



**Woodland Creation at Liddel Water,
Scottish Borders
Ecological Appraisal**

Simply Ecology Limited

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For:

EJD Forestry Ltd,

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Control Sheet

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2	20/09/2023	KH	JR	Minor amendments

Disclaimer

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1.0 INTRODUCTION

1.1 Background Information

1.1.1 In January 2023, Simply Ecology Limited was commissioned by EJD Forestry Ltd to undertake habitat and wildlife surveys of land (approximately 120ha) in the Scottish Borders at Liddel Water, Kershopefoot, Borders, TD9 0TJ (grid reference NY 478 831) (see Plan 1).

1.2 Aims

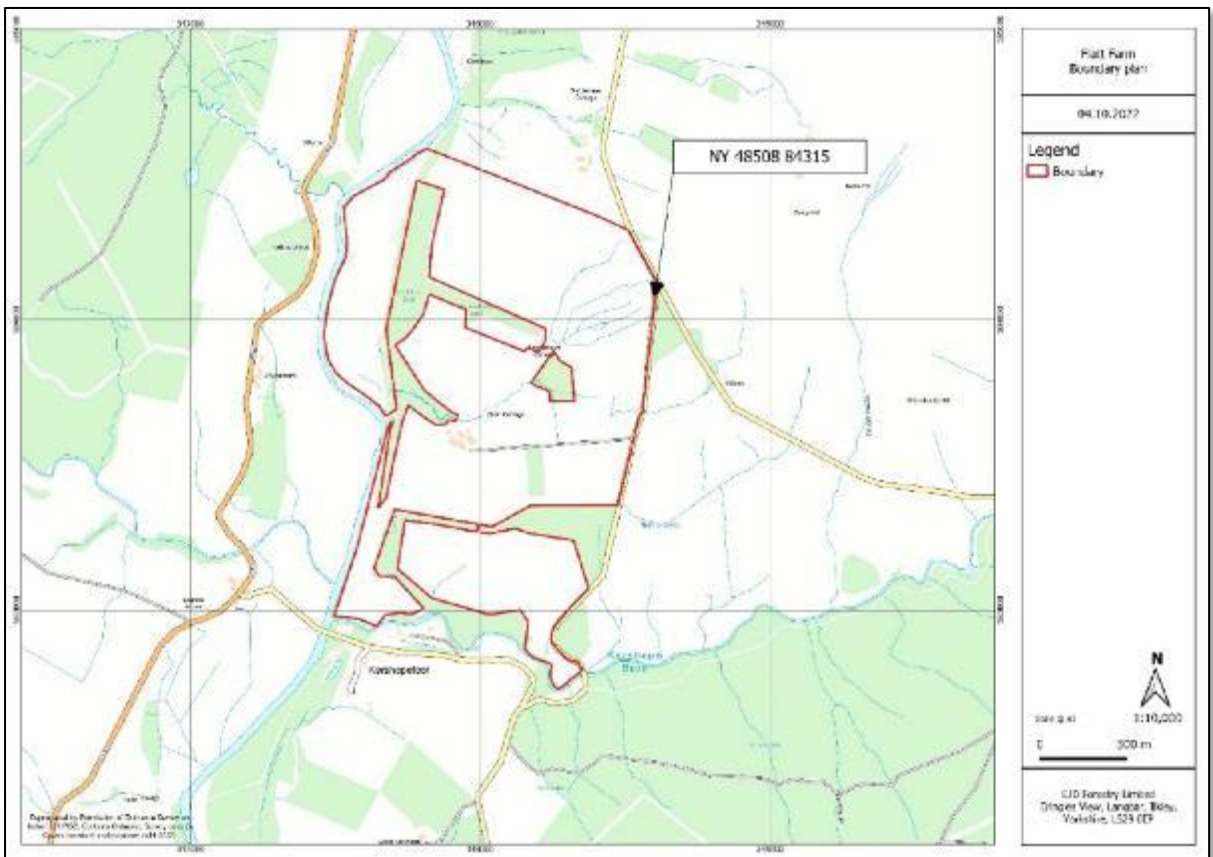
1.2.1 The aims of this ecological appraisal were to gain an understanding of the species and habitats on site in order to:

- 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 landholding and surrounding area.
- confirm the presence or absence of protected species, such as badgers, bats, great crested newts, otter, etc) within the landholding.
- enable the client's new woodland creation proposal to comply with legislation afforded to protected sites and species.
- highlight the presence of any habitats or species of ecological importance, including Priority Habitats and Species (Nature Conservation (Scotland) Act, 2004).
- identify any ecological issues in relation to the future new woodland creation proposal and to feed into the forest design process.
- make an assessment of the nature conservation impact of the new woodland creation proposal.
- make nature conservation recommendations.

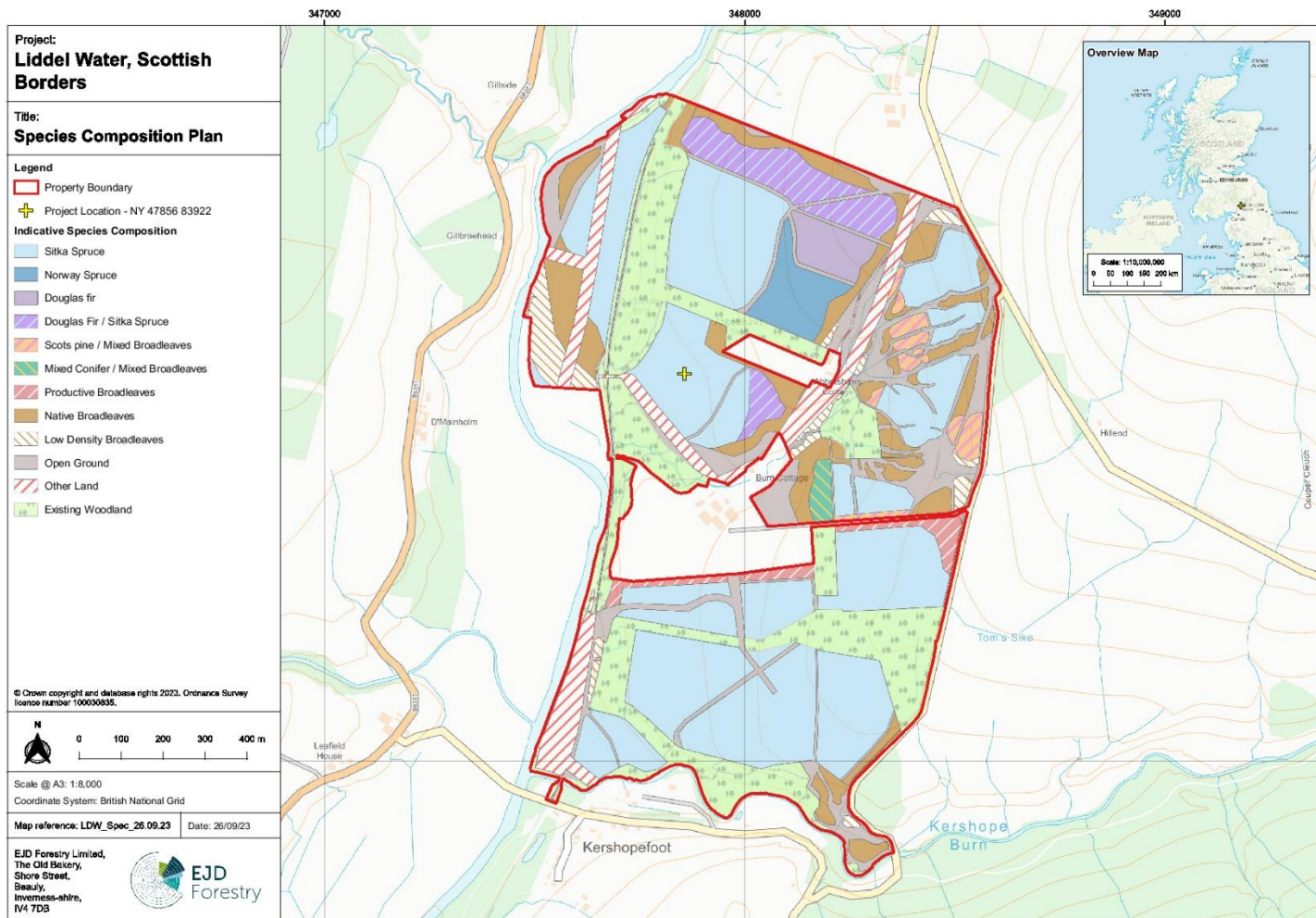
1.2.2 This submission presents the results of the ecological surveys at the site and assessment of the final forest design plan (See Plan 2 and Plan 3).



Plan 1: Site location.



Plan 2: Site Plan (detail).



Plan 3: Proposed Planting Scheme.

2.0 SURVEY METHODOLOGY

2.1 Desk Study

- 2.1.1 For the desk study the application site and surrounding 2km was selected to search for any existing biological information. Consultation with commercial and freely available datasets was undertaken to identify records of animals or plants within this search area.
- 2.1.2 The North and East Yorkshire Ecological Data Centre (NEYEDC) were contacted to identify species record and Local Biodiversity Sites in the Scottish Border.
- 2.1.3 In addition, an online search of the Magic Maps website was undertaken to identify the presence of nationally or internationally important sites receiving statutory protection. This included sites designated under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010. This covers Sites of Special Scientific Interest (SSSI), Special Protection Areas (SPA) and Special Areas of Conservation (SAC) all of which have legal protection.

2.2 Phase 1

- 2.2.1 A Phase 1 Habitat Survey and protected species risk assessment was undertaken across the site taking in the variety of habitats present within the site. The surveyors included Jason Reynolds MSc MCIEEM, Kevin Heywood BSc (Hons) ACIEEM and Philip Wright MSc CIEEM. The walkover and subsequent habitat and species surveys took three days to complete.
- 2.2.2 Habitats on the site were described and mapped following standard Phase 1 habitat survey methodology (JNCC 2010). A detailed list of plant species identifiable at the site was compiled. Nomenclature follows Stace (1997) for vascular plant species.
- 2.2.3 Incidental records of protected or otherwise noteworthy species noted during the course of the Phase 1 survey and ecological walkover survey. Scientific names are given after the first mention of a species, thereafter, common names only are used.
- 2.2.4 Habitats were recorded on a map and accompanied by photographs.

2.3 UK Habitat Survey

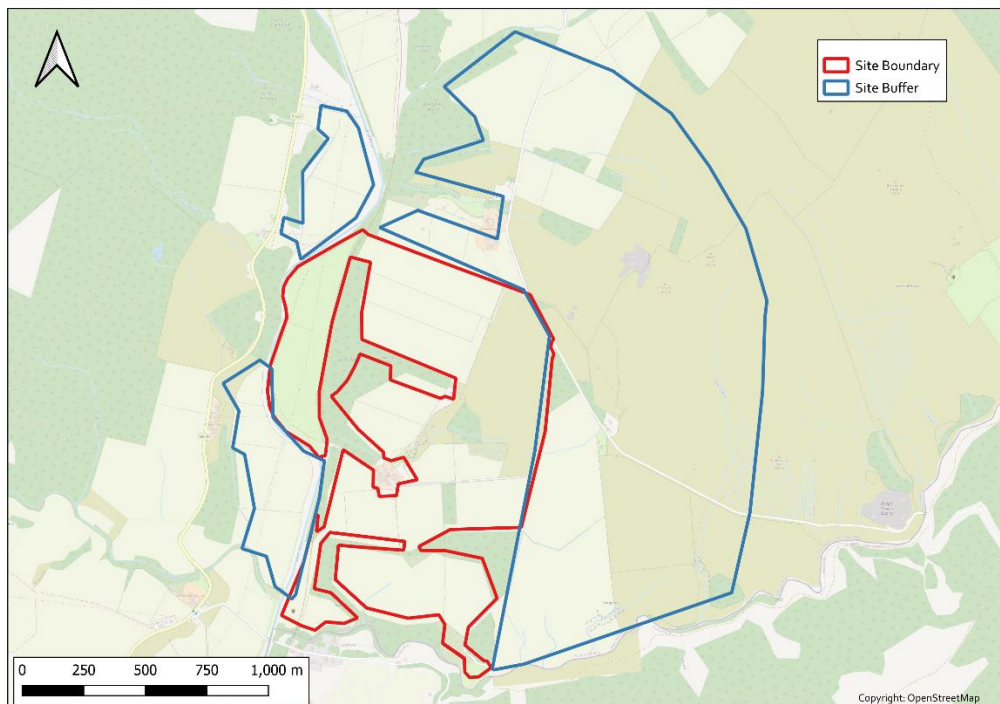
- 2.3.1 The habitat survey was undertaken by Kevin Heywood BSc ACIEEM on 20th June 2023. The survey recorded all habitats on the site (inc Priority Habitats) using the UKHab Classification (Butcher *et al.* 2023), which is the modern standard technique for recording and mapping habitats. During the ecological survey, the presence or potential for presence of protected species was recorded and assessed.
- 2.3.2 The survey involved walking the whole site, mapping and describing different habitats (for example: woodland, grassland, scrub). Evidence of fauna and faunal habitat is also recorded (for example droppings, tracks, or habitat such as ponds for breeding amphibians). The methods used for ecological survey are in accordance with those established and generally accepted methodologies for field survey, as published by the professional body, the Chartered Institute of Ecology and Environmental Management (CIEEM).

2.4 Badger

- 2.4.1 Methods used to conduct badger surveys were based upon the generally accepted methodologies for field survey as published in badger field survey (Harris S, Cresswell P and Jefferies D 1989). Direct observations were made by a surveyor during an initial walkover of the site and surrounding landscape where appropriate permissions for access was in place. This took place on 14-15th February 2023. The primary goal was to determine the precise location of any sett entrances and tunnels, badger paths and/or other signs of activity on site or in the immediate surrounding area. This helped clarify badger presence/absence and the type of activity.
- 2.4.2 Any evidence of badger activity (in the form of setts, droppings, pathways, snuffle holes, hair and footprints) observed during the ecological walkover was recorded. All sett entrances were examined closely to determine if they displayed signs of use, past or present. Particular attention was paid to areas where the vegetation and/or the topography offered suitable sett sites. Areas with dense ground cover (hedges, scrub, woodland, etc.) were examined closely. Where dense vegetation (e.g. bramble) precluded a thorough search, the perimeter was searched for badger runs or pathways into the vegetation which might suggest the presence of a concealed sett.

2.5 Breeding Bird Survey

- 2.5.1 A survey of the site was carried out for breeding birds. The surveys comprised two methodologies, depending on location (see Plan 4):
- Site footprint (woodland creation area)
 - Buffer (up to 1km radius from the site footprint)



Plan 4: The survey areas within the red line boundary and the buffer area.

Survey method: site footprint (woodland creation area)

2.5.2 A modified version of the Bird Survey Guidelines is used (<https://birdsurveyguidelines.org/>). Follow BSG method but make visits focusing on all waders and any other priority species (plus any others that may be of concern for specific reasons e.g. barn owl, raptors, colonial species). Visits must be spaced as follows:

- 20th March – 10th April (must be done by this date)
- 16th April – 15th May
- 16th May – 15th June
- 16th June – 10th July

2.5.3 Timing of surveys: start between 30 mins before sunrise and 30 mins after sunrise, and conclude around mid-morning.

Survey method: buffer area (up to 1km radius from site footprint). Breeding waders only.

2.5.4 Three visits of both enclosed and unenclosed land as follows:

- Three visits walking within 100m of all points regardless of landscape – in enclosed fields walk a route to ensure coverage to within 100 of all points. On open ground walk parallel 200m transects.
- Survey period spread between 5th April and 15th June, ensuring the first survey is carried out by mid-April, and with at least 2 weeks between survey visits.
- Time of day during daylight hours, but avoiding the middle of the day (12:00-15:00), particularly during the earlier visits. One early visit starting at dawn may be helpful to pick up harder to detect species.
- Allow 5-6 hours to record a 2km block (tetrad).
- For analysis, count individuals and assign birds to pairs on the basis of mapped registrations. E.g. curlew 1 bird within a 500m x 500m block = 1 pair, 2 birds = 1 pair, unless obviously different (e.g. aggressive display) in which case 2 pairs. Correction factors should not be used.
- Analyse data for each visit individually, rather than overlaying maps.
- Use the maximum counts across visits to generate the estimated number of pairs (and density), assuming there is no reason to reduce this (e.g. where it's believed that birds failed to breed and moved elsewhere). Where this is necessary, justification must be given.
- Aggregated maps of wader territories to be provided in addition.

2.5.5 In all cases survey design may be influenced by the species known or likely to be present, and may need to encompass methods not specifically described here (e.g. vantage point surveys or focus on suitable habitat). Any deviation from the method described here must be agreed in advance with FC.

- 2.5.6 Any minor variation from the prescribed methods must be fully explained and justified by the surveyor.
- 2.5.7 Where bird surveys are required in areas where breeding waders are not a concern, you will generally be expected to follow the full bird survey guidelines method, unless advised otherwise by the area ecologist or woodland creation officer.
- 2.5.8 All survey dates and brief note on the weather conditions during the surveys are described in Table 1.

Table 1: Weather and survey dates for all bird surveys carried out.

Date	Start Temperature	Sunrise/ Survey Start	Survey Duration	General Weather
6 th April 2023	8°C	06:32 / 06:45	5 Hours	Overcast
1 st May 2023	10°C	05:32 / 06:30	5.5 Hours	Overcast
31 st May 2023	14°C	04:42 / 05:00	5 Hours	Sunshine
18 th June 2023	18°C	04:32 / 05:15	5 Hours	Sunshine

- 2.5.9 Following on from the initial surveys, all data received from the survey was analysed and presented in table and plan format. The criteria used in the assessment of breeding birds was based on the standard criteria in the BTO Bird Atlas methods (BTO 2022) and was grouped into four categories: **non-breeding**, **possible breeder**, **probable breeder** and **confirmed breeder**. The criterion for distinguishing these categories is based on evidence seen in the field and is provided in Table 2.

Table 2: BTO Standard Criteria to distinguish breeding status of birds on site.

Non-Breeding
Flying Over
Species observed but suspect to be still on migration
Species observed but suspected to be summering non-breeder
Possibly Breeding
Species observed in breeding season in suitable nesting habitat
Singing male present (or breeding calls heard) in breeding season in suitable breeding habitat
Probably Breeding
Pair observed in suitable nesting habitat in breeding season

Permanent territory presumed through registration of territorial behaviour (song etc) on at least two different days a week or more part at the same place or many individuals in one day
Courtship and display (judged to be in or near potential breeding habitat; be cautious with wildfowl)
Visiting probable nest site
Agitated behaviour or anxiety calls from adults, suggesting probably presence of nest or young nearby
Brood patch on adult examined in the hand, suggesting incubation
Nest building or excavating nest-hole
Confirmed Breeding
Distraction-display or injury feigning
Used nest or eggshells found (occupied or laid within period of survey)
Recently fledged young (nidicolous species) or downy young (nidifugous species). Careful consideration should be given to the likely provenance of any fledged juvenile capable of significant geographical movement. Evidence of dependency on adults (e.g., feeding) is helpful. Be cautious, even if the record comes from suitable habitat
Adults entering or leaving nest-site in circumstances indicating occupied nest (including high nests or nest holes, the contents of which cannot be seen) or adults seen incubating
Adult carrying faecal sac or food for young
Nest containing eggs
Nest with young seen or heard

- 2.5.10 The conservation value of bird populations has been measured using the RSPB approach to determining nature conservation value and conservation status.
- 2.5.11 **RSPB BoCC interpretation** - The criteria used in assessments are intended to ensure that Birds of Conservation Concern (BoCC) listings reflect each species' global and European status as well as that within the UK, and additionally measure the importance of the UK population in international terms (Eaton *et al* 2021).
- 2.5.12 Species that meet any of the following criteria are **red** listed:
- IUCN Global Conservation Status. Species listed by BirdLife International as being Globally Threatened using IUCN criteria.
 - HD Historical Decline. A severe decline in the UK between 1800 and 1995, without substantial recent recovery.
 - BDp Breeding Population Decline. Severe decline in the UK breeding population size, of more than 50%, over 25 years (BDp1) or the entire period used for assessments since the first BoCC review, starting in 1969 ("longer-term") (BDp2).

- WDP Non-breeding Population Decline. Severe decline in the UK non-breeding population size, of more than 50%, over 25 years (WDP1) or the longer-term (WDP2).
- BDR Breeding Range Decline. Severe decline in the UK range, of more than 50%, as measured by number of 10 km squares occupied by breeding birds, over 25 years (BDR1) or the longer-term (BDR2).

2.5.13 Species that meet any of the following criteria are **amber** listed:

- SPEC European Conservation status. Categorized as a Species of European Conservation Concern (SPEC 1, 2 or 3).
- HDrec Historical Decline – Recovery. Red listed for Historical Decline in a previous review but with substantial recent recovery (more than doubled in the last 25 years).
- BDMp Breeding Population Decline. As for red list criteria BDp1 and BDp2, but with moderate decline (by more than 25% but less than 50%).
- WDMp Non-breeding Population Decline. As for red list criteria WDP1 and WDP2, but with moderate decline (by more than 25% but less than 50%).
- BDMr Breeding Range Decline. As for red list criteria BDR1 and BDR2, but with moderate decline (by more than 25% but less than 50%).
- BR and WR Rarity. UK breeding population of less than 300 pairs (BR), or non-breeding population of less than 900 individuals (WR).
- BL and WL Localisation. At least 50% of the UK breeding (BL) or non-breeding (WL) population found in 10 or fewer sites.
- BI and WI International Importance. At least 20% of the European breeding (BI) or non-breeding (WI) population found in the UK.

2.5.14 Clear maps of all **probable** or **confirmed** breeding birds are provided, with their BoCC status illustrated. In addition, maps of wader species are provided and accompanying tables were also compiled to indicate the total numbers of breeding pairs and densities.

Breeding wader pairs within the site boundary were surveyed following Bird Survey Guidelines (2022). The results of individual survey visits were amalgamated into conclusions about the number and location of breeding pairs present using BTO standard criteria (see Table 2) to distinguish breeding status.

2.6 Ecological Value and Impact

2.6.1 The evaluation of the ecological features of the site and the magnitude of the likely impacts of the proposed new woodland creation upon those features follows that published by the Chartered Institute of Ecology and Environmental Management (CIEEM 2022). Overall, the process adopts a geographical scale for valuing ecological features. The evaluation places the site within a hierarchy of perceived ecological importance. This hierarchy ranges from the highest value sites which have 'international' status, then down to 'national', 'regional', 'county', 'district' and 'borough' and finally through to 'local' in terms of diminishing importance (see Annex C for full description of evaluation criteria).

- 2.6.2 Once the site's ecological value has been rated, impacts are subsequently identified and ranked according to the comparative severity of their effects. The impact magnitude of the development is recorded with the following criteria: 'major, 'moderate, 'slight' and 'negligible. Impacts can be both positive and adverse (see Annex C for full description of impact magnitude criteria).
- 2.6.3 Once the above two stages have been completed, it is possible to determine the significance of impact. This involves the interaction of both impact magnitude and nature conservation value and is based upon an exercising of professional judgement (as per CIEEM 2022).

2.7 Bats

Ground-level Survey

- 2.7.1 As part of the bat survey a ground-level survey of all trees was carried out. Trees were categorised into high, medium or low potential for bats. The following signs which can be indicators of bat presence were used for the categorisation:
- Woodpecker holes with small cracks/crevices.
 - Cracks/crevices, ivy cover and flaking bark.
 - Loose or flaking bark deadwood in canopy or stem low/no ivy cover.
 - Medium to dense ivy cover.
 - Deadwood in canopy or stem.
 - Snagged branches.
 - Hollow stems or limbs.
 - Hole in buttresses/hollow core.
- 2.7.2 The following signs were searched for in all of the above places as these would indicate bat presence:
- Staining around a hole, caused by natural oils in the bats' fur.
 - Stains beneath a hole, caused by bat urine.
 - Scratch marks around a hole, caused by bat claws.
 - Bat droppings beneath a hole.
 - Insects (especially flies) around a hole.
- 2.7.3 Once surveyed, each tree was categorised, using Bat Conservation Trust guidelines, according to its potential to support roosting bats into one of four categories: 1. Confirmed bat roost, 2a. High potential to support bats, 2b. Low/moderate potential to support bats, and 3. Negligible potential to support bats.

2.8 Otter

- 2.8.1 Otter surveys record field signs along rivers and streams to determine activity levels and patterns of behaviour over a predetermined area of suitable habitat ('The New Rivers and Wildlife Handbook' (RSPB, NRA and RSNC, 1995).
- 2.8.2 Otter surveying records locations of otter activity i.e. footprints, spraints (otter droppings), feeding remains, footprints, slides (where otters pass back and forth to the waters edge), lying-up areas and holts to determine otter usage of particular stretches of a river and its

tributaries. The otter survey undertaken at Black Loch, the un-named tributary of the Eddlestone Burn and Tweeddale Burn consisted survey of both banks (where accessible) within the site.

- 2.8.3 There are a number of different resting places that indicate use by otters. Below is a brief description of the terminology used in this report.

Holts

- 2.8.4 Otter holts are places/structures used by otters for shelter on a 'permanent' basis. Holts are covered structures, usually a hole or burrow along the river bank amongst riparian vegetation and the roost system of river side trees, or behind boulders set in to the bank. Usually a holt will also have other associated otter field signs such as footprints or an accumulation of spraint. Holts may also be connected to lying-up areas and have more than one entrance as with badger setts.

Lying-up areas/couches

- 2.8.5 Lying-up areas or couches are 'temporary' areas used by otters for resting, grooming or feeding whilst on the move. Lying-up areas usually do not form a full covered structure, rather they are partially hidden bankside shelves amongst riparian vegetation, or 'nest-like' structures amongst reeds and grasses. As with holts, lying up areas usually have other field signs to demonstrate use by otters.

Natal Dens

- 2.8.6 Natal dens are holts which are used by otters to give birth and rear their young natal dens usually have inconspicuous entrances and have little or no evidence of otter activity around the entrance. Natal dens can be located some distance from the watercourse, sometimes being set back in woodland amongst log piles, tree roots, rubble or even amongst reed beds.
- 2.8.7 The banks of the ditches and watercourses within the site were assessed for their potential to support otter in line with methods given in Chanin (2003). Any field signs of otter activity, including footprints, spraints, lying-up sites and holts were noted. All fieldwork is carried out in accordance with current best practice guidelines with reference to Monitoring the Otter (Life in UK Rivers 2003) and The New Rivers and Wildlife Handbook (RSPB, NRA and RSNC,1995).
- 2.8.8 Any evidence of otter was to be recorded on a map and accompanied by photographs.

2.9 Water vole

- 2.9.1 Spot check searches of both banks of the un-named tributary of the Eddleston Water, Burn Loch and Tweeddale Burn which flow through the site were walked by the surveyor on 30/06/2016. The banks of the ditches and watercourses were assessed for their potential to support water vole. The survey methods were implemented in accordance with those described in the Water Vole Conservation Handbook, (Dean, Strachan, Gow and Andrews, 2016).

2.9.2 A detailed examination of the watercourses was carried out to search for evidence of water vole (as described in Strachan and Moorhouse 2006). These were:

- Feeding signs, including feeding stations;
- Latrines and individual droppings;
- Burrows, nests and feeding lawns (areas of shortly-grazed grassland at the entrance to a burrow);
- Footprints and obvious runways in vegetation; and
- The distinctive ‘plop’ sound of water voles entering the water.

2.9.3 Any evidence of water vole was to be recorded on a map and accompanied by photographs.

2.10 Reptiles

2.10.1 The habitat within the working area and up to 10m either side of the site was assessed in terms of its suitability for reptiles. Based upon the broad distribution of Britain’s 6 native reptiles and the habitats encountered at the site the suitability of the site for the following three species was assessed: adder (*Vipera berus*), slow worm (*Anguis fragilis*) and common lizard (*Zootoca vivipera*). The assessment was conducted in accordance with standard reptile survey methods detailed in the National Amphibian and Reptile Survey (NARRS). The key elements which were assessed in undertaking the habitat assessment were as follows:

- Vegetation structure – ideal reptile habitat has a variable structure with a mixture of vegetation heights, tangled or thorny areas, mosaics, bare patches, lots of edges (‘ecotones’) and good basking places.
- Extent – must be big enough area to support a population. Small habitat patches can be sufficient for lizards, whereas snakes need larger areas (although grass snakes can cross unsuitable habitat).
- Aspect – sunny, sheltered locations, unshaded, south-facing
- Topography - undulating topography, banks, hummocks, hollows, south-facing slopes; generally not north-facing slopes.
- Connectivity – essential to allow colonisation when habitat is created, and re-colonisation after local extinctions. For example, if an area of good habitat is surrounded by intensive arable farmland, reptiles might not be able to colonise it.
- History – habitat that has been recently created might look deceptively good, but it takes time for reptiles to colonise, and there must be connectivity with neighbouring areas where they are present.

2.11 Timing and Constraints

2.11.1 Surveys were spread out across 2023 to ensure that habitats and species were compliant with the best times of year. All initial walkover surveys were carried out on the 14th-15th February 2023. This is an ideal time of the year to survey for badger setts as well as to record general habitat type. Whilst this timing is not optimal for botanical surveys, many typical key habitat indicator species can be readily identified. It was therefore possible to conduct a rigorous and proper assessment of the ecological value/quality of the site.

- 2.11.2 Further surveys were completed 20th June 2023 as this is the ideal time of year for further detailed habitat surveys and also for detecting other mammal signs. Many species are active and breeding at this time, clearly displaying signs, such as badger latrines and fresh digging signs. The timing posed no problems for the protected species assessment, and no constraints were encountered.
- 2.11.3 In all, no significant constraints were encountered that could affect any of the above surveys and reliable survey data was collected.

2.12 Personnel

- 2.12.1 The site surveys were carried out by Kevin Heywood BSc (Hons) ACIEEM. Kevin is an Ecologist with Simply Ecology Ltd. Kevin graduated with a first-class honours degree in Ecology from Lancaster University in 2015. In addition to this, he has acquired experience since 2012 working as an ecologist in a freelance capacity and since 2015 as a full-time employee for Simply Ecology Ltd. During this time, he has developed numerous field skills and carried out a wide range of botanical and protected species surveys. His expertise predominantly lies with habitat mapping and undertaking protected species surveys including: bats, great crested newts, badgers, otters and reptiles. Kevin holds a protected species licence for all British bats and for Great Crested Newts.
- 2.12.2 Report verification was carried out by Jason Reynolds MSc MCIEEM. Jason started Simply Ecology Limited in 2007 and is an experienced ecologist who has been continuously employed in the field of nature conservation since 1995 (27 years' experience) and has a wealth of experience in both the statutory nature conservation agencies and private consultancy. During his career has worked in Conservation Officer roles for the Joint Nature Conservation Committee, English Nature, Environment Agency, Cumbria Wildlife Trust and Durham Wildlife Trust prior to setting up Simply Ecology ecological consultancy in 2007, where he is the Lead Ecologist. He has an MSc from The University of Aberdeen and his thesis investigated the relationship between habitat type and complexity and the foraging behaviour of Pipistrelle bats. Jason holds protected species survey licences for all British bats, white-clawed crayfish and great crested newts.

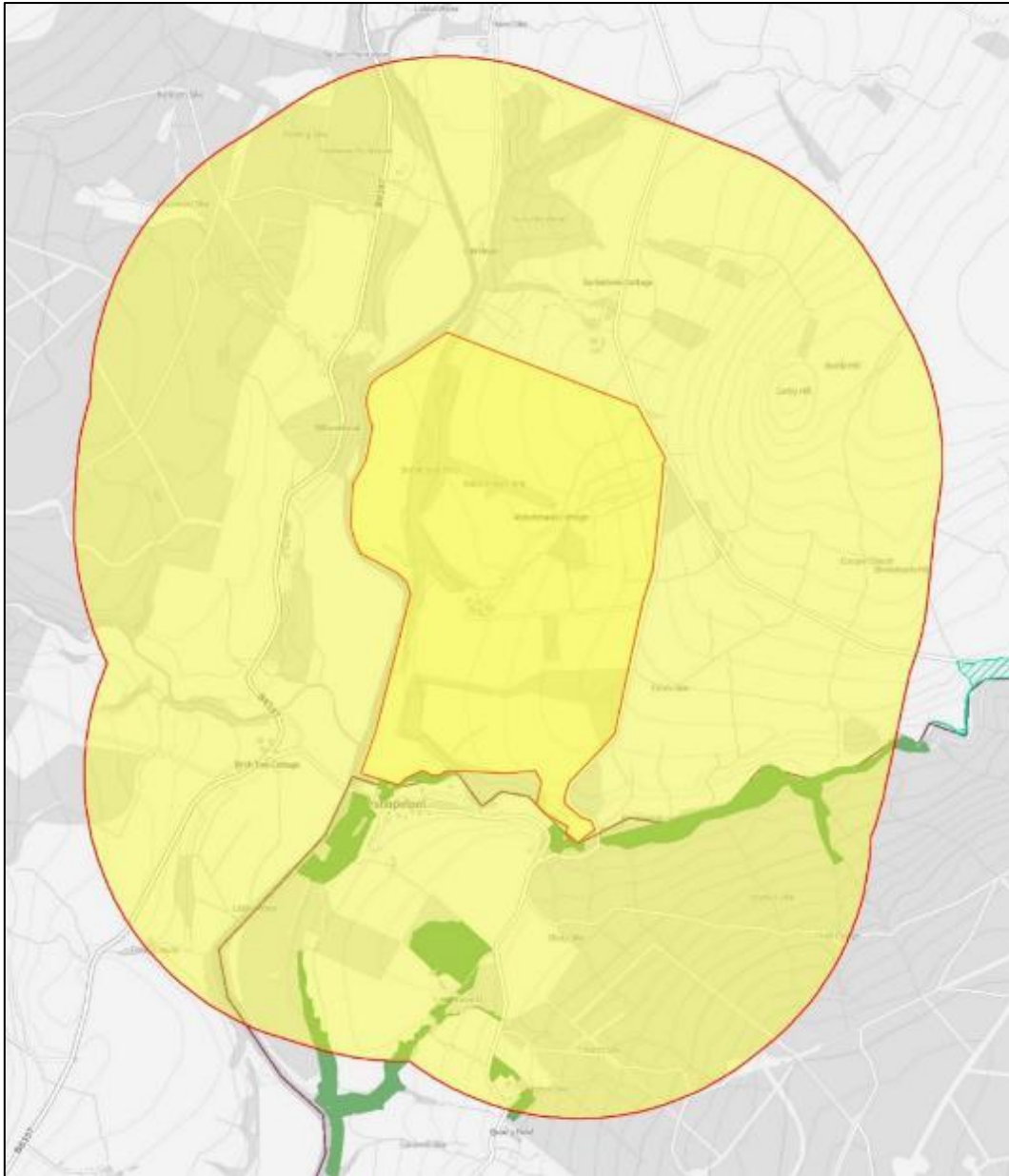
3.0 DESK STUDY RESULTS

3.1 Statutory Nature Conservation Sites

- 3.1.1 The search for conservation sites within and around the site included both nationally important sites (Sites of Special Scientific Interest), and internationally important sites (Natura 2000 and Ramsar sites). Information was gleaned from NatureScot and, where relevant to this cross-border site, Magic Maps was used.
- 3.1.2 There were no such sites within or adjacent to the site boundary. The closest statutory nature conservation site comprised Kershope Bridge SSSI, approximately 1km east of site (see Plan 5). This site is designated for its geological features (see ANNEX C).

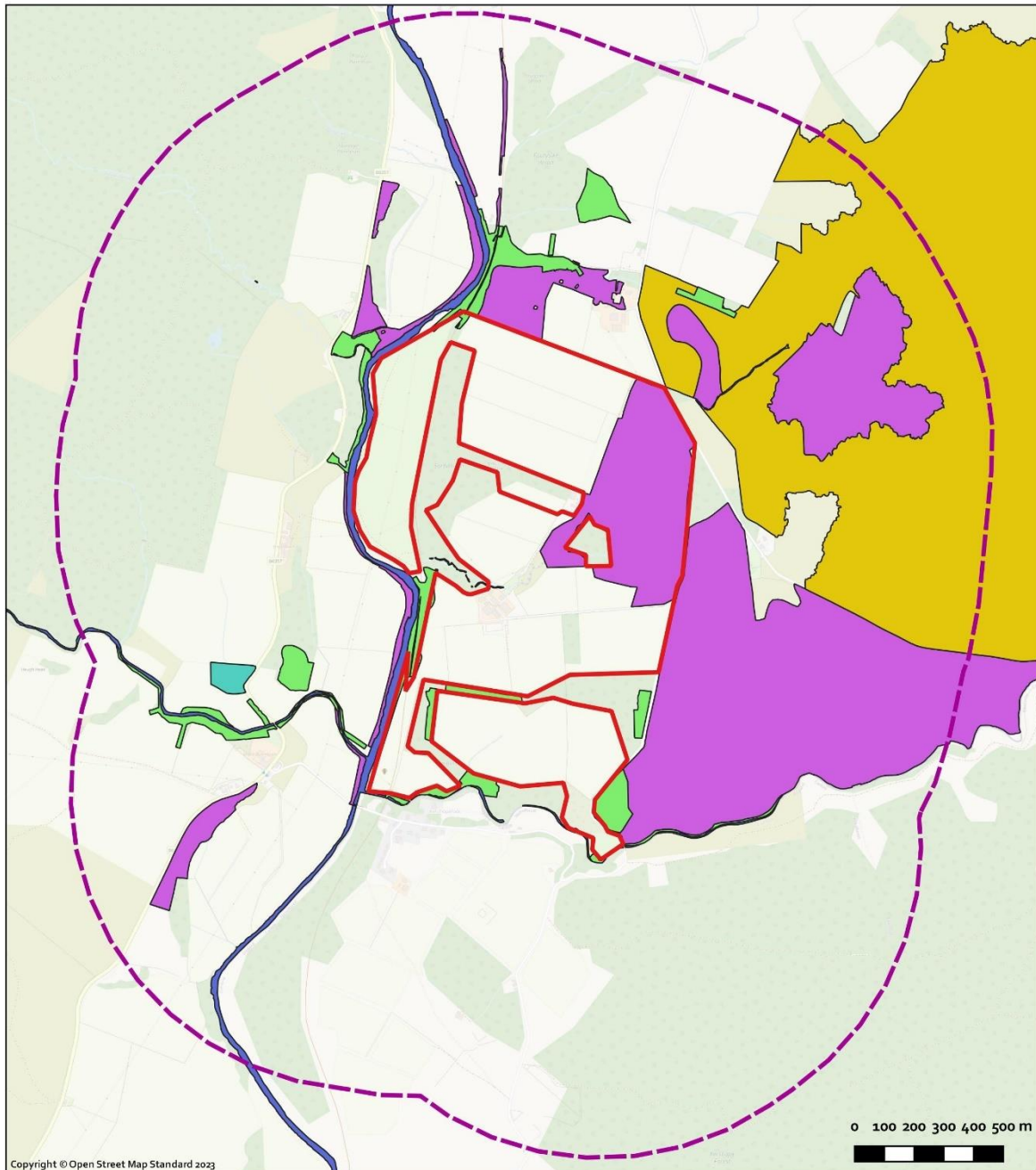
3.2 Priority and Notable Habitats

- 3.2.1 Within the site and the surrounding area there were substantial pockets of Deciduous Woodland. South of the border this is indicated on Plan 5, however, semi-mature deciduous woodland blocks were present within the regions of the site boundary, outside the site. For areas searched within Scotland, all notable habitats are presented on Plan 6. Habitats present included Acid Grassland, Broad-leaved Woodland, Marshy Grassland and Running Water.



Plan 5: Magic Map nearby statutory sites and Priority Habitats (England falls within the Zone of Influence).

Desk Study - Nearby Notable Habitats Liddel Water, Scottish Borders.



Legend

- | | |
|--------------------------------|-------------------------------------|
| Site Boundary | Broadleaved woodland - semi-natural |
| 1km Site Boundary Buffer | Marsh/marshy grassland |
| Acid grassland - semi-improved | Running water |
| Acid grassland - unimproved | |



Plan 6: Notable Habitats within 1km of site.

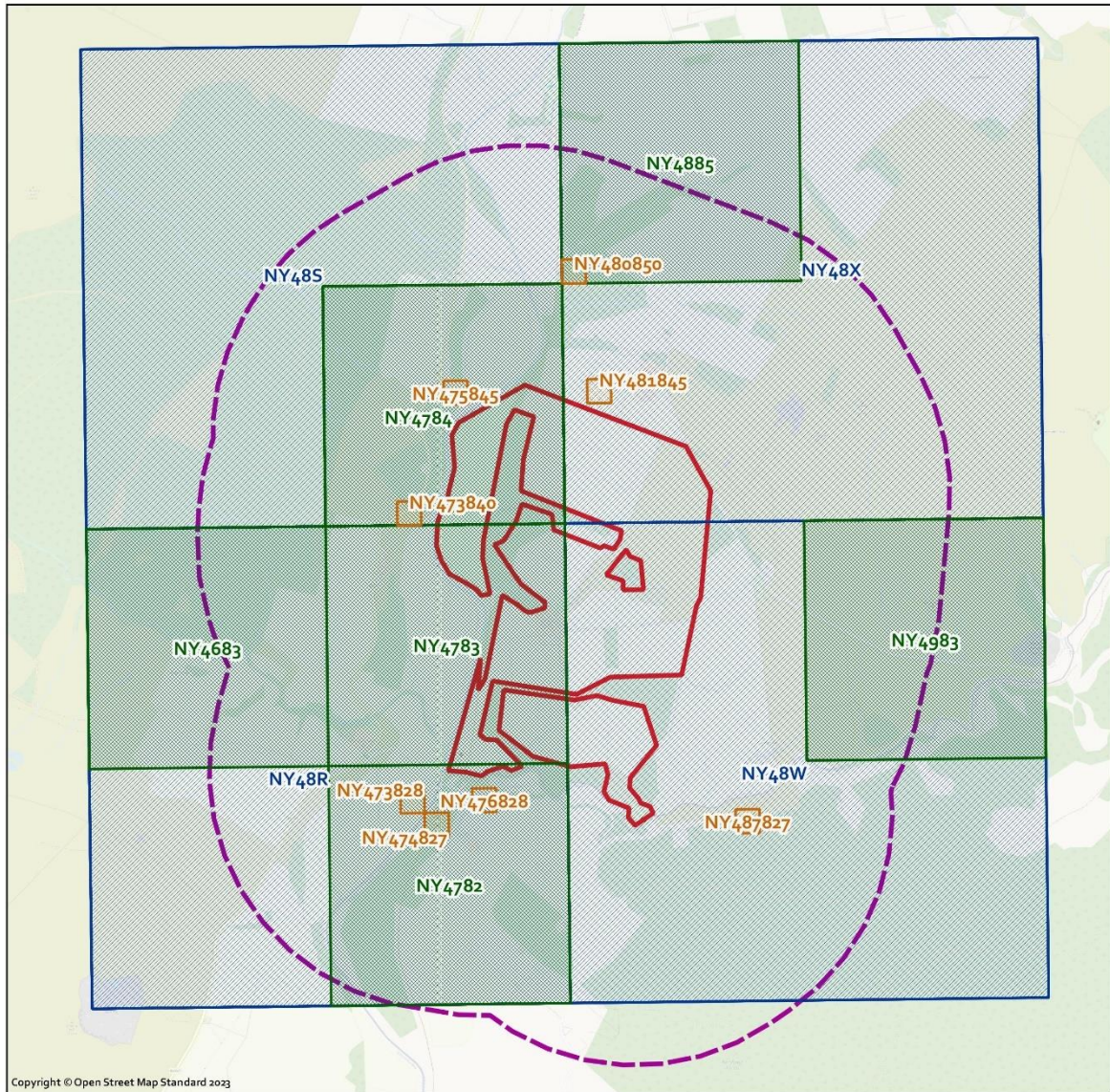
3.3 Protected and Noteworthy Species

- 3.3.1 The Wildlife Information Centre was also contacted for a full data search of all records of protected species within 1km of site, illustrated on Table 3 and Plan 7. In addition, BAP, Red Listed and other Notable species are listed on Table 7 in Annex D. However, 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.
- 3.3.2 The presence or absence within the site of any protected species was considered 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 considered when undertaking the site survey.

Table 3: Statutory Protected Species located within 1km of site (recordings made this century).

Name	Common Name	Taxon Group	No. of Records	UK Legislation
<i>Alcedo atthis</i>	Kingfisher	Kingfisher	3	ScotBL, WCA1i
<i>Loxia curvirostra</i>	Crossbill	Crossbill	5	WCA1i
<i>Sciurus vulgaris</i>	Eurasian Red Squirrel	Eurasian Red Squirrel	6	ScotBL, UKBAP, WCA5/9.1k/l, WCA5/9.1t, WCA5/9.4.a, WCA5/9.4b, WCA5/9.4c
<i>Turdus iliacus</i>	Redwing	Redwing	4	ScotBL, WCA1i
<i>Turdus pilaris</i>	Fieldfare	Fieldfare	10	WCA1i
<i>Tyto alba</i>	Barn Owl	Barn Owl	11	ScotBL, WCA1i
<i>Vipera berus</i>	Adder	Adder	2	ScotBL, UKBAP, WCA5/9.1k/l
<i>Zootoca vivipara</i>	Common Lizard	Common Lizard	1	ScotBL, UKBAP, WCA5/9.1k/l
ScotBL: Scottish Biodiversity List of species of principle importance for biodiversity conservation WCA1i: Wildlife and Countryside Act 1981 Schedule 1 Part 1 UKBAP: UK Biodiversity Action Plan Priority Species WCA5/9.1k/l: Wildlife and Countryside Act 1981 Schedule 1 Section 9.1k WCA5/9.1t: Wildlife and Countryside Act 1981 Schedule 1 Section 9.1t WCA5/9.4a: Wildlife and Countryside Act 1981 Schedule 1 Section 9.4a WCA5/9.4b: Wildlife and Countryside Act 1981 Schedule 1 Section 9.4b WCA5/9.4c: Wildlife and Countryside Act 1981 Schedule 1 Section 9.4c				

Desk Study - Statutory Protected Species Liddel Water, Scottish Borders



Legend

-  6 Figure Grid Ref
-  4 Figure Grid Ref
-  2 Figure Grid Ref
-  1km Site Buffer
-  Site Boundary

NY48R: Fieldfare, Redwing, Kingfisher & Crossbill
 NY48S: Barn Owl & Crossbill
 NY48W: Fieldfare & Redwing
 NY48X: Crossbill, Fieldfare & Redwing

NY4683: Crossbill
 NY4782: Fieldfare
 NY4783: Barn Owl
 NY4784: Barn Owl
 NY4885: Barn Owl
 NY4983: Adder & Common Lizard

NY473828: Red Squirrel
 NY473840: Red Squirrel
 NY474827: Kingfisher
 NY475845: Red Squirrel
 NY476828: Fieldfare
 NY480850: Red Squirrel
 NY481845: Red Squirrel
 NY487827: Adder



Plan 7: Strictly Protected Species within 1km (see also Table 1).

4.0 SURVEY RESULTS

4.1 Habitat Results

4.1.1 This site is a west facing slope ranging from 170m down to below 100m in altitude. It is characterised by gradual slopes down to Liddel Water which represents the western boundary. The landscape has a small range of graminoid dominated habitats present that are suited to microclimates, in conjunction with the underlying substrate, gradient and aspect. Anthropogenic intervention has also had an impact in shaping the residual habitats due to grazing pressure and agricultural improvement. Surrounding and interspersed through the site were areas of (mostly) semi-mature deciduous and/or coniferous woodland plantations. A summary of the existing habitat types is provided here:

4.1.2 Much of the site comprises semi-improved grassland, including MG1, MG6 and MG9 communities. These are also described as UK Habitats: G4 (modified grassland), G3C (other neutral grassland) and G3C7 (*Deschampsia* neutral grassland). Damper, more flushed marshy grassland has the MG10 community present (G3C8 UK Hab, *Holcus-Juncus* neutral grassland) with above frequent coverage of rushes. This marshy grassland was also present within small channels draining the slopes, particularly in the east. Generally speaking, the undulating ground in the east comprised that which the most tussocky and rough vegetation expressed, with the more improved grasslands located in the west of the site.

4.1.3 In all, the following broad phase one habitat types were found on site in order of greatest ecological value first (see the below habitat map; see Plan 8):

- Improved Grassland
- Semi-Improved Neutral Grassland
- Marshy Grassland
- Scattered Trees
- Other (buildings, roads, tracks and manège)

4.1.4 Descriptions of these broad habitat types are described below, followed by a UK Habitat Condition Assessment Summary of the main habitats present on site.

Improved Grassland

4.1.5 Towards the west of the site, near the Liddel Water, there were large fields of improved grassland (see Plate 1). This grassland had very little structure and abundant *Lolium perenne*. Other grasses with the sward comprised *Poa* and *Holcus lanatus*, with frequent *Bellis perennis*, *Ranunculus repens*, *Prunella vulgaris*, *Trifolium repens*, *Plantago major* and *Taraxacum officinale* agg.



Plate 1: The fields in the west of site comprised improved grassland.

Semi improved neutral grassland

- 4.1.6 Much of the site comprised neutral grassland which had been somewhat improved through traditional agricultural practises. The swards had a typical species assemblage of semi-improved grassland. Three distinct types of this habitat were present on site. These comprised, grassland indicative of MG6, MG9 and MG1 NVC types.
- 4.1.7 MG6 grasslands on site had varying degrees of structure (see Plate 2, Plate 3 and Plate 4), with *Lolium perenne* and *Cynosurus cristatus* abundant throughout the sward. The sward also comprised frequent to rare examples of the following graminoids: *Holcus lanatus*, *Anthoxanthum odoratum*, *Agrostis capillaris*, *Festuca rubra*, *Poa trivialis*, *Dactylis glomerata*, *Alopecurus pratensis*, *Phleum pratense*, *Deschampsia cespitosa* and *Juncus effusus*. Forbs were relatively limited, with each area containing a small selection of occasional to rare: *Ranunculus repens*, *Ranunculus acris*, *Cardamine pratensis*, *Cerastium fontanum*, *Cirsium vulgare*, *Cirsium palustre*, *Cirsium arvense*, *Rumex acetosa*, *Rumex obtusifolius*, *Ficaria verna*, *Rhinanthus minor*, *Prunella vulgaris*, *Trifolium repens*, *Trifolium pratense*, *Veronica chamaedrys* and *Cirsium arvense*.
- 4.1.8 MG9 grassland present on site (see Plate 5 and Plate 6) was readily distinguished through the frequent to abundant distinctive *Deschampsia cespitosa* tussocks instead of *Lolium* and *Cynosurus*, typically on damper ground and around flushed rushy channels. Forbs present exclusively here included: *Lotus pedunculatus*, *Hypochaeris radicata*, *Lathyrus pratensis* and *Conopodium majus*.
- 4.1.9 Beside Liddel Water on the west of site there was a band of grassland outside of the conventional fields of improved grassland (see Plate 7). This grassland had abundant to frequent to *Dactylis glomerata*, amongst other grassland species listed above.
- 4.1.10 It is noted that the desk study revealed a part of the site in the east to be acid grassland (see Plan 6). However, a lack of characteristic indicators species (such as: *Nardus stricta*,

Deschampsia flexuosa, *Juncus squarrosus*, *Galium saxatile* and *Potentilla erecta*), as well as the presence of neutral indicators, distinguished this area to be on neutral soils.



Plate 2: The gradually sloping fields in the north comprised regularly grazed semi-improved grassland.



Plate 3: Semi-improved grassland was present across most of the site, including the grassland near the farm.



Plate 4: There was a graduation between the drier semi-improved grasslands to the damper rushy grasslands.



Plate 5: MG9 Deschampsia cespitosa grassland was present on slightly damp ground.



Plate 6: The far south of site had slopes of abundant *Deschampsia cespitosa*.



Plate 7: MG1 grassland along the river in the west of the site.

Marshy Grassland

- 4.1.11 In the narrow drainage channels cut through site from east to west *Juncus effusus* was dominant (see Plate 8). These channels widen further to the west to become a small burn bordered by a narrow band of marshy grassland with little macrophyte vegetation present within the water (see Plate 9). Pockets of flushed grassland (see Plate 10 and Plate 11) indicative of MG10 also had frequent *Juncus effusus*, alongside frequent to rare: *Holcus lanatus*, *Deschampsia cespitosa*, *Phleum pratense*, *Urtica dioica*, *Ranunculus repens*, *Rumex obtusifolius*, *Cardamine pratensis*, *Mentha aquatica*, *Galium uliginosum* and *Cirsium palustre*.



Plate 8: Drains in the Eastern part of the site had narrow rush-dominated vegetation.



Plate 9: The drains widen to become small burns near the farm buildings.



Plate 10: Some areas of grassland were relatively damp, such as at the foot of a slope here.



Plate 11: Grassland along the farm entrance road had abundant *Juncus effusus*.

Scattered Trees

4.1.12 Within the site boundary there were relatively few trees. Very infrequent hawthorn could be seen, typically along boundary edges (see Plate 12). In addition, near to the farm there were a number of mature trees (see Plate 13 and Plate 14), including *Fagus sylvatica*, *Tilia* and *Acer pseudoplatanus*.



Plate 12: Semi-mature hawthorns located across the site.



Plate 13: Along the boundaries of the farm there were mature beeches.



Plate 14: Mature lime and sycamore were located at the boundary of the farm.

Other Habitat

- 4.1.13 A number of habitats were present on site in small amounts, with very little botanical interest other than small pocket of amenity grassland and small ornamental shrubs. This includes the farm and dwelling properties on site (see Plate 15 to Plate 17), as well as the tracks and hardstanding roads that serve them. In addition, there was a small manège south of the farm (see Plate 18).



Plate 15: The bed and breakfast located within the farmstead.



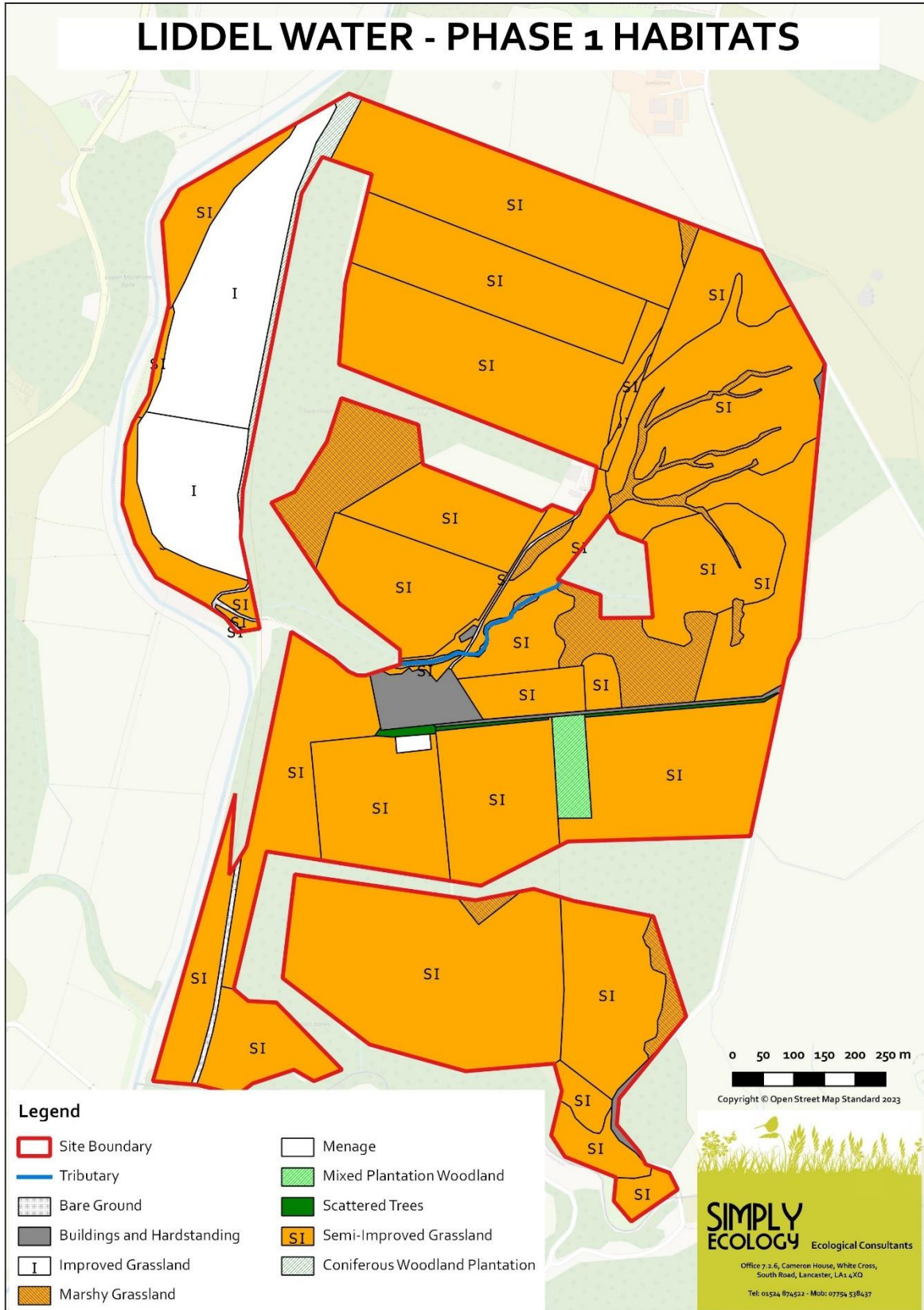
Plate 16: Agricultural buildings across the farm.



Plate 17: A large agricultural shed amongst the farm grounds.



Plate 18: A small manège was located south of the farm grounds.



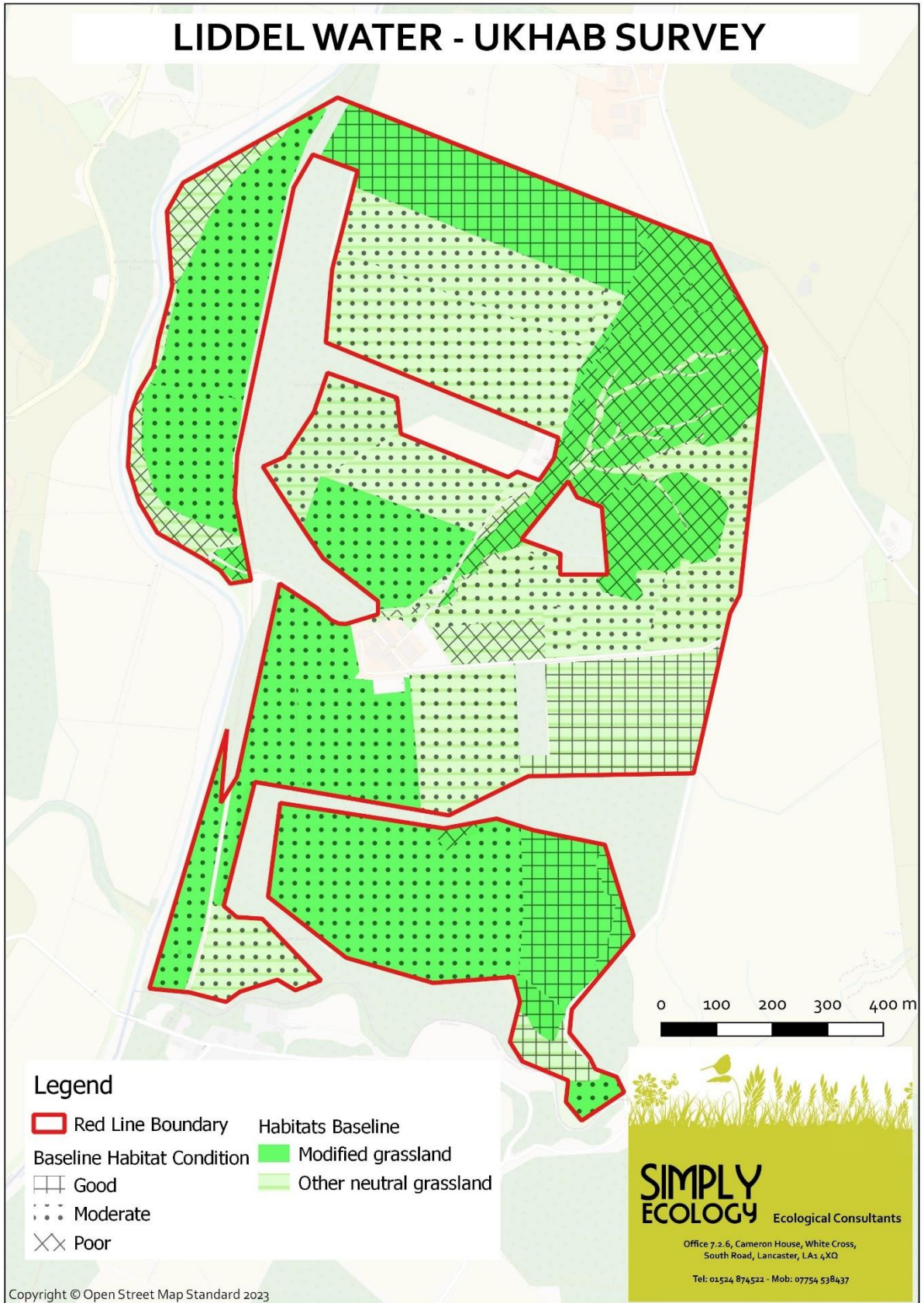
Plan 8: Phase 1 Habitat Map.

4.2 Habitat Condition Assessment Summary

4.2.1 The site was re-visited in the summer of 2023 with a view to determine the UK Habitats present on site, as well as to establish the condition of existing open habitats that may be used for new plantation woodland. The predominant UK Habitats are described below in Table 4 and Plan 9. The vast majority of the site comprised 'modified' and 'other neutral' grassland in 'moderate' condition. Smaller portions of the site were classed as 'poor' condition. These areas were typically lower than a 'good' score due to a general lack of species present, in addition to limited bare ground coverage or variation in sward height. In total there was 20.58 ha of habitat classes as 'good' condition. It is important to note that, however, that this indicates habitat of relatively low value to of good condition for that habitat type. Overall, there were no habitats on site regarded as high value habitat, although, the collection of habitats on site do offer some intrinsic value for a limited suite of fauna, described within this report.

Table 4: UK Habitats across site, with condition assessment.

UK Habitat Code	UK Habitat	Condition Assessment Score	Area
G4	Modified grassland	Moderate	40.65
G3C	Other neutral grassland	Moderate	31.68
G4	Modified grassland	Poor	15.54
G4	Modified grassland	Good	13.36
G3C	Other neutral grassland	Good	6.26
G3C8	<i>Holcus-Juncus</i> neutral grassland	Moderate	5.66
G3C	Other neutral grassland	Poor	4.44
G3C8	<i>Holcus-Juncus</i> neutral grassland	Poor	1.37
G3C7	<i>Deschampsia</i> neutral grassland	Good	0.96



Plan 9: UK Habitats present on all fields on site with their respective condition assessment results.

4.3 Badger

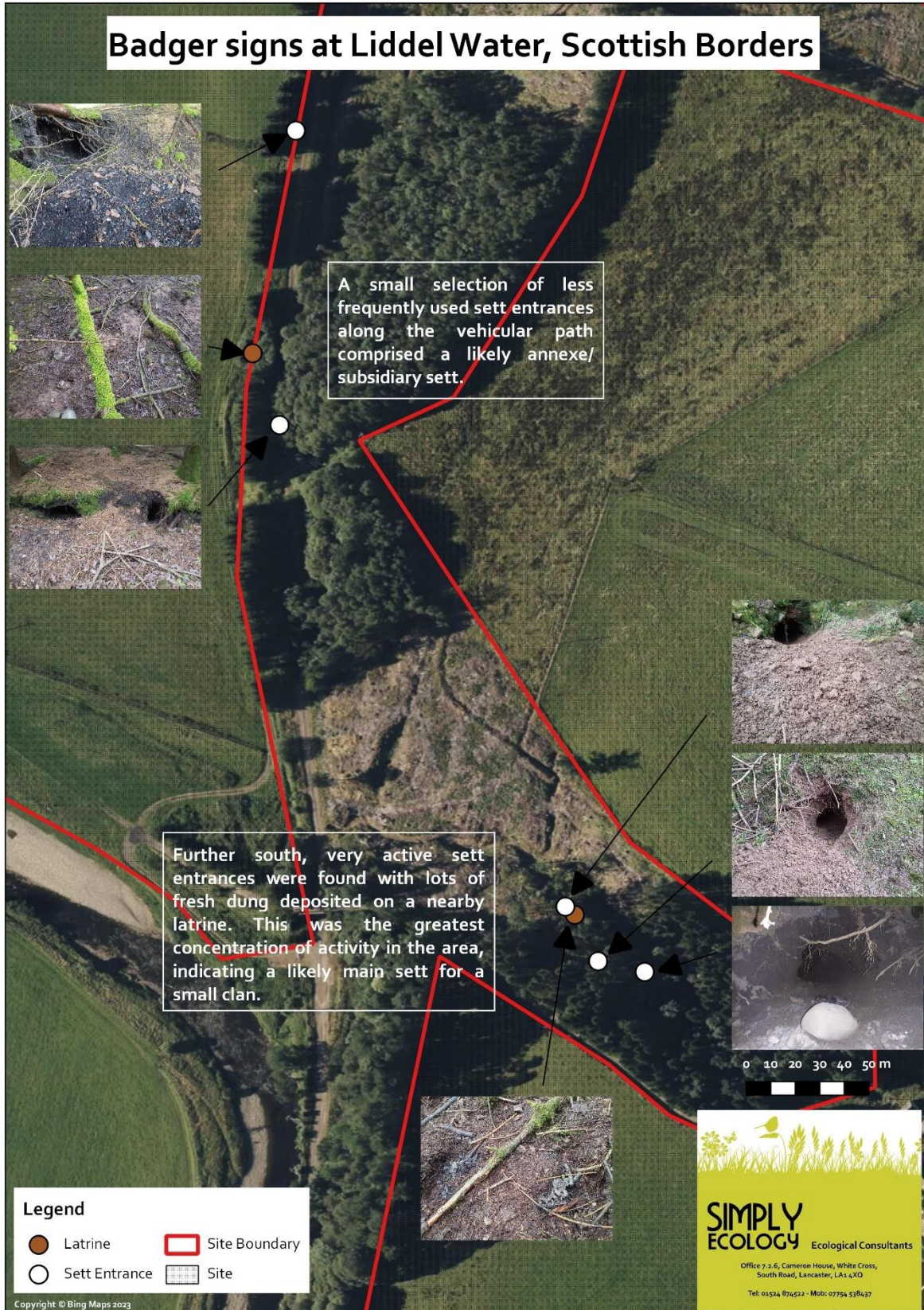
- 4.3.1 The entire site and nearby adjacent woodland was surveyed in search of signs of badger. A number of signs were encountered and evidence was gleaned from tenants inhabiting property within the site. Two key areas of activity were identified within woodland adjacent to site (see Plan 10). In total 5 badger sett entrances were identified between these areas, with 2 and 3 holes respectively. The southern area had very clear signs of fresh digging, and recent dung pits were seen at nearby latrines in both areas. Whilst the number of holes was relatively low for a main sett, this could represent a main sett for small numbers of badgers. The northern sett, less frequently used, likely represents an annex/subsidiary sett. Badgers are highly likely to be passing between the setts along the woodland corridor and connecting vehicular tracks. The nearby woodland and semi-improved fields surrounding the site offer substantial foraging grounds.
- 4.3.2 Conversations with the existing tenants on site indicated that badgers are commonly foraging on the rough semi-improved grassland in the eastern part of the site. However, no further setts were identified within the nearby woodlands in the east.

4.4 Hare

- 4.4.1 A maximum count of two hares were seen in the eastern rough grassland within the site during the site surveys. These animals are readily visible during early spring due to this timing coinciding with their breeding season. The habitat on site is not optimal across the low lying more improved grasslands. However, given that the east of site comprises rough grassland with cover from the strong *Deschampsia* and *Juncus* tussocks, clearly there is sufficient to cover amongst the grassland which offers sufficient foraging.



Plate 19: Hare were seen on site, (up to a maximum count of 2).



Plan 10: Summary of badger signs found adjacent to the site.

4.5 Birds

- 4.5.1 A total of 70 species were recorded during the four surveys which occurred in the breeding season of 2023 (see Table 5). Distributions of birds across the site was dependent on preferred habitat types. Species that are more dependent on habitats with trees or hedgerow such as blackbird, chaffinch, great tit, robin, wren, and willow warbler were concentrated around the woodland areas and field boundaries. Ground nesting species of open grasslands, such as skylark and meadow pipit, were found throughout the site. The most frequently encountered species included jackdaw, wren, carrion crow, sand martins, meadow pipit and skylark (see Table 8; ANNEX E).
- 4.5.2 In terms of nature conservation importance, the more noteworthy birds present were 14 species which appear on the RSPB BoCC 'Red List' as declining conservation status. This included 8 species that were considered either Probable or Confirmed breeders on site and/or in the site buffer. These were: curlew, house martin, house sparrow, lapwing, mistle thrush, skylark and starling (see Table 5; Plan 11 to Plan 18). All species have been subject to rapid breeding declines nationwide, hence their red-list designations. Curlew, house sparrow, lapwing, skylark, and starling are afforded additional consideration as they are listed on The Scottish Biodiversity List.
- 4.5.3 A further 23 species appear on the 'Amber list': This included the following 13 Probable/Confirmed breeders: common sandpiper, dipper, greylag goose, grey wagtail, mallard, meadow pipit, oystercatcher, rook, stock dove, song thrush, woodpigeon, wren and willow warbler. (see Table 5; Plan 11 to Plan 18). Song thrush are also afforded additional consideration as they are listed on The Scottish Biodiversity List (2006; see Plan 20 and Plan 21).
- 4.5.4 The largest proportion of birds present on site were the 30 green listed species. The 'Green list' also includes those species listed as recovering from Historical Decline in the last review that have continued to recover and do not qualify under any of the other criteria. This included 21 Probable/Confirmed breeders (see Table 5; Plan 11 to Plan 18).
- 4.5.5 When compared against The Scottish Biodiversity List of species the site had total of 6 Probable/Confirmed breeders present (see Plan 20 and Plan 21).
- 4.5.6 Surveys specifically for breeding waders were carried out on the site and the buffer during the breeding season (see Plan 22). Total numbers of breeding pairs and densities are summarised on Plan 23 and Table 6.

Table 5: Species recorded in surveys, including conservation and breeding status.

(BoCC = Birds of Conservation Concern; Sch 1 = Schedule 1 of The Wildlife and Countryside Act 1981 (as amended); SBL = Scottish Biodiversity List Species)

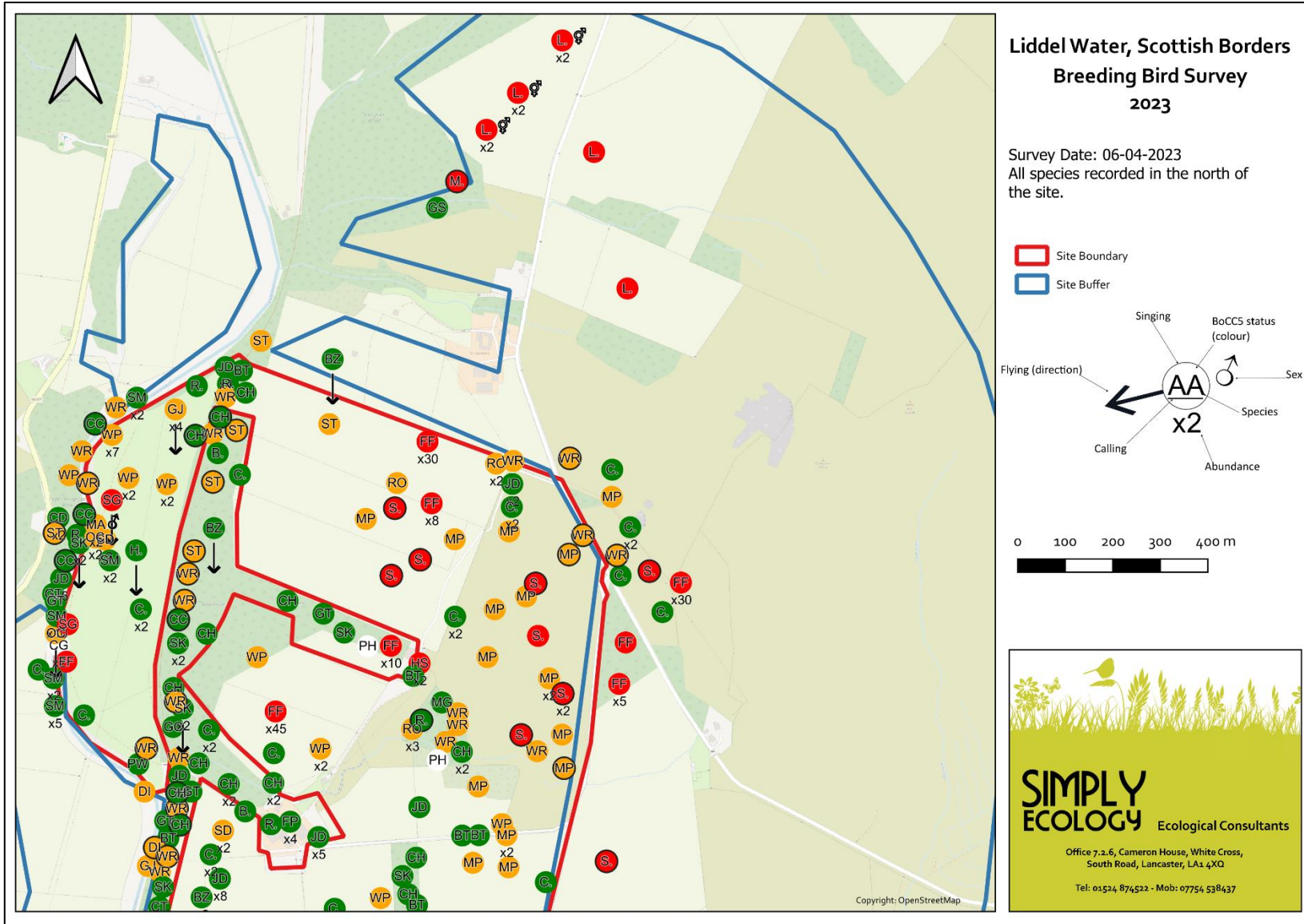
Common Names	Latin Name	BTO Species Code	BoCC Status	Sch 1	Scottish Biodiversity List	IUCN Global Red List Status ⁺	Breeding & Nesting Habitat ⁺⁺	Confirmed Breeding Status on Site ⁺⁺⁺
Cuckoo	<i>Cuculus canorus</i>	CK	Red		✓	LC	T	Possible
Curlew	<i>Numenius arquata</i>	CU	Red		✓	NT	G	Probable
Fieldfare	<i>Turdus pilaris</i>	FF	Red	✓		LC	T	Non-breeding
Greenfinch	<i>Chloris chloris</i>	GR	Red			LC	T	Possible
Herring Gull	<i>Larus argentatus</i>	HG	Red		✓	LC	G	Possible
House Martin	<i>Delichon urbicum</i>	HM	Red			LC	B	Confirmed (buffer only)
House Sparrow	<i>Passer domesticus</i>	HS	Red		✓	LC	B	Probable (buffer only)
Lapwing	<i>Vanellus vanellus</i>	L	Red		✓	NT	G	Confirmed (buffer only)
Linnet	<i>Linaria cannabina</i>	LI	Red		✓	LC	T	Possible
Mistle Thrush	<i>Turdus viscivorus</i>	M	Red			LC	T	Probable
Ringed Plover	<i>Charadrius hiaticula</i>	RP	Red			LC	G	Non-breeding
Skylark	<i>Alauda arvensis</i>	S	Red		✓	LC	G	Probable
Starling	<i>Sturnus vulgaris</i>	SG	Red		✓	LC	T	Confirmed (buffer only)

Swift	<i>Apus apus</i>	SI	Red		✓	LC	B	Non-breeding
Black-headed Gull	<i>Larus ridibundus</i>	BH	Amber		✓	LC	G	Non-breeding
Common Gull	<i>Larus canus</i>	CM	Amber			LC	G	Non-breeding
Common Sandpiper	<i>Actitis hypoleucos</i>	CS	Amber			LC	W	Confirmed
Dunnock	<i>Prunella modularis</i>	D	Amber			LC	T	Possible
Dipper	<i>Cinclus cinclus</i>	DI	Amber			LC	W	Confirmed (along river)
Greylag Goose	<i>Anser anser</i>	GJ	Amber			LC	G	Confirmed
Grey Wagtail	<i>Motacilla cinerea</i>	GL	Amber			LC	T	Confirmed (along river)
Kestrel	<i>Falco tinnunculus</i>	K	Amber		✓	LC	T	Non-breeding
Lesser Black-backed Gull	<i>Larus fuscus</i>	LB	Amber			LC	G	Non-breeding
Mallard	<i>Anas platyrhynchos</i>	MA	Amber			LC	T & W	Confirmed
Meadow Pipit	<i>Anthus pratensis</i>	MP	Amber			LC	G	Confirmed
Oystercatcher	<i>Haematopus ostralegus</i>	OC	Amber			NT	G	Confirmed
Pied Flycatcher	<i>Ficedula hypoleuca</i>	PF	Amber			LC	T	Non-breeding
Reed Bunting	<i>Emberiza schoeniclus</i>	RB	Amber		✓	LC	T	Non-breeding
Redwing	<i>Turdus iliacus</i>	RE	Amber	✓	✓	NT	T	Non-breeding
Rook	<i>Corvus frugilegus</i>	RO	Amber			LC	T	Probable

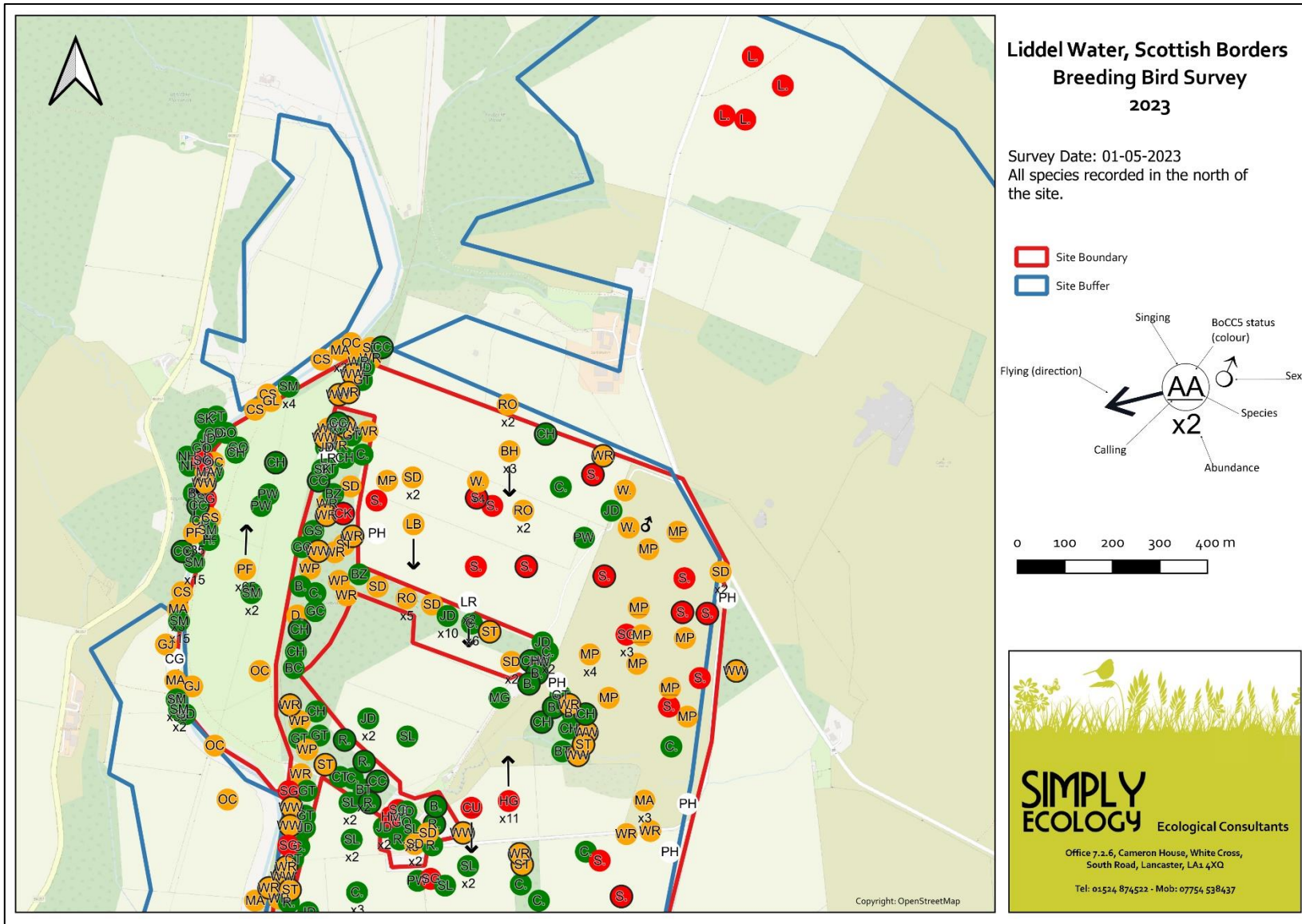
Stock Dove	<i>Columba oenas</i>	SD	Amber			LC	T	Confirmed
Song Thrush	<i>Turdus philomelos</i>	ST	Amber		✓	LC	T	Probable
Tawny Owl	<i>Strix aluco</i>	TO	Amber			LC	T	Possible
Wheatear	<i>Oenanthe oenanthe</i>	W	Amber			LC	T	Possible
Woodpigeon	<i>Columba palumbus</i>	WP	Amber			LC	T	Probable
Wren	<i>Troglodytes troglodytes</i>	WR	Amber			LC	T	Probable
Willow warbler	<i>Phylloscopus trochilus</i>	WW	Amber			LC	T	Probable
Blackbird	<i>Turdus merula</i>	B	Green			LC	T	Probable
Blackcap	<i>Sylvia atricapilla</i>	BC	Green			LC	T	Possible
Blue Tit	<i>Cyanistes caeruleus</i>	BT	Green			LC	T	Probable
Buzzard	<i>Buteo buteo</i>	BZ	Green			LC	T	Probable
Carrion Crow	<i>Corvus corone</i>	C	Green			LC	T	Probable
Chiffchaff	<i>Phylloscopus collybita</i>	CC	Green			LC	T	Probable
Collared Dove	<i>Streptopelia decaocto</i>	CD	Green			LC	T+B	Probable
Chaffinch	<i>Fringilla coelebs</i>	CH	Green			LC	T	Probable
Crossbill (common)	<i>Loxia curvirostra</i>	CR	Green	✓		LC	T	Possible
Coal Tit	<i>Periparus ater</i>	CT	Green			LC	T	Probable

Feral Pigeon	<i>Columba livia</i>	FP	Green			LC	T+B	Possible
Goldcrest	<i>Regulus regulus</i>	GC	Green			LC	T	Probable
Goosander	<i>Mergus merganser</i>	GD	Green			LC	W	Probable
Goldfinch	<i>Carduelis carduelis</i>	GO	Green			LC	T	Probable
Great Spotted Woodpecker	<i>Dendrocopos major</i>	GS	Green			LC	T	Possible
Great Tit	<i>Parus major</i>	GT	Green			LC	T	Probable
Garden Warbler	<i>Sylvia borin</i>	GW	Green			LC	T	Non-breeding
Grey Heron	<i>Ardea cinerea</i>	H	Green			LC	T	Possible
Jay	<i>Garrulus glandarius</i>	J	Green			LC	T	Probable
Jackdaw	<i>Corvus monedula</i>	JD	Green			LC	T & B	Confirmed
Kingfisher	<i>Alcedo atthis</i>	KF	Green			LC		Possible
Long-tailed Tit	<i>Aegithalos caudatus</i>	LT	Green			LC	T	Possible
Magpie	<i>Pica pica</i>	MG	Green			LC	T	Probable
Nuthatch	<i>Sitta europaea</i>	NH	Green			LC	T	Probable
Pied Wagtail	<i>Motacilla alba</i>	PW	Green			LC	T	Confirmed
Robin	<i>Erithacus rubecula</i>	R	Green			LC	T	Probable
Raven	<i>Corvus corax</i>	RN	Green			LC	T	Possible
Siskin	<i>Spinus spinus</i>	SK	Green			LC	T	Probable

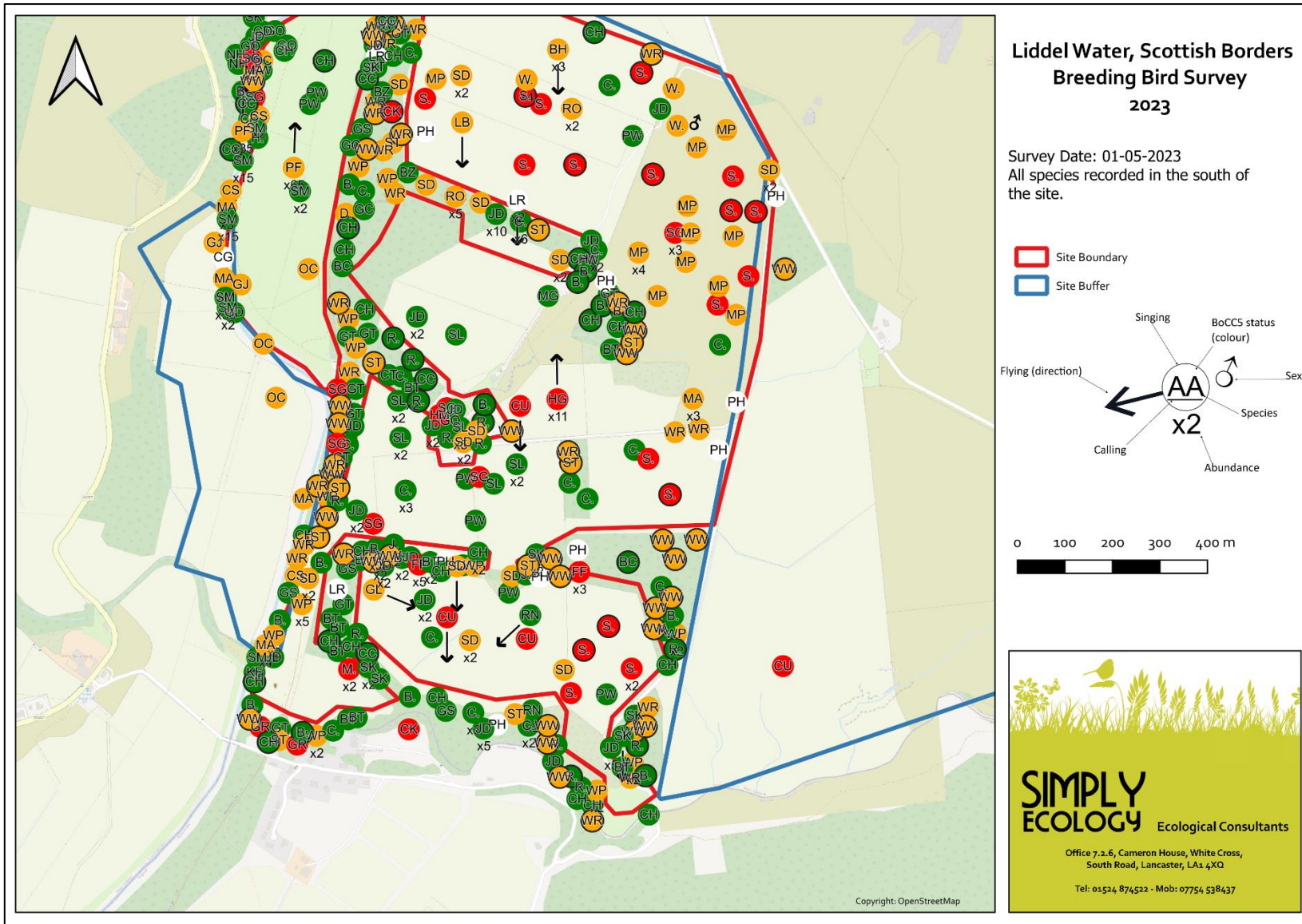
Swallow	<i>Hirundo rustica</i>	SL	Green			LC	B	Probable	
Sand Martin	<i>Riparia riparia</i>	SM	Green			LC	G	Confirmed (along river)	
Canada Goose	<i>Branta canadensis</i>	CG	N/A			LC	W	Possible	
Lesser Redpoll	<i>Acanthis Cabaret</i>	LR	N/A			-	T	Possible	
Pheasant	<i>Phasianus colchicus</i>	P	N/A			LC	G	-	
<p>+Key LC = Least Concern NT = Near Threatened NE = Not Evaluated</p>					<p>**Key G = Ground nesting T = Trees, woodland and/or hedgerow W = Water or next to water B = Buildings</p>				
<p>***Status for Possible, Probable and Confirmed Breeding relate to individuals in potentially suitable nesting habitat and observation of supplementary information e.g., Nest containing eggs found (see Table 2).</p>									



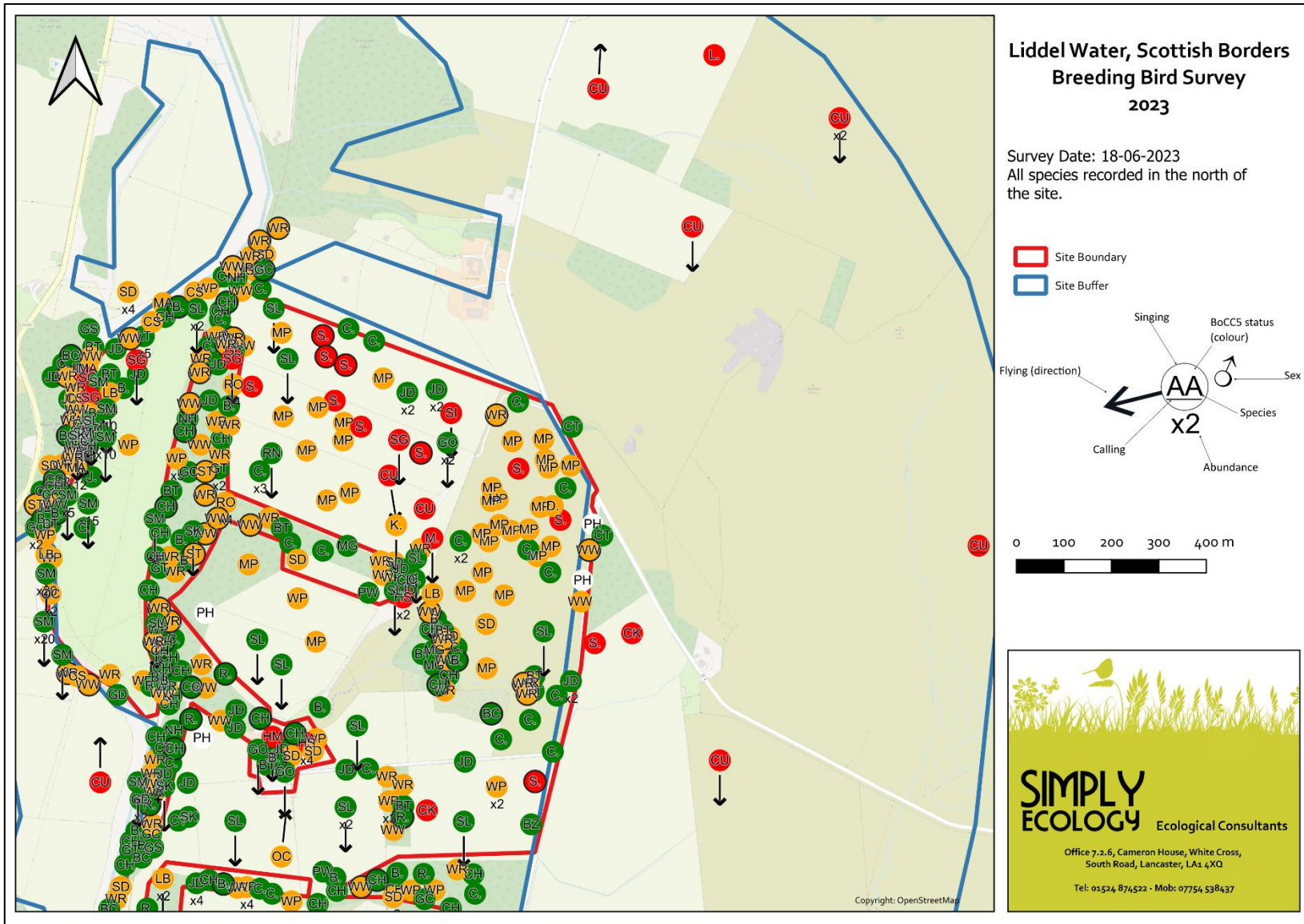
Plan 11: April Breeding Bird Surveys, (northern).



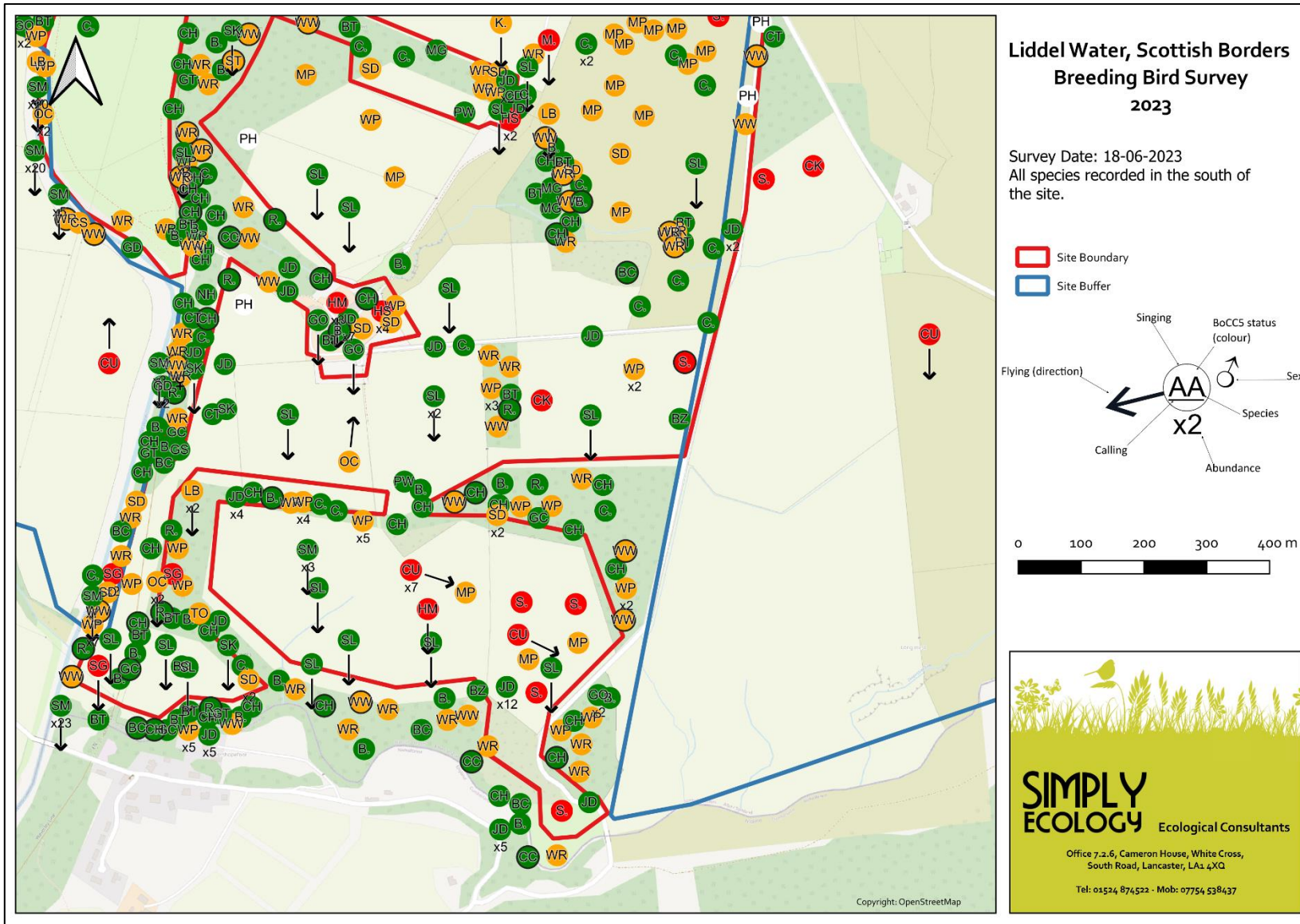
Plan 13: May Breeding Bird Surveys, (northern).



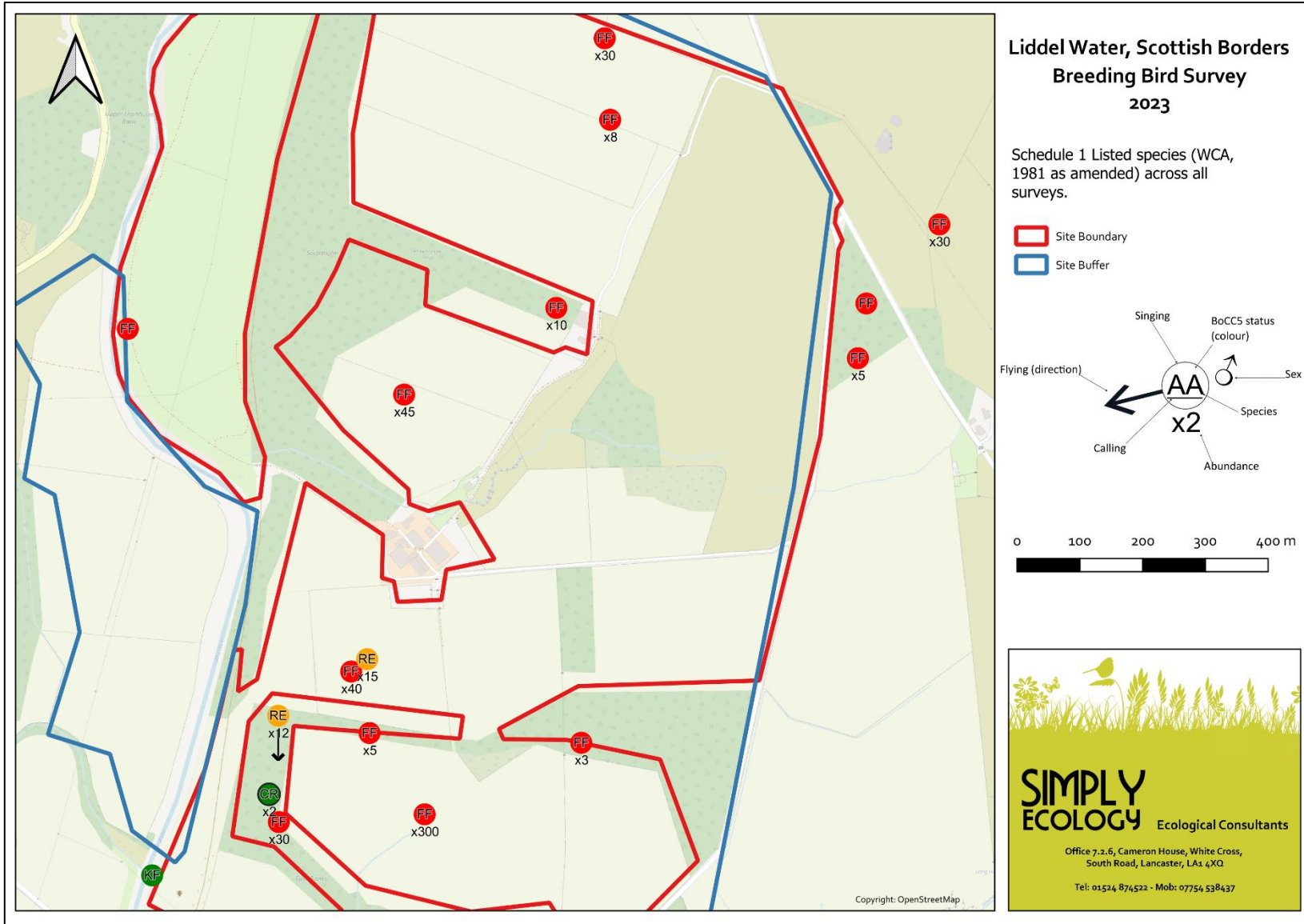
Plan 14: May Breeding Bird Surveys, (southern).



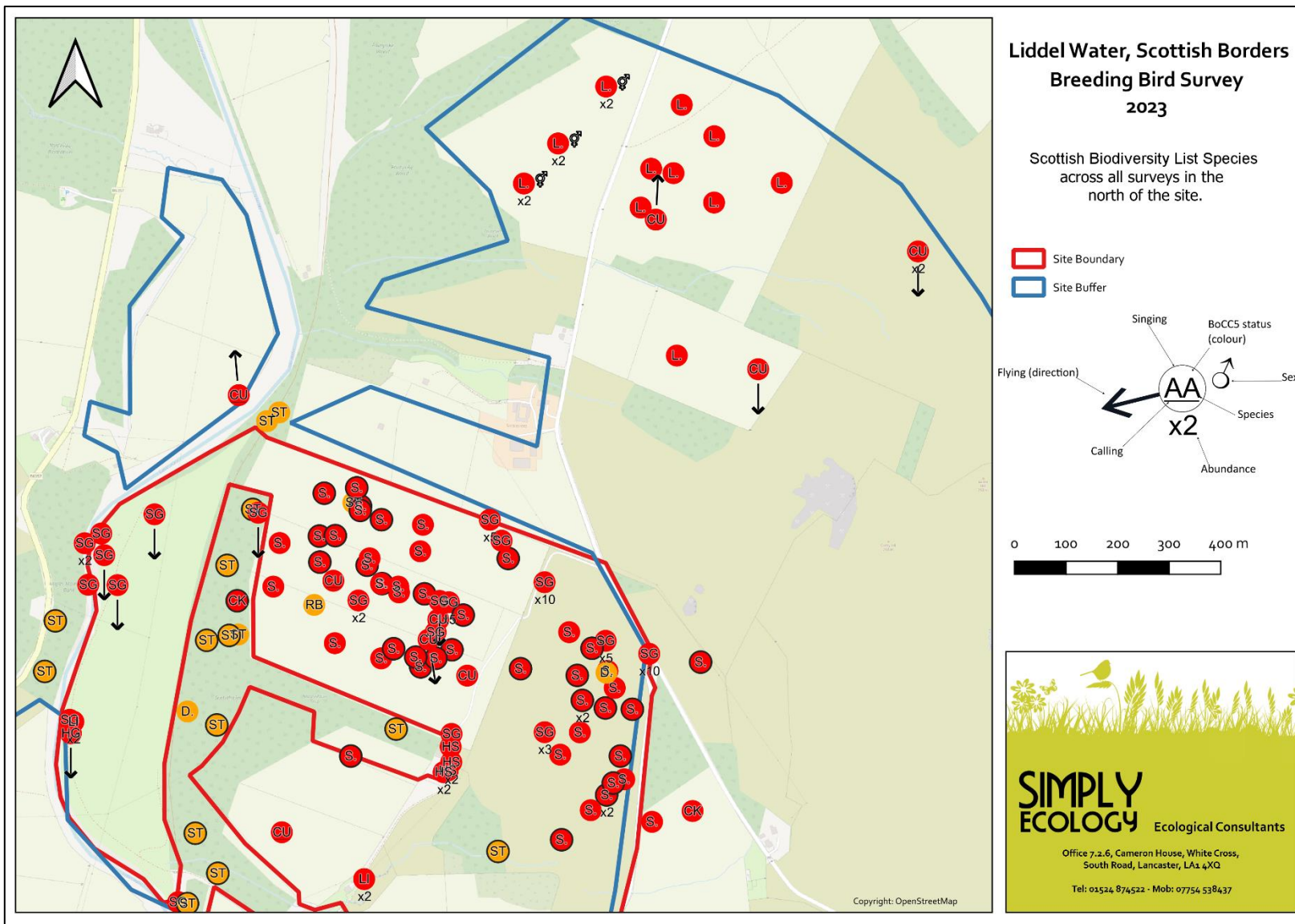
Plan 17: June Breeding Bird Surveys, (northern).



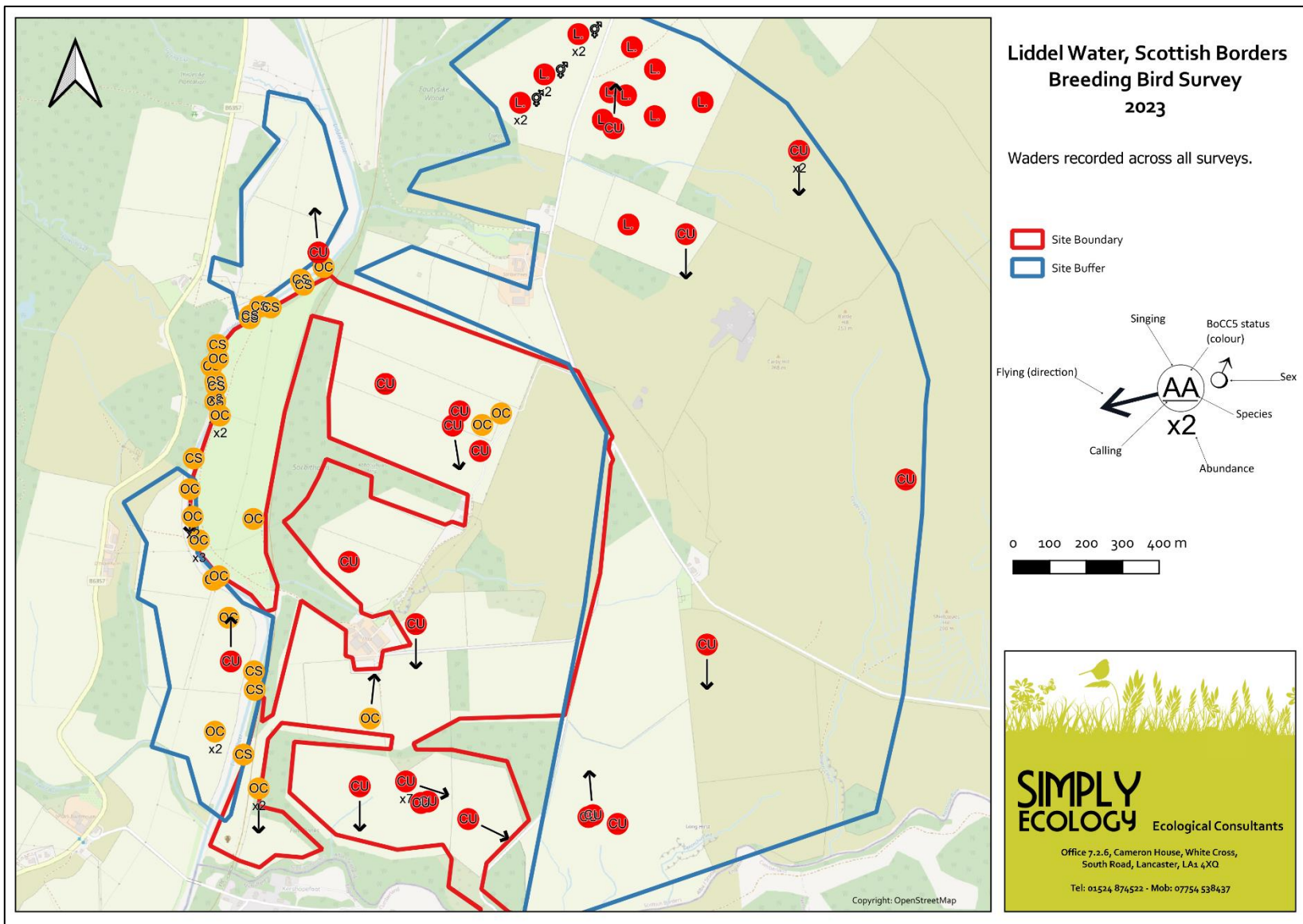
Plan 18: June Breeding Bird Surveys, (southern).



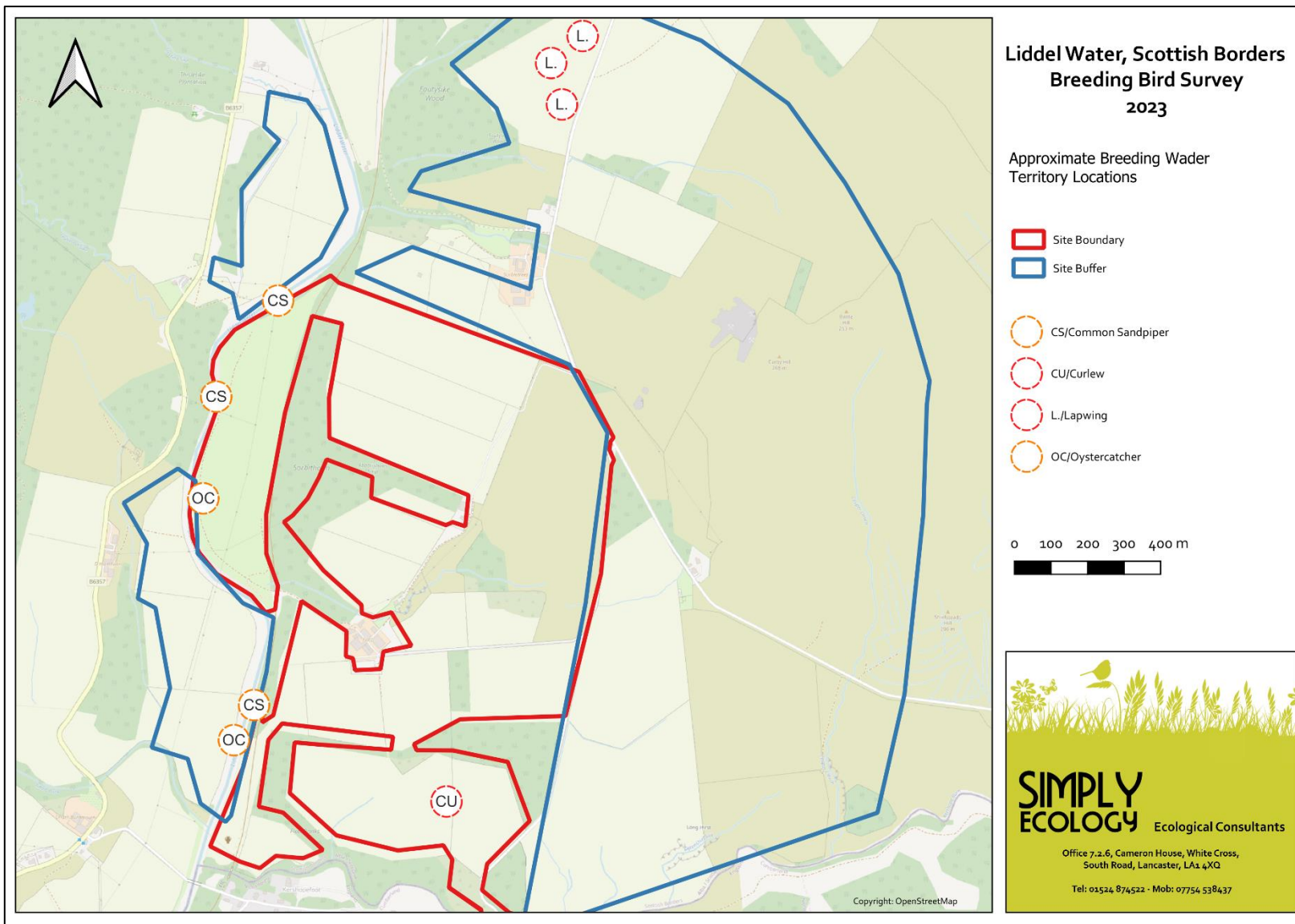
Plan 19: Schedule 1 listed species.



Plan 20: Scottish Biodiversity Listed species (northern).



Plan 22: Waders present across all surveys.



Plan 23: Approximate breeding wader territory locations.

Table 6: Summary of breeding waders during the 2022 breeding season within the site boundary (woodland creation area).

Species	Pairs in Site Boundary (density in pairs/km ²)	Pairs in Site Buffer (density in pairs/km ²)	Pairs across both areas (density in pairs/km ²)
Curlew CU	1 (0.8)	0	1 (0.3)
Lapwing L	0	3 (1.2)	3 (0.8)
Oystercatcher OC	1 (0.8)	1 (0.4)	2 (0.5)
Common Sandpiper CS	0	3 (1.2)	3 (0.8)

4.1 Breeding Waders

4.1.1 In the following assessments population trend values, where available, are from the BTO Breeding Bird Survey trends for the United Kingdom and Scotland (Heywood *et al*, 2023).

Curlew

4.1.2 Observations were recorded of curlew within the site and site boundary. The April survey revealed two birds present near the south of site indicating that one pair was likely breeding. The rest of the findings were scattered through other months, typically comprising birds flying over or foraging on site. Maximum count of 10 birds were present on a given month within the site boundary, with a maximum count of 6 birds within the buffer (June, see Plan 17 and Plan 18). The conclusions of the bird surveyor indicated that one pair were likely present on site, with none in the surrounding buffer. In all this amounted to a density of 0.8 pairs/km² within the site boundary. It was considered that the majority of the birds foraging in the grasslands on site were likely breeding on land east of the site buffer.

4.1.3 Based on national density mapping research on a range of birds (BTO, 2019), curlew have been recorded at an approximate density up to 5 pairs/km² in some parts nearby, although, in other nearby areas densities are well below 1 pair/km². In the UK, the greatest densities predicted are upwards of 20 pairs/km² (BTO, 2019). Therefore, based on these densities the densities of curlews on site does not represent a significant curlew site in a national or within the local landscape context.

4.1.4 However, this Scottish Biodiversity List and BoCC Red Listed species has seen a -48% decline throughout the UK and -60% decline in Scotland over the last 25 years (Heywood *et al*, 2023).

4.1.5 As a result of such declines in population in the UK, guidance has been published to determine the location of High-Risk areas. Using BTO's Wader Zonal map, the site sits within a medium-risk zone (Strata 3) for curlew, with subsequent guidance stating that opportunities for woodland creation needs to balance overall impacts versus the benefits arising from new woodland creation (Scottish Forestry, 2021).

4.1.6 Curlew population declines have been shown to be inversely related to the area of woodland surrounding sites. This is mainly because of decreased nesting success from increased predator pressure (especially carrion crow), which can have effects up to 1km from the

woodland boundaries (Douglas *et al* 2014; Tamis & Heemskerk, 2020). The guidance favours avoidance of planting in areas without existing woodland due to the possibility of creating predation shadow effects being introduced into the landscape.

- 4.1.7 The desk study identified the site to be a medium-risk zone for curlew, and the field surveys found curlew at 1 pair within the site boundary (0.8 pairs/km²) and 0 breeding pairs within the buffer.
- 4.1.8 Overall, the afforestation will result in permanent loss of breeding habitat for 1 pair of curlew, a Red listed species. Furthermore, without increases in predator control this will result in permanent long-term increases in predation, causing an indirect loss of viable foraging habitat for up to 6 curlews within the site buffer.
- 4.1.9 In summary, ground-nesting birds were distributed at a low breeding density across this predominantly grassland habitat. At 0.8 pairs/km², afforestation at the site would result in loss of breeding habitat at a low population density. The site is situated relatively close to large areas of plantation woodland, particularly to the east. Predator shadow therefore already exists, and makes this a more suitable site for new woodland creation than areas without existing tree cover. For example, suitable large areas of open moorland are present north-west around Cooms Fell and Roan Fell and beyond and tree planting here would be better avoided. Given the relatively low numbers of breeding birds, in the context of the surrounding plantation woodland, it is considered that afforestation would impact a single breeding pair, which is categorised a major adverse effect on a single pair, valued at the 'Site level'.

Lapwing

- 4.1.10 Lapwing were seen in the northern part of the site buffer only. A peak count of 8 birds were seen in April, although this dwindled over the course of the survey season. The bird surveyor determined that 3 pairs were breeding within the buffer, which comprises a density of 1.2 pairs/km² (see Plan 23). No breeding lapwing were seen within the site at all.
- 4.1.11 This Scottish biodiversity List and BoCC Red Listed species has seen a -48% decline throughout the UK and -60% decline in Scotland over the last 25 years (Heywood *et al*, 2023).
- 4.1.12 As a result of the decline in populations across the UK, using BTO's Wader Zonal map, the site encompasses Low, Medium and High risk zones (Stratas 2, 3 and 4) for lapwing.
- 4.1.13 Based on national density mapping research on a range of birds, lapwing have been recorded at an approximate density upwards of 5 pairs/km² in the surrounding area (BTO, 2019). In the UK the greatest densities predicted are upwards of 40 pairs/km² (BTO, 2019). Based on these densities the density of 0.8 pairs/km² within the buffer does present an issue for new woodland creation at this site.
- 4.1.14 It is known that wader population decline is related to the area of woodland near to breeding sites; this is in part due to an increase in predator numbers (especially carrion crow) that can have effects up to 1km from the woodland boundaries (Douglas *et al* 2014; Tamis & Heemskerk, 2020).

In summary, there were no recordings of lapwing within the site boundary at all. In addition, 3 pairs of lapwings (0.8 pairs/km²) were confirmed to be breeding within the site buffer. As

with curlew, the desk study identified the site as a high-risk zone for lapwing, although in this case the survey data did not support this. As such it is anticipated that there will be a 'major' impact on a small number of birds in the site buffer through increased predation risk at the site level.

Oystercatcher

- 4.1.15 Oystercatcher were recorded within the site and the buffer, predominantly on the west of the site on/near to the river (see Plan 23). The surveyor confirmed 1 breeding pair to be present within the site (0.8 pairs/km²) and 1 breeding pair within the buffer (0.4 pairs/km²).
- 4.1.16 Based on these densities, the site does not represent an important site for oystercatcher. This BoCC Amber Listed species has had a mixed change in populations over the last 25 years with a -22% decline throughout the UK and -36% decline in Scotland (Harris *et al*, 2022). In the North-West region there has been a 4% increase in 25 years (Harris *et al*, 2022; BTO, 2022A).
- 4.1.17 As a result of declining populations across the UK, using BTO's Wader Zonal map, the site encompasses medium and high risk zones (Strata 3 and Strata 4) for oystercatcher.
- 4.1.18 In summary, oystercatcher were distributed at a very low density within the site (0.8 pairs/km²) and buffer (0.4 pairs/km²), and individuals showed preference for riparian habitat west of the site. As such, the site offers relatively limited suitable habitat for this species and afforestation within the site boundary will mainly result in the loss of sub-optimal habitat for this species.
- 4.1.19 Given the relative scarcity of oystercatcher on site it is considered that there is a foreseeable likelihood of a slight adverse impact on this species, and only at the 'site level'.

Common Sandpiper

- 4.1.20 This Amber listed species was recorded exclusively along the river adjacent/outside the site, with an estimated 3 pairs along the site boundary (1.2 pairs/km² in the buffer) and no breeding pairs within the site.
- 4.1.21 Based on these densities, the site itself does not represent an important site for common sandpiper. This species has seen a -28% decrease throughout the UK and Scotland over the last 25 years (Heywood *et al*, 2023).
- 4.1.22 Using BTO's Wader Zonal map, the site encompasses the medium to high-risk zone (Strata 3, 4 and 5) for common sandpiper.
- 4.1.23 Planting of broad-leaved species or allowing riparian vegetation to develop along an appropriate riverside buffer would likely result in positive impacts for this species. This would reduce contaminants entering and polluting the water, limit acidification and siltation, and increase organic matter entering the river, improving prey availability within the river (Forestry Commission, 2011).
- 4.1.24 Appropriate use and implementation of buffers along the river edge could result in overall slight positive impacts for this species at the site level.

4.2 Other Red and Amber listed Confirmed and Probable Breeding Birds

Dipper

- 4.2.1 This species was present along the river adjacent to site. One pair was seen on two occasions indicating a possible breeding pair (see Plan 11, Plan 12, Plan 15 and Plan 16).
- 4.2.2 This species has seen a -39% decrease throughout the UK over the last 25 years (Heywood *et al*, 2023). It is considered that the introduction of the woodland on the site will not result in direct loss of habitat for this species. However, increased acidification of the river could result in loss of habitat suitability for this species (Ormerod, *et al*. 1989; Vickery, 1991). Planting of broad-leaved species or allowing riparian vegetation to develop along an appropriate riverside buffer would likely result in positive impacts for this species. This would reduce contaminants entering and polluting the water, limit acidification and siltation, and increase organic matter entering the river, improving prey availability within the river (Forestry Commission, 2011).
- 4.2.3 Appropriate use and implementation of buffers along the river edge could result in overall slight positive impacts for this species at the site level.

Greylag Goose

- 4.2.4 This species was present in small numbers mainly along the river. Fledgelings were seen indicating confirmed breeding within the buffer just west of the site (see Plan 11 to Plan 16).
- 4.2.5 This species has seen a 180% rise throughout the UK and 92% rise in Scotland over the last 25 years (Heywood *et al*, 2023). It is considered that the introduction of the woodland on this site will not result in adverse effects on the Greylag population, particularly as this species does not suffer from the same increases of predation effects as waders (Tamis & Heemskerk, 2020).
- 4.2.6 The habitat in which this species was recorded was semi-improved/improved grassland near to the river west of site in the buffer. Overall, therefore, the effect on this species is predicted to be negligible at the 'Local level'.

Grey Wagtail

- 4.2.7 This species was present along the river adjacent to site. Two pairs were confirmed to be breeding by the bird surveyor, indicated by the presence of (see Plan 13 to Plan 16).
- 4.2.8 This species has seen a -7% decrease throughout the UK and -17% decrease in Scotland over the last 25 years (Harris *et al*, 2022). It is considered that the introduction of the woodland on the site will not result in direct loss of habitat for this species. Planting of broad-leaved species or allowing riparian vegetation to develop along an appropriate riverside buffer would likely result in positive impacts for this species. This would reduce contaminants entering and polluting the water, limit acidification and siltation, and increase organic matter entering the river, improving prey availability within the river (Forestry Commission, 2011).
- 4.2.9 Appropriate use and implementation of buffers along the river edge could result in overall slight positive impacts for this species at the site level.

House Martin

- 4.2.10 Up to 4 house martins were seen on site with one bird confirmed sitting on nest in early May (see Plan 13 to Plan 18). These birds were seen around the main farm buildings at the heart of the survey area, nesting in the eaves of the main house. This corresponds with this bird

species' preferred breeding place. These birds were likely foraging on invertebrates over the surrounding fields.

- 4.2.11 This Scottish Biodiversity List and BoCC Red Listed species has seen decline of -37% and in the UK and 70% decline in Scotland over the last 25 years (Heywood *et al*, 2023).

In summary, at least one breeding pair of house martins were found nesting within the eaves of the building. Plantation woodland being created in the surrounding area will not result in the loss of breeding habitat, however, immediate foraging habitat in the surrounding area will be lost for this pair. As such, there will be a slight impact on this species at the site level.

House Sparrow

- 4.2.12 Small flocks of house sparrow of up to 6 birds were identified in April to June (see Plan 11 and Plan 12, Plan 15 to Plan 18). House sparrow were present in and around the properties amongst the centre of the survey area, potentially nesting in the buildings. This corresponds with this bird species' preferred breeding place. These birds were likely feeding on vegetative material such as seeds, cereals, and herbs in the surrounding area.

- 4.2.13 This Scottish Biodiversity List and BoCC Red Listed species has neither declined nor increased across the UK over the last 25 years, and in Scotland numbers have increased by 56% over the same period (Heywood *et al*, 2023).

- 4.2.14 In summary, a small population of house sparrows was present probably nesting within the existing farm/dwelling buildings near to the centre of the survey areas and overall, there would be a neutral effect from afforestation.

Mallard

- 4.2.15 Up to 18 birds seen in late May, one confirmed pair was identified. This species were seen almost exclusively on the river just west of site (see Plan 11 to Plan 18). The site itself had relatively limited suitable habitat for this species.

- 4.2.16 This BoCC Amber Listed species has seen a 12% increase throughout the UK and -10% decline in Scotland over the last 25 years (Heywood *et al*, 2023). The introduction of woodland will not reduce any realistically suitable breeding habitat for this species.

- 4.2.17 Overall, afforestation in the site boundary is predicted to have a slight positive effect upon this species at the site level due to the introduction of a buffer zone along the adjacent river.

Meadow Pipit

- 4.2.18 One of the most recorded species, meadow pipits were present across the eastern parts of the site amongst rush influenced and tussocky grassland was present (see Plan 11 to Plan 18). This was in line with expectation given the known preference for this bird to breed within rougher open habitats that are not intensively grazed. Many recordings of bird families were recorded, all of which were within the site boundary.

- 4.2.19 This BoCC Amber listed species has seen a -14% decline throughout the UK and -13% decline in Scotland over the last 25 years (Heywood *et al*, 2022).

- 4.2.20 Given the fact that meadow pipits prefer open mosaics of rough habitats, the afforestation will result in a long-term adverse loss of breeding habitat for this species.

- 4.2.21 In summary, meadow pipit were breeding throughout the eastern parts of the site and were also present across the buffer. Good numbers of these birds were present, and therefore afforestation will result in an major adverse effect at the 'Site level'.

Mistle Thrush

- 4.2.22 A pair of this BoCC Red Listed species were recorded in April and May near to the site boundary in the south, and a singing male was recorded in the buffer north of the site (see Plan 11 to Plan 14). These birds were recorded within the pockets of coniferous plantation near to site. Mistle thrush inhabit areas of woody vegetation set amongst open ground and the transitions between.
- 4.2.23 This BoCC Amber Listed species has seen a -30% decrease throughout the UK and 26% increase in Scotland over the last 25 years (Heywood *et al*, 2023).
- 4.2.24 Overall afforestation within the site will result in an increase of suitable habitat for this species, constituting a moderate positive effect at the 'Local level'.

Rook

- 4.2.25 A maximum count of 18 individuals was recorded in May 2023 within the site boundary, considered as probable breeders due to being present in potentially suitable breeding habitat during the breeding season. These birds are typically found in pasture, farmland and open woodland and they were present in these habitats within the site boundary and buffer (see Plan 11 to Plan 18) and the site clearly offers sufficiently good quality habitat for this species.
- 4.2.26 This BoCC Amber Listed species has seen a -20% decrease throughout the UK and -34% decrease in Scotland over the last 25 years (Heywood *et al*, 2023).
- 4.2.27 Overall commercial forestry in the site boundary, incorporating broad-leaved woodland, will increase available habitat for this species in the long term which is a slight positive effect at the 'Site level'.

Skylark

- 4.2.28 A maximum count on any one visit of 20 skylark was recorded within the site boundary in late May 2022. Skylarks can be found in a variety of habitats including farmland, grasslands, and moorland and were found within the site boundary amongst the rough grassland in the east, similar to meadow pipits (see Plan 11 to Plan 18). Skylark were considered probable breeders on site.
- 4.2.29 This Scottish Biodiversity List and BoCC Red listed species has seen a -15% decrease throughout the UK and -3% decrease in Scotland over the last 25 years (Heywood *et al*, 2023).
- 4.2.30 Skylark prefer open habitat, as such the new woodland creation will result in long term loss of suitable breeding habitat for this species. Furthermore, plantations nearby could result in greater predation on skylarks from known predators such as corvids.
- 4.2.31 Given the skylark density in the site boundary of 8.3 pairs/km², it is clear that the site offered intermediate quality habitat for this species. This is a moderate density for this species. As skylark requires open habitats, afforestation will result in the long-term loss of habitat for his species.

- 4.2.32 In summary, afforestation will result in the long-term loss of suitable habitat for moderate numbers of this species and therefore it is considered that there would be a major adverse effect on this species, at the 'Site level'.

Song Thrush

- 4.2.33 These birds were recorded within the pockets of coniferous plantation near to site. Song thrush inhabit areas of woody vegetation set amongst open ground and the transitions between.
- 4.2.34 Song thrush is a BoCC Amber listed species which was considered a probable breeding species on site. A maximum count on any one visit of 11 song thrush was recorded within the site boundary in April and early May 2023, and up to 8 birds were recorded singing (see Plan 11 to Plan 18). These birds were typically recorded either within woodland and treelines, or in the near vicinity. Song thrush require patches of woody vegetation with damp open ground nearby to feed within.
- 4.2.35 This Scottish Biodiversity List and BoCC Amber listed species has seen a 27% increase throughout the UK and 37% increase in Scotland over the last 25 years (Heywood *et al*, 2023).
- 4.2.36 Overall afforestation in the site boundary could result in an increase of viable habitat for this species, constituting a major positive long-term effect at the 'Site level'.

Starling

- 4.2.37 A peak count of 50+ starlings was recorded within the site boundary in late May, although this species was represented across the entire survey season (see Plan 11 to Plan 18). No conclusive evidence was recorded but they were probable breeders possibly nesting within nearby farm buildings just outside the site. Starlings are omnivorous but in the breeding season they are typically feeding young protein. These birds were likely relying on the surrounding farmland to feed their offspring.
- 4.2.38 This Scottish Biodiversity List and BoCC Red Listed species has seen -53% decline throughout the UK and -31% decline in Scotland over the last 25 years (Heywood *et al*, 2023).
- 4.2.39 In summary, a small population of starlings was present on site. Woodland creation will result in a reduction of foraging suitability. In the short to medium term, this species will benefit from foraging and nesting opportunities as the trees become established, but overall it is considered that there will be a moderate adverse effect at the 'Site level'.

Stock Dove

- 4.2.40 Although not confirmed as breeding on the site, a maximum count of 19 birds were recorded in June 2023. These birds were recorded on semi-improved grassland and rough grassland near to woodland blocks, both typical habitats for this species (see Plan 11 to Plan 18).
- 4.2.41 This BoCC Amber Listed species has seen 38% increase throughout the UK (Heywood *et al*, 2023).
- 4.2.42 Overall, woodland creation in the site boundary with increase in broad-leaved woodland will enhance available habitat and produce a moderate positive effect at the 'Site level'.

Woodpigeon

- 4.2.43 A maximum count of 54 wood pigeons were encountered in June, although this species were present on and around the site across the survey season (see Plan 11 to Plan 18). These birds were typically recorded on or near to the pockets of plantation woodland around site boundary. This species is like song thrush in that it occupies the ecotone between woodland and open ground.
- 4.2.44 This BoCC Amber listed species has seen a 33% increase throughout the UK and a 5% increase in Scotland over the last 25 years although the rate of change has slowed (Heywood *et al*, 2023).
- 4.2.45 Overall, afforestation will result in an increase of viable habitat for this species, constituting a positive long-term effect at the 'Site level'.

Wren

- 4.2.46 One of the most frequently recorded birds across the surveys, a max count of 52 wrens were recorded across the surveys (see Plan 11 to Plan 18). Although, breeding was not confirmed, behaviour of this BoCC Amber listed species was indicative of a probable breeding species. These birds showed a clear preference for the woodland pockets and broad-leaved treelines. This bird will use a variety of habitats, particularly mixed woodland. Similar to song thrush and woodpigeon, wren occupy the transition areas between woodland and open ground.
- 4.2.47 This BoCC Amber listed species has seen a 22% increase throughout the UK and 33% increase in Scotland over the last 25 years (Heywood *et al*, 2023).
- 4.2.48 Overall, afforestation will result in an increase of viable habitat for this species, constituting a positive long-term effect at the 'Site level'.

Willow Warbler

- 4.2.49 A maximum count of 30 singing willow warblers (probable breeders) were recorded in April, although this species was well represented across the entire survey season (see Plan 11 to Plan 18). Almost all recordings were within or near the site boundary in the woodland and broad-leaved treelines. This bird will use a variety of habitats, particularly deciduous and mixed woodland.
- 4.2.50 This BoCC Amber listed species has seen a -10% increase throughout the UK and 35% increase in Scotland over the last 25 years (Heywood *et al*, 2023).
- 4.2.51 Overall, woodland creation in the site boundary, particularly of broad-leaved woodland, could result in an increase in suitable habitat for this species, constituting a positive long-term effect at the 'Site level'.

4.3 Other Species

- 4.3.1 During the site survey, evidence and/or direct sightings of a range of mammals were observed. Across the open grasslands there were clear signs of moles, and within the most tussocky grasslands to the east, field vole runs were present with accumulated droppings (see Plate 20 and Plate 21). Signs of rabbit were also seen, and fox scat was observed along a field boundary in the northern part of the site (see Plate 22). The field margins on the far west of site were walked in search of any possible otters signs, however no clear wildlife tracking could be seen. Pockets of deposited silt and mud on the inside bends of the river were checked, in search of possible tracks but no such signs were seen (see Plate 23). Whilst it is conceivable that otters could be utilising the Liddel Water, it was considered unlikely that otters are tracking across ground within the site.
- 4.3.2 Roe deer were observed sheltering in the small coupes around the site boundaries, with up to 3 individuals observed, including a mature buck (see Plate 24). Within the mature coniferous woodland in the west of site some scattered stripped cones were deposited below spruce (see Plate 25). Given the general scattered nature of these cones, and the maturity of the trees here, it is conceivable that this could represent signs of red squirrels. However, further north along the nearby track there were stripped cones leading into a small hole on the ground indicative of feeding wood mice (see Plate 26). Therefore, whilst red squirrels could be present on or near to site, this was not confirmed.
- 4.3.3 No signs of pine marten (such as scat or tracks) were seen during the walkover survey throughout the adjoining woodland. However, signs of this species are notoriously difficult to identify, and this does not discount the possibility of their presence.
- 4.3.4 All scattered trees on site were checked for bat Potential Roost Features, though none were found. It is conceivable that bat roosts could well be present within the adjacent woodland coupes outside of site, however, this was not assessed on the survey.
- 4.3.5 In addition to the mammals listed above, a range of birds were recorded on and adjacent to site within the nearby woodland and on the river. These included: buzzard, skylark, jackdaw, starlings, siskin, blackbird, treecreeper, great tit, mallard, dipper, heron, kestrel, song thrush, wood pigeon, coal tit, carrion crow, chaffinch, blue tit and goldcrest.



Plate 20: Moles hills were seen across the site.



Plate 21: The tussocky grasslands on site had mole runs throughout.



Plate 22: Fox scat were seen on site.



Plate 23: No obvious signs of otter were observed at the field boundaries.



Plate 24: Roe deer were seen sheltering in the adjacent woodland copses.



Plate 25: Stripped spruce cones were recorded under mature trees.



Plate 26: Evidence of mouse was apparent set below mature spruce elsewhere on site.

5.0 IMPACTS AND CONCLUSIONS

5.1 Designated Sites

5.1.1 Kershope Bridge SSSI was located ~1km east of site, (see Plan 5). This site is designated for its geological features. Given the intended land use and the distance between the site and the designated sites it is anticipated that there will be no direct impact upon any statutory protected sites.

- The new woodland creation will result in no likely impacts upon nearby designated sites.

5.2 Habitats

5.2.1 The vast majority of the site comprises variants of neutral semi-improved, improved grassland and marshy grassland. These equates to a combination of Modified and Other Neutral grassland under UK Habitat classification. Such sheep-grazed agricultural habitats are common and widespread in the area and have relatively limited intrinsic habitat value. Their ecological value is therefore relatively low. The overall condition of these habitats varied from 'Poor' to 'Good' when assessed using the Biodiversity Metric 4.0. The majority of grasslands were considered to be in 'Moderate' condition. The site vegetation in the eastern part of the site was rougher grazing and on wetter ground with greater prevalence of rushes and rough grasses providing some heterogeneity. This was the slightly better area of wildlife habitat within the site. In broad terms, the habitat transitions into the western part of the site into more intensive and agriculturally improved habitat, which has lower value for wildlife.

- Woodland creation (as per Plan 3) will result in loss of almost all semi-improved and improved neutral grassland, as well as pockets of marshy grassland at the site. New woodland creation on site would therefore likely result in a *major* impact upon common and widespread neutral grassland habitats. This is significant only at the *site* level.
- Overall, this will for the most part see the loss of low value grassland in mostly moderate/poor condition. There were no areas of habitat identified to be of high quality habitat, and no Priority Habitats were present within any of the fields surveyed.

5.3 Badger

5.3.1 A small main sett and an annexe/subsidiary sett were located in woodland adjacent to site. These badgers will be foraging on the fields within the main site boundary.

- Woodland creation on the site will result in a long term decrease in available foraging habitat for this protected mammal species. However, some of the new woodland creation will comprise deciduous tree planting, which is ideal foraging habitat for badgers. In addition, new woodland creation will provide new shelter and opportunities for sett creation. Overall, it is anticipated that the new woodland creation scheme would likely result in a long term *slight* to *moderate* impact on small numbers of this species, which are valued at the *site* level.

5.4 Hare

5.4.1 Small numbers of hares are present on site, with two spotted during the site surveys during the active breeding season when this species is readily visible. This is a listed priority species, and during the closed season this species is strictly protected in Scotland under the Wildlife and Countryside Act 1981.

- Woodland creation on the site will result in a long term decrease in available habitat for this priority listed mammal species. This represents a long term *major* impact on small numbers of this species, which are valued at the *site* level.

5.5 Other Mammals

5.5.1 Evidence of a range of additional small mammals were encountered on and surrounding the site, typical of lowland open grassland habitats and plantation woodlands. Mole, field vole and rabbit are all present within the site, which offer a food resource for predators such as fox and birds of prey. No signs of otter tracking long the field edges could be seen. A full in river assessment would be required to increase certainty on this, however, woodland creation along the river edge would provide cover for these animals, increasing suitability for them to use the site. No further detailed surveys for otter or water vole are required.

5.5.2 Within the adjoining woodlands outside of the site boundary, there were signs of wood mice, and amongst the more mature trees, red squirrel, bats and pine marten could be present. However, new woodland creation within the site will not likely have any detrimental impact on these species.

- Woodland creation on the site will result in a long term decrease in available habitat for common mammal species that inhabit open semi-improved and/or marshy grassland. Rabbit, mole and field vole are common in the surrounding landscape. This represents a long term *major* impact on these species, which are valued at the *site* level.
- None of the few scattered trees within the site boundary had any Potential Roost Features for bats. As such, it is considered that there will be *no likely impact* upon these protected species.
- Woodland creation within the site boundary would not likely have any detrimental impacts on woodland mammal species that are potentially inhabiting the existing habitats. Furthermore, it is anticipated that an increase in mixed woodland within the site would offer long term *major* positive impacts at the *district* level for woodland dwelling protected and priority species such as red squirrel and pine marten.
- Woodland creation near the Liddel Water on the western boundary would likely offer new opportunities for shelter and cover in the long term for otter. This represents a long term *slight* positive impact for this species at the *site level*.
- Woodland creation across the site is anticipated to have *negligible* impacts on roe deer.

5.6 Birds

- 5.6.1 The range of bird species identified at the Liddel Water site were typical of the upland fringe and surrounding semi-improved grassland habitats. A total of 70 bird species were identified, 42 of which were confirmed as breeding on/adjacent to site, or within the site buffer. 8 red listed and 13 amber listed species were confirmed or probably breeding within the site or buffer. 7 of these species were afforded protection via The Nature Conservation (Scotland) Act (2006), as priority species: curlew, house sparrow, lapwing, linnets, starling and song thrush. In addition, of all confirmed/probable breeders within the site/buffer, a small selection of waders were represented, notably: curlew, lapwing, oystercatcher and common sandpiper.
- 5.6.2 Distributions of birds across the site was dependent on preferred habitat types. Species that are more dependent on habitats with trees or hedgerow were concentrated around the adjacent woodland areas and field boundaries. Ground nesting species of open grasslands, (including waders), were found mainly in the open rough grassland habitats. There were also a selection of species present along the adjacent River Liddel. The likely impacts on respective species is largely determined by the habitat type they occupy in relation to the proposed woodland creation scheme.
- 5.6.3 Red and amber confirmed/probable breeders on site that depend on the current pockets of woodland, deciduous treelines and scrub included: mistle thrush, starling, rook, stock dove, song thrush, woodpigeon, wren, and willow warbler. These birds (and many green listed birds) are predicted to benefit from afforestation through increased nesting opportunities, perching opportunities and increased prey/food availability. Similarly, the birds along the watercourse where improved grassland is present almost up to the water's edge, will benefit with new buffer zones to inhabit. These include dipper, grey wagtail, common sandpiper and mallard.
- 5.6.4 Some red or amber listed confirmed/probable breeders are considered likely to suffer from adverse impacts as a result of woodland creation on site. This includes: skylark, meadow pipit, house martin and starling. In particular, the loss of open habitat will result in a *major* adverse to the skylark and meadow pipit populations on site. It is anticipated that there will be a neutral effect on greylag goose and house sparrow.
- 5.6.5 Due to rapid recent declines, guidance clearly states where densities of some wader species exceed that which is appropriate for loss in the context of afforestation suitability (BTO 2022A and Heywood *et al* 2023). Breeding lapwing and curlew densities on site were low and total numbers of breeding pairs were relatively small. As such, it was considered that the woodland creation across the site at Liddel Water would likely result in 'slight' adverse impacts at the 'site' level to the confirmed/probable breeding waders on/adjacent site (see ANNEX B). Conversely, incorporation of appropriate buffers alongside the river would likely result in 'slight' positive impacts at the 'site' level for common sandpiper.
- 5.6.6 Overall, the results of this Breeding Bird Survey indicate that there will be adverse effects on certain red listed and vulnerable species. In most cases this impact is limited to the site level as a consequence of their low densities in comparison to national populations. **It is advised that, due to the stark declines seen in recent years, particularly with curlew, lapwing and oystercatcher, the potential losses seen here represent a slight adverse effect, only at the**

'Site level' as so few pairs of birds were present. To mitigate this impact, afforestation plans will incorporate new habitats of "high wildlife value" such as , to ensure that "the benefits outweigh the impact on breeding waders", as per guidance.

5.7 Other Species

5.7.1 The desk study also indicated records of a range of notable species in the nearby area (see Table 3, Plan 7 and Table 7). This included a suite of birds, a small number of invertebrates, flowering plants and both adder and common lizard reptile species. None of these species were determined to be present on site with specific grid references (see Plan 7). The realistic impacts on birds will be determined following the commissioned bird surveys.

- The habitats on site do not correspond with the vegetative species flagged in the desk study, and as such it is considered that there would *not likely* be any conceivable impact upon these species of *site* level value.
- It is considered that the habitats present on site offer limited suitability for reptiles such as adder. As such, it is considered that there would *not likely* be any conceivable impact upon these species of *site* level value.
- The moths identified in the desk study (Pebble Hook-tip and Red-necked footman) are dependent on woodland species such as oak, beech, larch, spruces, birch and alder. As such, new woodland creation in the area could conceivably have a positive increase in available foodplants for these species. The loss of semi-improved grassland will *not likely* result in a loss of available habitat for these species at *site* level value.

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ANNEX A: STATUTORY AND PLANNING CONTEXT

A.0.1 The client is advised that many species of British wildlife are legally protected. The following section provides a brief overview of the protection afforded to species commonly encountered during development. The Recommendations at the end of this report will advise as necessary, but it is also useful for the client to have an understanding of the legal protection as this helps to ensure that the law is complied with.

A.1 Badgers

A.1.1 Badgers are protected under Schedule 6 of the Wildlife and Countryside Act 1981 (as amended) (WCA), and the Protection of Badgers Act 1992. It is illegal to:

- Kill, injure, take, possess or cruelly ill-treat a badger or to attempt to do so;
- Interfere with a badger sett by damaging or destroying it;
- Obstruct access to or any entrance of a badger sett;
- Disturb a badger when it is occupying a sett

A.1.2 A badger sett is “any structure or place that displays signs indicating current use by a badger”. Scottish Natural Heritage, the Government’s statutory nature conservation body, classifies a sett as active if it has been occupied within the last 12 months.

A.1.3 Operations that might cause disturbance of an active sett entrance can be carried out under licence from Scottish Natural Heritage. If any badgers are found during the course of the survey, this will be highlighted in this report.

A.2 Birds

A.2.1 All wild birds are protected against killing or injury under The WCA 1981 (as amended). This protection extends to birds nests during the breeding season, which makes it an offence to damage or destroy nests or eggs. Birds that are listed on Schedule 1 of the Act receive additional protection against intentional or reckless disturbance during the breeding season. This makes it an offence to disturb these species at or near to their nesting site.

A.3 Protected Mammals and Protected Reptiles (includes water vole, red squirrel, slow worm, common lizard and others)

A.3.1 A variety of British mammals and reptiles also receive protection under The WCA 1981 (as amended). Schedule 5 of The WCA lists animals that are protected. The degree of protection varies. Water voles and red squirrel are examples of species with full protection. The Act makes it an offence to intentionally kill, injure, take, possess,

or trade in any wild animal listed in Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturbing animals occupying such places.

- A.3.2 All British reptiles are all protected. The commoner species such as common lizard and slow worm are protected only from unlawful killing. In practice this requires a reptile protection scheme before implementing a planning permission. No specific licence is required. The rarer reptiles, including smooth snake and sand lizard are fully protected and any works affecting them can only be carried out if a NatureScot licence has been issued.
- A.3.3 If any protected species are found during the course of the survey, this will be highlighted in this report.

A.4 European Protected Species (includes bats, great crested newts, otter and others).

- A.4.1 The client is advised that all bats, great crested newts and otter are European Protected Species (EPS). These EPS receive the full protection of the Wildlife and Countryside Act 1981 (as amended) (Section 9, Schedule 5). In addition, these EPS are also protected under European legislation that is implemented in Scotland via The Conservation of Habitats and Species Regulations 2017 (as amended). A full list of EPS is provided in Schedule 2 of the Regulations.
- A.4.2 If both national and international legislation are taken together, the legislative protection afforded to the species makes it an offence to:
- Intentionally/deliberately kill, disturb, injure or capture them.
 - Intentionally or recklessly damage, destroy or obstruct access to any breeding site or resting place.
 - Possess or control any live or dead specimen or anything derived from a European Protected Species.
- A.4.3 If an activity is likely to result in any of the above offences, derogation from the legal protection can be issued in the form of a European Protected Species licence issued by NatureScot. Licences for development purposes are issued under The Conservation of Habitats and Species Regulations 2017 (as amended) and only allow what is permitted within the terms and conditions of the licence. If any EPS are found during the course of the survey, this will be highlighted in this report.

A.5 Planning Considerations

- A.5.1 1. When considering each planning application, the presence of protected species, such as those listed above, is a material consideration which must be fully considered

by the Local Authority when granting planning permission. If a licence from NatureScot is required, then prior to issuing any planning consent, the local planning authority will need to be satisfied that there is no reason why such a licence would not be issued. Therefore, in reaching the planning decision the local planning authority will need to have regard to the requirements of The Conservation of Habitats and Species Regulations 2017 (as amended). The three licensing tests given in the Regulations must be considered. In summary, these are that:

The development is for a licensable purpose, such as:

- preserving public health or public safety,
 - for other imperative reasons of over-riding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment.
 - for preventing serious damage to property.
2. There is no satisfactory alternative.
 3. The proposal will not be detrimental to the maintenance of the population of the species at a favourable conservation status.

A.5.2 All necessary information would need to be provided to the planning authority as part of the planning application in order to address the above tests.

ANNEX B: IMPACT ASSESSMENT CRITERIA

Table 1: Valuing Ecological Features

Level of Value	Examples
International	An internationally designated site or candidate site (SPA, pSPA, SAC, cSAC, pSAC, Ramsar site, Biogenetic Reserve). A viable area of a habitat type listed in Annex I of the Habitats Directive, or smaller areas of such habitat which are essential to maintain the viability of a larger whole. Any regularly occurring population of an internationally important species, which is threatened or rare in the UK, i.e. it is a UK Red Data Book species or listed as occurring in 15 or fewer 10km squares in the UK (Categories 1 and 2 in the UK BAP) or of uncertain conservation status or of global conservation concern in the UK BAP. A regularly occurring, nationally significant population of any internationally important species.
National	A nationally designated site (SSSI, ASSI, NNR, Marine Nature Reserve) or a discrete area, which meets the published selection criteria for national designation. A viable area of a priority habitat identified in the UK BAP, or of smaller areas of such habitat which are essential to maintain the viability of a larger whole. Any regularly occurring population of a nationally important species which is threatened or rare in the region or county (see local BAP). A regularly occurring, regionally or county significant number of a nationally important species.
Regional	Viable areas of key habitat identified in the Regional BAP or smaller areas of such habitat which are essential to maintain the viability of a larger whole. Viable areas of key habitat identified as being of Regional value in the appropriate Natural Area profile. Any regularly occurring population of a nationally important species which is not threatened or rare in the region. Any regularly occurring, locally significant population of a species listed as being nationally scarce which occurs in 16-100 10km squares in the UK or in a Regional BAP or relevant Natural Area on account of its regional rarity or localisation. A regularly occurring, locally significant number of a regionally important species.
County	Semi-natural ancient woodland greater than 0.25ha. County/Metropolitan sites and other sites which the designating authority has determined meet the published ecological selection criteria for designation, including Local Nature Reserves selected on County/metropolitan ecological criteria. A viable area of habitat identified in the County BAP. A regularly occurring, locally significant number of a County/Metropolitan 'red data book' or BAP species, designated on account of its regional rarity or localisation. A regularly occurring, locally significant number of a County/Metropolitan important species.
District/Borough	Semi-natural ancient woodland smaller than 0.25ha. Areas of habitat identified in a sub- County (District/Borough) BAP or in the relevant Natural Area profile. Sites/features that are scarce within the District/Borough or which appreciably enrich the District/Borough habitat resource. A diverse and/or ecologically valuable hedgerow network. A population of a species that is listed in a District/Borough BAP, because of its rarity in the locality or in the relevant Natural Area profile because of its regional rarity or localisation. A regularly occurring, locally significant number of a District/Borough important species during a critical phase of its life cycle.
Site	Areas of habitat or populations/communities of species considered to appreciably enrich the habitat resource within the context of the parish or neighbourhood, e.g. species-rich hedgerows. NB: Where species or habitats occur in more than one category, the highest value is applicable.

Table 2: Impact Magnitude

Impact Magnitude	Examples
Major	Loss of over 50% of a site feature, habitat or population. Adverse change to all of a site feature, habitat or population. For benefits, an impact equivalent in nature conservation terms to gain of over 50% of a site feature, habitat or population.
Moderate	Loss affecting 20-50% of a site feature, habitat or population. Adverse change to over 50% of a site feature, habitat or population. For benefits, an impact equivalent in nature conservation terms to a gain of 20-50% of a site feature, habitat or population.
Slight	Loss affecting 5-19% of a site feature, habitat or population. Adverse change to 20-50% of a site feature, habitat or population. For benefits, an impact equivalent in nature conservation terms to a gain of 5-19% of a site feature, habitat or population.
Negligible	Loss affecting up to 5% of a site feature, habitat or population. Adverse change to less than 20% of a site feature, habitat or population. For benefits, an impact equivalent in nature conservation terms to a gain of up to 5% of a site feature, habitat or population.

ANNEX C: SSSI CITATIONS



Scottish Natural Heritage

**Kershope Bridge
Site of Special Scientific Interest**

SITE MANAGEMENT STATEMENT

Site code: 839

**Anderson's Chambers
Market Street
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TD1 3AF**

**Tel: 01896 756652
Fax: 01896 750427
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Purpose



This is a public statement prepared by SNH for owners and occupiers of the SSSI. It outlines the reasons it is designated as an SSSI and provides guidance on how its special natural features should be conserved or enhanced. This Statement does not affect or form part of the statutory notification and does not remove the need to apply for consent for operations requiring consent.

We welcome your views on this statement.

Description of the site

Kershope Bridge site of special scientific interest (SSSI) is located 3 km east of the village of Kershopefoot in Liddesdale, and is situated on and alongside the Kershope Burn. At this point, the border between Scotland and England is the mid-line of the Kershope Burn, and so whilst the bulk of the geological interest feature of this SSSI lies in Scotland, a small area of the feature is present along the south side of the Kershope Burn and is located in England. This land is also designated as SSSI, under English legislation.

The site in Scotland represents an 850m length of the Kershope Burn and some land to its north, with boundaries largely defined by the middle of the Kershope Burn (boundary with England) and two tributaries on its northern bank.

The SSSI is of interest for the rock sequences present in the stream section and disused quarry at Kershope Bridge, which formed during the Carboniferous period, between 355 to 290 million years ago. Two main groups of rocks occur at the site: volcanic (igneous) and sedimentary, with good geological cross-sections comprising both types visible at the site. The sediments which formed the sedimentary rocks were in part derived from old pre-existing rocks on land through the process of erosion and were carried by rivers to be deposited into a lowland area that was often covered by a shallow, tropical sea. This area was restricted in extent, being bordered to the north and south by upland areas, and is known as the Northumberland Basin. Huge amounts of sediment accumulated in layers within the Northumberland Basin, with local volcanic activity occurring at intervals spreading lava over parts of the landscape. When the volcanic activity ceased, the lavas and volcanic ash became buried by sediments which continued to accumulate in the lowland marine environment. One of

these areas became the Kershope Bridge area. After millions of years, the Northumberland Basin ceased to exist, the sediments became rock, and subsequent movements and upheavals in the crust of the Earth tilted the horizontally bedded rock sequence, most recently during the ice age.

The sedimentary rocks found at Kershope Bridge SSSI are of three main types: sandstone, limestone and mudstone. These different sediment layers were formed within the Northumberland Basin under different environmental conditions which reflected variations in sea levels and the rate of sediment input.

The igneous rocks within the sedimentary rock sequence are the best examples of a series of rocks known as 'Kershopefoot Basalt'. There are three visually distinct types at the site. The relationship between these basalts is difficult to determine. However, it is thought that they represent different lava flows produced one upon the other at different times. The location of the volcanic vent from which they came is not known.

The intimate association of the Kershopefoot Basalt sandwiched between the thicker layers of sedimentary rock yields a considerable amount of information about the development of the ancient environment. In addition, detailed study of the rock sequence, in particular the rock chemistry of the lavas, indicates the major changes which occurred in the crust of the Earth as it continued to evolve during the Lower Carboniferous period.

The 2002 site condition monitoring (SCM) assessment found the feature to be in favourable condition as the monitoring targets were all met for the extent and visibility of the feature and access to the exposures.

This is a Geological Conservation Review site.

Natural features of Kershope Bridge SSSI	Condition of feature (and date monitored)
Geology: Igneous Petrology: Carboniferous - Permian Igneous	Favourable – maintained (September 2002)

Past and present management

There is a disused quarry at the site.

The SSSI forms part of Sorbietrees Farm and is grazed by livestock.

Objectives for Management

We wish to work with the owner to protect the site and to maintain and, where necessary, enhance its features of special interest. SNH will carry out site survey, monitoring and research as appropriate to increase our knowledge and understanding of the site and its natural features and monitor the effectiveness of the management.

- 1. To maintain the favourable condition of the geological exposure, ensuring that any rock exposures are not obscured and that adequate access is maintained.**

Date last reviewed: 29 March 2010

ANNEX D: NEARBY NOTABLE SPECIES

Table 7: All notable species within 1km of site.

Name	Common Name	Taxon Group	No. of Records	UK Legislation
<i>Acanthis cabaret</i>	Lesser Redpoll	bird	2	ScotBL, UKBAP
<i>Accipiter nisus</i>	Sparrowhawk	bird	6	BAmb, CMS_A2
<i>Acrocephalus schoenobaenus</i>	Sedge Warbler	bird	2	BAmb
<i>Actitis hypoleucos</i>	Common Sandpiper	bird	1	BAmb, CMS_A2, CMS_AEWA-A2
<i>Alauda arvensis</i>	Skylark	bird	4	BRed, ScotBL
<i>Alcedo atthis</i>	Kingfisher	bird	3	BD1, Bern2, ScotBL, WCA1i
<i>Anas platyrhynchos</i>	Mallard	bird	8	BAmb, CMS_A2, CMS_AEWA-A2
<i>Anguilla anguilla</i>	European Eel	bony fish (Actinopterygii)	4	OSPAR, RLGLB.CR, ScotBL, UKBAP
<i>Anthus pratensis</i>	Meadow Pipit	bird	13	BAmb, Bern2
<i>Apus apus</i>	Swift	bird	2	BRed, ScotBL
<i>Ardea cinerea</i>	Grey Heron	bird	6	CMS_AEWA-A2
<i>Atolmis rubricollis</i>	Red-necked Footman	insect - moth	1	
<i>Betula pubescens</i>	Downy Birch	flowering plant	1	
<i>Buteo buteo</i>	Buzzard	bird	28	CMS_A2
<i>Calluna vulgaris</i>	Heather	flowering plant	1	
<i>Carduelis carduelis</i>	Goldfinch	bird	7	Bern2
<i>Certhia familiaris</i>	Treecreeper	bird	3	Bern2
<i>Chloris chloris</i>	Greenfinch	bird	5	Bern2, BRed
<i>Cinclus cinclus</i>	Dipper	bird	9	BAmb, Bern2
<i>Columba oenas</i>	Stock Dove	bird	2	BAmb
<i>Columba palumbus</i>	Woodpigeon	bird	9	BAmb
<i>Corvus corax</i>	Raven	bird	7	
<i>Corvus frugilegus</i>	Rook	bird	18	BAmb
<i>Cyanistes caeruleus</i>	Blue Tit	bird	15	Bern2
<i>Delichon urbicum</i>	House Martin	bird	3	Bern2, BRed
<i>Dendrocopos major</i>	Great Spotted Woodpecker	bird	14	Bern2
<i>Drepana falcatoria</i>	Pebble Hook-tip	insect - moth	1	
<i>Erithacus rubecula</i>	Robin	bird	20	Bern2
<i>Falco tinnunculus</i>	Kestrel	bird	5	BAmb, Bern2, CMS_A2, ScotBL
<i>Gallinago gallinago</i>	Snipe	bird	2	BAmb, CMS_A2, CMS_AEWA-A2
<i>Haematopus ostralegus</i>	Oystercatcher	bird	1	BAmb, CMS_AEWA-A2
<i>Hirundo rustica</i>	Swallow	bird	9	Bern2
<i>Kiaeria blyttii</i>	Blytt's Fork-moss	moss	2	
<i>Larus fuscus</i>	Lesser Black-backed Gull	bird	1	BAmb, CMS_AEWA-A2
<i>Linaria cannabina</i>	Linnet	bird	3	Bern2, BRed, ScotBL
<i>Lophozia sudetica</i>	Hill Notchwort	liverwort	1	

<i>Loxia curvirostra</i>	Crossbill	bird	5	Bern2, WCA1i
<i>Mergus merganser</i>	Goosander	bird	3	CMS_A2, CMS_AEWA-A2
<i>Motacilla alba</i>	Pied Wagtail	bird	5	Bern2
<i>Motacilla cinerea</i>	Grey Wagtail	bird	3	BAmb, Bern2
<i>Muscicapa striata</i>	Spotted Flycatcher	bird	11	Bern2, BRed, CMS_A2, ScotBL, UKBAP
<i>Numenius arquata</i>	Curlew	bird	3	BRed, CMS_A2, CMS_AEWA-A2, RLGLB.NT, ScotBL, UKBAP
<i>Oenanthe oenanthe</i>	Wheatear	bird	4	BAmb, Bern2
<i>Parus major</i>	Great Tit	bird	20	Bern2
<i>Passer domesticus</i>	House Sparrow	bird	8	BRed, ScotBL, UKBAP
<i>Periparus ater</i>	Coal Tit	bird	21	Bern2
<i>Phalacrocorax carbo</i>	Cormorant	bird	1	CMS_AEWA-A2
<i>Phoenicurus phoenicurus</i>	Redstart	bird	1	BAmb, Bern2
<i>Phylloscopus trochilus</i>	Willow Warbler	bird	6	BAmb
<i>Pluvialis apricaria</i>	Golden Plover	bird	1	BD1, CMS_A2, CMS_AEWA-A2, ScotBL
<i>Porpidia soresizodes</i>	Porpidia soresizodes	lichen	1	
<i>Prunella modularis</i>	Duncock	bird	7	BAmb, Bern2
<i>Pyrrhula pyrrhula</i>	Bullfinch	bird	2	BAmb, ScotBL
<i>Regulus regulus</i>	Goldcrest	bird	8	Bern2
<i>Riparia riparia</i>	Sand Martin	bird	6	Bern2
<i>Salmo salar</i>	Atlantic Salmon	bony fish (Actinopterygii)	8	Bern3, HabRegs4, HSD2p, HSD5, OSPAR, ScotBL, UKBAP
<i>Salmo trutta</i>	Brown/Sea Trout	bony fish (Actinopterygii)	8	ScotBL, UKBAP
<i>Saxicola rubicola</i>	Stonechat	bird	1	Bern2
<i>Sciurus vulgaris</i>	Eurasian Red Squirrel	terrestrial mammal	6	Bern3, RLGB.EN, ScotBL, UKBAP, WCA5/9.1k/l, WCA5/9.1t, WCA5/9.4.a, WCA5/9.4b, WCA5/9.4c
<i>Scolopax rusticola</i>	Woodcock	bird	1	BRed, CMS_A2, CMS_AEWA-A2, ScotBL
<i>Sitta europaea</i>	Nuthatch	bird	5	Bern2
<i>Spinus spinus</i>	Siskin	bird	6	Bern2, ScotBL
<i>Strix aluco</i>	Tawny Owl	bird	3	BAmb, Bern2
<i>Sturnus vulgaris</i>	Starling	bird	9	BRed
<i>Troglodytes troglodytes</i>	Wren	bird	25	BAmb, Bern2
<i>Turdus iliacus</i>	Redwing	bird	4	BAmb, ScotBL, WCA1i
<i>Turdus philomelos</i>	Song Thrush	bird	3	BAmb, ScotBL
<i>Turdus pilaris</i>	Fieldfare	bird	10	BRed, WCA1i
<i>Turdus viscivorus</i>	Mistle Thrush	bird	9	BRed
<i>Tyto alba</i>	Barn Owl	bird	11	Bern2, ScotBL, WCA1i
<i>Vaccinium oxycoccos</i>	Cranberry	flowering plant	1	
<i>Vanellus vanellus</i>	Lapwing	bird	4	BRed, CMS_A2, CMS_AEWA-A2, ScotBL, UKBAP

<i>Vipera berus</i>	Adder	reptile	2	Bern3, ScotBL, UKBAP, WCA5/9.1k/l
<i>Zootoca vivipara</i>	Common Lizard	reptile	1	Bern3, ScotBL, UKBAP, WCA5/9.1k/l
International, National and Local Statuses – Designation Codes Key				
<p>International and National Status</p> <p>Bern1: Bern Convention Appendix 1 Bern2: Bern Convention Appendix 2 Bern3: Bern Convention Appendix 3 BDL: Birds Directive Annex 1 BAmib: Bird Population Status Amber BRsd: Bird Population Status Red HabRegs2: The Conservation (Natural Habitats c.) Regulations 2010 (Schedule 2) HabRegs4: The Conservation (Natural Habitats c.) Regulations 2010 (Schedule 4) HabRegs5: The Conservation (Natural Habitats c.) Regulations 2010 (Schedule 5) CMS_A1: Convention on Migratory Species Appendix 1 CMS_A2: Convention on Migratory Species Appendix 2 CMS_EUROBATS-A1: Convention on Migratory Species - EUROBATS Annex 1 CMS_ASCOBANS: Convention on Migratory Species - Small Cetaceans Agreement CMS_AWOLA-A2: Convention on Migratory Species - African-Eurasian Waterbirds Agreement - Annex II RGLB.CR: IUCN - Global Red List: Critically Endangered RGLB.DD: IUCN - Global Red List: Data Deficient RGLB.EN: IUCN - Global Red List: Endangered RGLB.FX: IUCN - Global Red List: Extinct RGLB.L[cd]: IUCN - Global Red List: Lower Risk (Conservation Dependent) RGLB.L[NT]: IUCN - Global Red List: Lower Risk (Near Threatened) RGLB.VU: IUCN - Global Red List: Vulnerable HSD2np: Habitats Directive Annex 2 (Non-Priority Species) HSD2p: Habitats Directive Annex 2 (Priority Species) HSD4: Habitats Directive Annex 4 HSD5: Habitats Directive Annex 5 NRMir: Nationally rare marine species NSMar: Nationally scarce marine species N: Nationally Notable Na: Nationally Notable A Nb: Nationally Notable B</p> <p>Local Rarity</p> <p>E?: Possibly extinct L: Local VL: Very Local</p> <p>LBAP – Local Biodiversity Action Plan</p> <p>CE - City of Edinburgh CL - Clackmannanshire F - Fife F(I) - Falkirk M - Midlothian SB - Scottish Borders ST - Stirling W(I) - West Lothian W(K) - West Lothian Key Species</p> <p>NR: excludes: Nationally Rare. Excludes Red Listed Taxa NS: excludes: Nationally Scarce. Excludes Red Listed Taxa OSPAR: The Convention for the Protection of the Marine Environment of the North-East Atlantic PBA: Protection of Badgers Act (1992) PS(R): Protected Species - Research Only RGLB.CR: IUCN (2001) GB Red List - Critically endangered RGLB.DD: IUCN (2001) GB Red List - Data Deficient RGLB.EN: IUCN (2001) GB Red List - Endangered RGLB.FW: IUCN (2001) GB Red List - Extinct in the Wild RGLB.L[NT]: IUCN (2001) GB Red List - Lower Risk (Near Threatened) RGLB.VU: IUCN (2001) GB Red List - Vulnerable RGLB.EX: IUCN (2001) GB Red List - Extinct RDLGB.LN: IUCN (pre1994) GB Red List - Endangered RDLGB.R.UK: IUCN (pre1994) GB Red List - Rare RDLGB.VU: IUCN (pre1994) GB Red List - Vulnerable RDLGB.EX: IUCN (pre1994) GB Red List - Extinct RDLGB.Thre: IUCN (pre1994) GB Red List - Threatened Endemic ScotBL: Scottish Biodiversity List of species of principal importance for biodiversity conservation ScotBL(WB): Scottish Biodiversity List of species of principal importance for biodiversity conservation (Watching Brief) UKBAP: UK Biodiversity Action Plan Priority Species WCA1: Wildlife and Countryside Act 1981 Schedule 1 Part 1 WCA1b: Wildlife and Countryside Act 1981 Schedule 1 Part 2 WCA5/9.1k/l: Wildlife and Countryside Act 1981 Schedule 1 Section 9.1k WCA5/9.1l: Wildlife and Countryside Act 1981 Schedule 1 Section 9.1l WCA5/9.4a: Wildlife and Countryside Act 1981 Schedule 5 Section 9.4a WCA5/9.4b: Wildlife and Countryside Act 1981 Schedule 5 Section 9.4b WCA5/9.4c: Wildlife and Countryside Act 1981 Schedule 5 Section 9.4c WCA8: Wildlife and Countryside Act 1981 Schedule 8</p>				

ANNEX E: PEAK BIRD COUNTS

Table 8: Peak Bird Counts at Liddel Water in summer 2023.

	06.04.23	01.05.2023	31.05.2023	18.06.2023
Blackbird	5	16	32	29
Blackcap		2	13	10
Black-headed Gull		3		
Blue Tit	8	14	19	18
Buzzard	5	4	4	2
Canada Goose	2	1		
Carrion Crow	32	31	26	34
Chaffinch	32	27	38	45
Chiffchaff	4	7	4	6
Coal Tit	3	3	5	4
Collared Dove	2	1		2
Common Crossbill	2			
Common Gull			1	
Common Sandpiper		7	6	5
Cuckoo		2		2
Curlew	2	4	6	17
Dipper	2		3	
Dunnock		1	2	
Feral Pigeon	5		1	
Fieldfare	500	8		
Garden Warbler			1	
Goldcrest	3	2	5	7
Goldfinch		4	7	8
Goosander		2		3
Great Spotted Woodpecker	1	4	2	2
Great Tit	11	9	4	5
Greenfinch		2		
Grey Heron	1	1		
Grey Wagtail		2	5	
Greylag Goose	7	10	7	
Herring Gull		11	1	
House Martin		1	2	4
House Sparrow	2		2	6
Jackdaw	48	46	81	59
Jay		3		1
Kestrel				1
Kingfisher		1		
Lapwing	8	4	1	1
Lesser Black-backed Gull		1	44	8
Lesser Redpoll	3	4		

Linnet			4	
Long-tailed Tit				5
Magpie	1	1	2	3
Mallard	13	17	18	14
Meadow Pipit	19	14	16	36
Mistle Thrush	3	2	1	1
Nuthatch		2		4
Oystercatcher	5	5	7	5
Pheasant	7	9	2	4
Pied Wagtail	4	9	6	2
Pink-footed Goose		100		
Raven		4		1
Redwing	27			
Reed Bunting			1	
Robin	10	14	19	9
Rook	6	9	18	8
Sand Martin	21	73	76	128
Siskin	10	9	5	5
Skylark	13	19	21	16
Song Thrush	11	11	3	3
Starling	10	11	53	9
Stock Dove	6	19	7	19
Swallow		13	12	25
Swift			5	1
Tawny Owl			1	1
Wheatear		6		
Willow Warbler		30	24	31
Woodpigeon	27	21	25	54
Wren	33	26	27	52