessment of their potential to be used by bats to be made by a licensed surveyor. Aerial inspections of higher risk trees were undertaken to confirm absence.
- 3.3.7 Trees were all assessed in accordance with Collins, J. (ed) (2016).
- 3.3.8 Simply Ecology (2012) and Simply Ecology (2019) report on additional bat activity surveys as well as aerial tree inspections.

3.4 Birds

- 3.4.1 All breeding birds, other than pest species, are protected under the Wildlife and Countryside Act of 1981 when building a nest, rearing young or sitting on eggs. Some bird species, such as barn owl (*Tyto alba*), are protected when near an active nest site. Several birds are listed as UK and or County BAP species.
- 3.4.2 The Common Bird Census (CBC) methodology was employed to monitor the populations of common breeding birds on site (Bibby et al., 2000; Gilbert et al., 1998; Marchant, 1983). This involves the production of bird species maps that can be used to indicate the density and distribution of territorial breeding birds. It is based on a British Trust for Ornithology (BTO) survey method known as 'territory mapping', which identifies the number and distribution of breeding territories (for individual bird species) in a specified census area. That is, adult males singing (proclaiming a territory), adult males fighting (defending a territory), adult birds carrying food or nesting material, juveniles calling for food or being fed, or adult birds displaying alarm calls.
- 3.4.3 Additional activities of territorial significance, such as displaying and mating were noted, when appropriate.
- 3.4.4 Observations of bird species (by sight or sound) were noted on the survey maps using BTO standard species and activity recording codes. This information was then transferred to a summary map to highlight the breeding bird species that are of conservation significance.
- 3.4.5 Observations of any other birds made during the course of other surveys which had not been previously detected were also incorporated into the tables such as crepuscular species like Barn Owl (*Tyto alba*).
- 3.4.6 Simply Ecology (2012) and Simply Ecology (2019) report on additional bird surveys following the same methodology.

3.5 Brown Hare

- 3.5.1 The brown hare (*Lepus europaeus*) is a UK BAP species.
- 3.5.2 The survey method involved walking boundaries and surveying with binoculars. The survey was conducted at a suitable distance to ensure that the hares were not disturbed. Generally, surveys were undertaken throughout the early afternoon and evening when hares are thought to be most active and feeding.
- 3.5.3 Where present the number of brown hares in each field or hedgerow was recorded, together with the nature and use of the field, climatic conditions and time of day. The presence of forms and faeces where present were also recorded.
- 3.5.4 Simply Ecology (2012) and Simply Ecology (2019) report on additional brown hare surveys.

3.6 Otter

3.6.1 Otters (*Lutra lutra*) are given protection by the Wildlife and Countryside Act (1981) as amended and Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

This protection means that it is an offence to deliberately or recklessly:

- Kill or injure otters;
- Destroy, damage or obstruct their dens, and
- Disturb them whilst in the den.

3.6.2 Watercourses were assessed for their suitability and for the presence of otters within 10m of the banks. The banks and scrub vegetation were carefully searched for spraints, feeding remains, runs, prints and couches/holts.

3.6.3 Simply Ecology (2012) and Simply Ecology (2019) report on additional otter surveys.

3.7 Reptiles

3.7.1 All native reptiles are protected in Britain under the Wildlife and Countryside Act of 1981. It is an offence to intentionally kill, injure, sell or advertise to sell any of the six native species.

3.7.2 The survey for these species was based on assessing the habitat type and suitability of the site. This comprised an assessment of satellite imagery for the site and surrounding area as well as comparison of the results from the records searches with habitat types. The general habitat at the site was evaluated in terms of its suitability to reptiles for foraging or breeding.

3.7.3 Reptile surveys comprising visual encounter surveys were undertaken during all of the field surveys. Searches of suitable refuges were also undertaken by carefully lifting potential refuges such as logs and stones before replacing them. Habitat at the site was not considered sufficiently suitable for a full presence/absence survey to be warranted.

3.8 Water Vole

3.8.1 Water voles (*Arvicola amphibious*) and their habitat are fully protected under Schedule 5 of the Wildlife and Countryside Act (1981). This provides protection from killing or taking by certain prohibited methods and their breeding and resting places are fully protected from destruction or obstruction, it is also an offence to disturb them in these places.

3.8.2 There is a small stream on the North side of the site. This watercourse was surveyed and assessed for evidence of the presence of water vole.

3.8.3 This involved intensive searches by wading upstream where possible, and observing from the banks where not; looking for burrows and other signs including footprints, droppings and chewed vegetation. This was undertaken up to 5m from the water course.

3.8.4 Simply Ecology (2012) and Simply Ecology (2019) report on additional water vole surveys.

3.9 Survey limitations

- 3.9.1 Due to the habitats present on site there were no significant constraints in respect of identifying the botanical interest of the site.
- 3.9.2 Follow-up surveys in 2022 were time constrained and a full season was not completed.
- 3.9.3 Surveys at the site have been undertaken over a number of years and as survey results remain similar, it is considered the level of use of the site by species targeted for survey has been determined sufficient to make outline recommendations but full surveys in the 2022 season are required to draw more sound conclusions particularly in respect of breeding birds.

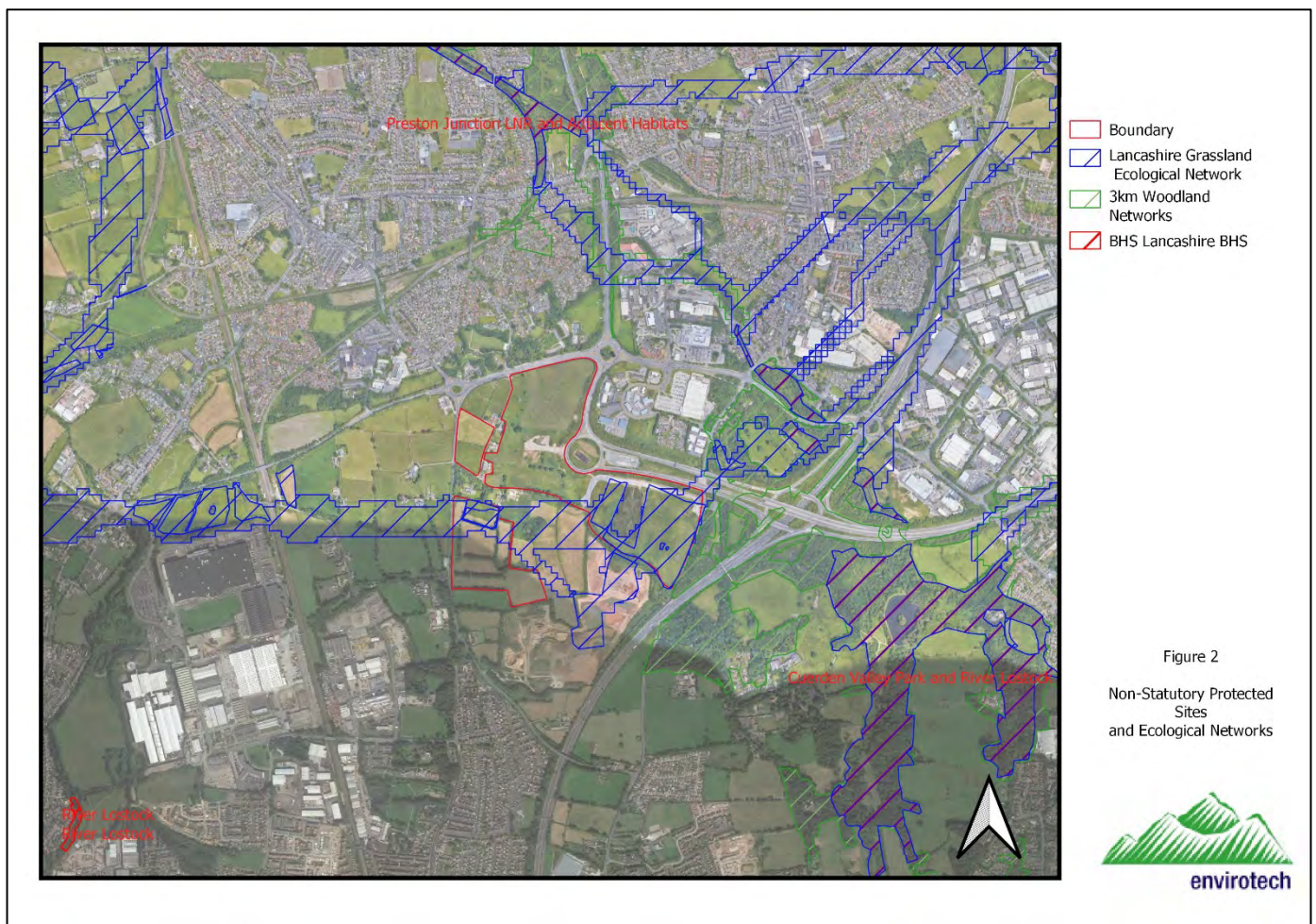
4. RESULTS

4.1 Data Search

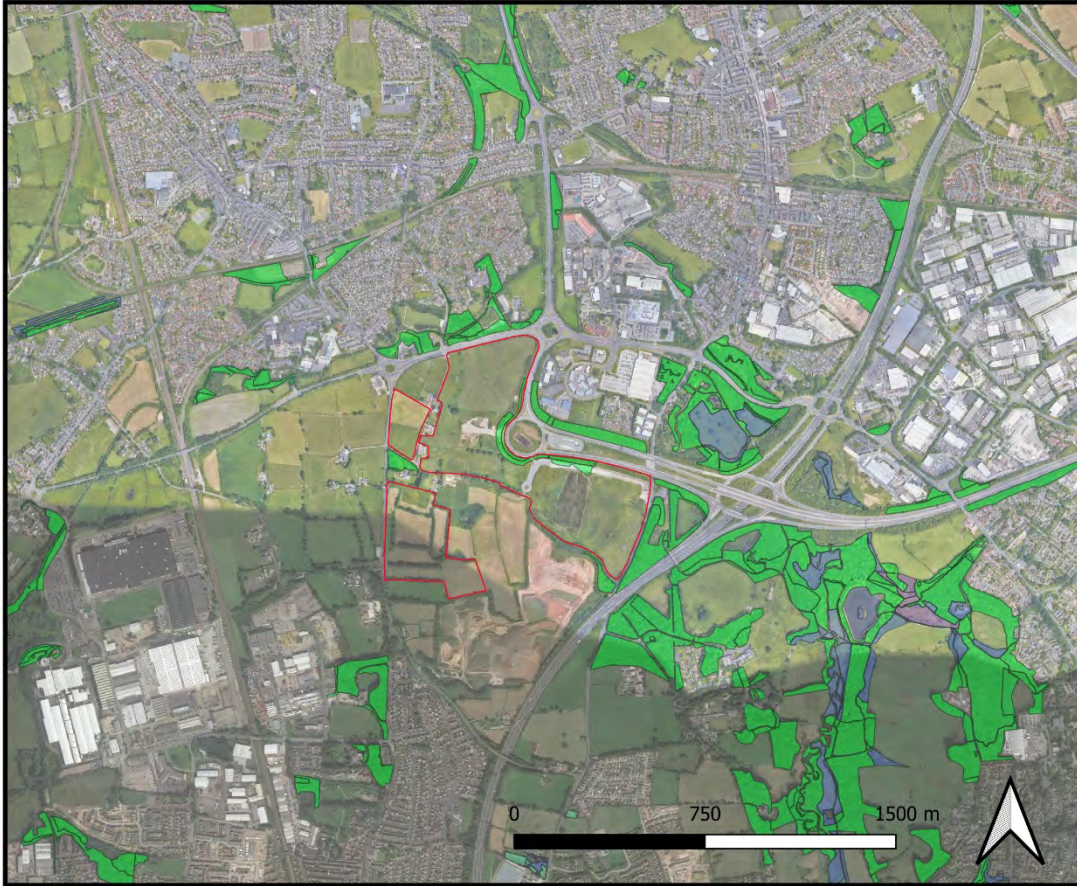
4.1.1 The desk study of the MAGIC and Natural England data sets revealed that there is one statutory designated nature conservation sites within 2km of the application site. This is Preston Junction Local Nature Reserve (LNR) 500m to the North. The search included both local nature reserves, national (Sites of Special Scientific Interest) and internationally important sites (Natura 2000 and Ramsar sites).

4.1.2 There is one non-statutory site within 2km. This is the Cuerden Valley Park and River Lostock Biological Heritage Site (BHS). This BHS lies, at its closest, approximately 500m to the north and west of the site.

4.1.3 Part of the site lies within the Lancashire Grassland Ecological Network, Figure 2.



4.1.4 There is the BAP habitat “Deciduous woodland” mapped to the North boundary of the site along the M65 embankment, Figure 3.



- Boundary
- Deciduous woodland
- Lowland meadows
- Traditional orchard

Figure 3
Mapped BAP Habitats



- 4.1.5 The desk study of the Lancashire Environmental Records Centre returned a number of protected species from within 2km of the site as well as records for Invasive Non Native Species on site, Figure 4. It is noted that the absence of records of other flora and fauna does not necessarily discount the possibility of protected species being on the site or in the vicinity. The site is also shown as within a Forestry Commission/British Trust for Ornithology Wader Zonal Map as potentially important for waders.
- 4.1.6 The NBN was searched in accordance with its commercial use policy, Figure 5. The Preston Naturalists Union records from Simply Ecology (2012) were also reviewed, Table 1. These searches located notable species within 2km.
- 4.1.7 The presence or absence within the site of any protected species was taken into account when carrying out the detailed site-specific searches as part of the extended Phase 1 survey. In addition, any habitat which had clear potential for any protected species, or protected species groups was also taken into account when undertaking the site survey.

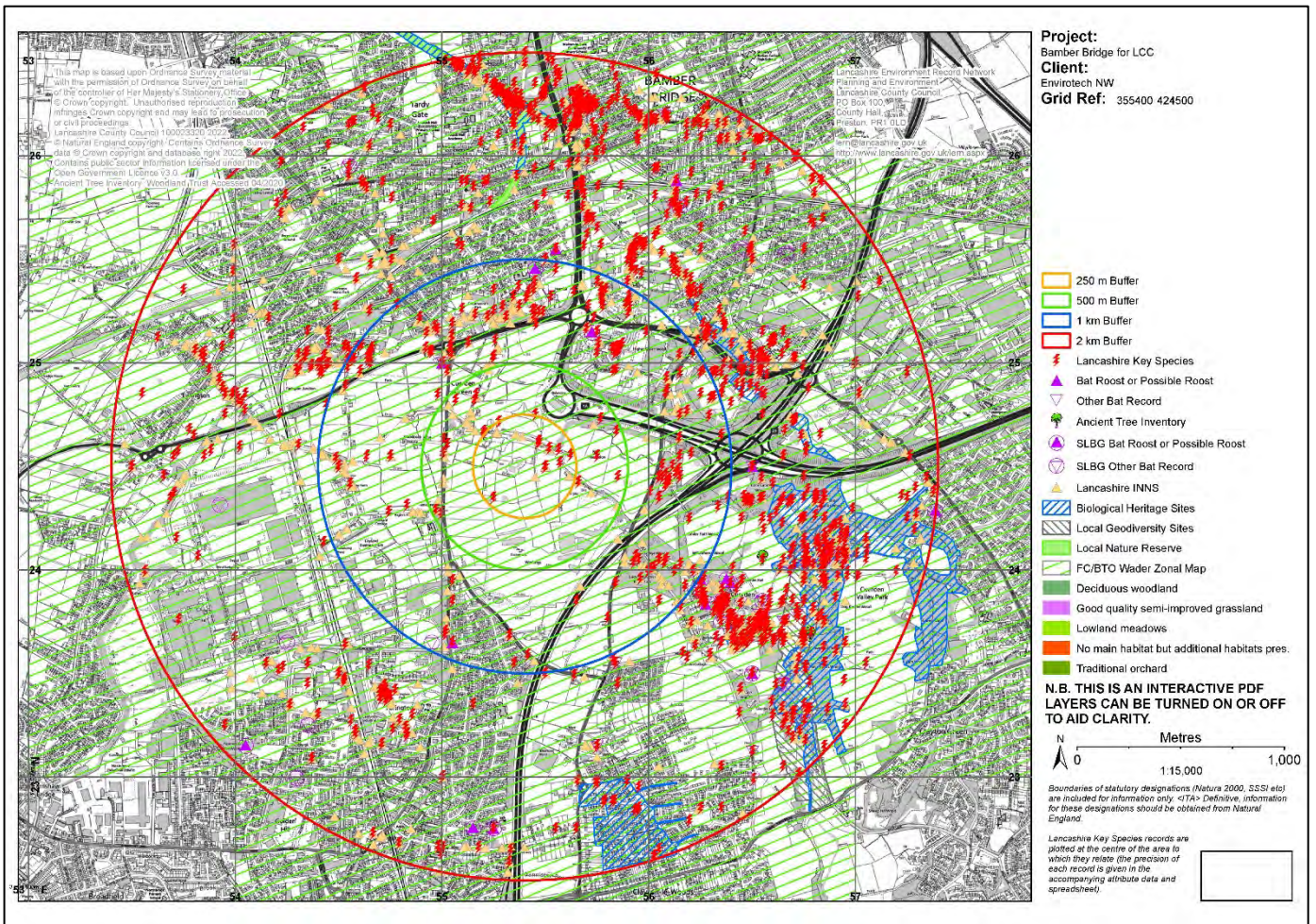


Figure 4- LERN Records

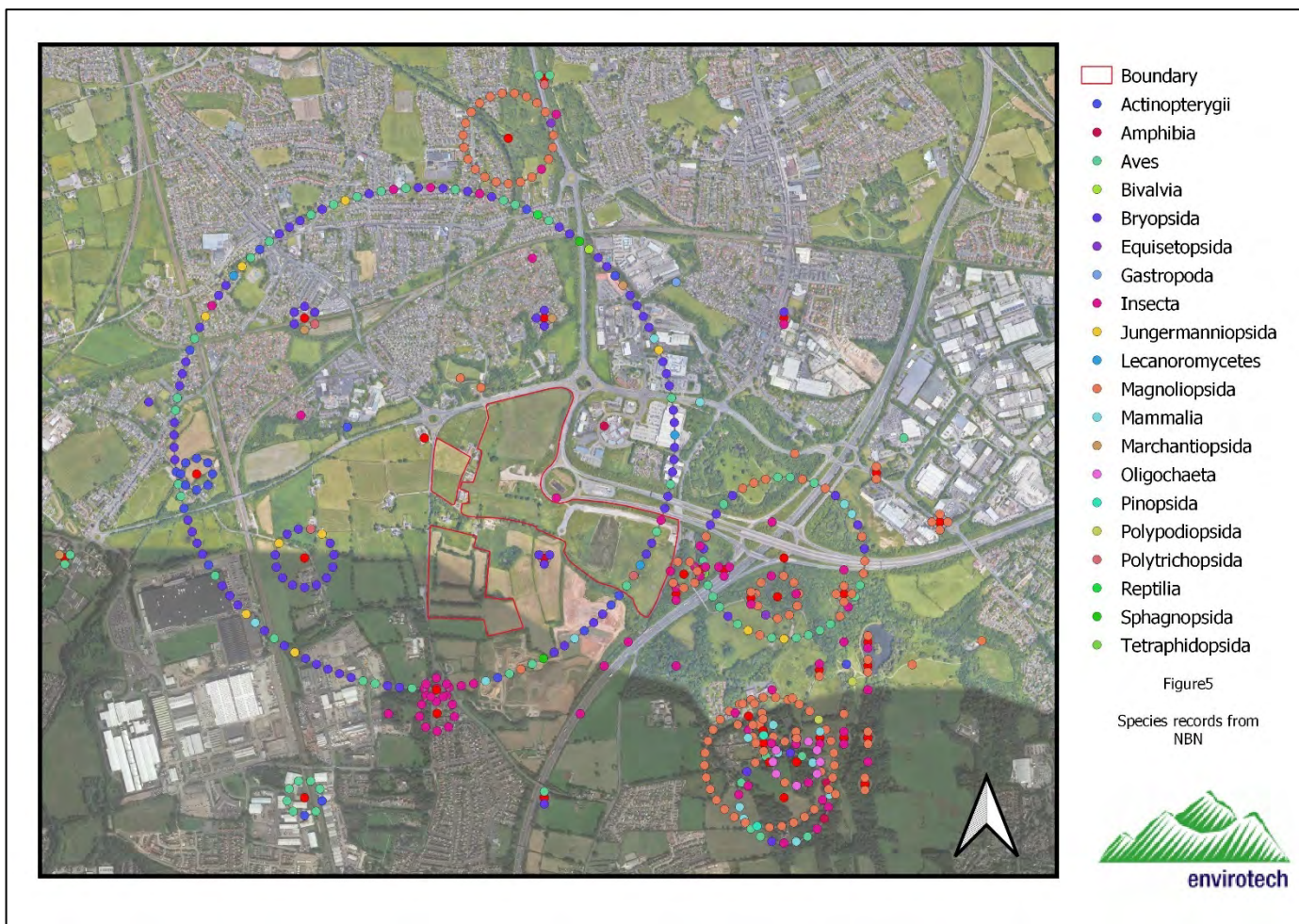


Table 1- Bird records identified from the local area from The Preston Naturalists Union

Latin Name	Common Name	Observations
Anser anser	Greylag Goose	Cuerden Valley Lake. Odd sightings through 1980s. 1997
Branta canadensis	Canada Goose	Cuerden Valley Lake. Small numbers increasing. Peak 1994 & 1998 when flocks of 150
Anas penelope	Wigeon	Cuerden Valley Lake. One pair in
Anas crecca	Teal	Cuerden Valley Lake. One record of
Anas platyrhynchos	Mallard	Cuerden Valley Lake. Regular &
Anas clypeata	Northern Shoveller	Cuerden. 3 seen flying in 1982
Aythya ferina	Common Pochard	Cuerden Valley Lake. Regular
Anas fuligula	Tufted Duck	Cuerden Valley. Regular low
Aythya marila	Greater Scaup	Cuerden Valley Lake. v. rare
Mergus merganser	Goosander	Cuerden Valley Lake. 2 records from
Oxyura jamaicensis	Ruddy Duck	Cuerden Valley Lake. 1 record 1990

<i>Perdix perdix</i>	Grey Partridge	Cuerden Valley. recorded <10
<i>Tachybaptus ruficollis</i>	Little Grebe	Cuerden Valley Lake. Regular low
<i>Podiceps cristatus</i>	Great Crested Grebe	Cuerden Valley Lake. Regular
<i>Ardea cineria</i>	Grey Heron	Cuerden Valley Lake. Regular
<i>Rallus aquaticus</i>	Water Rail	Cuerden Valley Park. Occasional
<i>Gallinula chloropus</i>	Moorhen	Cuerden Valley Lake. Regular
<i>Fulica atra</i>	Coot	Cuerden Valley Lake. Regular
<i>Larus cachinnans</i>	Yellow-legged Gull	Cuerden Valley. 1 record 1998
<i>Sterna hirundo</i>	Common Tern	Cuerden. A few records from 1980s
<i>Uria aalge</i>	Guillemot	Cuerden Valley. 1 record 1993
<i>Columba palumbus</i>	Woodpigeon	Cuerden Valley Park. Regular &
<i>Cuculus canorus</i>	Cuckoo	Cuerden Valley Park. Records up to
<i>Strix aluco</i>	Tawny Owl	Cuerden Valley Park. Regular. Last
<i>Alcedo atthis</i>	Kingfisher	Cuerden Hall & R. Lostock. Regular
<i>Picus viridis</i>	Green Woodpecker	Cuerden Valley. Regular
<i>Dendrocopos major</i>	Great Spotted	Cuerden Valley. Regular & Common
<i>Dendrocopos minor</i>	Lesser Spotted	Cuerden Valley. Records from early
<i>Delichon urbica</i>	House Martin	Cuerden Valley. Regular & Common
<i>Anthus trivialis</i>	Tree Pipit	Cuerden Valley. 1 record mid-1980s
<i>Motacilla cinerea</i>	Grey Wagtail	Cuerden Valley Lake. Regular &
<i>Cinclus cinclus</i>	Dipper	Cuerden Valley & R. Lostock.
<i>Turdus philomelos</i>	Song Thrush	Cuerden Valley. Regular
<i>Turdus iliacus</i>	Redwing	Cuerden Valley. Regular high
<i>Turdus viscivorus</i>	Mistlethrush	Cuerden Valley. Regular
<i>Acrocephalus</i>	Sedge Warbler	Cuerden Valley. Low numbers 1980s
<i>Sylvia borin</i>	Garden Warbler	Cuerden Valley. Low numbers 1980s
<i>Sylvia communis</i>	Whitethroat	Cuerden Valley. Regular low
<i>Phylloscopus inornatus</i>	Wood Warbler	Cuerden Valley. Low numbers 1980s
<i>Phylloscopus trochilus</i>	Willow Warbler	Cuerden Valley. Regular
<i>Muscicapa striata</i>	Spotted Flycatcher	Cuerden Valley. Low numbers 1980s
<i>Ficedula hypoleuca</i>	Pied Flycatcher	Cuerden Valley. 1 record mid-1980s
<i>Aegithalos caudatus</i>	Long-tailed Tit	Cuerden Valley. Regular & Common
<i>Parus major</i>	Great Tit	Cuerden Valley. Regular & Common

Parus ater	Coal Tit	Cuerden Valley. Regular low
Parus montanus	Willow Tit	Cuerden Valley. Low numbers 1980s
Sitta europaea	Nuthatch	Cuerden Valley. Regular
Garrulus glandarius	Jay	Cuerden Valley. Regular & Common
Pica pica	Magpie	Cuerden Valley. Regular & Common
Corvus monedula	Jackdaw	Cuerden Valley. Regular & Common
Corvus frugilegus	Rook	Cuerden Valley. Regular & Common
Corvus corone corone	Carrion Crow	Cuerden Valley. Regular & Common
Corvus corax	Raven	Cuerden Valley. 1 record 2005
Sturnus vulgaris	Starling	Cuerden Valley.
Passer montanus	Tree Sparrow	Cuerden Valley Park.
Fringilla montefringilla	Brambling	Cuerden Valley Park.
Carduelis chloris	Greenfinch	Cuerden Valley Park.
Carduelis carduelis	Goldfinch	Cuerden Valley Park. Low numbers
Carduelis spinus	Siskin	Cuerden Valley Park. Regular
Carduelis cannabina	Linnet	Cuerden Valley Park. Regular
Carduelis cabaret	Lesser Redpoll	Cuerden Valley Park. Occasional
Pyrrhula pyrrhula	Bullfinch	Cuerden Valley Park. Regular low
Coccothraustes	Hawfinch	Cuerden Hall. Low numbers up to
Emberiza citrinella	Yellowhammer	Cuerden Valley. Regular low
Emberiza schoeniclus	Reed Bunting	Cuerden Valley. Regular low
Psittacula krameria	Ring-necked Parakeet	Cuerden Valley. 1 record 1982, believed still in area

5. PHASE 1 SURVEY RESULTS

5.1 *Habitat Results*

- 5.1.1 A drone was overflown on the 15th April 2022. This produced a number of images which were stitched together to form a orthomosaic map and provided upto date imagery of the site from which phase 1 habitat mapping has been based. Figure 6 (a-e) shows the hi-resolution imagery overlain to google earth, visible to the boundary of the drone survey area as a lighter shade, without the phase 1 mapping overlay.
- 5.1.2 Following the mapping of current vegetation cover by drone, vegetation types were ground truthed. Area measurements were then taken from the orthomosaic map and ground truthed vegetation boundaries.
- 5.1.3 The site boundary was drawn to the inside (site side) of boundary hedges.
- 5.1.4 The mapped area covers 47.53Ha and consisted largely of semi-improved agricultural grassland with hedgerows and scattered trees dividing the site into numerous fields.
- 5.1.5 A Phase 1 Habitat Plan and Target Notes (hereafter referred to as TN) are included at Figure 7a-f and Table 2.



Figure 6a
Orthomosaic map
drone imagery taken
15th April 2022





Figure 6b
Orthomosaic map
drone imagery taken
15th April 2022





Figure 6c
Orthomosaic map
drone imagery taken
15th April 2022





Figure 6d
Orthomosaic map
drone imagery taken
15th April 2022





Figure 6e
Orthomosaic map
drone imagery taken
15th April 2022



Table 2 - Details of Target Notes.		
Target Note	Description	Comment
1	Species poor hedge	Hedgerow along the A49 on the Eastern part of the site. A regularly cut continuous hedgerow approximately 2m tall formed the eastern boundary of the site. Several woody species were present. These were: hawthorn, field maple, blackthorn, hazel and elder. Tree species which had been regularly cut to form part of the hedge layer were sycamore, wych elm, beech, ash and holly. Other plants comprised ivy, bramble, cleavers with a field layer of false oat grass, cock's-foot, dandelion, herb Robert, creeping thistle, garlic mustard, broad-leaved dock, burdock and hogweed.
2	Neutral Grassland Semi-improved	Very large and irregular shaped field of permanent pasture. The field is semi-improved neutral grassland. A variety of grasses dominated the sward, with abundant Yorkshire fog, sweet vernal grass, common bent, crested dog's tail, meadow foxtail and perennial rye-grass. Forbs comprised frequent creeping buttercup and white clover. There was occasional meadow buttercup nettle and scattered infrequent creeping thistle. Common sorrel was rare as was common mouse-ear. In addition to the grassland, within the field were a couple of depressions and areas of damp vegetation. In the damper areas were marsh foxtail, glaucous sweet-grass and floating sweet-grass.
3	Ponds 5 and 6	Pond 5 and 6 are two depressions which are linked by a shallow ditch. These are permanent ponds with a floating mat of vegetation at their centre. Due to health and safety concerns it was not possible to sample the vegetation within the raft of vegetation. The pond was part surrounded by hawthorn, grey willow and bramble. In the small area where the pond was not heavily overshadowed soft rush was abundant around the margins. Common duckweed covered approximately 60% of the pond surface and common water star-wort was also present. The other marginal plants were bittersweet, marsh willowherb and soft rush. Bullrush is beginning to colonise the North side of the ponds.
4	Line of trees	The principle tree-line on the site was located immediately outside the site boundary along a formerly accessible part of Stoney Lane which has now fallen into disuse. The mature trees were predominantly sycamore with occasional alder and the hedge layer comprised abundant hawthorn and elder with bramble, nettle and infrequent

		creeping thistle. Rhododendron and Himalayan balsam were abundant all along the former trackway.
5	Marshy grassland	A former woodland area now felled dominated by Soft rush and Hardrush. Dock, nettle and creeping thistle are frequent. Yorkshire Fog to more open areas. Dry ditches to the sides of this area with Rosebay Willow herb. Occasional Goat Willow and Silverbirch saplings establishing. Single Oak sapling with small area of bluebell to its base to the West being the only indicator of the former woodland habitat. This habitat grades into Semi-improved neutral grassland to the East.
6	Dense Scrub	Post and rail fence marks the field boundary. On the far side the habitat was semimature planting which forms the landscaping to the M65 exit. The planted woody species comprised: blackthorn, hawthorn, pine, , goat willow with rank grass ground flora of false oat grass, common bent, creeping buttercup, cock's-foot, nettle and common sorrel.
7	Bare ground	Compacted aggregate forming a haul road with no vegetation cover
8	Neutral Grassland Semi-improved	Three fields immediately to the North of Stoney Lane all supported semi-improved neutral grassland. The first field was permanent pasture behind residential properties. A boundary hedge of Pedunculate oak and hawthorn divided this from the larger field to the East. Two mature Pedunculate oaks and hawthorn formed the remnant hedge and post and wire fence along the boundary. The grassy sward in these fields comprised: abundant sweet vernal grass, meadow fox-tail and abundant common bent with abundant common mouse-ear, abundant creeping buttercup, frequent meadow buttercup, frequent white clover with abundant chickweed, redshank and Himalayan balsam around the field entrances from Stoney Lane.
9	Native hedge species rich with trees	The two hedges running along either side of Stoney Lane shared the same vegetation composition. They were predominantly hawthorn with elder, hazel, holly and ivy comprising the woody shrubs and with an over-storey of scattered mature Pedunculate oak and sycamore along their length. There were also a handful of ash and white poplar trees. The stems of the hawthorn showed evidence of historical hedge laying although the condition of the hedges does not indicate any active management in recent years. Nonetheless, these are classed as species-rich hedges.

		<p>Post and rail and post and wire fencing were present in ad hoc fashion along the length of the hedge where gaps had appeared. In the field layer the invasive alien Himalayan balsam was dominant and was present right the way along both hedges.</p> <p>Grasses included cock's-foot, false oat grass with abundant pleurocarus mosses.</p> <p>Forbs comprised abundant cleavers and nettle with frequent bluebell and occasional red campion, hogweed, foxglove and silverweed. Common male fern, herb Robert, tufted vetch, field horsetail, broad-leaved dock and garlic mustard were all occasional Meadow buttercup and burdock were rare.</p>
10	Species poor hedge with trees	<p>Defunct unmanaged gappy shrubby hedge with mature deciduous trees. The most abundant scattered tree species were Pedunculate oak and sycamore with these two species comprising virtually all of trees save for a handful of alder and holly. There was no fence so the gaps present meant that the hedge was defunct as a field boundary. As with many of the hedges elsewhere on the site this hedge did not appear subject to any ongoing management. This has resulted in a mature tree-line with tall below which is an often straggly and gappy over-mature hedge.</p>
11	Tall ruderal	<p>A spoil heap with extensive nettle, Rosebay Willow herb and Dock. Similar species extend along a former hedge line to the North which grades into the adjacent grassland.</p>
12	Ephemeral/ Short Perennial	<p>Spoil heap with bare ground, Nettle, Pineapple Mayweed, Annual Meadow Grass, Dock and creeping thistle.</p>
13	Tall ruderals	<p>The small un-named stream flowed within a ditch which ran from East to West across the site. The shallow stream was no more than 1m wide and 30cm deep and had sluggish flowing water. The streambed was sandy with few stones. Bankside flora comprised abundant swathes of bracken, rosebay willowherb, nettle, bramble, ragwort and creeping thistle. Wild angelica was frequent and foxglove, meadowsweet and red campion were occasional. Very little open water was visible and the overhanging vegetation was dense. In the channel was abundant reed canary grass with large stands of fools watercress and clumps of soft rush and brooklime with frequent marsh willowherb. Dense stand of Wild Raspberry to the East.</p>
15	Neutral Grassland Semi-improved	<p>Long narrow field adjacent to Old School Lane. The field was permanent pasture. Sward comprised Yorkshire fog, meadow fox-tail and common bent with sweet vernal</p>

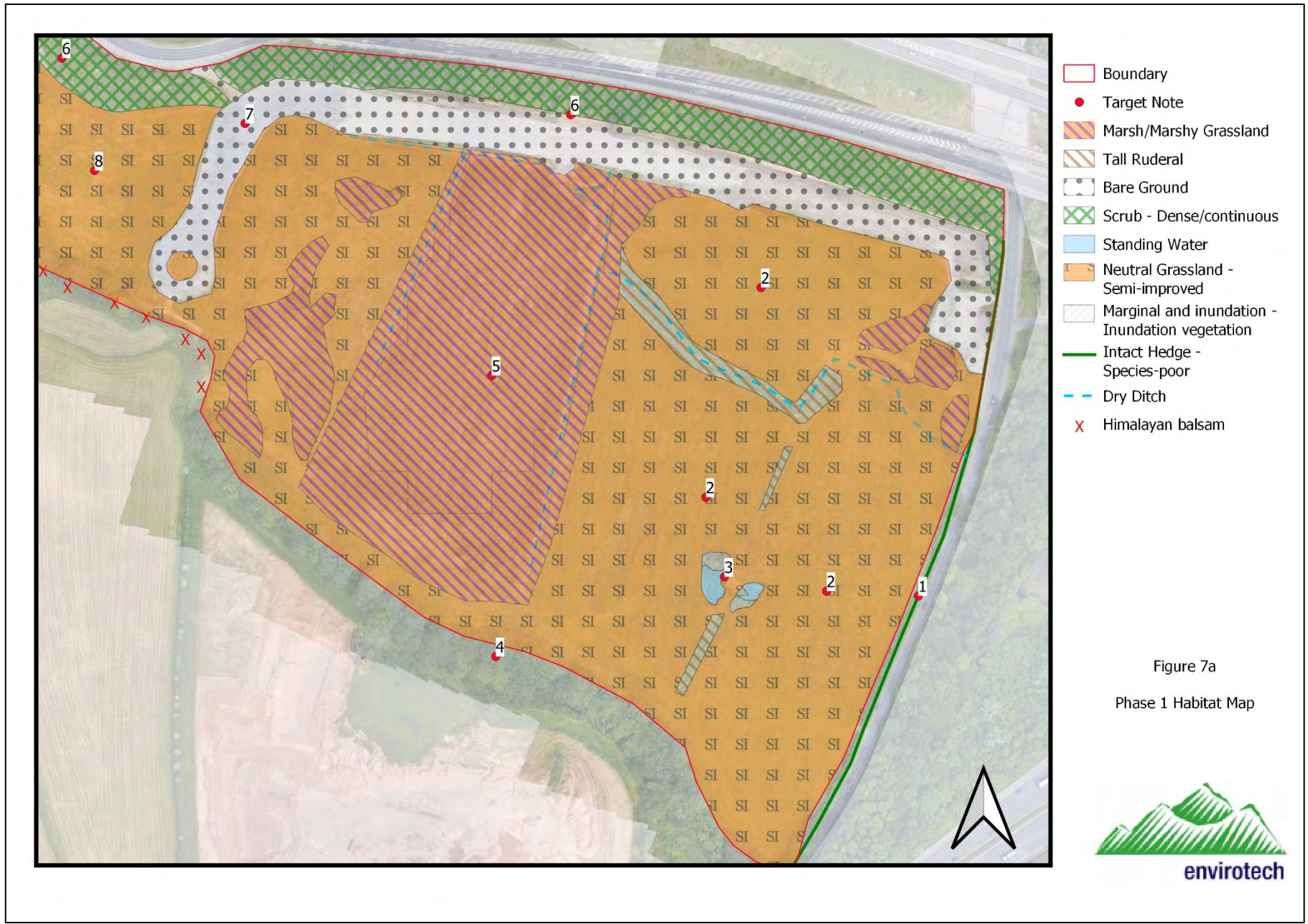
		grass and tussocks' of cocksfoot with some twitch. Forbs included creeping buttercup, broad-leaved dock, common sorrel and cleavers, great willowherb and rosebay willowherb around the site margins and underneath the large pylon in the centre of the field. Other species present included false oat-grass and black horehound.
16	Neutral Grassland Semi-improved	Large field of permanent pasture in the Northern part of the site. The sward comprised Yorkshire fog, perennial rye-grass, red fescue, common bent, perennial rye-grass and a little crested dog's-tail with scattered tussocks of cock's-foot grass, some false oat grass and soft rush. Forbs were few and comprised occasional meadow buttercup and rare creeping thistle and spear thistle.
17	Dry Ditch	Small dry ditch which was approximately 4m wide at the banktop and 2m wide in the channel which rises within the field and flows North for 100m out towards the A582 where it enters a culvert. Bankside flora comprised abundant swathes of rosebay willowherb, nettle, bramble, ragwort and creeping thistle.
18	Species poor hedge	A managed hedge along Old School Lane. Hawthorn was dominant with occasional elder, rare hazel, rare privet with occasional bramble. Grasses comprised Yorkshire fog with meadow foxtail and false oat grass with rare cocksfoot. Abundant creeping buttercup with frequent, cleavers, nettle, cow parsley frequent garlic mustard and cleavers. Common comfrey and Burdock, creeping thistle and field horsetail were all rarely encountered.
19	Species poor hedge	Post and rail fence and hedge forming the northern boundary of the site along the A582. Woody species comprised virtually all hawthorn with field maple, hornbeam and bird cherry. Rank vegetation along the hedge included false oat-grass, cocksfoot, nettle, Yorkshire fog and cleavers.
20	Species poor hedge	Tall hawthorn hedge with a little elder and abundant bramble and cleavers. Cocksfoot, false oat grass and twitch. Numerous rabbit burrows were present along the hedge base.
21	Improved grassland	Short sward improved field. Abundant Yorkshire fog, creeping red fescue and perennial rye-grass, occasional cock's-foot and false oat grass around the field margin. Creeping buttercup in the field with nettle, burdock and creeping thistle at the field edges.

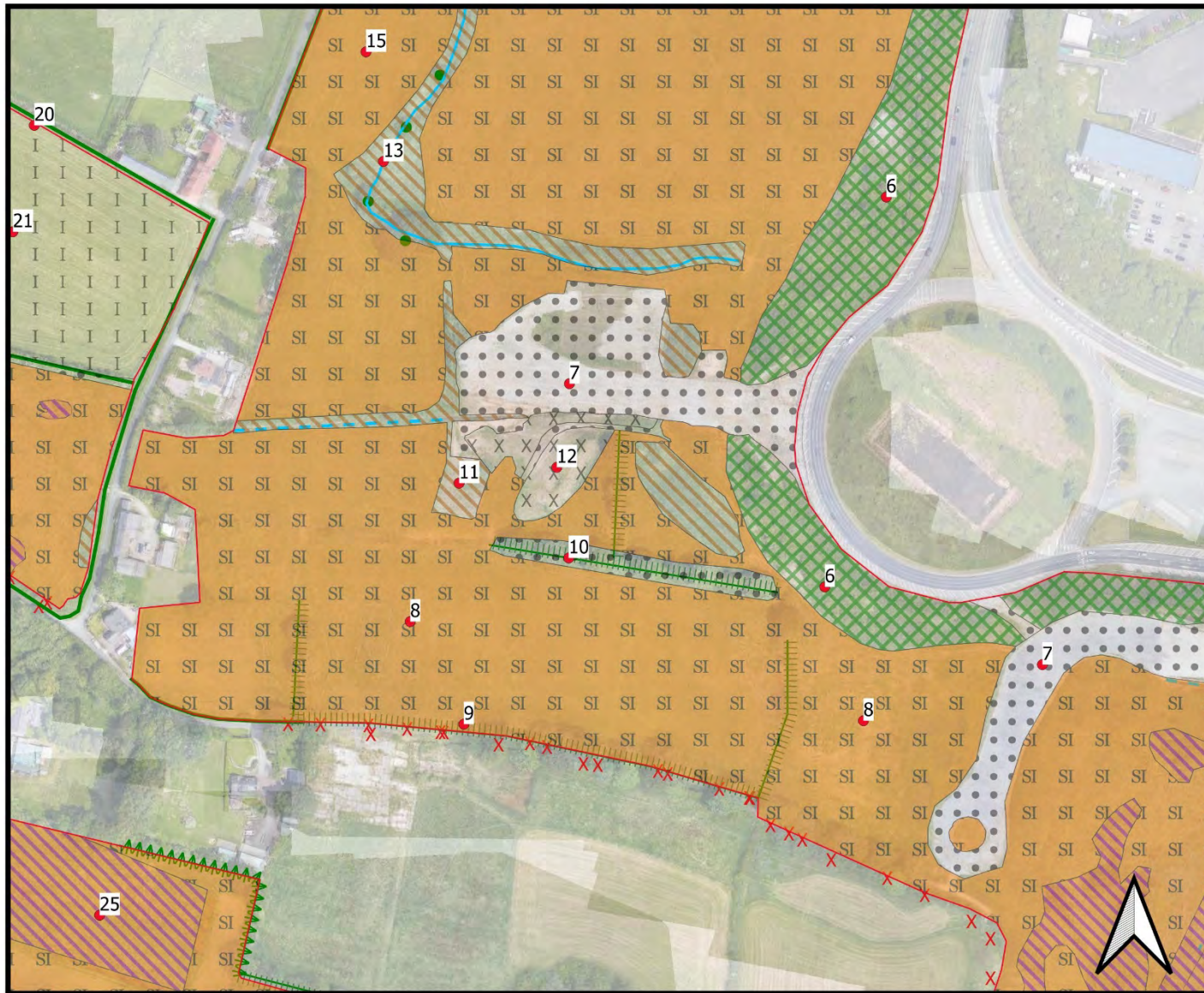
22	Species poor hedge	Tall (approx 3-4m) unmanaged predominantly hawthorn hedge. The hedge was continuous and is classed as a 'shrubby hedge'. Some elder was present. Rank vegetation along the base of the hedge was dominated by nettle, bramble, false oat grass and cock's-foot with some creeping thistle.
23	Neutral Grassland Semi-improved	Field of rank grass. Species comprised abundant Yorkshire fog and abundant meadow foxtail with frequent sweet vernal grass, abundant white clover, abundant creeping buttercup, abundant common mouse-ear, frequent creeping thistle, patches of nettle and broad-leaved dock. In the NE part of the site was a small area of damp grass with glaucous sweet-grass, water forgetmenot and soft rush.
24	Species poor hedge	Shrubby hedge around the bottom western field was hawthorn dominated showing evidence of previous laying with rare elder. The hedge was managed and was approximately 1.8m high. Ground flora comprised ivy, nettle, bramble, cleavers, creeping buttercup, rare foxglove, frequent false oat grass. Himalayan balsam was abundant. Silverweed, rosebay willowherb, reed canary grass, broad leaved dock and herb Robert were also present in limited numbers.
25	Marshy Grassland	<p>Currently un-managed field. Border-line marshy grassland/poor semi-improved neutral grassland. The field has elements of both but the vegetation was dominated by rushes, with extensive stands of soft rush and some compact rush throughout the entire area. Grasses were typical of a relatively species-poor neutral semi-improved sward, with Yorkshire fog abundant along with patches of cocksfoot, Timothy, and forbs are restricted with creeping buttercup dominant and frequent bird's-foot trefoil with occasional common sorrel and scattered meadow buttercup and broad-leaved dock. Areas of tufted hair grass are also scattered throughout and occasional cuckooflower in wetter areas. Ragwort and marsh willowherb were occasional.</p> <p>Field boundary along the northern edge is a drainage ditch bounded by post and wire fence in its Western half with the Eastern half becoming hawthorn, elder, bramble with single holly and elder with one or two hazel. The ground flora had occasional foxglove and mature Pedunculate oak and sycamore above. The drainage ditch supports frequent Himalayan balsam along its length.</p>
26	Species poor hedge with trees	Shrubby hedge around the bottom western field was hawthorn dominated showing evidence of previous laying with rare elder. The hedge was managed and was approximately 1.8m high. Ground flora comprised ivy, nettle, bramble, cleavers, creeping buttercup, rare foxglove, frequent false oat grass. Himalayan balsam was

		abundant. Silverweed, rosebay willowherb, reed canary grass, broad leaved dock and herb Robert were also present in limited numbers.
27	Species poor hedge	Regularly managed hedgerow approximately 1.5m high, along side the A5083 which comprised hawthorn, with rare elder, ivy and hedge bindweed. Ash and sycamore saplings which had been regularly cut also formed part of the woody hedge layer. There was a single mature ash tree and a sycamore within the hedge. The field layer comprised Cock's-foot, twitch, red fescue, dandelion, nettle, bramble, cleavers, herb Robert and creeping buttercup with occasional garlic mustard and mugwort. Burdock was rarely encountered.
28	Neutral Grassland Semi-improved	Field which is not cut for silage immediately adjacent to the A5083. Rank grassy vegetation dominated by Yorkshire fog, meadow fox-tail, cock's-foot, and timothy grass, with frequent creeping buttercup, soft rush, broad-leaved dock and nettle and creeping thistle. Occasional meadow buttercup, common sorrel and common mouse ear.
29	Neutral Grassland Semi-improved	Abundant Yorkshire fog, common bent and infrequent marsh fox-tail with creeping buttercup, common mouse-ear with occasional soft rush and jointed rush, meadow buttercup, broadleaved dock, common sorrel and cuckooflower. Spear thistle were also present.
30	Native hedge species poor with trees	Gappy hedgerow boundary between two fields in the Western part of the site. The hedge comprised the following species: blackthorn, hawthorn, elder, holly with some small amount of hazel and a couple of mature pedunculate oak along its length. Bramble was abundant and common knapweed was rarely encountered along the base of the hedge. A single honeysuckle was also present. A small ditch with no running water ran along the hedge and in this reed canary grass and soft rush were abundant.
31	Neutral Grassland Semi-improved	Two parallel fields of permanent pasture with a square field to the East all had the same sward. The grassy semi-improved species poor sward comprised: Dominant Yorkshire fog and common bent with occasional cock's-foot with abundant creeping buttercup, with only occasional white clover and ragwort, broad-leaved dock and meadow buttercup. Spear thistle was rare. Around the site boundaries twitch and false oat-grass were also present. The centre hedge comprised semi-mature Pedunculate oak and very gappy hawthorn hedge with bramble and nettle. These fields were formally heavily grazed by horses but are not mown for silage.

32	Marginal and inundation vegetation	Former Pond 18 was set in the corner of a small enclosure with mature pedunculate oak trees and common hawthorn along its southern edge. The pond was dry in April 2022 and comprises bare mud. Bulrush, reed canary grass and marsh cinquefoil dominant and frequent marsh bedstraw and soft rush occur around the margins. A little branched bur-reed was also present.
33	Neutral Grassland Semi-improved	Field of semi-improved pasture. Yorkshire fog and infrequent marsh fox-tail with creeping buttercup, common mouse-ear with frequent soft rush and occasional meadow buttercup, broad-leaved dock, greater stitchwort, common sorrel, cuckooflower, and rare spear thistle. The field boundary along the Eastern side of this field comprised a gappy blackthorn hedge with mature Pedunculate oak.
35	Pond 16	Pond 16 set in corner of field which was largely over-shaded by several mature Pedunculate oak as well as a one or two specimens of hawthorn, holly, goat willow and elder. Deep pond with layer of very dense leaf litter and bare mud edges with only restricted marginal vegetation. This comprised a few tussocks sea clubrush, a handful of branched bur-reed and small patches of common duckweed. Rank grass vegetation around the pond comprised: common bent, cock's-foot, with scattered marsh willowherb, soft rush and occasional field horsetail and bittersweet.
36	Native hedge species poor with trees	Short section of remnant hedge adjacent pond. The first 50m is continuous and comprised mostly blackthorn with a smaller amount of hawthorn, cherry, holly and alder. The hedge then gives way to post and wire fence and gaps with the hedge no longer functional. Pedunculate oak and Silver Birch.
37	Pond 17	Pond 17 Deep, circular pond set adjacent to a field boundary. 20% of the shoreline was shaded by the adjoining Pedunculate oak trees. The pond was subject to high levels of water fowl disturbance with marginal and aquatic vegetation very limited to a few stands of soft rush and floating sweet grass. Some small willows had begun to establish within the edges of the pond.
38	Dense Scrub	Defunct unmanaged gappy shrubby hedge to a bank with mature deciduous trees, now described as scrub as has no function as a field boundary. The scattered tree species were Pedunculate oak with shrubby species comprising hawthorn with very few hazel and holly. There was a post and wire fence between the gaps as the hedge was defunct as a field boundary. As with many of the hedges elsewhere on the site this hedge did not appear subject to any ongoing management.

		<p>This has resulted in a mature tree-line with tall below which is an often straggly and gappy over-mature hedge. Ground cover comprised common bent, cock's-foot and false oat grass with the following forbs: creeping buttercup, cleavers, red campion, marsh willowherb, bittersweet, bramble, ragwort and nettle. To the rear of the hedge in the narrow strip of land before the steep quarry void was vegetation dominated by rosebay willowherb, nettle and bramble.</p>
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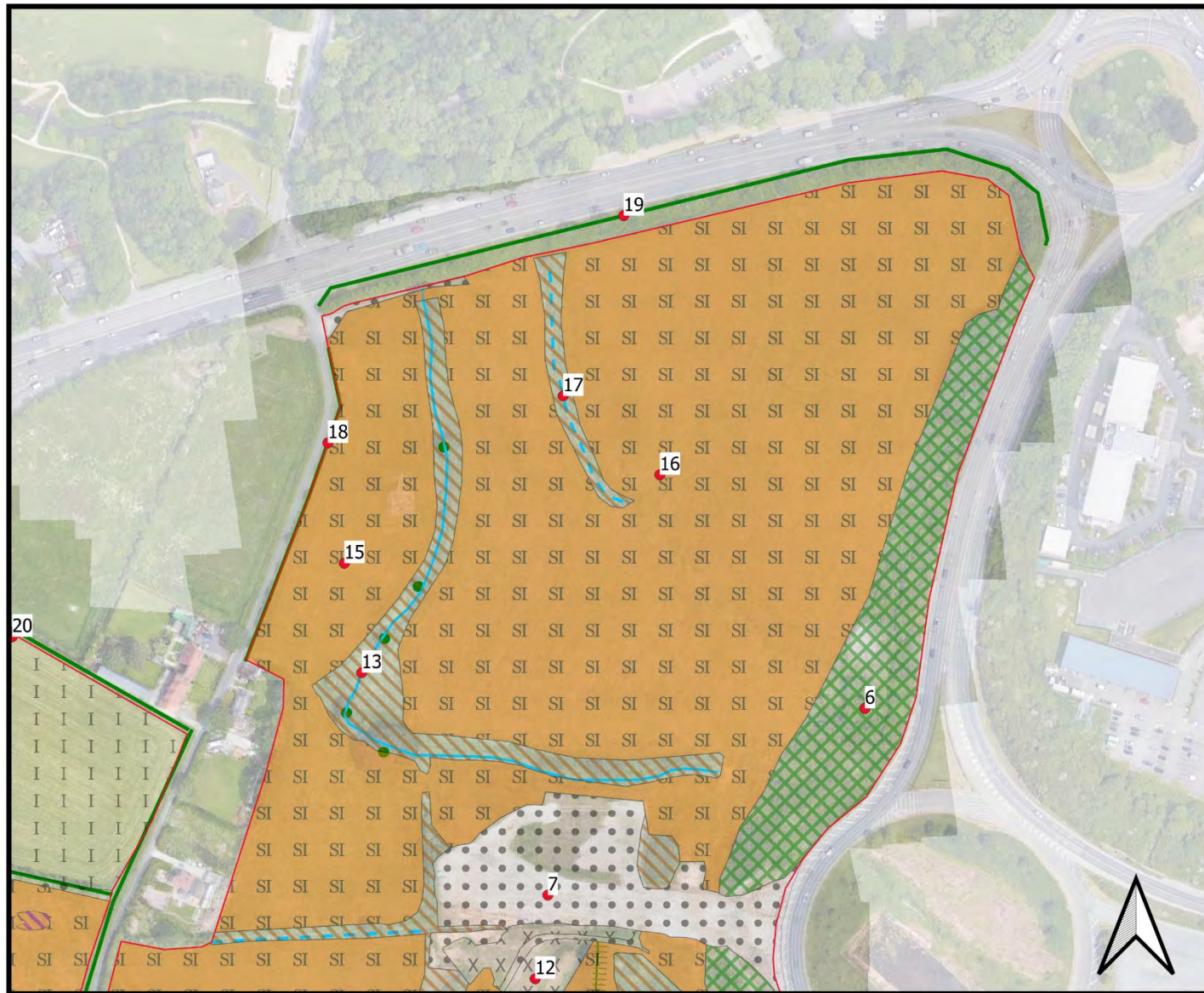




- Boundary
- Target Note
- Improved Grassland
- Marsh/Marshy Grassland
- Tall Ruderal
- Bare Ground
- Cultivated/Disturbed Land - Ephemeral/short perennial
- Scrub - Dense/continuous
- Neutral Grassland - Semi-improved
- Hedge and Trees - Native Species-rich
- Hedge and Trees - Species-poor
- Intact Hedge - Species-poor
- Dry Ditch
- Running Water
- Himalayan balsam
- Himalayan balsam

Figure 7b
Phase 1 Habitat Map





- Boundary
- Target Note
- Improved Grassland
- Marsh/Marshy Grassland
- Tall Ruderal
- Bare Ground
- Cultivated/Disturbed Land - Ephemeral/short perennial
- Scrub - Dense/continuous
- Neutral Grassland - Semi-improved
- Hedge and Trees - Species-poor
- Intact Hedge - Species-poor
- Dry Ditch
- Running Water
- (Parkland/scattered Trees - Broad-leaved)

Figure 7c
Phase 1 Habitat Map





- Boundary
- Target Note
- Improved Grassland
- Marsh/Marshy Grassland
- Tall Ruderal
- Bare Ground
- Cultivated/Disturbed Land - Ephemeral/short perennial
- Neutral Grassland - Semi-improved
- Hedge and Trees - Species-poor
- Intact Hedge - Species-poor
- Dry Ditch
- Running Water
- (Parkland/scattered Trees - Broad-leaved)
- Himalayan balsam

Figure 7d
Phase 1 Habitat Map





- Boundary
- Target Note
- Marsh/Marshy Grassland
- Bare Ground
- Standing Water
- Neutral Grassland - Semi-improved
- Woodland - Broad-leaved Semi-Natural
- Marginal and inundation - Inundation vegetation
- ⋈ Hedge and Trees - Native Species-rich
- ⋈ Hedge and Trees - Species-poor
- Intact Hedge - Species-poor
- - - Dry Ditch
- X Himalayan balsam

Figure 7e

Phase 1 Habitat Map



envirotech



- Boundary
- Target Note
- Improved Grassland
- Marsh/Marshy Grassland
- Tall Ruderal
- Bare Ground
- Cultivated/Disturbed Land - Ephemeral/short perennial
- Scrub - Dense/continuous
- Standing Water
- Neutral Grassland - Semi-improved
- Woodland - Broad-leaved Semi-Natural
- Marginal and inundation - Inundation vegetation
- Hedge and Trees - Native Species-rich
- Hedge and Trees - Species-poor
- Intact Hedge - Species-poor
- Dry Ditch
- Running Water
- (Parkland/scattered Trees - Broad-leaved)
- X Himalayan balsam

Figure 7f

Phase 1 Habitat Survey



envirotech

Table 3 Photographs



TN 1- Neutral Grassland Semi-improved

Rutting and extensive undesirable weed species present



TN3- Pond 5 and 6 with inundation vegetation to their banks



TN5- Marshy grassland dominated by rush with frequent dock



TN5- Marshy grassland with occasional silverbirch, willow and a single oak sapling

Bluebell still present to base of oak sapling from former woodland in this area



TN7- Extensive areas of compacted bare gravel with sharp transition to grassland at its edges



TN8- Marshy grassland to the East around TN5 grades into Neutral Grassland Semi-improved which has been more recently mown to the West



TN9- Native species rich hedge with mature trees along Stoney lane



TN10- Native species poor hedge with trees which is gappy



TN11- Earth banks covered by dock and nettle



TN12- Earth bank with bare ground and ephemeral vegetation



TN13- Tall ruderals along a shallow stream



TN16- Open field of Neutral Grassland Semi-improved which has been more recently mown to the North. Occasional soft rush.



TN21- Improved grassland



TN23- Field of rank grass



TN25- Small area of marshy grassland





TN26- Dry ditch with extensive Himalayan Balsam



TN30- Species rich hedgerows with trees to field boundaries



TN31- Neutral Grassland Semi-improved which appears to have been cut for silage. Sward diversity sits between Improved and Semi-improved classification.



TN32- Pond 18 is dry with inundation present