

BREEDING BIRD SURVEY

WALLSHIELD



JULY
2022

FINAL

CLIENT Forestry Commission
PROJECT NAME Wallshield
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SPECIES	RECORDER	DATE	LOCATION (4 FIG. NGR)	ABUNDANCE	COMMENT
Cuckoo	E3 Ecology Ltd.	June 2022	NY 71 70	1	Pair
Curlew	E3 Ecology Ltd.	June 2022	NY 71 70	8	Pairs
Grasshopper Warbler	E3 Ecology Ltd.	June 2022	NY 71 70	1	Pair
Grey Wagtail	E3 Ecology Ltd.	June 2022	NY 71 70	2	Pairs
House Martin	E3 Ecology Ltd.	June 2022	NY 71 70	2	Pairs
House Sparrow	E3 Ecology Ltd.	June 2022	NY 71 70	3	Pairs
Lapwing	E3 Ecology Ltd.	June 2022	NY 71 70	2	Pairs
Lesser Redpoll	E3 Ecology Ltd.	June 2022	NY 71 70	2	Pairs
Mallard	E3 Ecology Ltd.	June 2022	NY 71 70	3	Pairs
Meadow Pipit	E3 Ecology Ltd.	June 2022	NY 71 70	94	Pairs
Mistle Thrush	E3 Ecology Ltd.	June 2022	NY 71 70	4	Pairs
Oystercatcher	E3 Ecology Ltd.	June 2022	NY 71 70	1	Pair
Reed Bunting	E3 Ecology Ltd.	June 2022	NY 71 70	7	Pairs
Rook	E3 Ecology Ltd.	June 2022	NY 71 70	16	Pairs
Sedge Warbler	E3 Ecology Ltd.	June 2022	NY 71 70	3	Pairs
Skylark	E3 Ecology Ltd.	June 2022	NY 71 70	84	Pairs
Snipe	E3 Ecology Ltd.	June 2022	NY 71 70	7	Pairs
Song Thrush	E3 Ecology Ltd.	June 2022	NY 71 70	9	Pairs
Sparrowhawk	E3 Ecology Ltd.	June 2022	NY 71 70	1	Pair
Starling	E3 Ecology Ltd.	June 2022	NY 71 70	3	Pairs
Stock Dove	E3 Ecology Ltd.	June 2022	NY 71 70	1	Pair
Wheatear	E3 Ecology Ltd.	June 2022	NY 71 70	5	Pairs
Willow Warbler	E3 Ecology Ltd.	June 2022	NY 71 70	13	Pairs
Woodpigeon	E3 Ecology Ltd.	June 2022	NY 71 70	11	Pairs
Wren	E3 Ecology Ltd.	June 2022	NY 71 70	12	Pairs

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A. SUMMARY

E3 Ecology Ltd was commissioned to undertake breeding bird surveys at land at Wallshield, near Haltwhistle, where it is proposed to plant a mixed productive woodland. The study area covered both the proposed forestry site, as well as a buffer surrounding the forestry site.

Consultation with the Multi Agency Geographic Information for the Countryside (MAGIC) website indicated that there is a single Special Protection Area (SPA) within 10km of the forestry site, designated for upland raptors and golden plover, but no Sites of Special Scientific Interest (SSSIs) with ornithological monitored features within 5km of the forestry site. The forestry site falls within the Curlew LIFE Geltsdale & Hadrian's Wall Project boundary. The project aims to stabilise curlew breeding populations by improving breeding habitat conditions.

Habitats in the forestry site primarily comprise improved, semi-improved and acid grasslands. The bird species breeding in the forestry site are generally ground-nesting species that are typical of marginal upland grassland habitats.

Habitats in the buffer are generally similar to the forestry site, however the unenclosed land is less intensively grazed. Additional habitats present in the buffer include several small conifer plantations, several small patches of deciduous and mixed woodland, several burns, four scattered farms/houses and several single-track roads. The bird species using the buffer are generally similar to those using the forestry site. However the woodland, houses and burns support species that are not found in the forestry site.

The forestry site was found to support approximately 29 pairs of 10 species in 2022. The table below lists species of conservation concern and species likely to be of parish value or above that were recorded breeding in the forestry site.

Species¹⁰	BTO Code	Pairs	National Priority	Schedule 1	Annex 1
Curlew	CU	2	✓		
Mallard	MA	1			
Meadow Pipit	MP	12			
Skylark	S.	7	✓		
Snipe	SN	1			
Stock Dove	SD	1			
Stonechat	SC	1			
Wheatear	W.	1			
Wren	WR	1			

The buffer was found to support approximately 345 pairs of 38 species in 2022. The table below lists species of conservation concern and species likely to be of parish value or above that were recorded breeding in the buffer.

TABLE 2: BREEDING BIRD ASSEMBLAGE RESULTS AND EVALUATION IN BUFFER: KEY SPECIES¹³

Species ¹⁰	BTO Code	Pairs	National Priority	Schedule 1	Annex 1
Cuckoo	CK	1	✓		
Curlew	CU	8	✓		
Grasshopper Warbler	GH	1	✓		
Grey Wagtail	GL	2			
House Martin	HM	2			
House Sparrow	HS	3	✓		
Lapwing	L.	2	✓		
Lesser Redpoll	LR	2	✓		
Mallard	MA	2			
Meadow Pipit	MP	82			
Mistle Thrush	M.	4			
Oystercatcher	OC	1			
Reed Bunting	RB	7	✓		
Rook	RO	16			
Sedge Warbler	SW	3			
Skylark	S.	77	✓		
Snipe	SN	7			
Song Thrush	ST	9	✓		
Sparrowhawk	SH	1			
Starling	SG	3	✓		
Stonechat	SC	6			
Wheatear	W.	4			
Willow Warbler	WW	13			
Woodpigeon	WP	11			
Wren	WR	11			

Two wader species were recorded breeding in the forestry site: curlew (two territories) and snipe (single territory). Four wader species were recorded breeding in the buffer: curlew (eight territories), lapwing (two territories), oystercatcher (one territory) and snipe (seven territories). As the territories in the forestry site overlapped with the buffer, the number of territories in the whole survey area is the same as the number of territories in the buffer. The total number of territories of each wader in the whole survey area is curlew (8), lapwing (2), oystercatcher (1) and snipe (7).

The forestry site is considered to be parish value due to the presence of breeding curlew, snipe, stonechat, stock dove and wheatear. The buffer is considered to be district value due to the presence of cuckoo, six pairs of stonechat and grasshopper warbler.

Curlew, meadow pipit, skylark, snipe and stonechat all require open grassland for breeding. As the grassland in the proposed forestry site is largely being converted to forestry, then these species are likely to be progressively reduced in number as breeding pairs are lost. Meadow Pipit and stonechat may continue to nest within the forestry area, but in reduced numbers. Although species breeding in the wider area may not be directly displaced, they may still be impacted, particularly if they lose habitat used for foraging or if they are disturbed during forestry operations. Wader species (curlew, lapwing, oystercatcher and snipe) may be discouraged from nesting in the buffer adjacent to the forestry due to increased predation risk. The new plantation woodland in the proposed forestry site will attract new territories and species, possibly including species such as cuckoo, grasshopper warbler, song thrush and lesser redpoll.

The following are understood to be part of the forestry design, which would increase the value of the plantation woodland for birds:

- No planting close to the burn that flows through the forestry site per the Forestry and Water Guidelines (UKFS).

- Retention of rides at the edge of existing woodland and gaps to allow access for nesting birds of prey.
- Creation of ungrazed open space within the plantation.
- Planting of deciduous trees within the plantation.
- Variation in tree density.
- Deer management.
- The rocky outcrop at the northern end of the site is being left open.

The following practices would increase the value of plantation woodland for birds^{21, 22, 23}:

- Stagger planting new woodland where possible to create a diverse range of tree ages with the aim of including all growth stages of the forest cycle.
- Allow some trees to persist through several rotations.
- Incorporate SuDS features suitable for snipe within the woodland drainage design.
- Carry out survey work to identify bird-rich areas and nest locations of rare species using the woodland, then plan forestry to minimise disturbance to such areas and species.
- Avoid felling trees that contain visible large nests at any time of year.
- Consider suspending potentially damaging operations during the main breeding season (April to July).
- Incorporate areas of clear fell for species that favour such habitat, for example stonechat.
- Retain dead trees wherever possible.

Potential compensation measures for species likely to be lost or displaced could include:

- Create shallow pools in adjacent grassland to benefit breeding species including lapwing.
- Enhance nearby grassland through rewetting, which could improve habitat for species including lapwing, curlew, snipe and reed bunting.
- Wheatear breeds on open grassland and upland heaths but requires walls, rocks or ruined buildings in which to nest - maintain some of these.
- Provide barn owl boxes on posts of woodland rides.
- Manage nearby grasslands to be more suitable for curlew and skylark by, for example, avoiding cutting grass in April and May, and grazing grassland using low densities of cattle/sheep.
- Create habitat mosaics in nearby land, consisting of moorland, trees and wet features, which will benefit the widest variety of species.
- Predator (fox and crow species) control may help increase breeding bird populations.

If you are assessing this report for a local planning authority and have any difficulties interpreting plans and figures from a scanned version of the report, E3 Ecology Ltd would be happy to email a PDF copy to you. Please contact us on 01434 230982.

B. INTRODUCTION

E³ Ecology Ltd was commissioned by the Forestry Commission to undertake breeding bird surveys of land at Wallshield, near Haltwhistle.

The purpose of this report is to:

- Assess the breeding bird species and numbers using the forestry site and a buffer around the forestry site.

The forestry site is located at grid reference NY 716 701 and is illustrated below in Figure 2.

It is proposed to plant a mixed productive woodland as per Figure 2.

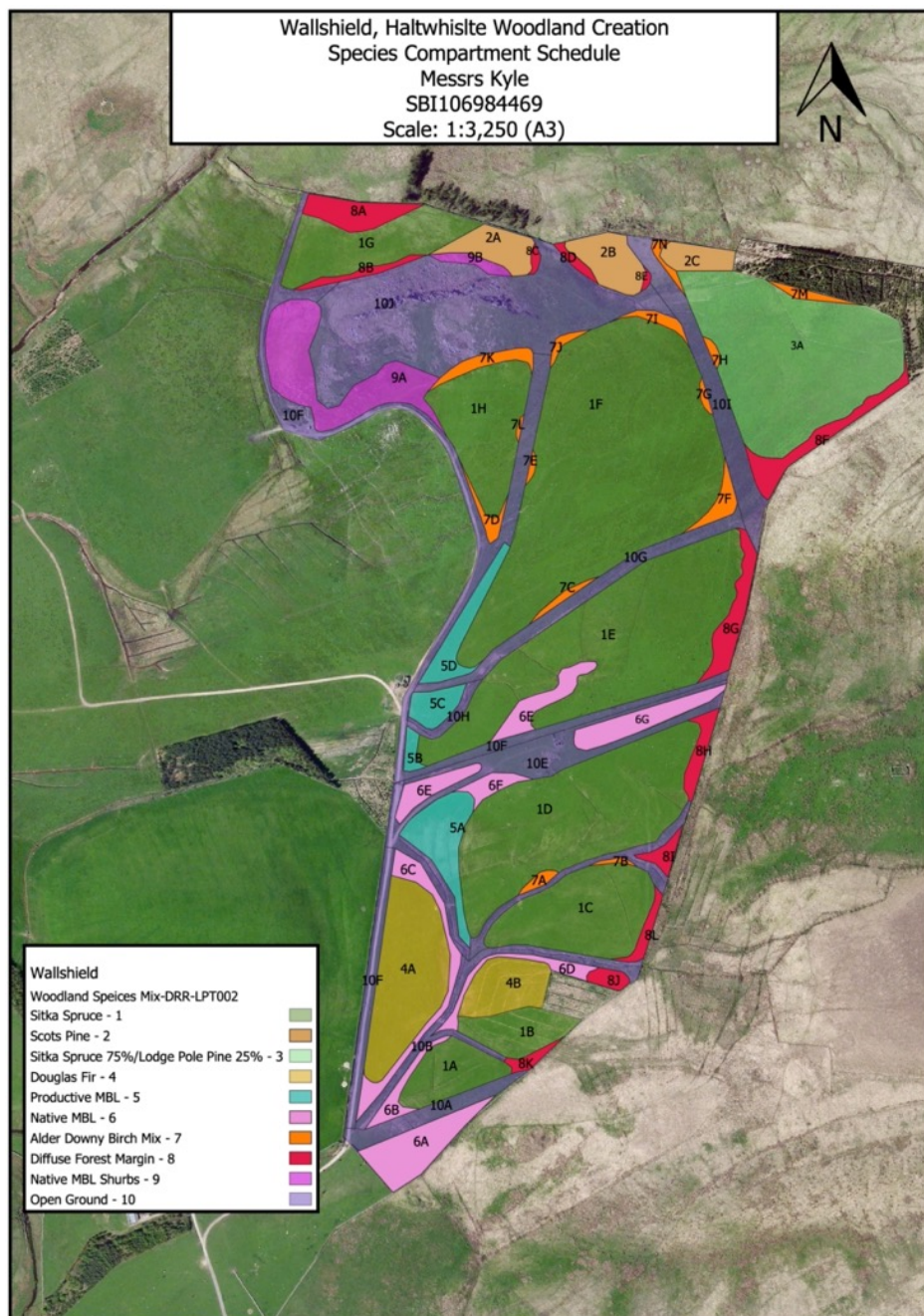


FIGURE 1: PLANTING PLAN
(Provided by Forestry Commission)

C. METHODOLOGY

C.1 PLANNING POLICY & LEGISLATIVE CONTEXT

Information on planning policy and legislative context for this report is provided at Appendix 1.

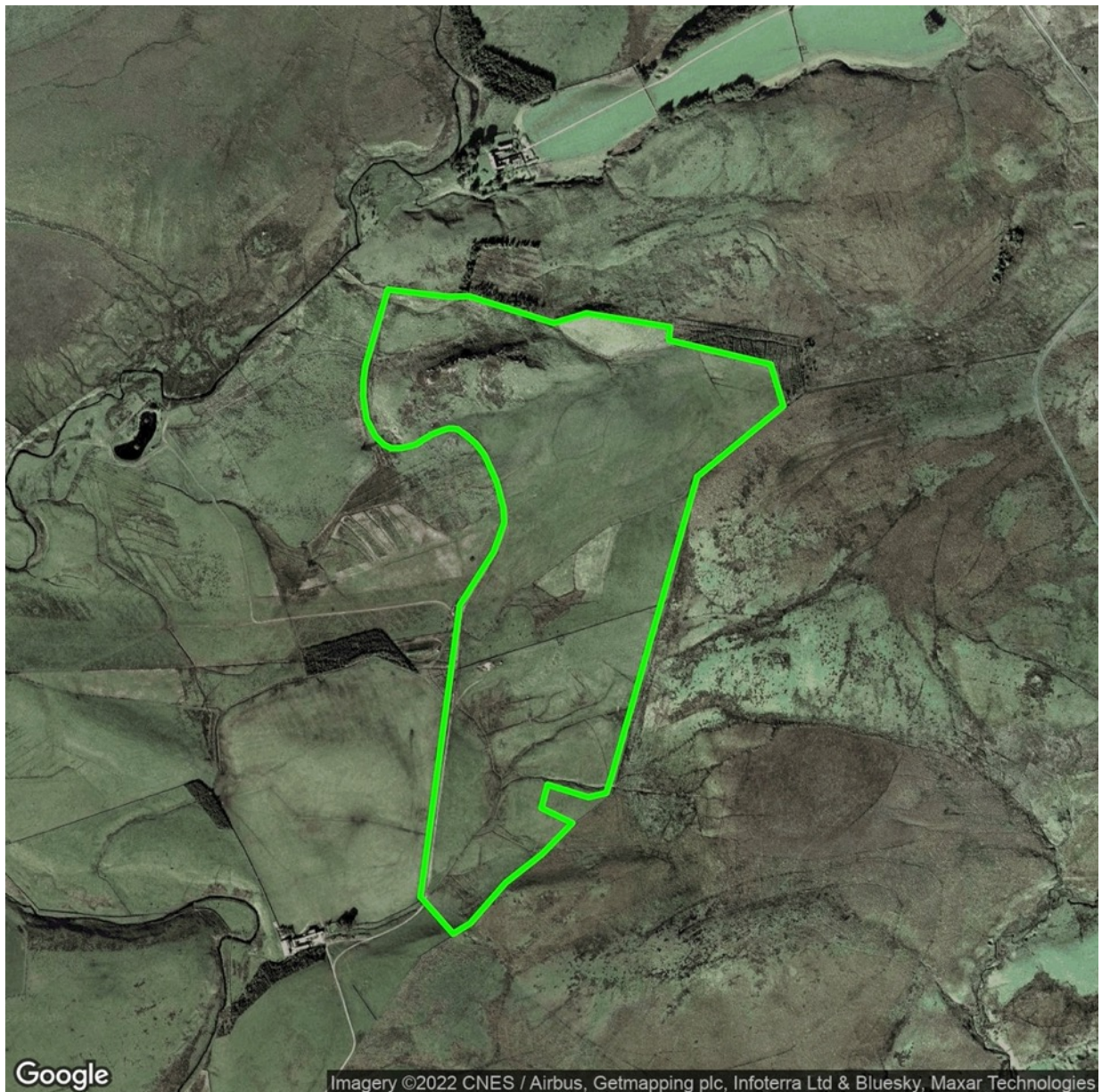
C.2 SCOPE OF STUDY

It was considered that the breeding bird population of the forestry site and the wider buffer area could be of significant conservation value, and as such, detailed breeding bird surveys were required.

The study area comprised the proposed forestry site as well as an additional survey area that extended approximately 1km in all directions from the forestry site. In this report, the proposed forestry planting site is referred to as the 'forestry site', the buffer around the forestry site is referred to as the 'buffer' and these areas combined are referred to as the 'study area'.

Consultation with the local records centre covered the forestry site boundary plus a 2km buffer zone. For designated sites, where ornithology is a key reason for designation, the search area for internationally designated sites (SPAs, pSPAs and Ramsar sites) covered the forestry site boundary and a 10km buffer zone. For nationally designated sites (SSSIs) a 5km buffer zone was used.

Figure 2 illustrates the forestry site boundary whilst Figure 3 illustrates the study area.



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FIGURE 2: FORESTRY SITE (GREENLINE)
(Reproduced under licence from Google Earth Pro.)

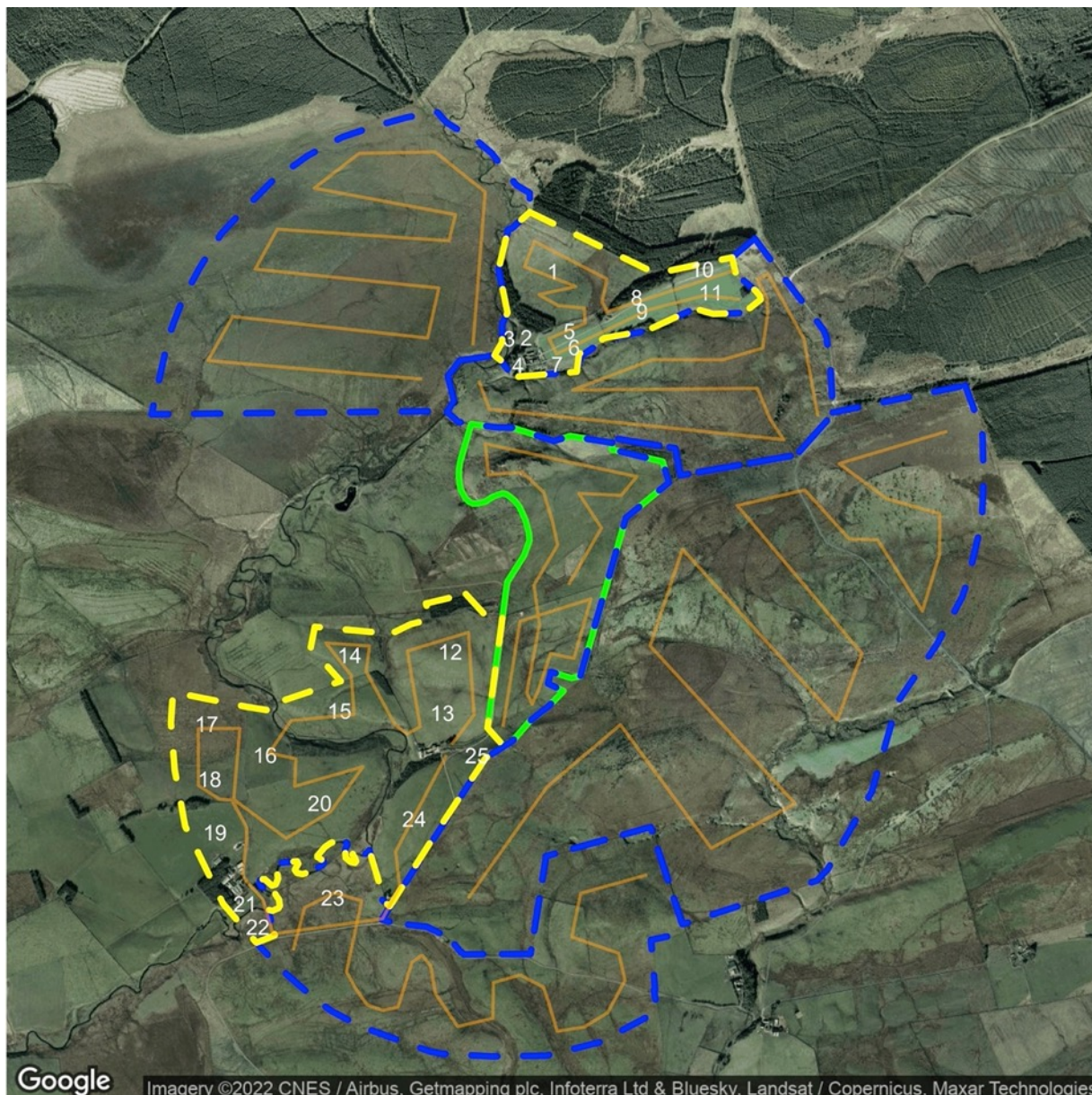


FIGURE 3: FORESTRY SITE AND PARTS OF 1KM BUFFER THAT WERE SURVEYED

(Reproduced under licence from Google Earth Pro. Green = forestry site, blue = unenclosed land in 1km buffer that was surveyed, yellow = enclosed land in 1km buffer that was surveyed. Field numbers are shown in white. Transects route are shown using orange lines.)

C.3 DESK STUDY

The Multi Agency Geographic Information for the Countryside website (MAGIC)¹ was searched for the following statutory protected sites designated for ornithological interests:

- Special Protection Areas (SPAs);
- Proposed Special Protection Areas (pSPAs);
- Sites of Special Scientific Interest (SSSIs); and
- Ramsar sites.

¹ Multi Agency Geographic Information for the Countryside (MAGIC) www.magic.gov.uk

C.4 FIELD SURVEY

C.4.1 SURVEY EQUIPMENT

The following items of equipment were utilised during survey work and analysis:

- Swarovski EL 8x32 WB binoculars
- Swarovski EL 8x42 binoculars
- Swarovski ATS 80 HD scope with 25-50x W eyepiece
- Vortex Diamondback HD scope
- iPad with GIS Pro mapping
- SW Maps App for Android
- Sony RX10 IV digital camera
- IR night vision equipment
- SM4 to record bird songs and calls.
- Pulsar Axion XM30S thermal camera

C.4.2 BREEDING BIRD SURVEY METHODS OF FORESTRY SITE

Surveys of the forestry site followed Bird Survey Guidelines². The key points of the guidelines are as follows:

- Surveys to be completed by an experienced ornithologist who is able to identify all commonly occurring UK bird species by sight and call.
- Six surveys to be carried out between March and July.
- At least one dusk survey required at sites that are potentially suitable for crepuscular/nocturnal species. The forestry site was considered potentially suitable for crepuscular/nocturnal species, and therefore a dusk survey was carried out in March.
- Early morning surveys to start between half an hour before sunrise and half an hour after sunrise.
- Dusk surveys to be carried out in last few hours of the day, finishing at least one hour after sunset.
- Weather conditions should be good during each survey, therefore heavy rain, strong wind and low visibility should be avoided.
- Sites should be walked at an ambling pace, approaching each point within the site to a minimum distance of 50m, depending on habitat within the site.
- Locations of priority species to be plotted onto a map using the British Trust for Ornithology's standard list of codes for bird species, along with data such as behaviour, sex and number of individuals.

C.4.3 WADER SURVEY METHODS OF BUFFER

Surveys of enclosed land (grassland below the moorland line) in the 1km buffer followed O'Brien and Smith (1992)³. The key points of the guidelines are as follows:

- Three visits between 18th April and 19th June.
- Surveys should be carried out at the correct time of day given the wader species present. The three hours after dawn are suitable for each of oystercatcher, lapwing, snipe, redshank and curlew. Surveys for all species except redshank can be undertaken in the

² Bird Survey & Assessment Steering Group. 2022. Bird Survey Guidelines for assessing ecological impacts, v.0.1.0.

³ O'Brien, M. & Smith, K. W. 2009. Changes in the status of waders breeding on wet lowland grasslands in England and Wales between 1982 and 1989. *Bird Study* 39: 165–176.

three hours before dusk. Surveys for curlew can also be undertaken between 09:00 and 17:00, and surveys for redshank can also be undertaken up to 12:00.

- Each field should be walked so that all parts are approached to within 100m.
- Locations of waders to be plotted onto a map using the British Trust for Ornithology's standard list of codes for bird species, along with data such as behaviour, sex and number of individuals.
- Each bird should be allocated to a single field—the first field in which it was recorded, or, if the bird was first observed in display flight, the field at the centre of its display flight. At the end of the visit, summary information should be recorded including the number of pairs or individuals of each species in each field.

Surveys of unenclosed land (open moorland) in the 1km buffer followed Brown and Shepherd (1993)⁴. The key points of the guidelines are as follows:

- A minimum of two visits to be undertaken, once during the early part of the season (early April to mid-May) and once later (mid-May to late June).
- Surveys should be carried out between 08:30 and 18:00.
- Spend 20-25 minutes in each 500m x 500m quadrat of land.
- Stop and scan the study area at regular intervals.
- Locations of wader species to be plotted onto a map using the British Trust for Ornithology's standard list of codes for bird species, along with data such as behaviour, sex and number of individuals.

The dates and times of each visit were noted together with the weather conditions (Table 3). All of the forestry site was surveyed during the same morning, but as the buffer was large, it was surveyed across several different mornings.

C.4.4 SURVEY TIMING AND WEATHER CONDITIONS

The table below details the survey dates, timings and weather conditions.

Area	Date	Temp.	Cloud	Precip.	Wind	Visibility	Time
Forestry site	22/03/22	8°C	30%	None	SE2	>2km	17:25-19:25
Forestry site	28/03/22	9°C	90%	None	NE2	>2km	06:45-09:00
Forestry site	12/04/22	7°C	100%	None	NE2	>2km	06:20-08:30
Buffer	12/04/22	8°C	100%	None	NE2	>2km	08:30-13:30
Buffer	14/04/22	11°C	60%	None	SE3	>2km	09:15-16:30
Buffer	25/04/22	4°C	80%	None	E2	>2km	17:00-20:15
Forestry site	03/05/22	8°C	100%	None	E2	>2km	05:50-08:15
Buffer	23/05/22	12°C	100%	None	S2	>2km	05:00-08:30
Forestry site	07/06/22	17°C	90%	None	E1	>2km	05:00-07:30
Buffer	07/06/22	17°C	90%	None	E2	>2km	07:45-12:30
Buffer	09/06/22	12°C	100%	None	SW2	>2km	05:00-08:00
Buffer	09/06/22	15°C	100%	None	SW4	>2km	05:00-08:00
Forestry site	15/06/22	9°C	80%	None	W2	>2km	04:50-07:10

C.5 PERSONNEL

The table below details the personnel who undertook the survey work.

⁴ Brown, A. F. & Shepherd, K. B. 1993. A method for censusing upland breeding waders. *Bird Study* 40: 189–195.

Name	Position	Professional Qualifications	Natural England Survey Licence Numbers
Ross Ahmed	Senior Field Ornithologist	BA (Hons) MPhil	CL29/00294 (Barn Owl)
Richard Thompson	Graduate Ecologist	BSc (Hons) MSc	-

Further details of experience and qualifications are available at www.e3ecology.co.uk.

C.6 INTERPRETATION OF RESULTS

C.6.1 BREEDING BIRD SURVEYS OF FORESTRY SITE

Field maps were generated for each visit and contain all records of all species for that visit. Interpretation of the breeding bird maps is not such a simple process that unambiguous rules can be used. The general aim is to identify clusters of registrations from the maps that are likely to refer to one pair of breeding birds. These clusters are considered to represent the focal point of a territory and results are presented in terms of the number of such pairs.

If species were recorded on only a single occasion, a specific assessment of the likelihood of breeding was undertaken. This includes a review of the habitats within and adjacent to the site for their suitability to support the species. The specific ecology of the species and its known range were also carefully considered using as up to date literature as practicable. In the case of migratory or dispersing species the location of the site and the weather conditions were also assessed to determine whether the species is likely to be “passing through” on migration or likely to be breeding. It must be borne in mind that this is inexact and so a precautionary approach was taken with a species included as breeding should the habitats be suitable.

As all survey data was recorded electronically in the field, using an Apple iPad running the ‘GIS Pro’ application, the breeding bird maps (one for each of the visits) can be analysed as separate layers within a single map, and therefore clusters of registrations are relatively easy to detect. The final breeding bird map presented in this report has the species code recorded around the centre of its likely territory.

C.6.2 WADER SURVEYS OF BUFFER

Estimates of the number of pairs of each wader species in the enclosed land use the criteria below, which is based on the O’Brien & Smith method³ for the enclosed land. Estimates of breeding territories of waders using this method may differ slightly from clusters of territories evident on territory maps.

- Oystercatcher: the number of pairs is calculated by totalling the number of paired individuals divided by two, number of displaying individuals, number of single birds, number of nests or the number of broods.
- Lapwing: the number of pairs is calculated using the maximum number of individuals recorded on the site between mid-April and late May divided by two.
- Snipe: the number of pairs is considered to be the total of the maximum number of drumming or chipping individuals in each field over the three visits.
- Curlew: the number of pairs is calculated by transforming the mean number of individuals (excluding birds apparently in flocks) counted over the three visits at each site using the formula $(0.71 \times \text{mean count}) + 0.10$.
- Redshank: the number of pairs is considered to be the mean number of birds found on the site over all visits.

In the unenclosed land, birds are considered to represent breeding birds if they are observed displaying or singing, observed at the nest, if eggs or young are located, if adults repeatedly alarm call or perform distraction displays, or if adults are observed in territorial disputes.

Separate maps are provided for the wader species recorded in the forestry site and the buffer (Figure 6). The maps show locations at which waders were recorded, as denoted by the BTO code (for example 'CU'). All sightings are considered to involve breeding birds. A buffer was added around each location with an area equivalent to average territory sizes for each species, which are as follows: curlew (6.35ha⁵), lapwing (0.6ha⁶), oystercatcher (0.75ha⁷) and snipe (9ha⁸). Buffers considered to form part of the same territory were joined, to give an estimation of territory extent (see red buffers around the BTO codes in Figure 6). However, this process is not exact and there will always be some element of uncertainty.

C.7 EVALUATION

The relative ornithological value of the site was assessed using a geographical frame of reference. For designated sites this is generally a straightforward process with the assigned designation generally being indicative of a particular value, e.g. Sites of Special Scientific Interest are designated under national legislation and are therefore considered to be receptors of national value. The assignment of value to non-designated receptors is less straightforward and as recognised by the Guidelines for Ecological Impact Assessment produced by the Chartered Institute of Ecology and Environmental Management⁹, is a complex and subjective process and requires the application of professional judgement.

When assessing the value of species and habitats, a number of criteria are considered, including the abundance of the species, both on a national and local scale, the diversity of species present, the quality of the surrounding habitat and both local and national trends. Relevant documents and legislation are considered including the lists of species and habitat of principal importance annexed to the NERC Act (2006), those provided within relevant local Biodiversity Action Plans and the BoCC4¹⁰. These data sources can provide context at a local, regional and national scale and take account of both national and local population trends.

At the time of writing, there is no agreed method for assessing the value of a site for specifically for breeding waders. The evaluation of the site for breeding waders may need to be amended in the light of any emerging guidance.

The table below provides examples of receptors of value at different geographical scales.

TABLE 5: VALUATION	
LEVEL OF VALUE	EXAMPLES
International	An internationally designated site or candidate site (SPA/pSPA/Ramsar)
	A site meeting criteria for international designation.
	A species present in internationally important numbers (i.e. >1% of the biogeographic population)
National	A nationally designated site (SSSI/NNR).
	A species present in nationally important numbers (i.e. >1% of the national population)

⁵ Valkama, J., Robertson, P. & Currie, D. 1998. Habitat selection by breeding curlews (*Numenius arquata*) on farmland: the importance of grassland. *Annales Zoologici Fennici* 35: 141–148.

⁶ <https://www.rspb.org.uk/birds-and-wildlife/wildlife-guides/bird-a-z/lapwing/breeding-and-nesting-habits/>

⁷ Danielsen, J. 2001. Reproductive performance in a population of individually marked Oystercatchers (*Haematopus ostralegus*) on the Faroe Islands.

⁸ Winegardner, S. C. 1976. Ecology of the Common Snipe in Northern Utah.

⁹ Chartered Institute for Ecology and Environmental Management. 2016. *Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater and Coastal*.

¹⁰ Stanbury, A. et al. 2021. The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds* 114: 723–747.

TABLE 5: VALUATION	
LEVEL OF VALUE	EXAMPLES
Regional	A site that falls slightly below the criteria necessary for designation as a SSSI but is considered of greater than county value.
	A species present in important numbers in the context of the county (i.e. >1% of the regional population)
County	A Local Wildlife Site (LWS) or equivalent, designated at a County level
	A species present in important numbers in the context of the county (i.e. >1% of the county population)
District	A Local Wildlife Site (LWS) or equivalent, designated at a District level
	A species present in important numbers in the context of the district (i.e. >1% of the district population)
Parish	A species population considered to appreciably enrich the habitat resource within the context of the parish.
	Local Nature Reserves
Local	Habitats and species that contribute to local biodiversity but are not exceptional in the context of the parish.
Low	Assemblages of limited diversity that are unexceptional and common to the local area.

The site lies within Greenhead Civil Parish which covers approximately 2,212ha and is mainly moorland and pasture land.

D. RESULTS

D.1 DESKTOP STUDY

D.1.1 PRE-EXISTING INFORMATION

AERIAL PHOTOGRAPHY

The most recent aerial photograph of the forestry site (2020) indicates that habitats are dominated by intensively managed upland fringe grasslands.

Historic imagery suggests that the forestry site has largely remained unchanged since the earliest aerial photograph (2002). The area to the north west of the forestry site was planted as Wallshield phase 1 approximately six years ago. Recent aerial photographs do not show the recently planted area.

MULTI AGENCY GEOGRAPHIC INFORMATION FOR THE COUNTRYSIDE WEBSITE¹

The table below details the internationally and nationally statutorily designated sites in the surrounding area for which ornithological interest is a key reason for designation. A single internationally designated site lies within 10km of the forestry site. There are no nationally designated sites with ornithological monitored features within 5km of the forestry site.

Designation	Site Name	Reason for Designation	Distance from Site
Special Protection Area	North Pennine Moors	Breeding hen harrier (2.3% of British population), merlin (10.5% of British population), peregrine (1.3% of British population) and golden plover (6.2% of British population)	7.2km south

The forestry site falls within the Hadrian's Wall Higher Level Stewardship Target Area.

The forestry site falls within the Curlew LIFE Geltsdale & Hadrian's Wall Project boundary, which is shown in Figure 4. The project aims to stabilise curlew breeding populations by improving breeding habitat conditions.

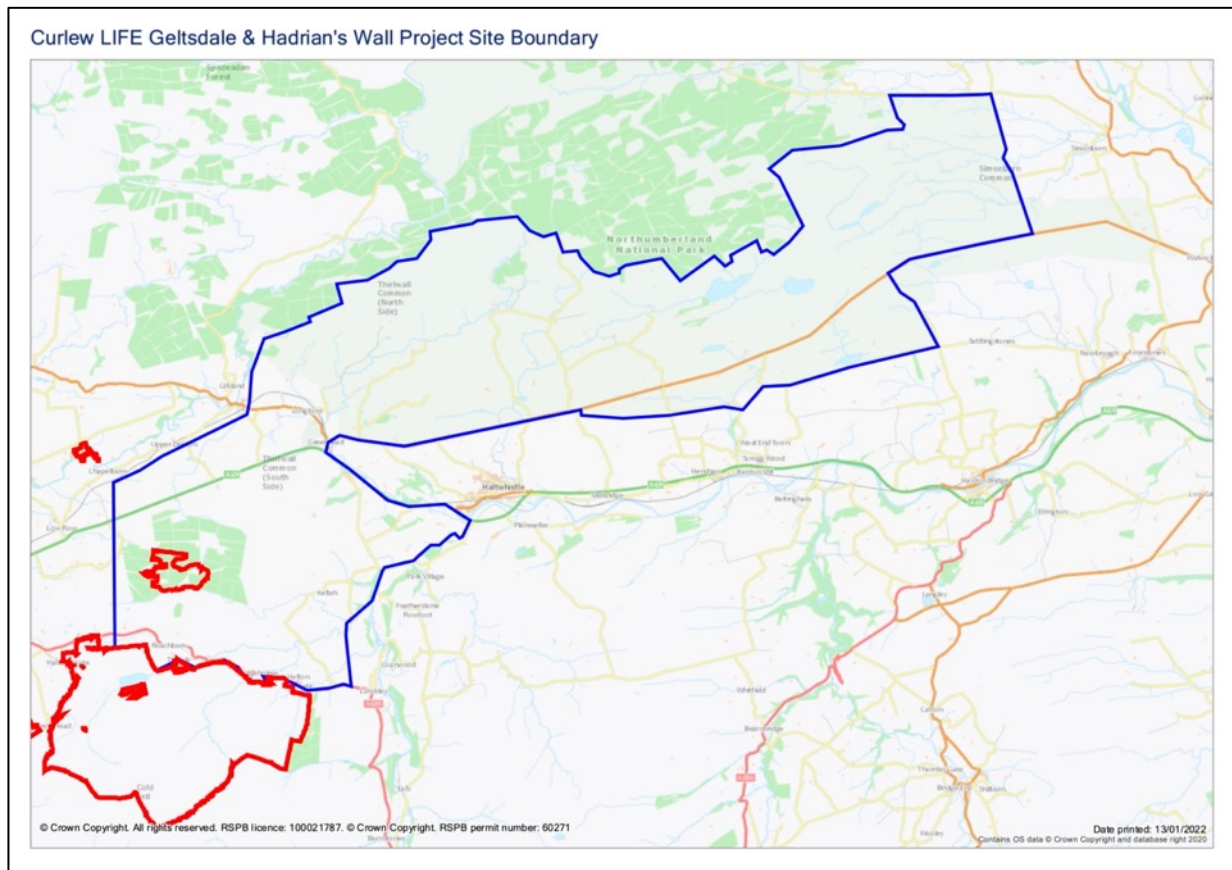


FIGURE 4: CURLEW LIFE GELTSDALE & HADRIAN'S WALL PROJECT SITE BOUNDARY

Guidance for afforestation proposed on or near nationally important upland breeding wader areas

This section (Steps 1-3 below) provides an assessment of the importance of the priority breeding bird species present and follows the decision support framework to guide wader conservation and the establishment of new woodland in England¹¹.

Step 1

The guidance was followed in conjunction with MAGIC to determine whether the forestry site is likely to be an important site for breeding waders (a) the forestry site and the buffer both lie in an area with priority species for CS targeting (curlew and lapwing) (b) the forestry site or buffer do not lie in Important Bird Areas (c) part of the buffer lies within the moorland line, but the forestry site does not (d) the forestry site lies within strata 4 for curlew and lapwing, strata 3 for snipe, strata 2 for oystercatcher, and strata 1 for golden plover, dunlin, common sandpiper, redshank and ringed plover. In general, the buffer lies in strata 3-5 for curlew, lapwing and snipe, strata 1-3 for oystercatcher, common sandpiper, dunlin and golden plover, and strata 1 for redshank and ringed plover (e) no priority habitats were identified in the forestry site, but MAGIC identified the following in the buffer: grass moorland (non-priority), deciduous woodland and blanket bog, as well as areas with additional habitats but no main habitat.

Step 2

¹¹ Forestry Commission. 2022. Guidance for afforestation proposed on or near nationally important upland breeding wader areas. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1051259/FC-NE_Joint_Guidance_Note_-_Afforestation_and_important_wader_sites_V9.0_DOUBLE_CHECK_PLUS_Version__31_JAN_2022.pdf.

The forestry site (which is 33.1ha) is part of a large area (much larger than 10ha) of generally open land that lies between Haltwhistle and Kielder Forest. However, a recently planted area lies immediately to the west of the north-west end of forestry site.

Step 3

This report provides necessary information on breeding birds to help fulfil this step.

PREVIOUS SURVEY WORK

Breeding bird surveys have been undertaken at the forestry site previously¹². Within the forestry site, five species were recorded breeding: skylark (17 pairs), wheatear (1 pair), meadow pipit (approximately 16 pairs), cuckoo (1 pair) and curlew (1 pair). A total of 38 bird species were recorded within the forestry site and in the areas adjacent, of which 27 species were confirmed to have bred.

D.1.2 CONSULTATION

Local Records Centre

The table below details the bird species records provided by the local records centre in 2022 from within a search area covering the forestry site boundary and a 2km buffer zone.

TABLE 7: LOCAL RECORDS CENTRE DATA SEARCH	
Species	No. of Records within Search Area
Barn Owl	1
Bullfinch	1
Carrion Crow	3
Coal Tit	2
Common (Mealy) Redpoll	1
Cuckoo	1
Curlew	27
Dunnock	2
Fieldfare	1
Goldcrest	4
Greylag Goose	1
Hen Harrier	2
Kestrel	2
Lapwing	9
Lesser Redpoll	1
Linnet	1
Little Owl	1
Long-eared Owl	3
Mallard	1
Marsh Warbler	3
Meadow Pipit	6
Mistle Thrush	1
Moorhen	2
Oystercatcher	3
Pheasant	1
Ringed Plover	9
Robin	3
Short-eared Owl	1
Siskin	3
Skylark	10
Snipe	13

¹² Whytock, R. 2019. Wallshield Farm Ecological Survey Report. Whytock Ecology Ltd.

Song Thrush	3
Sparrowhawk	1
Starling	1
Willow Warbler	3
Woodpigeon	2
Wren	3

D.2 FIELD SURVEY

D.2.1 HABITAT SURVEY

Habitats in the forestry site primarily comprise improved, semi-improved and acid grasslands, which have been significantly modified by intensive grazing. Much of the northern half of the forestry site comprises *Juncus* dominated grassland. Vegetation topping was carried out just prior to the commencement of breeding bird surveys in 2022. The remainder of the forestry site comprises a mosaic of grassland types including acid grassland, mesotrophic grassland associated with well-drained permanent pastures and meadows, and bracken-dominated grassland. A rocky outcrop is present at the north end of the forestry site. The boundaries of the area are generally marked by dry stone walls. The bird species breeding in the forestry site are generally ground-nesting species that are typical of marginal upland grassland habitats.



FIGURE 5: HABITATS PRESENT IN AND ADJACENT TO FORESTRY SITE

Habitats in the buffer are generally similar to the forestry site, however the unenclosed land is less intensively grazed. Additional habitats present in the buffer include several small conifer plantations, several small patches of deciduous and mixed woodland, several burns, four scattered farms/houses and several single-track roads. The bird species using the buffer are generally similar to those using the forestry site. However the woodland, houses and burns support species that are not found in the forestry site. The area adjacent to the forestry site to the west was planted with forestry approximately six years ago.

D.2.2 BREEDING BIRD SURVEY

The table below details the species recorded breeding within the forestry site and the number of pairs for each species.

TABLE 8: BREEDING BIRD ASSEMBLAGE RESULTS AND EVALUATION IN FORESTRY SITE¹³

Species ¹⁰	BTO Code	Pairs	National Priority	Schedule 1	Annex 1
Curllew	CU	2	✓		
Mallard	MA	1			
Meadow Pipit	MP	12			
Pied Wagtail	PW	2			
Skylark	S.	7	✓		
Snipe	SN	1			
Stock Dove	SD	1			
Stonechat	SC	1			
Wheatear	W.	1			
Wren	WR	1			
Total:		29	2	0	0

A further 13 species were recorded using the forestry site but were not recorded breeding and these are detailed in the table below.

TABLE 9: SPECIES RECORDED DURING SURVEYS, THOUGH NOT CONSIDERED TO BE BREEDING WITHIN THE FORESTRY SITE¹³

Species ¹⁰	BTO Code	Peak Count	National Priority	Schedule 1	Annex 1
Blackbird	B.	1			
Buzzard	BZ	1			
Carrion Crow	C.	1			
Chaffinch	CH	1			
Fieldfare	FF	19		✓	
Linnet	LI	2	✓		
Mistle Thrush	M.	6			
Pheasant	PH	1			
Raven	RN	1			
Starling	SG	2	✓		
Swallow	SL	6			
Song Thrush	ST	5	✓		
Woodpigeon	WP	13			
Total:		59	3	1	0

The table below details the species recorded breeding within the buffer and the number of pairs for each species.

¹³ National Priority = Species of principal importance listed in Section 41 of the NERC Act (2006),
 Schedule 1 = Species listed on Schedule 1 of the Wildlife and Countryside Act (1981) as amended. These are birds and their young, for which it is an offense to intentionally or recklessly disturb at, on or near an 'active' nest,
 Annex 1 = Species listed on Annex 1 of The Conservation of Habitats and Species Regulations 2017 (as amended). This lists 194 species and sub-species which are particularly threatened. Member States must designate Special Protection Areas (SPAs) for their survival.

TABLE 10: BREEDING BIRD ASSEMBLAGE RESULTS AND EVALUATION IN BUFFER¹³

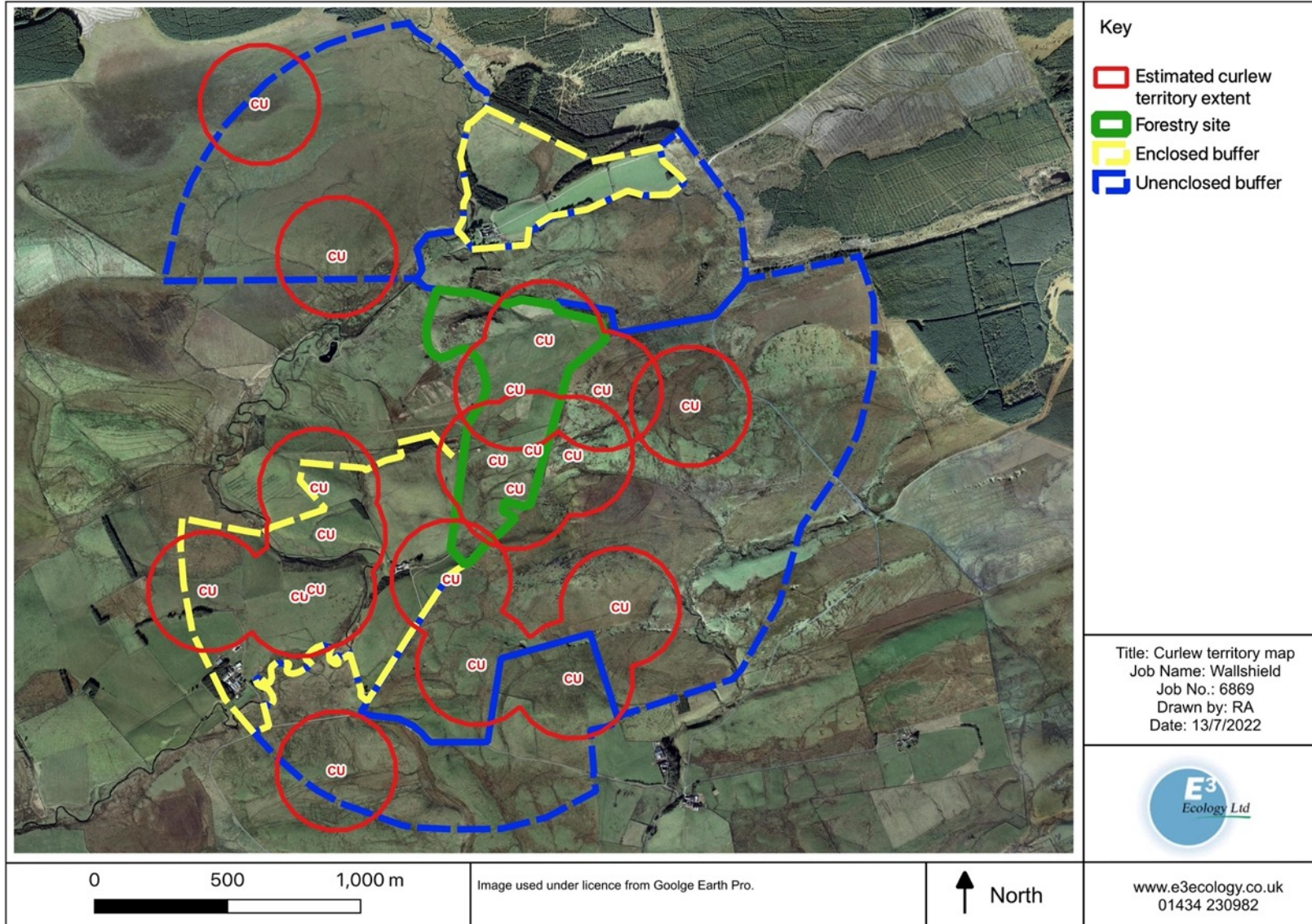
Species ¹⁰	BTO Code	Pairs	National Priority	Schedule 1	Annex 1
Blackbird	B.	5			
Blackcap	BC	1			
Carrion Crow	C.	1			
Chaffinch	CH	17			
Coal Tit	CT	6			
Cuckoo	CK	1	✓		
Curlew	CU	8	✓		
Goldcrest	GC	4			
Goldfinch	GO	2			
Grasshopper Warbler	GH	1	✓		
Grey Wagtail	GL	2			
House Martin	HM	2			
House Sparrow	HS	3	✓		
Lapwing	L.	2	✓		
Lesser Redpoll	LR	2	✓		
Magpie	MG	1			
Mallard	MA	2			
Meadow Pipit	MP	82			
Mistle Thrush	M.	4			
Oystercatcher	OC	1			
Pheasant	PH	2			
Pied Wagtail	PW	10			
Reed Bunting	RB	7	✓		
Robin	R.	9			
Rook	RO	16			
Sedge Warbler	SW	3			
Siskin	SK	2			
Skylark	S.	77	✓		
Snipe	SN	7			
Song Thrush	ST	9	✓		
Sparrowhawk	SH	1			
Starling	SG	3	✓		
Stonechat	SC	6			
Swallow	SL	7			
Wheatear	W.	4			
Willow Warbler	WW	13			
Woodpigeon	WP	11			
Wren	WR	11			
Total:		345	10	0	0

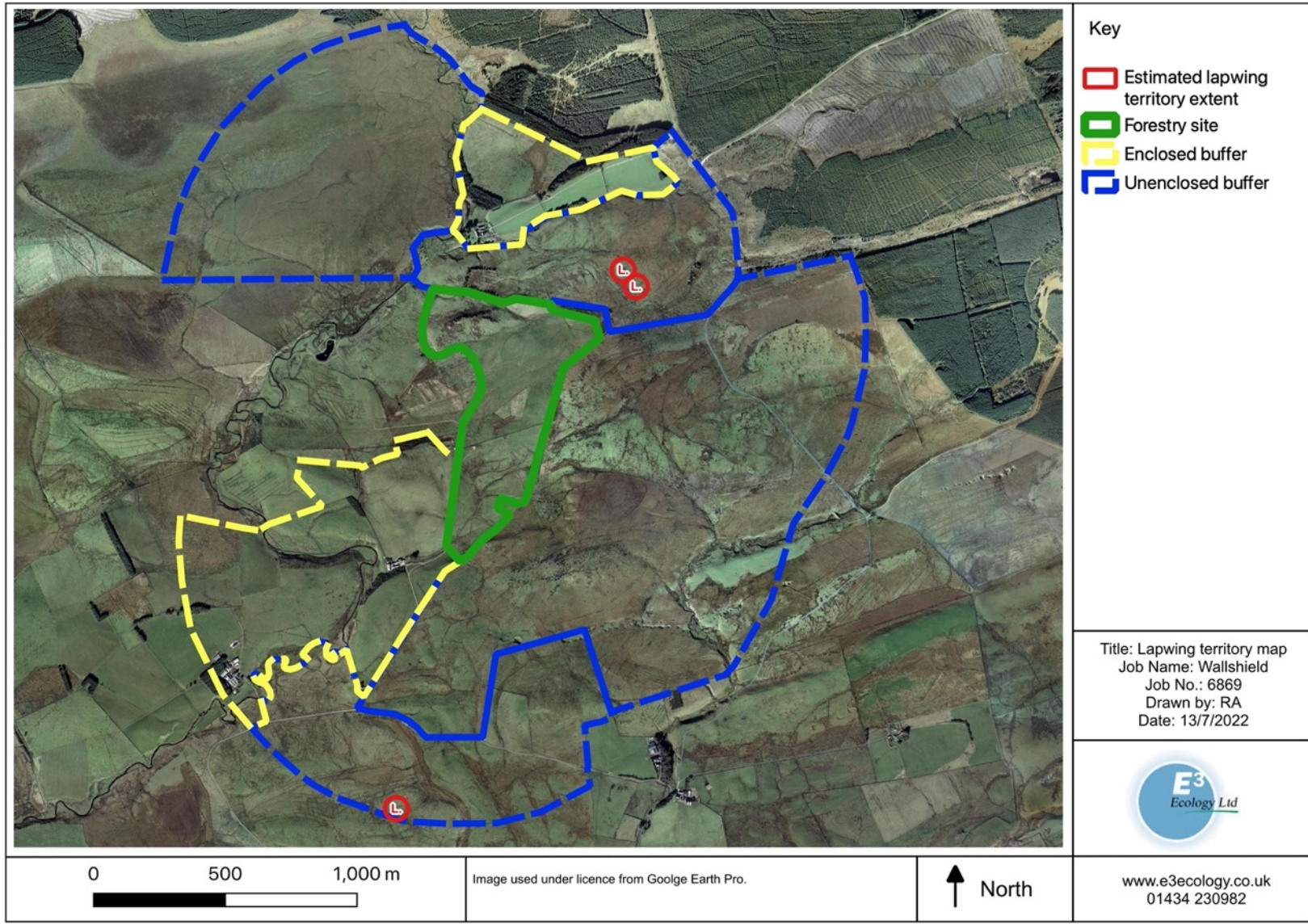
A further 13 species were recorded using the buffer but were not recorded breeding and these are detailed in the table below.

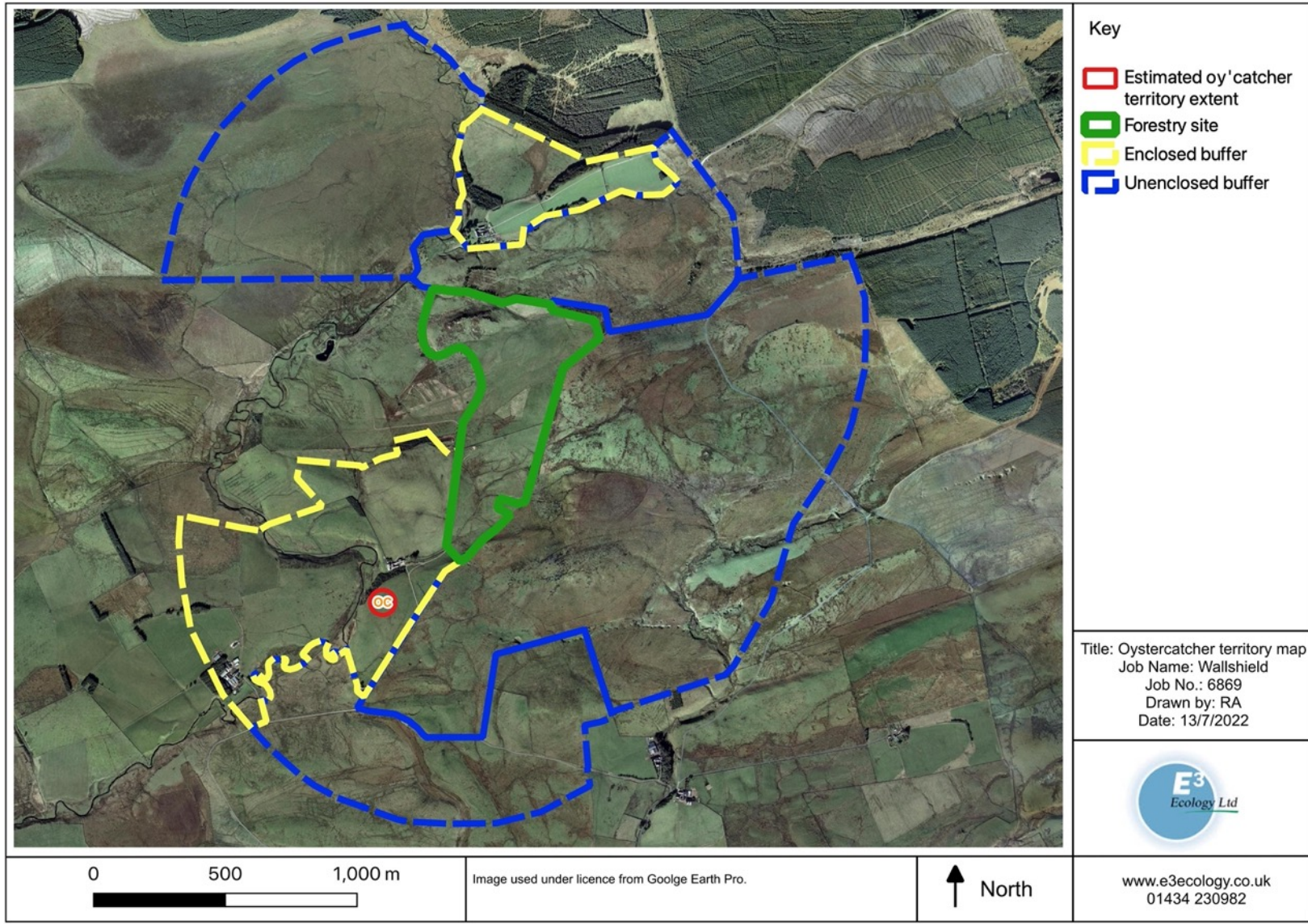
TABLE 11: SPECIES RECORDED DURING SURVEYS, THOUGH NOT CONSIDERED TO BE BREEDING WITHIN THE BUFFER¹³

Species ¹⁰	BTO Code	Peak Count	National Priority	Schedule 1	Annex 1
Black-headed Gull	BH	8			
Canada Goose	CG	2			
Fieldfare	FF	18		✓	
Goshawk	GI	1		✓	✓
Grey Heron	H.	2			
Kestrel	K.	2			
Linnet	LI	1	✓		
Long-tailed Tit	LT	1			
Raven	RN	3			
Peregrine	PE	1			
Ring Ouzel	RZ	1	✓		
Stock Dove	SD	2			
Sand Martin	SM	6			
Total:		49	2	2	1

D.2.3 WADER MAPS







- Key**
- Estimated oystercatcher territory extent
 - Forestry site
 - Enclosed buffer
 - Unenclosed buffer

Title: Oystercatcher territory map
 Job Name: Wallshield
 Job No.: 6869
 Drawn by: RA
 Date: 13/7/2022



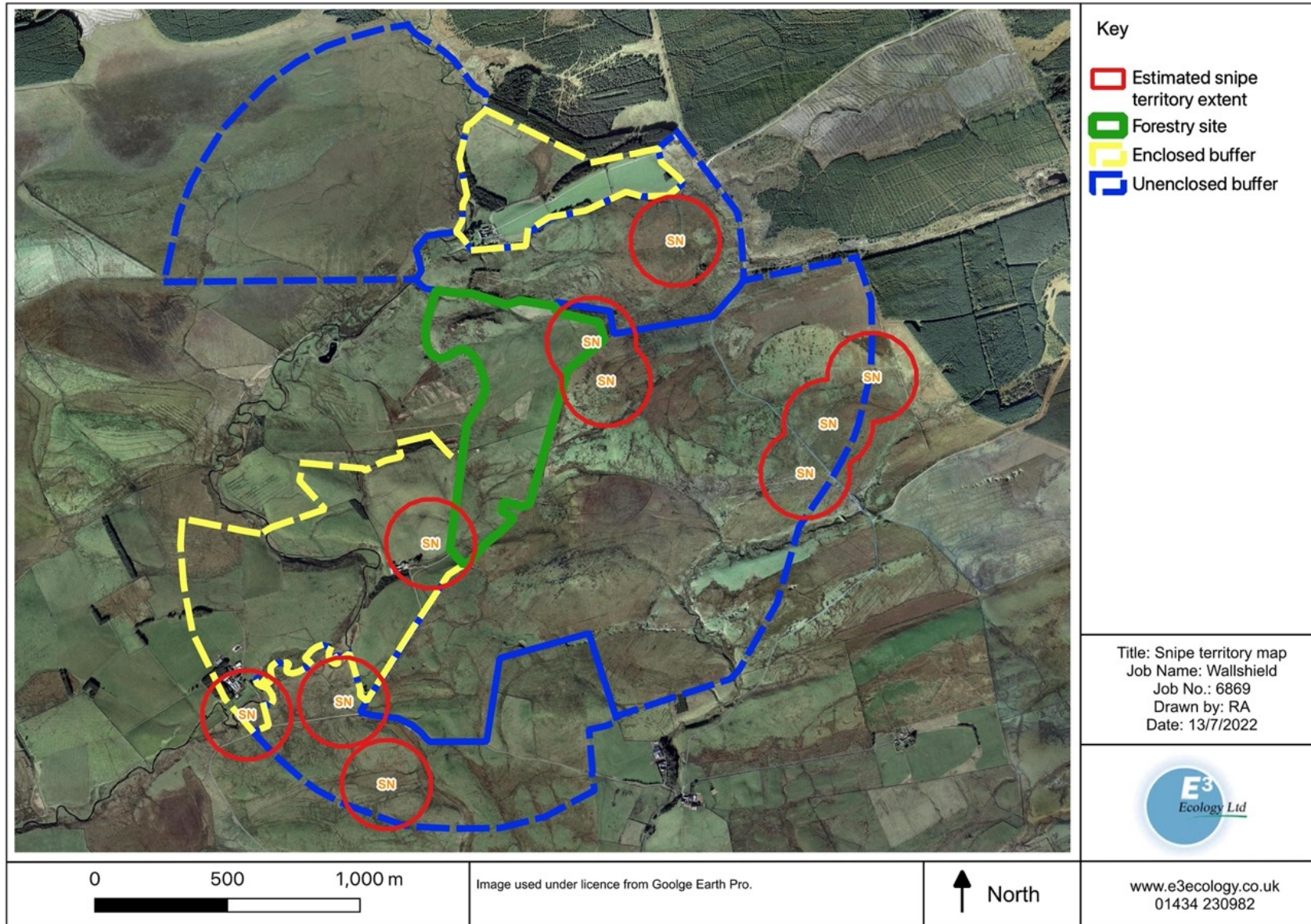


FIGURE 6: ESTIMATED WADER TERRITORY LOCATIONS AND EXTENTS

D.2.4 TERRITORY MAPS (EXCLUDING WADERS)

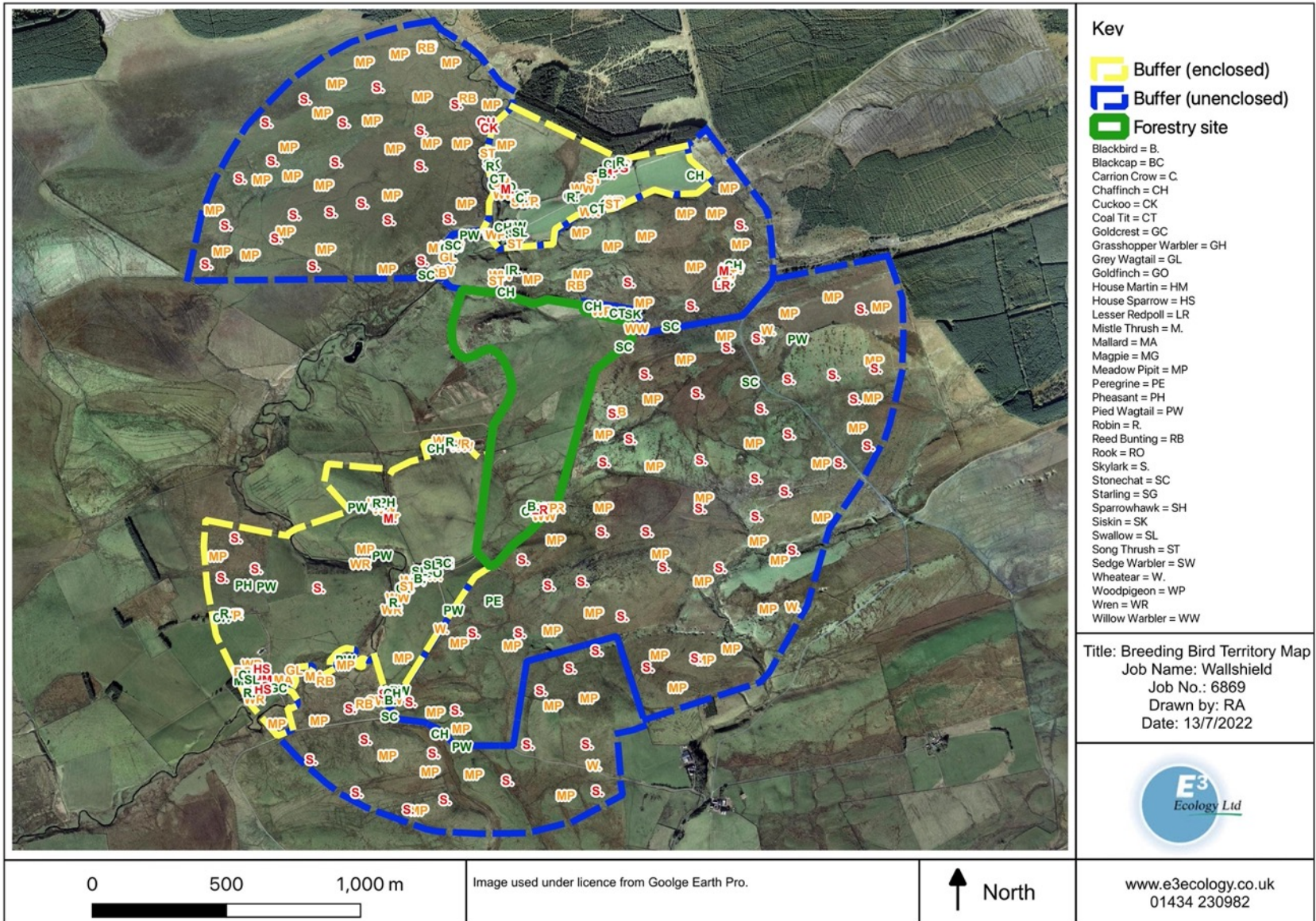


Key

Site Boundary

Mallard = MA
 Meadow Pipit = MP
 Pied Wagtail = PW
 Skylark = S.
 Stock Dove = SD
 Stonechat = SC
 Wheatear = W.
 Wren = WR

Title: Breeding Bird Territory Map
 Job Name: Wallshield
 Job No.: 6869
 Drawn by: RA
 Date: 27/6/2022



Key

- Buffer (enclosed)
- Buffer (unenclosed)
- Forestry site

Blackbird = B.
 Blackcap = BC
 Carrion Crow = C
 Chaffinch = CH
 Cuckoo = CK
 Coal Tit = CT
 Goldcrest = GC
 Grasshopper Warbler = GH
 Grey Wagtail = GL
 Goldfinch = GO
 House Martin = HM
 House Sparrow = HS
 Lesser Redpoll = LR
 Mistle Thrush = M.
 Mallard = MA
 Magpie = MG
 Meadow Pipit = MP
 Peregrine = PE
 Pheasant = PH
 Pied Wagtail = PW
 Robin = R.
 Reed Bunting = RB
 Rook = RO
 Skylark = S.
 Stonechat = SC
 Starling = SG
 Sparrowhawk = SH
 Siskin = SK
 Swallow = SL
 Song Thrush = ST
 Sedge Warbler = SW
 Wheatear = W.
 Woodpigeon = WP
 Wren = WR
 Willow Warbler = WW

Title: Breeding Bird Territory Map
 Job Name: Wallshield
 Job No.: 6869
 Drawn by: RA
 Date: 13/7/2022

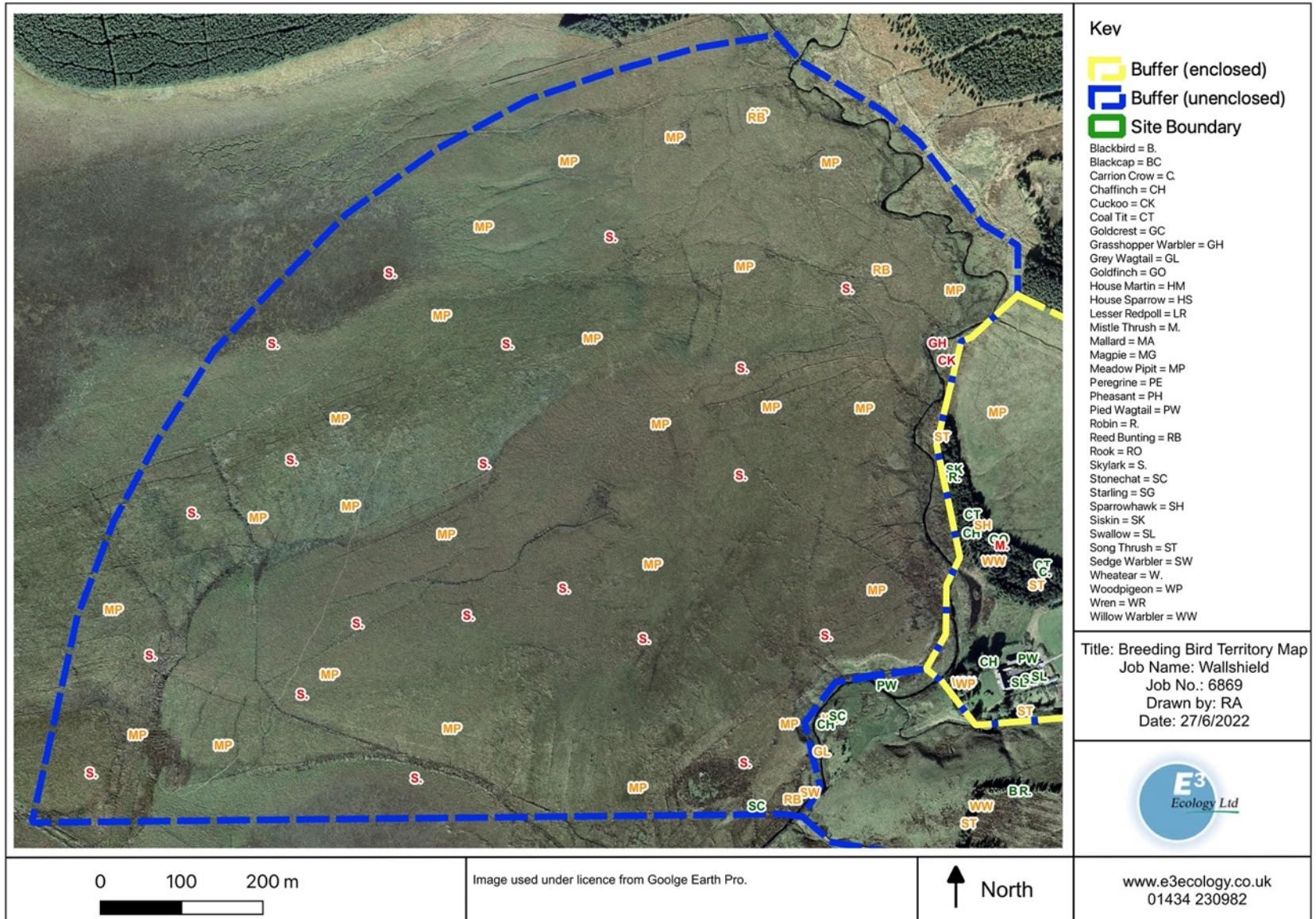


www.e3ecology.co.uk
 01434 230982

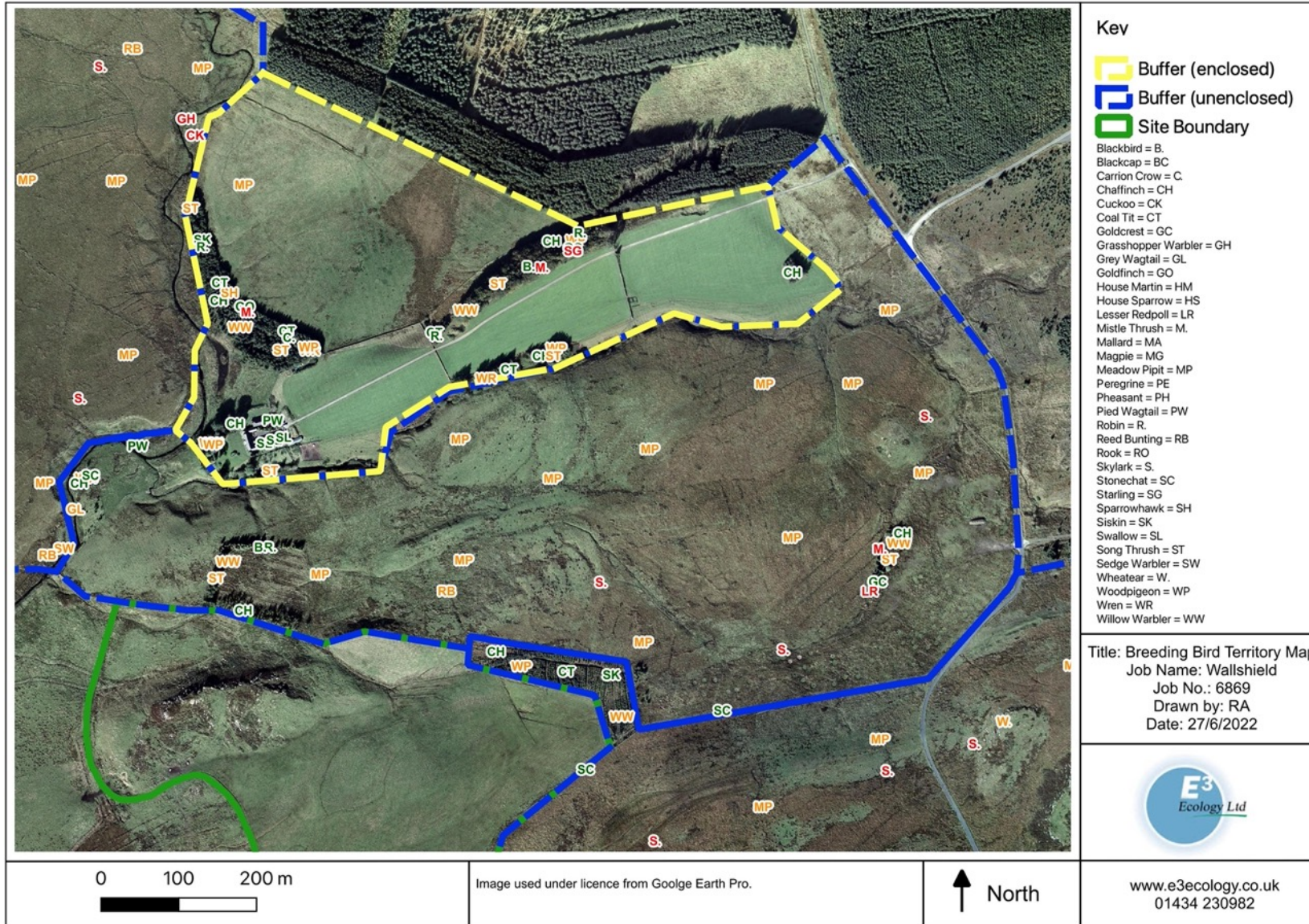


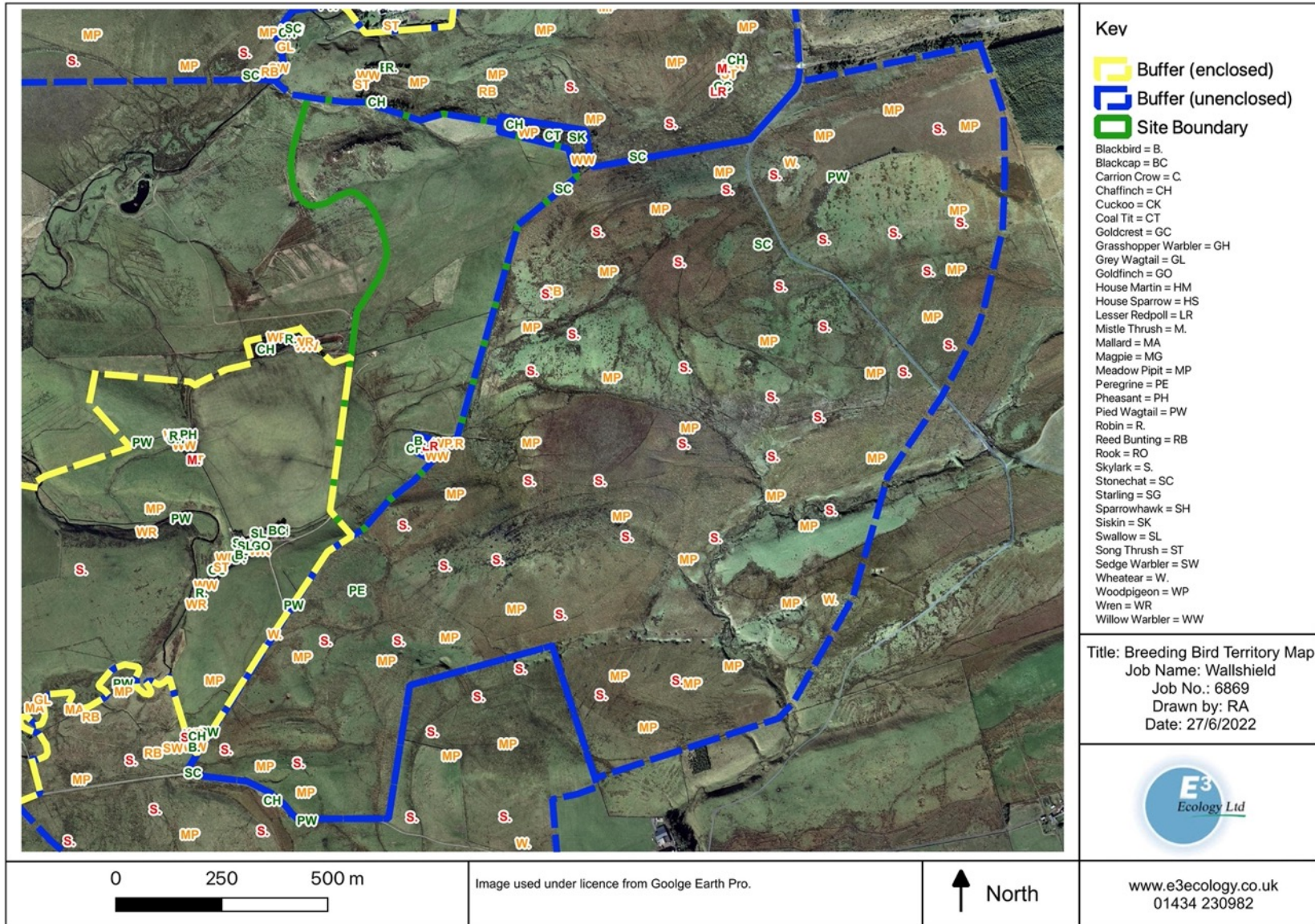
Image used under licence from Goolge Earth Pro.

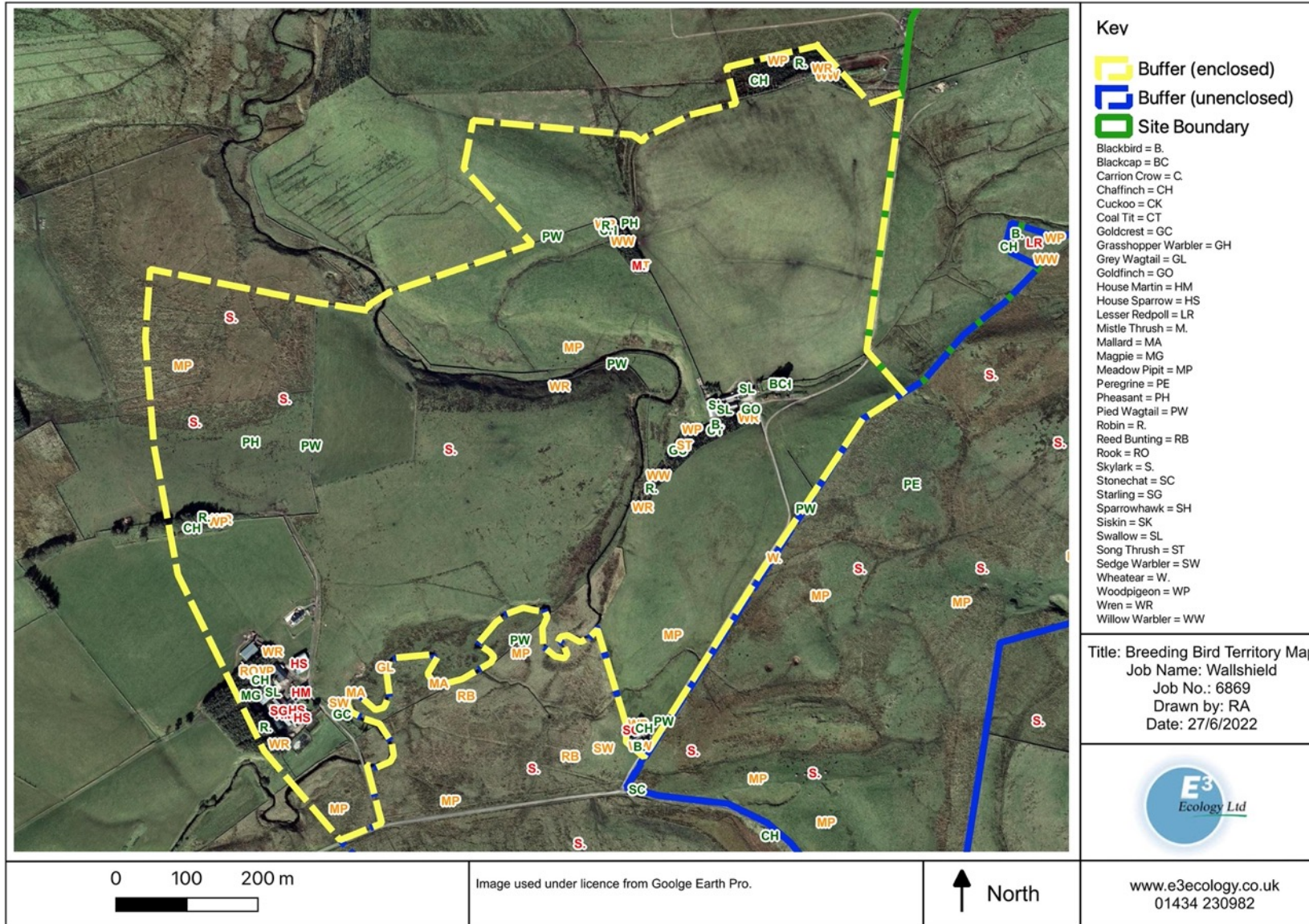












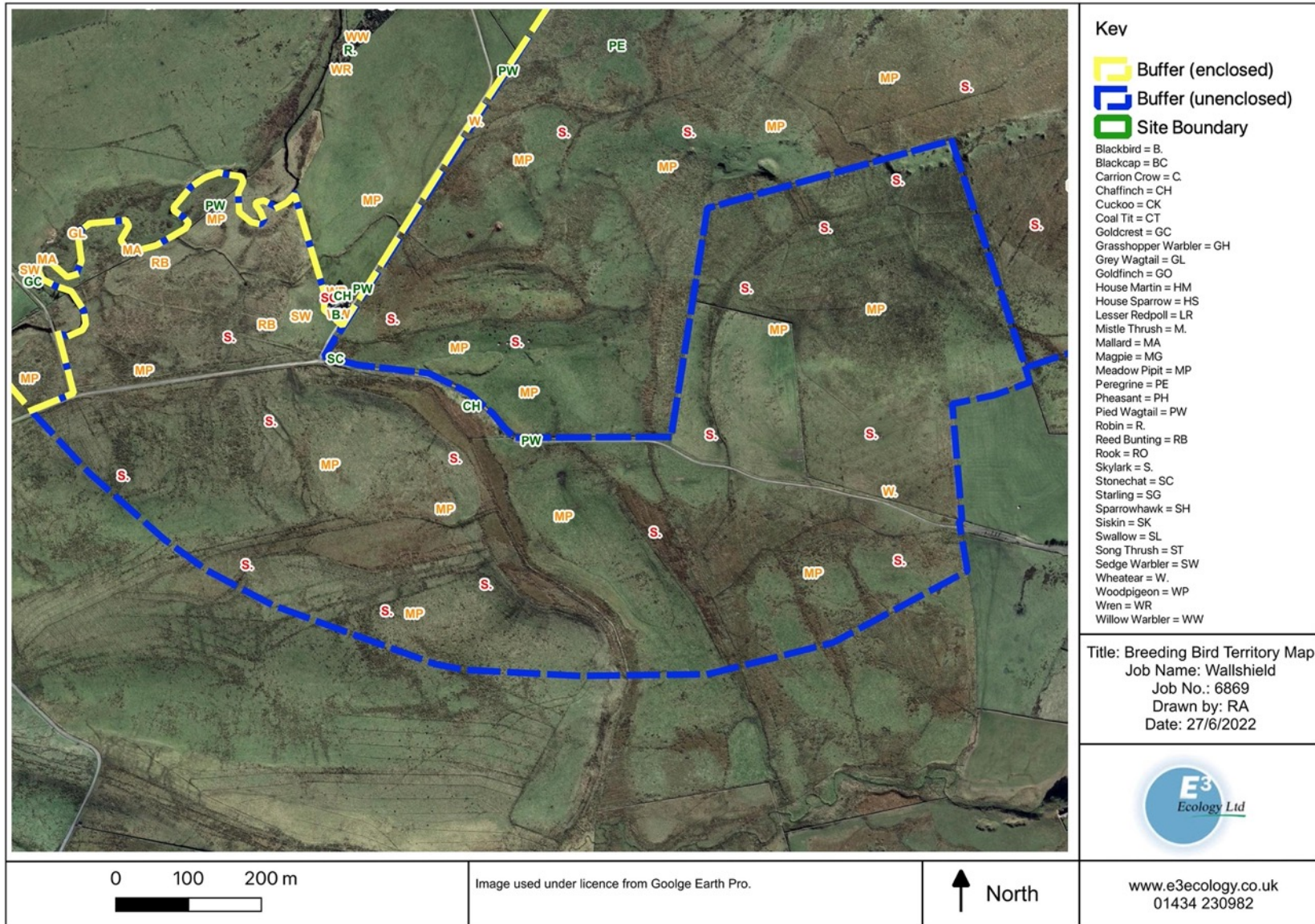


FIGURE 7: TERRITORY MAP (EXCLUDING WADERS)

E. EVALUATION

E.1 BREEDING BIRD ASSESSMENT: FORESTRY SITE

E.1.1 GENERAL BIRD ASSEMBLAGE

The forestry site was found to support approximately 29 pairs of 10 species. This diversity and abundance is low, which reflects the site's small size and limited range of habitat. Most birds breeding in the forestry site are typical of marginal upland grassland habitats. Scarcer species associated with uplands habitats are absent (such as ring ouzel, whinchat, black grouse and raptors).

Several public footpaths traverse the forestry site, but nobody was seen using them and they are unlikely to cause significant disturbance. However farm quad bikes may cause some disturbance and possibly trampling of eggs/chicks. Quad bikes were seen in the site during most surveys.

The density of birds in the forestry site (33.1ha) was 0.88 pairs per hectare. In the northern field (22.4ha) there were 0.89 pairs per hectare and in the southern field (10.7ha) there were 0.84 pairs per hectare

Curlew, meadow pipit, skylark, snipe and stonechat were all nesting in the open grassland. Other species breeding were nesting at the rocky outcrop at the north end of the forestry site (pied wagtail, stock dove and wheatear), in the dry stone walls at the boundaries (wren and pied wagtail), and along the small burn that runs through the forestry site (mallard). Large parts of the site were lacking any breeding birds - for example the grassland in the eastern half of the lower field contained few breeding birds. The lack of breeding birds in large parts of the forestry site can be partly attributed to heavy grazing by sheep and cattle. Heavy grazing can negatively impact vegetation for nesting birds, as it can result in short and sparse vegetation, with restricted plant species diversity. Some large areas of *Juncus* sp. are present in the forestry site. Such prevalence of *Juncus* sp. tends to reduce wader populations, as its tall height and high density limit access to the soil and increase predation threats. Few territories are present around the boundaries of the forestry site due to increased predation risk in these areas and the presence of dry stone walls (which offer few opportunities for nesting birds) rather than hedgerows and trees.

Thirteen species found during surveys were considered not breeding (see Table 9). Fieldfare is a wintering species in the area but the last individuals do not leave the area until late April/early May – a flock of 19 were present in the March survey. All other species were recorded using the forestry site (generally for foraging) without showing breeding behaviour. However all non-breeding species except fieldfare are likely to breed close to the forestry site, and in some cases immediately adjacent. Several species breeding in adjacent plantation woodland used the forestry site for foraging, particularly song thrush which regularly foraged in the grassland within the forestry site. Most non-breeding species are common and widespread, both locally and nationally. However, raven is a scarce breeder in Northumberland where approximately 35 pairs are present.

Several breeding species are likely to be significant in the context of Greenhead Civil Parish, in which the forestry site is situated. Such species include curlew, snipe, stonechat, stock dove and wheatear. However, although breeding bird population figures at the district level are unavailable, none of the species breeding in the forestry site are likely to be significant within the context of the areas covered by Tynedale local area council.

An assessment of the suitability of the forestry site for woodland creation was undertaken and the results are shown in Figure 8. As a standard methodology for the assessment does not yet

exist, the following methods were used. BoCC5¹⁴ red-listed species were given a score of three, amber species a score of two and green species a score of one. The forestry site was split into 10 squares, which resulted in each measuring 5.8ha. The scores were summed for each grid square and the sums were divided into three groups. Grid squares in the higher scoring group were assigned to red, the middle group were assigned to amber and the bottom group assigned to green. For example, the north-eastern most square contained the following territories (score in parentheses): curlew (three), skylark (three), skylark (three), snipe (two), meadow pipit (two), which totals to 13. The figure gives an indication of the areas of the forestry site more or less suitable for woodland creation. However, as most of the species breeding in the forestry site rely on open grassland habitat with long sightlines to see approaching predators, creating woodland in parts of the site where breeding birds are present could displace birds breeding in non-planted areas. This would include species breeding in areas of the buffer.

A breeding bird survey completed in 2019¹² recorded five species in the forestry site, compared with 13 species in 2022. A total of approximately 36 territories were recorded in 2019, which is slightly more than the 29 recorded in 2022. A single wader territory was recorded in 2019 - curlew - whereas curlew (two territories) and snipe (single territory) were recorded in 2022.

E.1.2 WADER ASSEMBLAGE

Two wader species were recorded breeding in the forestry site: curlew (two territories) and snipe (single territory). Both territories of curlew and the snipe territory overlapped with the adjacent buffer to the east (see Figure 6), as evidenced by displaying individuals in the forestry site seen moving into the buffer. Two displaying curlew (representing two pairs) were recorded simultaneously in the March survey, but in subsequent surveys only a single pair were recorded which possibly indicates one of the pairs failed in their breeding attempt.

The table below provides a summary of waders recorded in the forestry site.

Species¹⁰	Surveys Recorded (of 6)	Number of Pairs	Percentage County Breeding Population	County Breeding Population¹⁵	National Breeding Population¹⁶
Curlew	1,2,3,4,5	2	0.06%	3,200	58,000
Snipe	1,2,3	1	0.03%	3,600	64,500

The density of curlew in the forestry site was 6.04 pairs per km² and the density of snipe was 3.02 pairs per km². This represents a low density of waders and is likely to be a result of heavy livestock grazing, the lack of wetland habitat, possible disturbance and trampling by quad bikes (given the frequent presence of quad bikes in the forestry site) and possible high densities of predators. The same reasons possibly explained the absence of both lapwing and oystercatcher, despite the habitat appearing to be generally suitable for both of these species. The site was likely to have been too dry to support breeding redshank.

Both curlew and snipe are of sufficient conservation concern to be placed on the BoCC5¹⁰ list. Curlew is red-listed due to it being in steep decline, is now considered one of the UK's highest

¹⁴ Red list species are of high conservation concern; amber list species are of medium conservation concern; Stanbury, A. et al. 2021. The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds* 114: 723–747. National priority species are listed on the UK Post-2010 Biodiversity Framework published July 2012, formerly UK BAP.

¹⁵ Dean, T. R., Myatt, R. W., Cadwallender, M. L. & Cadwallender, T. A. 2015. Northumbria Bird Atlas 2007-11. Northumberland and Tyneside Bird Club. Newcastle upon Tyne.

¹⁶ Woodward, I., Aebischer, N., Burnell, D., Eaton, M., Frost, T., Hall, C., Stroud, D. & Noble, D. 2020. Population estimates of birds in Great Britain and the United Kingdom. *British Birds* 113: 69–104.

conservation priorities¹⁷ and is classified as 'near threatened' by the IUCN Red List¹⁸. Curlew belongs to the genus *Numenius* and two species belonging to this genus have recently become extinct; it is feared that curlew may suffer the same fate. Snipe is amber-listed due to moderate declines in its breeding population, which have primarily occurred on lowland wet grassland as a result of drainage¹⁹. In addition to curlew, skylark was the only other red-listed species recorded breeding. It is also of high conservation concern, having undergone large declines on a national scale in recent decades.

¹⁷ Brown, D. et al. 2015. The Eurasian Curlew – the most pressing bird conservation priority in the UK? *British Birds* 108: 660–668.

¹⁸ IUCN. 2022. The IUCN Red List of Threatened Species. Version 2021-3. The IUCN Red List of Threatened Species. [Retrieved from <https://www.iucnredlist.org> on 27th June 2022].

¹⁹ <https://www.rspb.org.uk/our-work/conservation/conservation-and-sustainability/farming/advice/helping-species/snipe/>

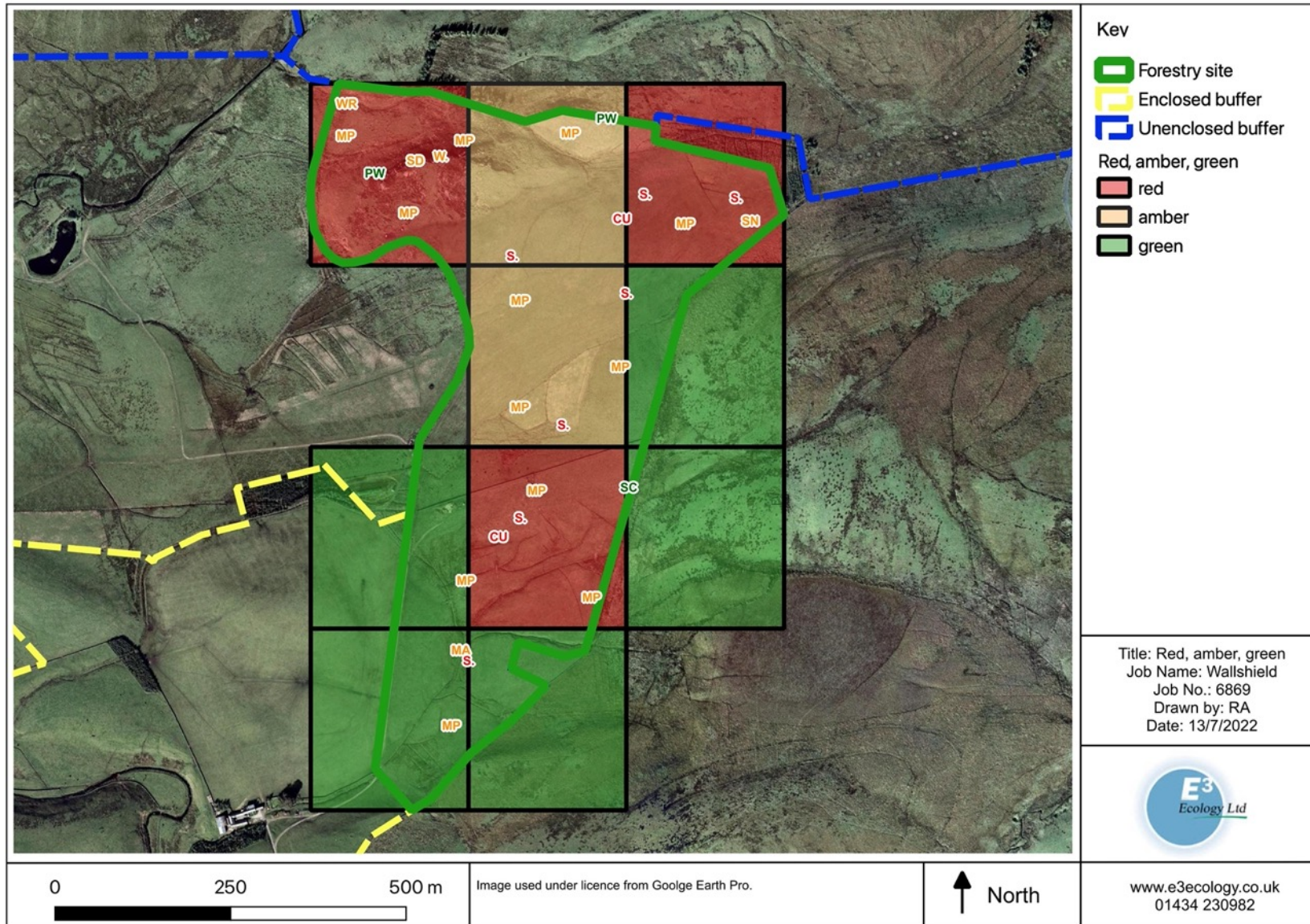


FIGURE 8: ASSESSMENT OF SUITABILITY OF FORESTRY SITE FOR WOODLAND CREATION (SEE TEXT FOR DETAILS)

E.2 BREEDING BIRD ASSESSMENT: BUFFER

E.2.1 GENERAL BIRD ASSEMBLAGE

The buffer was found to support approximately 345 pairs of 38 species. This diversity and abundance is moderate and reflects the large size of the buffer. Birds breeding in the buffer are generally representative of grassland and woodland habitats. A number of species are characteristic of marginal upland grassland and woodland including curlew, stonechat, lesser redpoll, cuckoo and wheatear. Species associated with wetlands are generally lacking but include mallard and grey wagtail, which were both breeding on streams running through the buffer.

Birds are fairly evenly spread across the grassland areas, but higher densities of breeding birds are present in the various small areas of woodland within the buffer. Densities of breeding birds are lowest where densities of cattle and sheep are highest, such as the area of unenclosed land towards the south-west.

In general, the species breeding in the buffer are common and widespread species that are typical of the area. Breeding bird population figures are unavailable at the district level, however cuckoo is of up to district ornithological importance in the context of Tynedale local area council, while the number of stonechat pairs (six) and grasshopper warbler pairs are also likely to be of district importance. A number of species are likely to be significant at a parish level including curlew (possibly district value, 3,200 pairs are estimated in Northumberland¹⁵ but it is not known how many of these breed in Tynedale and the eight pairs breeding in the buffer may not be 1% of the district population) and grey wagtail.

Thirteen species found during surveys were considered not breeding (see Table 11). Fieldfare is a wintering species in the area but lingers in the area into April. Ring ouzel breeds nearby but an individual seen during the April survey in a fieldfare flock appeared to be just passing through the area on migration. Goshawk and peregrine both flew over the buffer without interacting with it and each were seen on single dates only. Both species may use the buffer for hunting sporadically as part of a larger area, and although both breed nearby, there was no evidence of breeding within the buffer. Raven was seen fairly frequently in the buffer and is likely to be nesting close to the buffer and using it for foraging and other purposes. The remaining non-breeding species are likely to breed nearby or adjacent to the buffer, but there was no evidence of breeding within the buffer. Goshawk and peregrine are both scarce breeding species in the region, while ring ouzel and raven are scarce at a county level. Peregrine is the only qualifying species in the North Pennine Moors SPA to be recorded in the buffer (no qualifying species were recorded in the forestry site).

E.2.2 WADER ASSEMBLAGE

Four wader species were recorded breeding in the buffer: curlew (eight territories), lapwing (two territories), oystercatcher (one territory) and snipe (seven territories). The density of pairs of each species were: curlew (1.8 pairs per km²), lapwing (0.44 pairs per km²), oystercatcher (0.22 pairs per km²) and snipe (1.5 pairs per km²).

Two of the curlew territories and one of the snipe territories were the same territories as within the forestry site, as shown in Figure 6. As a result, there are the same number of territories in the buffer as within the buffer and site combined. The total number of breeding pairs across the forestry site and buffer combined was curlew (eight), lapwing (two), oystercatcher (one) and snipe (seven).

The table below provides a summary of waders recorded in the buffer.

TABLE 13: SUMMARY OF BREEDING WADERS IN BUFFER

Species ¹⁰	Enclosed Land Fields Recorded	Surveys Recorded (of 3)	Number of Pairs	Percentage County Breeding Population	County Breeding Population ¹⁵	National Breeding Population ¹⁶
Curlew	14,15,20	1,2,3	8	0.25%	3,200	58,000
Lapwing	-	1,2,3	2	0.04%	5,100	96,500
Oystercatcher	24	2	1	0.06%	1,600	92,500
Snipe	22	1,2,3	7	0.19%	3,600	64,500

E.3 EVALUATION OF OVERALL SURVEY AREA

As the territories in the forestry site overlapped with the buffer, the number of territories in the whole survey area is the same as the number of territories in the buffer. The total number of territories of each wader in the whole survey area is curlew (8), lapwing (2), oystercatcher (1) and snipe (7).

None of the territory totals of waders are likely to be significant at a county level. The number of territories of curlew and snipe may be significant at district level, but otherwise are likely to be significant at a parish level. The territory totals of lapwing and oystercatcher are likely to be significant at a parish level. However, as the number of wader territories are unavailable below county level, it is not possible to be certain of significance below county level.

The ornithological value of the forestry site and buffer combined for all species is considered to be district value on the basis of cuckoo, stonechat and grasshopper warbler. The overall average density of breeding birds per km² is 77 territories.

E.4 POTENTIAL BIRD USE OF CONSERVATION SIGNIFICANCE THROUGH THE YEAR

In general, the conservation value of the study area is likely to be lower outside of the breeding season. This is because many species will leave the buffer during the autumn and not return until the spring. All of the higher value species (grey wagtail, curlew, grasshopper warbler, stonechat, cuckoo, wheatear and snipe) except possibly grey wagtail are likely to leave the buffer. Although goshawk, peregrine and raven are likely to remain in the area during the winter, they are only likely to use the study area sporadically, if at all.

Some species are unlikely to leave the area until relatively late in the autumn, for example ring ouzel and wheatear could still be in the area into October. Other species arrive back onto breeding territories as early as February, particularly the wader species.

Additional species that could potentially use the study area outside the breeding season include common gull, woodcock, golden plover, barn owl, redwing and crossbill. These species are generally frequent and widespread, however barn owl is scarcer (county breeding population around 60 pairs¹⁵, but non-breeding population slightly higher).

E.5 LIMITATIONS AND CONSTRAINTS

Due to the nature of the study area and the surrounding area, supporting common and abundant habitats, local bird club data has not been sought.

Males of many passerines sing during northward spring migration, but do not breed until breeding territories are reached. This means the true number of breeding pairs of passerines contained within a site might actually be less than the number of singing males recorded during surveys.

Survey work sought to avoid disturbance to sheep and lambs, and local farmers reported that some cattle with calves could be aggressive. This meant that in some cases, planned

routes were altered slightly. However even when routes were altered, the openness of the study area meant that all areas could be thoroughly scanned for birds.

F. IMPACT ASSESSMENT & RECOMMENDATIONS

F.1 POTENTIAL IMPACTS

The forestry design is a mixed productive woodland with areas of conifer and broadleaf woodland combined with open space.

A total of 29 pairs of 10 species were present inside of the forestry site including two species that are BoCC4 red listed and six species that are BoCC4 amber listed (see Table 8). The majority of breeding birds inside the forestry site are meadow pipit (12 pairs) and skylark (7 pairs) that together make up 66% of the 30 pairs. There are one or two pairs of all other species.

Curlew, meadow pipit, skylark, snipe and stonechat all require open grassland for breeding. As the grassland in the forestry site is largely being converted to forestry, then these species are likely to be progressively reduced in number as breeding pairs are lost as a direct consequence of the planted forestry. They are likely to remain absent from the forestry site unless it is converted back to grassland. Meadow Pipit and stonechat may continue to nest within the forestry area but possibly in reduced numbers depending on the size of grassland that is left free from planting, but the other species require relatively large areas of open grassland and thus may be lost as breeders. Curlew, snipe and stonechat are likely to be species of parish significance, but skylark and meadow pipit are likely to be of local significance.

Although species breeding in the wider area may not be directly displaced, they may still be impacted, particularly if they lose habitat used for foraging or if they are disturbed during forestry operations. Table 9 lists species that were using the forestry site for foraging, while Table 10 lists species that were breeding in the buffer.

Indirect displacement can affect birds that nest on the ground in open areas as they generally prefer long sightlines to be able to see approaching predators. Forestry can help to conceal approaching predators, meaning that birds may not see predators until they are close to the nest. For this reason, many ground nesting birds choose to nest several hundred metres away from forestry, and while the forestry may not directly remove habitat in the adjacent buffer, the forestry may discourage birds from breeding in the adjacent buffer. Wader species (curlew, lapwing, oystercatcher and snipe) in particular may be discouraged from nesting in the buffer adjacent to the forestry. In a study of landscape effects on nest site selection in lapwing, 88% of nests were over 500m from the nearest woodland²⁰. Similarly, curlew have been shown to avoid woodland⁵.

The new plantation woodland could have positive effects by attracting new territories and species to the site. Potential species include nightjar (regionally scarce species, amber-listed), cuckoo (red-listed), tawny owl (amber-listed), jay, willow warbler (amber-listed), grasshopper warbler (red-listed), song thrush (amber-listed) and lesser redpoll (red-listed).

F.2 MITIGATION AND COMPENSATION

The following are understood to be part of the forestry design, which would increase the value of the plantation woodland for birds:

- No planting close to the burn that flows through the forestry site per the Forestry and Water Guidelines (UKFS).
- Retention of rides at the edge of existing woodland and gaps to allow access for nesting birds of prey.

²⁰ Bertholdt, N. P., Gill, J. A., Laidlaw, R. A. & Smart, J. 2016. Landscape effects on nest site selection and nest success of Northern Lapwing *Vanellus vanellus* in lowland wet grasslands. *Bird Study* 64: 1–7.

- Creation of ungrazed open space within the plantation.
- Planting of deciduous trees within the plantation.
- Variation in tree density.
- Deer management.
- The rocky outcrop at the northern end of the site is being left open.

The following practices would increase the value of plantation woodland for birds^{21,22,23}:

- Stagger planting new woodland where possible to create a diverse range of tree ages with the aim of including all growth stages of the forest cycle.
- Allow some trees to persist through several rotations.
- Incorporate SuDS features suitable for snipe within the woodland drainage design.
- Carry out survey work to identify bird-rich areas and nest locations of rare species using the woodland, then plan forestry to minimise disturbance to such areas and species.
- Avoid felling trees that contain visible large nests at any time of year.
- Consider suspending potentially damaging operations during the main breeding season (April to July).
- Incorporate areas of clear fell for species that favour such habitat, for example stonechat.
- Retain dead trees wherever possible.

Potential compensation measures for species likely to be lost or displaced could include:

- Create shallow pools in adjacent grassland to benefit breeding species including lapwing.
- Support the Curlew Recovery Programme through donations (further information here: <https://www.rspb.org.uk/our-work/conservation/projects/curlew-recovery-programme/how-you-can-help/>).
- Enhance nearby grassland through rewetting, which could improve habitat for species including lapwing, curlew, snipe and reed bunting.
- Avoid drainage of wet grassland.
- Wheatear breeds on open grassland and upland heaths but requires walls, rocks or ruined buildings in which to nest - maintain some of these.
- Provide barn owl boxes on posts of woodland rides.
- Manage nearby grasslands to be more suitable for curlew and skylark by, for example, avoiding cutting grass in April and May, and grazing grassland using low densities of cattle/sheep.
- Lightly graze wet grassland to provide a diversity of vegetation heights for snipe.
- Create habitat mosaics in nearby land, consisting of moorland, trees and wet features, which will benefit the widest variety of species.
- Provide 'lapwing plots' (small unseeded patches of bare ground within arable crops).
- Avoid cutting or cultivating grassland during the bird nesting season.
- Much evidence exists that suggests predator control benefits breeding birds. For example, a field experiment in northern England that reduced fox and crow population led to threefold increases in the breeding success of lapwing, golden plover, curlew,

²¹ Petty, S., and M. Avery. 1990. Forest Bird Communities: a review of the ecology and management of forest bird communities in relation to silvicultural practices in the British uplands. Forestry Commission.

²² O'Connell, S., Irwin, S., Wilson, M. W., Sweeney, O. F. McD., Kelly, T. C. & O'Halloran, J. 2012. How can forest management benefit bird communities? Evidence from eight years of research in Ireland. *Irish Forestry*, 44–57.

²³ Currie, F. & Elliott, G. 1997. Forests and Birds. RSPB. Sandy, Bedfordshire.

red grouse and meadow pipit²⁴. It has been suggested that habitat management with the aim of increasing bird populations is likely to fail if predator control is not incorporated into the management strategy²⁵.

²⁴ Fletcher, K., Aebischer, N. J., Baines, D., Foster, R. & Hoodless, A. N. 2010. Changes in breeding success and abundance of ground-nesting moorland birds in relation to the experimental deployment of legal predator control. *Journal of Applied Ecology* 47: 263–272.

²⁵ Calladine, J., Critchley, C. N. R., Baker, D., Towers, J. & Thiel, A. 2014. Conservation management of moorland: a case study of the effectiveness of a combined suite of management prescriptions which aim to enhance breeding bird populations. *Bird Study* 61: 56–72.

APPENDIX 1. PLANNING POLICY AND LEGISLATIVE CONTEXT

National Planning Policy

The table below details the key paragraphs from the National Planning Policy Framework (NPPF)²⁶ relating to the natural environment:

TABLE 14: NATIONAL PLANNING POLICY FRAMEWORK: CONSERVING AND ENHANCING THE NATURAL ENVIRONMENT	
Statement	Paragraph
<p>Planning policies and decisions should contribute to and enhance the natural and local environment by:</p> <ul style="list-style-type: none"> a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate; d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate 	174
Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework ²⁷ ; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.	175
Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks and the Broads ²⁸ . The scale and extent of development within all these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas.	176
When considering applications for development within National Parks, the Broads and Areas of Outstanding Natural Beauty, permission should be refused for major development ²⁹ other than in exceptional circumstances, and where it can be demonstrated that the development is in the public interest. Consideration of such applications should include an assessment of: <ul style="list-style-type: none"> a) the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy; b) the cost of, and scope for, developing outside the designated area, or meeting the need for it in some other way; and c) any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated 	177
Within areas defined as Heritage Coast (and that do not already fall within one of the designated areas mentioned in paragraph 176), planning policies and decisions should be consistent with the special character of the area and the importance of its conservation. Major development within a Heritage Coast is unlikely to be appropriate, unless it is compatible with its special character.	178

²⁶ National Planning Policy Framework (July 2021), Department for Communities and Local Government,

²⁷ Where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality.

²⁸ English National Parks and the Broads: UK Government Vision and Circular 2010 provides further guidance and information about their statutory purposes, management and other matters.

²⁹ For the purposes of paragraphs 177 and 178, whether a proposal is 'major development' is a matter for the decision maker, taking into account its nature, scale and setting, and whether it could have a significant adverse impact on the purposes for which the area has been designated or defined.

TABLE 14: NATIONAL PLANNING POLICY FRAMEWORK: CONSERVING AND ENHANCING THE NATURAL ENVIRONMENT	
Statement	Paragraph
<p>To protect and enhance biodiversity and geodiversity, plans should:</p> <ul style="list-style-type: none"> a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity³⁰; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation³¹; and b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity. 	179
<p>When determining planning applications, local planning authorities should apply the following principles:</p> <ul style="list-style-type: none"> a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused; b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest; c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons⁶³ and a suitable compensation strategy exists; and d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate. 	180
<p>The following should be given the same protection as habitats sites:</p> <ul style="list-style-type: none"> a) potential Special Protection Areas and possible Special Areas of Conservation; b) listed or proposed Ramsar sites³²; and c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites. 	181
<p>The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.</p>	182

Section 40 of the Natural Environment and Rural Communities Act 2006, places a duty on all public authorities in England and Wales to have regard, in the exercise of their functions, to the purpose of conserving biodiversity.

Planning Practice Guidance³³ states:

- Planning authorities need to consider the potential impacts of development on protected and priority species, and the scope to avoid or mitigate any impacts when considering site allocations or planning applications. (para. 016)
- Information on biodiversity and geodiversity impacts and opportunities needs to inform all stages of development (including site selection and design, pre-application consultation and the application itself). An ecological survey will be necessary in advance of a planning application

³⁰ Circular 06/2005 provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.

³¹ Where areas that are part of the Nature Recovery Network are identified in plans, it may be appropriate to specify the types of development that may be suitable within them.

³² Potential Special Protection Areas, possible Special Areas of Conservation and proposed Ramsar sites are sites on which Government has initiated public consultation on the scientific case for designation as a Special Protection Area, candidate Special Area of Conservation or Ramsar site.

³³ Planning Practice Guidance: Natural Environment (www.planningguidance.communities.gov) Updated July 2019

if the type and location of development could have a significant impact on biodiversity and existing information is lacking or inadequate. (para. 018)

- Even where an Environmental Impact Assessment is not needed, it might still be appropriate to undertake an ecological survey, for example, where protected species may be present or where biodiverse habitats may be lost. (para. 018)
- As with other supporting information, local planning authorities should require ecological surveys only where clearly justified. Assessments should be proportionate to the nature and scale of development proposed and the likely impact on biodiversity. (para. 018)
- The National Planning Policy Framework encourages net gains for biodiversity to be sought through planning policies and decisions. Biodiversity net gain delivers measurable improvements for biodiversity by creating or enhancing habitats in association with development. Biodiversity net gain can be achieved on-site, off-site or through a combination of on-site and off-site measures. (para. 022)

Protected Species Legislation

The table below details the relevant legislation for the protected species covered within the scope of the survey.

TABLE 15: SUMMARISED SPECIES LEGISLATION		
Species	Relevant Legislation	Level of Protection
Birds	<ul style="list-style-type: none"> • Protection under the Wildlife and Countryside Act (1981) as amended with the exception of some species listed in Schedule 2 of the Act 	<p>The WCA (1981) makes it an offence to (with exceptions for certain species):</p> <ul style="list-style-type: none"> • Intentionally kill, injure or take any wild bird • Intentionally take, damage or destroy nests in use or being built (including ground nesting birds) • Intentionally take, damage or destroy eggs • Species listed on Schedule 1 of the WCA or their dependant young are afforded additional protection from disturbance whilst they are at their nests

Schedule 1 Species

These are rare or threatened breeding UK birds, such as peregrine or corncrake, which are afforded special protection under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). In addition to the protection from killing or taking that all birds, their nests and eggs have under the Act, Schedule 1 birds and their young must not be disturbed at the nest.

These species are in general scarce breeders and will increase the ornithological value of the site in at least a district context. However, it includes barn owl, a much more common species, which is unlikely to be of greater than parish value, with the exception of more urban locations.

Annex 1 Species

These are rare breeding European birds such as golden plover and hen harrier, which are afforded special protection under Annex 1 of the EC Birds Directive (see below) and if recorded breeding on site will greatly increase the conservation value of the assemblage, with single pairs leading to at least county value up to national and international for SPA (see below) classified/significant populations.

Protected Site Legislation

Context in regard to the UK's Exit from the European Union

As of 1st January 2021, the UK is no longer bound by the Birds Directive and Habitats Directive. However, the Conservation of Habitats and Species Regulations still applies, which formerly acted to transpose the Birds Directive and the Habitats Directive into English and Welsh law. These are still referred to below for contextual purposes, as designated site citations and conservation objectives may not have been updated following the changes to applicable legislation and may still refer to the Directives.

Statutorily Designated Sites

Ramsar Site

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention recognises wetlands as important ecosystems and includes a range of wetland types from marsh to both fresh and salt water habitats. The wetlands can also include additional areas adjacent to the main water-bodies such as river banks or coastal areas where appropriate.

Special Protection Area (SPA)

SPAs are classified by the UK Government under the EC Birds Directive and comprise areas which are important for both rare and migratory birds.

Special Areas of Conservation (SAC)

SACs are designated under the EC Habitats Directive and are areas which have been identified as best representing the range and variety of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 unless they are offshore.

Sites of Special Scientific Interest (SSSI)

SSSIs are designated as sites which are examples of important flora, fauna, or geological or physiographical features. They are notified under the Wildlife and Countryside Act 1981 with improved provisions introduced by the Countryside and Rights of Way Act 2000.

National Nature Reserve (NNR)

NNRs are designated by Natural England under the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981 and support important ecosystems which are managed for conservation. They may also provide important opportunities for recreation and scientific study.

Country Parks

Country Parks are statutorily designated and managed by local authorities in England and Wales under the Countryside Act 1968. They do not necessarily have any nature conservation importance, but provide opportunities for recreation and leisure near urban areas.

Local Nature Reserves (LNR)

LNRs are designated under the National Parks and Access to the Countryside Act 1949 by local authorities in consultation with Natural England. They are managed for nature conservation and used as a recreational and educational resource.

Non-Statutorily Designated Sites

Non-Governmental Organisation Property

These are sites of biodiversity importance which are managed as reserves by a range of NGOs. Examples include sites owned by the RSPB, the Woodland Trust and the Wildlife Trusts.

Local Wildlife Site (LWS)

These are sites defined within the local plans under the Town and Country Planning system and are material considerations of any planning application determination. They are designated by the local authority although criteria for designation can vary between authorities.

Priority Species

Although not afforded any legal protection, national priority species (species of principal importance, as listed in Section 41 of the NERC Act (2006)), and local and regional priority species, as detailed within the relevant biodiversity action plans, are material considerations in the planning process and as such have been assessed accordingly within this report.

UK Post 2010 Framework

The UK Post-2010 Biodiversity Framework published July 2012, covers the period from 2011 to 2020. The framework enables work at a "UK level" to achieve the 'Aichi Biodiversity Targets' and the aims of the EU biodiversity strategy. Most work that was previously carried out under the UK Biodiversity Action Plan (UK BAP) is now focused at the country level though many of the tools developed under the UK

BAP remain of use; for example, lists of priority habitats and species. The lists of priority species and habitats agreed under UK BAP still form the basis of much biodiversity work in the countries. The Framework reflects a revised direction for nature conservation, towards an approach that aims to consider the management of the environment in a holistic manner, and to acknowledge the importance of nature in decision-making and as such is an important document implemented by the four countries.

BAP lists include both rare and common species whose populations' have declined. On most sites it is likely to be the common species that are likely to be present, resulting in local to district value depending on numbers.

The tables below detail the bird species/groups listed as priorities within the biodiversity action plans of the main Local Planning Authorities' within the north-east of England.

TABLE 16: BIODIVERSITY ACTION PLAN		
Northumberland Biodiversity Action Plan		
Species/Species Groups		
Barn Owl	Black Grouse	Coastal Birds
Farmland Birds	Garden Birds	Upland Waders

Birds of Conservation Concern

Several long-term surveillance programmes are undertaken in the UK. The data from these schemes allow the population status of Britain's birds to be regularly reviewed, it is from these data that

Red List species

These are listed by the RSPB as species of high national conservation concern. Species are included on this list if they meet one or more of the following criteria:

- Globally threatened;
- Historical population decline in UK during 1800-1995;
- Rapid (> 50%) decline in UK breeding population over last 25 years; and
- Rapid (> 50%) contraction of UK breeding range over last 25 years.

Amber List species

These are listed by the RSPB as species of medium national conservation concern. Species are included on this list if they meet one or more of the following criteria:

- Historical population decline during 1800-1995, but now recovering with population size having more than doubled over the last 25 years;
- Moderate (25-49%) decline in UK breeding or non-breeding population or breeding range over the last 25 years;
- Species of European Conservation Concern;
- Five year mean of between only one and 300 breeding pairs in the UK;
- >50% of the UK breeding or non-breeding population in ten or fewer sites;
- >20% of the European breeding population in the UK; and
- >20% of the NW European (wildfowl), East Atlantic Flyway (waders) or European (others) non-breeding populations in the UK.

These birds of conservation concern are often common species or locally scarce species such as starling and tree sparrow, which may increase a sites value.