Genesis Homes
Genesis House
4 Cowper Road
Penrith
Cumbria
CA11 9BN

Ecology Report

Cleator Mills

Elliott Environmental Surveyors Ltd
Mallan House
Bridge End
Hexham
Northumberland
NE46 4DO

ELLIOTT
Environmental Surveyors

EES17-091
17th May 2018
Version No. V1

CONTENTS

Author: **David White BSc ACIEEM (Ecologist)**
Contact email

Approved by: **T Elliott CEnv FRICS (Director)** 17th May 2018

SUMMARY

A Preliminary Ecological Appraisal was undertaken at Cleator Mills, Cumbria in July 2017 by Elliott Environmental Surveyors Ltd. Survey work for bats was also undertaken in July, August and September 2017. The survey work and subsequent reporting has been carried out on the instruction of Genesis Homes in the context of the preparation of a planning application to redevelop the site. Ecological survey and assessments for a previous consented scheme were carried out by EES in 2013 & 2014 and included a risk assessment and mitigation for developing adjacent to the River Ehen SAC.

The site is situated close to the centre of Cleator village within a landscape consisting of grazed fields, grassland, hedge-rows with mature trees and riparian habitats adjacent to the River Ehen which runs at the east of the site. To the west of the site boundary are a number of large residential properties with mature trees with canopies which overhang the site boundary. Housing is also present to the north, north-east and south-west of the site boundary. The site itself consists of disused factory buildings, three pasture fields and surrounding habitats; the western half comprises semi-natural habitats - grazing land, mature trees and hedgerows, whilst the eastern half comprises all of the buildings, roads and hard-standing together with associated riparian habitats along the River Ehen, which forms the eastern boundary.

Consultation was undertaken with the Cumbria Biodiversity Data Centre in February 2018. CBDC do not hold records of statutory or non-statutory sites within the proposed development boundary but the River Ehen SAC SSSI is present immediately to the east of the site. Records of protected species within 2km include great crested newt, common lizard, slow-worm, Mytois bats, Daubenton's bat, whiskered bat, Natterer's bat, noctule, common pipistrelle, soprano pipistrelle, otter, badger and red squirrel. Priority species within the same radius include common toad, hedgehog and nine species of butterfly.

The main protected species considerations within the site relate to bats. The site provides an important commuting route for a number of species of bat and a common pipistrelle roost has also been recorded within an extension of the main building, within a soffit. The site is considered to be of parish value to bats.

The adjacent SAC is an important habitat for fresh water pearl mussels. The site is considered to be of overall local to parish ecological value.

This report presents the results of surveys undertaken in 2017, once development plans have been provided the report will be updated to provide a robust impact assessment and mitigation strategy.

1 INTRODUCTION

1.1 Instruction details

A Preliminary Ecological Appraisal was undertaken of Cleator Mills, Cumbria on the 8th August 2017, with additional bat surveys over the period between July and September 2017. The survey work and subsequent reporting has been carried out on the instruction of Genesis Home Ltd, provided in July 2017, in the context of the preparation of a planning application to redevelop the site.

1.2 Objectives of the survey and subsequent reporting

The objectives of the survey were:

1. To survey and determine the ecological value of the site according to the JNCC, (2010), Handbook for Phase 1 habitat survey - a technique for environmental audit and CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland in order to inform an impact assessment and mitigation strategy.
2. To identify the use or potential use of the site by protected species in order to inform an impact assessment and mitigation strategy.
3. To identify how protected species are / may be using the site in order to assess its functionality to the local populations.
4. To recommend survey work at an appropriate level and to revise these recommendations as data collected at the site is analysed and interpreted.
5. To consider impacts to all habitats immediately adjacent to the site.
6. To consider potential impacts to local statutory and none statutory sites either within 2km or for European level designations, a buffer deemed as appropriate by the relevant Planning Authority.
7. To assess the presence of ponds within 500m and advise the client of any access requirements which they must attempt to secure.

1.3 Site Description

Cleator Mills is located in Cumbria, The development area is 8.14ha, located at an approximate central grid reference of NY019138. The site consists of disused factory buildings, three pasture fields and surrounding habitats. The western half comprising semi-natural habitats - grazing land, mature trees and hedgerows, whilst the eastern half comprises all of the buildings, roads and hard-standing together with associated riparian habitats along the River Ehen which forms the eastern boundary.

The River Ehen SAC, designated under the Habitats Directive, lies immediately adjacent to the site and the close proximity and very high sensitivity of the river means it should be considered when assessing the site as a whole.

The current survey encompassed the original 19th Century factory and former mill which is of sandstone block construction formerly with slate roofs; in many sections the slates have been removed, leaving the upper storey open. A modern extension to the north of the original Victorian structure, constructed in the 1960's but now in a derelict state, was also surveyed. Construction is from red brick with steel trusses and a glass/asbestos sheet roof. Associated buildings include a boiler house, chimney and disused storage building adjacent to the river, many in a dilapidated state.

The site is situated close to the centre of Cleator village within a landscape consisting of grazed fields, grassland, hedgerows with mature trees and riparian habitats adjacent to the River Ehen which runs at the east and south of the site. To the west of the site boundary are a number of large residential properties and a hotel with mature trees with canopies which overhang the site boundary. Housing is also present to the north, north-east and south-west of the site boundary.

2 LEGISLATION AND POLICY GUIDANCE

2.1 Planning Policy

The National Planning Policy Framework (NPPF) outlines the government's policies, inclusion those relating to the conservation and enhancement of the natural environment (Chapter 15), in line with existing wildlife legislation, through the planning process. Planning authorities must take into account the principles detailed within the document when preparing local plans and assessing local development applications.

The following key principles are included within the NPPF which are relevant to ecology and nature conservation:

- The planning system should contribute to and enhance the natural and local environment by recognising the wider benefits of ecosystem services and minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressure (Paragraph 109).

- Local planning authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife or geodiversity Sites or landscape areas will be judged. Distinctions should be made between the hierarchy of international, national and locally designated Sites, so that protection is commensurate with their status and given appropriate weight to their importance and the contribution that they make to wider ecological networks (Paragraph 113).

- Local planning authorities should set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure (Paragraph 114).

- To minimise impacts on biodiversity and geodiversity, planning policies should:

    - Plan for biodiversity at a landscape-scale across local authority boundaries;

    - Identify and map components of the local ecological networks, including the hierarchy of international, national and locally designated Sites of importance for biodiversity, wildlife corridors and stepping stones that connect them an areas identified by local partnerships for habitat restoration or creation;

    - Promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan; and

    - Where Nature Improvement Areas are identified in Local Plans, consider specifying the types of development that may be appropriate in these Areas (Paragraph 117).

- When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

    - If significant harm resulting from a development cannot be avoided (through location on an alternative Site with less harmful impacts) adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

    - Proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the Site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this Site, clearly outweigh both the impacts that it is likely to have on the features of the Site that make it of special scientific interest and any broader impacts on the national networks of Sites of Special Scientific Interest;

    - Development proposal where the primary objective is to conserve or enhance biodiversity should be permitted;

    - Opportunities to incorporate biodiversity in and around developments should be encouraged;

    - Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss; and

    - The following wildlife Sites should be given the same protection as European Sites: potential Special Protection Areas and possible Special Areas of Conservation, listed or proposed listed Ramsar Sites and Sites identified, or required, as compensatory measures for adverse effects on European Sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar Sites (Paragraph 118).

- The presumption in favour of sustainable development (Paragraph 14) does not apply where development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or determined (Paragraph 119).

- By encouraging good design, planning policies and decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation (Paragraph 125).

2.2 Species and Habitats Legislation

The Conservation of Habitats and Species Regulations 2010 (as amended)
The Conservation of Habitats and Species Regulations 2010 (as amended) consolidates all various amendments made to The Conservation (Natural Habitats & c.) Regulations 1994, in respect of England and Wales. The 1994 Regulations transposed the EC Habitats Directive 1992 (Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora) into national law.

Annexes I and II of the Habitats Directive list (respectively) habitats and species for which member states are required to establish and monitor SACs. The EC Birds Directive provides a similar network of Sites (SPAs) for all rare or vulnerable species listed in Annex I and all regularly occurring migratory species, with particular focus on wetlands of international importance.

Together with SACs, SPAs form a network of pan-European protected areas known as 'NATURA 2000' Sites.

The Habitats Regulations also make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade on the animals listed in Schedule 2, or pick, cut, uproot, destroy or trade in the plants listed in Schedule 4.

The Convention on Conservation of European Wildlife and Natural Habitats (Bern Convention 1979)
The Convention on Conservation of European Wildlife and Natural Habitats (Bern Convention 1979) aims to ensure conservation and protection of all wild plant and animal species and their natural habitats (listed in Appendices I and II of the Convention), to increase cooperation between contracting parties, and to afford special protection to the most vulnerable or threatened species (including migratory species).

The Wildlife and Countryside Act 1981 (as amended) (WCA 1981)
The WCA is the primary UK mechanism for statutory Site designation (Sites of Special Scientific Interest [SSSIs]) and the protection of individual species listed under Schedule 1, 2, 5 and 8 of the Act, each subject to varying levels of protection.

The Countryside and Rights of Way Act 2000
This legislation strengthens the provision of the 1981 WCA (as amended), both in respect of statutory Sites such as SSSIs and protected species. It also places a statutory obligation on Local Authorities and other public bodies to further conservation of biodiversity in the exercise of their functions, thus providing a statutory basis to the Biodiversity Action Plan (BAP) process, which began in 1994. Section 74 of the Act lists the habitat types and species of principal importance in England. The UK Biodiversity action Plan has now been superseded by the 'UK Post-2010 Biodiversity Framework' (July 2012), however, many of the species and habitats in the UK and local BAPs have not been updated and are still considered relevant to date.

Hedgerow Regulations 1997
The Hedgerow Regulations 1997 are intended to protect important countryside hedgers for destruction of damage in England and Wales.

Natural Environment and Rural Communities Act 2006
The 'NERC' Act makes provision in respect of biodiversity, pesticides harmful to wildlife, protection of birds and invasive non-native species. Section 40 of the act

also introduces a new duty on public bodies to have regards to the purpose of conserving biodiversity in the exercise of their functions.

2.2.1 Relevant Protected Species Legislation Potentially Relating to the Site

Bats (all species)
All European species of bats are listed on Annex IV of the EC Habitats Directive as being in need of "strict protection". This is implemented in Britain under The Conservation of Habitats and Species Regulations 2010 (as amended). All British bats are included on Schedule 5 of the WCA 1981 (as amended) and the whole of Section 9 of The Act applies to European bat species. In summary, the above legislation collectively prohibits the following:

- Deliberately or recklessly capturing, injuring, taking or killing of a bat;
- Deliberately or recklessly harassing a bat;
- Intentionally of recklessly disturbing a bat in its place of rest (roost), or which is used for protection or rearing young;
- Deliberately or recklessly damaging, destroying or obstructing access to any resting place or breeding area used by bats;
- Deliberately or recklessly disturbing a bat in any way which is likely to significantly affect the local population of the species, either through affecting their distribution or abundance, or affect any individuals ability to survive, reproduce or rear young;
- Possession or advertisement/sale/exchange of a bat (dead or alive) or any part of a bat.

In England, licences are issued by Natural England for any actions that may compromise the protection of a European protected species, including bats, under the Habitats Regulations 2010 (as amended). This includes all developments, regardless of whether they require planning permission.

Bats are also protected by the Wild Mammals (Protection) Act 1996 and selected species are listed on the UK Post-2010 Biodiversity Framework (BFS).

Great crested newt
Great crested newts are protected under European and British law, having the same level of protection as bats (see above). Licences are issued by Natural England for any action that may compromise the protection of these species, under The Conservation of Habitats and Species Regulations 2010 (as amended). This includes all developments, regardless of whether or not they require planning permission.

The species is also listed on the UK BFS.

Badger
Badger are protected under the Protection of Badgers Act 1992, which makes it an offence to:

- Knowingly kill, capture, injure or disturb any individual;
- Intentionally damage or destroy a badger sett, or any part thereof;
- Obstruct access to an area which is used for breeding, resting or shelter; and
- Disturb a badger while it is using any place used for breeding, resting or shelter.

The species is also protected by the Wild Mammals (Protection) Act 1996.

Otter
Otter are again protected under European and British law and receive the same level of protection as bats (see above.) The species is listed under Annex II and IV of the Habitats Directive, which is implemented in Britain under The Conservation of Habitats and Species Regulations 2010 (as amended). Otter are also protected under Schedules 5 and 6 of the WCA 1981 (as amended), The Wild Mammals (Protection) Act 1996 and are listed as a priority species in Appendix II of the Bern Convention.

The species is also listed on the UK BFS.

Water vole
Water voles are protected under Schedule 5 of the WCA 1981 (as amended). This makes it an offence to:

- Intentionally kill, injure of take water voles;
- Possess or control the species;
- Damage or destroy any place used by water vole for shelter or protection;
- Disturb water vole while they occupy such places of shelter;
- Sell, possess or transport water vole for the purpose of sale; and
- Advertise the buying or selling of water vole.

The species is also protected under the Wild Mammals (Protection) Act 1996 and listed on the UK BFS.

Reptiles
Common reptiles (grass snake, adder, common lizard and slow-worm) receive partial protection under the WCA 1981 (as amended), which makes it an offence to:

- Intentionally or recklessly kill or injure these species; and
- Sell, offer or advertise for sale, possess or transport for the purposes of sale these animals, whether alive or dead, or any part thereof.

In addition, smooth snake and sand lizard are listed on both the WCA 1981 and the Conservation (Natural Habitats, & c.) Regulations 2010 (as amended), which makes it an offence to:

- Intentionally or recklessly kill or injure these species;
- Intentionally or recklessly damage or destroy any place used by these species for shelter, protection, resting or breeding; and
- Intentionally or recklessly obstruct access to any place used for shelter, protection, resting or breeding by these species.

All six species of native reptile are listed on the UK BFS.

3 METHODS

In order to achieve the objectives outlined in section 1.3 a desktop study was carried out followed by a site visit and appropriate survey effort, including specialist bat surveys over a 3 month period.

3.1 Desk-top study

The desk study was undertaken by referring to the following data sources:

- Aerial mapping, including historic mapping where available;
- Ordnance Survey maps;
- The Multi-Agency Geographic Information for the Countryside (MAGIC) website;
- In-house knowledge of the local area; and
- The Cumbria Biodiversity Data Centre (CBDC) which was requested from the Cumbria Biodiversity Data Centre in order to obtain further information regarding the presence and distribution of protected species within the survey site and surrounding area.

3.2 Field Survey

Field surveys were completed of the site in order to obtain detailed baseline information regarding the habitats and protected species present. Specific bat surveys were also carried out, including transect and remote monitoring surveys, building surveys, and aerial tree inspections. These are described below.

3.2.1 Extended Phase 1 Habitat Survey

An Extended Phase 1 Habitat Survey was undertaken in August 2017 by Elliott Environmental Surveyors Ltd which involved identifying and mapping the dominant habitat types within the site boundary, following the Phase 1 Habitat survey methodology recommended by Natural England (JNCC, 2010). Dominant plant species were noted, as were uncommon species indicative of particular habitat types. In addition, any non-native invasive species present within and adjacent to the site were also recorded.

During the survey a note was made of any field signs indicating the presence of protected species and the location of these signs was mapped. A records was also made of any other animal species identified within the site or adjacent areas during the survey. The results of the Phase 1 habitat survey are shown at Appendix 2.

3.3 Protected and UKBAP species

3.3.1 Bats

All survey work and reporting was undertaken following the Bat Conservation Trust Bat Surveys for Professional Ecologists Good Practice Guidelines (3rd Ed., 2016).

Activity (transect) surveys were undertaken within the site boundary to identify the most likely species present and their pattern of behaviour. Three transects were walked on seven separate survey nights between July and September 2017. The spring season was missed as a result of the late instruction; however, three transects

were completed in summer and autumn in order to gain as much information as possible on the site and its use by bats.

Each transect was walked by two surveyors who used Anabat Walkabout detectors to assess and record bat activity. In order to allow for potential variations in the use of different areas of the Site by bats at different times, the order in which transects were walked was varied on each occasion. In accordance with Bat Conservation Trust guidelines (2016), the start and end point of each transect and the direction in which it was walked, was varied during the survey season.

In addition to the digital recordings, information about bat registrations was also recorded on satellite imagery maps and standardised recording sheets, including where possible:

- Time of bat registration;
- Direction of flight;
- Behaviour e.g. foraging; and
- Environmental variables including cloud cover, wind strength and direction, precipitation and air temperature.

In addition to the transect surveys, remote monitoring was undertaken using Anabat Express detectors. The detectors were deployed for three separate survey periods and positioned at two locations in different habitat types. The detectors were programmed to record approximately half an hour before sunset until approximately half an hour after sunrise. Recordings were analysed using version 4.1z of the AnalookW Software.

Remote monitoring locations and the transect route are provided in Appendix 3. Location 1 was adjacent to the River Ehen and Location 2 was on the southwest corner of the main factory building.

Tree climbing and aerial inspection surveys were carried out on the 19th September 2017, on all trees which had features suitable for roosting bats. This involved two suitably qualified and bat licenced tree climbers climbing trees and inspecting features using a Ridgid CA-330 endoscope. Features were assessed for the presence of bats as well as signs of use including droppings, smell, scratch marks, moisture and 'smoothing'.

3.3.2 Birds

Trees and buildings were inspected for signs of use by nesting birds. A general assessment of species likely to breed or overwinter on site according to habitats present on site and in the surrounding area was produced.

3.3.3 Freshwater Pearl Mussel

No survey for pearl mussel was undertaken to avoid disturbance, as a population is known to be present on the River Ehen adjacent to the site.

3.3.4 Biodiversity Framework Species/Other species

During the Extended Phase 1 Survey/Preliminary Ecological Appraisal habitats of value to UKBAP priority species are identified and any further survey work is recommended. Familiar UKBAP species include common toad, hedgehog, brown hare and dingy skipper butterfly.

4 BASELINE CONDITIONS

This section sets out the information acquired through desk studies and the field surveys.

4.1 Desk-Top Study

Statutory designated sites of international and national importance for their ecological interest were identified within 2km of the Site, through the Government's 'MAGIC' website, as follows:

The River Ehen SAC/SSSI is present immediately adjacent to the site, to the east and south. The River Ehen supports the largest freshwater pearl mussel *Margaritifera margaritifera* population in England. Exceptionally high densities (greater than 100 m^2) are found at some locations, with population estimates for the entire river exceeding 100,000. The conservation importance of the site is further enhanced by the presence of juvenile pearl mussels, indicating recruitment since 1990.

The SAC is also designated for the presence of Atlantic salmon *Salmo salar.*

Clints Quarry SSSI is present 1.4km southwest of the site. The quarry has been closed for over fifty years, and in that time a rich limestone flora of a type rare in Cumbria has developed on the site. The floor is uneven with a fan of spoil heaps radiating out from the eastern side of the site, with a broken terrace around the perimeter. Rising above the terrace for some 20 metres on the northern, western and part of the southern sides are vertical cliffs, whilst on the eastern and remaining part of the southern side are steep spoil banks with rocky outcrops. Species-rich neutral and calcareous grasslands, along with woodland and shrub communities have become established within the quarry. The site is also of geological importance, as it provides excellent exposures of carboniferous limestone containing several interesting features.

The Lake District National Park is present 1.4km northeast of the site.

Details of non-statutory sites and protected species data within 2km of the site was requested from the Cumbria Biodiversity Data Centre. Results are summarised below:

- Parkside Pond CWS is located 1.9km northeast of the site at its closest point.
- Birkhouse Pond CWS is located 1.4km northeast of the site at its closest point.
- Longlands Lake CWS is located 0.8km southwest of the site at its closest point.
- River Ehen Ponds CWS is located 1.4km southwest of the site at its closest point.
- Clints Quarry SIS is located 1.4km southwest of the site at its closest point.
- Orebank House Quarry (Bigrigg) LGS is located 1.6km southwest of the site at its closest point.
- An area of ancient woodland is present 0.4km east of the site at its closest point.

Table 1. Protected and notable species.			
Species	**Closest record**	**Most recent record**	**Status of record**
Great crested newt	0.6km	2011	Out-of-date
Common lizard	2km	1988	Historic
Slow-worm	1.4km	2009	Out-of-date
Bats	0.7km	2011	Out-of-date
Myotis sp.	1.3km	2012	Out-of-date
Daubenton's bat	0.7km	2017	Current
Whiskered bat	0.8km	1991	Historic
Natterer's bat	0.7km	2017	Current
Noctule	1.3km	2011	Out-of-date
Pipistrelle sp.	1km	1995	Historic
Common pipistrelle	0.3km	2012	Out-of-date
Soprano pipistrelle	1.2km	2017	Current
Otter	0.2km	2017	Current
Badger	0.8km	2011	Out-of-date
Red squirrel	0.2km	2015	Current
Hedgehog	0.2km	2012	Out-of-date
Common toad	0.6km	2011	Out-of-date
Dingy skipper	1.6km	2014	Current
Wall	0.9km	2015	Current
Small heath	1.6km	2013	Current
Grayling	1.4km	1998	Historic
Small pearl-bordered fritillary	1.4km	1982	Historic
Scarce grass-veneer	1.8km	2009	Out-of-date
Latticed heath	1.7km	2002	Historic
White ermine	1.8km	1995	Historic
Cinnabar	0.6km	2015	Current

4.2 Field Survey

4.2.1 Extended Phase 1 Survey

Semi-natural woodland

This habitat is restricted to the southern corner of the site where a small section of broad-leaved woodland is present within a bend in the River Ehen, between the river and the original factory building. Pockets of woodland riverside woodland occur sporadically along the north bank of the Ehen to the east of the site. The woodland extends down to the high water mark where it grades into a riparian community. The riparian zone supports plants typical of this community including hemlock water dropwort (*Oenanthe crocata*) and reed canary grass (*Phalaris arundinacea*).

Canopy species consisted mainly of mature sycamore (*Acer pseudoplatanus*) and ash (*Fraxinus excelsior*) with an under-storey of holly (*Ilex aquafolium*). Ground flora comprised of species indicative of semi-natural woodland including ramson (*Allium ursinum*), bluebell (*Hyacinthoides non-scripta*) and dogs' mercury (*Mercuralis perennis*), along with more ubiquitous species such as cow parsley (*Anthriscus sylvestris*). A large stand of Japanese knotweed (*Falopia japonica*), approx. 25m in length was present within the edge of the woodland immediately to the south-east of

Mill Lane, recorded previously in 2013. This appears to have been treated with no fresh growth visible during survey.

Parkland and scattered trees

Two large mature oak (*Quercus* sp.) are present within the large field. They are both very mature specimens with growth unencumbered by neighbouring competitors.

A line of mature trees consisting of sycamore *Acer pseudoplatanus*, ash *Fraxinus excelsior* and hawthorn *Crataegus monogyna,* which together form a remnant hedge-row which has developed a mature tree line sine cessation of management is present to the west of the main factory building.

Another remnant unmanaged hedgerow, also left to mature, present along the southern site boundary, it consists solely of a row of mature sycamore.

A mature oak and a horse chestnut (*Aesculas hippocastanum*), are present at the northern end of the site adjacent to the access road along with three mature hawthorn in the centre.

Scrub

A small section of scrub, consisting predominantly of bramble (*Rubus fruticosus* agg.), is present on the northern boundary bordering the northern access road into the site.

Semi-improved grassland (species-poor)

The fields on site consist of semi-improved neutral grassland, grazed by a number of horses at the time of survey.

The grassland is becoming ranker and is heavily poached in areas favoured by sheep. Species present include the grasses cocksfoot (*Dactylis glomerata*), rough meadow grass (*Poa trivialis*), sweet vernal grass (*Anthoxanthum odoratum*) and meadow foxtail (*Alopecarus pratensis*) with red fescue (*Festuca rubra*) generally less abundant.

Flowering plants are restricted to a few common species including meadow buttercup (*Ranunculus acris*), common sorrel (*Rumex acetosella*), plantain (*Plantago lanceolate*) and spear thistle (*Cirsium vulgare*).

Improved grassland

This habitat is restricted to two small areas adjacent to Mill Road, the southern access route into the old factory.

It consists of two grassed areas which have developed from formal grassland since cessation of mowing.

Species present are all frequent within base-rich lowland grasslands including daisy (*Bellis perennis*), nettle (*Urtica dioica*), dandelion and broad-leaved dock (*Rumex obtusifolius*) with the grasses sweet vernal grass and red fescue.

Defunct hedge

One hedge occurs along the north boundary with the A5085 for approx. 35m until it grades into bramble scrub. Few trees or shrubs remain on top of the dyke which reaches a height of c. 1.5m and is topped with the original iron-work fence.

Two ash trees were present to the western end of this hedgerow with a single hawthorn (*Crataegus monogyna)* between. The remainder of the vegetation consists of woody shrub species, mainly bramble and dog rose (*Rosa canina*) above a ground flora comprising the herbs barren strawberry (*Potentilla sterilis*), wall speedwell (*Veronica arvensis),* meadow buttercup and tormentil (*Potentilla erecta).*

A second hedge is also a present within the centre of the field.

Wall

A dry stone wall and dry ditch are present along the southern section of the western boundary. The wall constitutes the western boundary and consists of dressed sandstone with an associated shallow ditch in front.

4.2.2 Bats

Transect surveys

Transect surveys were undertaken on 26th July, 8th August and 18th September 2017. Each transect followed the same route covering features likely to be used by bats..

During the July survey common pipistrelle, soprano pipistrelle and noctule were recorded. Bats were recorded from nine minutes after sunset with most bats recorded commuting towards the River Ehen or along the northern boundary tree line.

During the August survey bats were recorded from one minute after sunset, commuting towards the river to the west of the building. Common pipistrelle, soprano pipistrelle and noctule were recorded.

During the September survey only common pipistrelle and soprano pipistrelle were recorded. The first bat was recorded 22 minutes after sunset. The majority of bats were recorded to the west of the main building, commuting towards the river Ehen.

A pattern of commuting bats was recorded on each survey to the west of the main building towards the River Ehen, this area recorded the highest levels of activity across all surveys. Other features such as the hedgerow on the northern boundary were used for commuting, but less frequently than towards the River Ehen.

Remote monitoring

26th July 2017 – 1st August 2017

The results of static monitoring are presented in table form below:

Table 2. Location 1						
Date / species	**Myotis**	**Noctule**	**Common pipistrelle**	**Soprano pipistrelle**	**Pipistrelle social call**	**Total**
26/07/2017			4	9	5	18
27/07/2017		46	16	12	5	79
28/07/2017		86	21	25	11	143
29/07/2017		61	22	20	19	122
30/07/2017	1	26	20	24	10	81
31/07/2017		46	12	9	22	89
01/08/2017			9	19	13	41
Total	**1**	**265**	**104**	**118**	**85**	**573**

Table 3. Location 2								
Date / species	**Myotis**	**Natterer's**	**Noctule**	**Common pipistrelle**	**Soprano pipistrelle**	**Pipistrelle social call**	**Whiskered/ Brant's**	**Total**
26/07/2017				1	3			4
27/07/2017	85	1		1	1	1		89
28/07/2017	15				1			16
29/07/2017	15		2		16			33
30/07/2017	7		4		32	11	1	55
31/07/2017	13	1			36	2		52
01/08/2017	10				37			47
Total	**145**	**2**	**6**	**2**	**126**	**14**	**1**	**296**

The majority of calls recorded on the building adjacent detector came from Myotis, however only a single Myotis call was recorded during the same period at the riverside location. This indicates that the Myotis bats are not using the river for foraging as frequently as pipistrelle species. The most frequently recorded species at location 1 was soprano pipistrelle which was the second most frequently recorded species at the location 2. It is likely that soprano pipistrelle are commuting past the building to forage at the river. Common pipistrelle appear to also be using the river for foraging but are not using the same commuting route as soprano pipistrelle past the main building.

20th August – 26th August 2017

Table 4. Location 1									
Date / species	Brown long-eared	Myotis	Noctule	Common pipistrelle	Pipistrelle sp.	Soprano pipistrelle	Pipistrelle social call	Whiskered/ Brandt's	Total
16/08/2017						1			1
17/08/2017		5				19	11	1	36
18/08/2017		10				17	4		31
19/08/2017	1	8	4	2	1	22	5		43
20/08/2017		5		2		2	9		18
21/08/2017		1		8					9
22/08/2017						17	2		19
Total	**1**	**29**	**4**	**12**	**1**	**78**	**31**	**1**	**157**

Table 5. Location 2			
Date / species	Soprano pipistrelle	Pipistrelle social call	Total
17/08/2017	1	5	6
19/08/2017	1	1	2
20/08/2017		3	3
21/08/2017	1	1	2
22/08/2017		3	3
Total	**3**	**13**	**16**

Notably lower levels of activity were recorded at both detector locations during the monitoring period compared with levels recorded in July. The reasons for this are uncertain, but it is possibly due to this time being the end of the maternity period and higher wind speeds meaning bats are using more sheltered areas. The location 2 detector recorded only 16 calls during the monitoring period, 13 of these were pipistrelle social calls. These may be attributed to the nearby roost or due to the start of the swarming period.

21st September – 27th September 2017

Table 6. Location 1							
Date / species	Myotis	Natterers	Common pipistrelle	Soprano pipistrelle	Pipistrelle social call	Whiskered/ Brandt's	Total
21/09/2017	18		1	11	5	3	38
22/09/2017	8	7		4	12	1	32
23/09/2017	12	7		8	38		65
24/09/2017	1				10		11
25/09/2017	14				6		20
26/09/2017	50	6		20	19		95
27/09/2017	1				10		11

Total	**104**	**20**	**1**	**43**	**100**	**4**	**272**

During the September monitoring period the building adjacent detector malfunctioned and failed to record. Higher levels of Myotis were recorded at the location 1 than previous months. Lower levels of pipistrelle calls were recorded but higher levels of social calls. The higher number of social calls are likely attributed with swarming behaviour.

Building surveys

10th August main building dusk 4 surveyors

During this survey all four surveyors recorded bats before sunset. No roosts were confirmed but three surveyors could not confirm where bats came from, it is possible they came from roosts in the building but this was not confirmed. Given the time of bats first being recorded it is likely that they are roosting close by. Common pipistrelle, soprano pipistrelle, noctule and Daubenton's were recorded during the survey. Bats were recorded commuting and foraging on all sides of the building, large numbers of bats were recorded commuting towards the River Ehen.

30th August main building dawn 4 surveyors

A roost occupied by common and soprano pipistrelle was recorded during this survey, at the north western corner of the building, behind the soffit board of one of the single storey extensions. The majority of bats were recorded commuting north. It is likely that roosts are present to the north, there is no shortage of opportunity in the form of mature trees and traditional buildings.

26th September main building dusk 2 surveyors

A total of three soprano pipistrelle were recorded emerging from the roost identified in the previous survey. No other roosts were identified during this survey. Common pipistrelle, soprano pipistrelle and soprano pipistrelle were recorded.

27th September outbuilding dawn 2 surveyors

This survey concentrated on the area between the two buildings which saw the highest levels of activity during the first surveys. Bats were again seen commuting and foraging in this area. No roosts were recorded.

29th August outbuilding dusk 4 surveyors

During this survey the first bat was recorded two minutes after sunset by surveyor 1 which was a soprano pipistrelle commuting towards the river. The gap between the two outbuildings is a popular commuting route to and from the river of soprano pipistrelle and Myotis bats. No bats were observed emerging from either building.

28th September main building dusk 2 surveyors

Lower levels of activity were recorded during this survey. Common pipistrelle, soprano pipistrelle, Myotis and noctule were recorded as per previous surveys. Bats were recorded foraging and commuting to the west of the main factory building, and to the south at a lesser level. No roosts were recorded during this survey.

Tree Inspection

Climb and inspect aerial surveys were carried out on a total of 13 trees within the field to the north of the main building. No bats or signs of bats were found during this survey. A map showing the locations of the trees assessed is available at Appendix 3. All trees assessed and climbed were considered to be of low risk for roosting bats.

4.2.3 Great crested newts

No ponds are known to be present within 250m of the site boundary. Although a single pond is present 450m to the northwest of the site. However, the River Ehen is present as a barrier which would block a direct commuting route to the site. Therefore, this species is unlikely to be present on site and is therefore not considered further within this assessment.

4.2.4 Otter

Otter are known to be present on the River Ehen which runs adjacent to the site and have been recorded on or near to the site as recently as 2017. The site itself is considered to be largely sub-optimal for otter away from the riparian zone due to large areas covered by buildings, hard-standing and horse grazed fields. No otter specific survey was undertaken due to the proposed retention of otter habitats and the sensitivity of the River Ehen and pearl mussels.

4.2.5 Birds

The site provides nesting and foraging opportunities to a range of species. Corvid nests were recorded within a number of trees in the field on the site.

4.2.6 Reptiles

The site does provide some habitat suitable for reptiles with refugia present within the field in the form of an old stone wall, with basking areas also present. The site is highly disturbed by walkers and it is likely that any reptile population is small and likely to be within the undisturbed area to the north east. Common lizard and slow-worm have both been recorded within 2km of the site.

4.2.7 Red squirrel

Habitat for red squirrel on site is limited and fragmented. There is limited connectivity into wider woodland with much more suitable, large wooded areas present to the east. It is unlikely that red squirrel are present on site with the limited habitats present.

4.2.8 Badger

Badger have been recorded within 0.8km of the site. The site does offer some foraging opportunity for badger and the wider areas provide sett creation opportunities. However, the wider area is considered of much higher value to this species, particularly woodland, grassland and scrub habitats to the east.

4.2.9 Fresh water pearl mussel

A population of pearl mussel is known to be present within the River Ehen which runs adjacent to the site.

4.2.10 Biodiversity Framework Species/Other species

A number of priority butterfly species records were provided by CBDC though all of these were at least 1km from the site. The site itself lacks key food species for these butterflies. Common toad and hedgehog have both been recorded within 1km of the site and may be present on site at times.

4.2.11 Information Gaps and Assumptions

A large number of horses were present within the semi-improved field within the site, which limited the amount of time spent within the field during the transect surveys to some extent, when the horses would tend to gallop towards and around the surveyors, creating a safety risk.

5 SITE EVALUATION AND POTENTIAL IMPACTS

The value of the site, potential impacts and any required mitigation or Natural England licensing in relation to bats is based on the survey findings, knowledge of the project ecologist and refers to the BCT current guidelines for bat surveying. Based on the results of the surveys, it can be concluded that the site is used on a regular basis by a range of locally common species for both commuting and foraging, and includes a roost within the building. Therefore, the site is likely to be of up to Parish Value to bat species.

A bat mitigation licence will be required from Natural England before any works (damage or disturbance to the building, directly or indirectly) are completed on the single story building in which bat roosts were located.

5.1 Constraints

Occasionally it is difficult to distinguish between the *Myotis* bats. In such instances these bats are described as '*Myotis* sp'. In addition, where pipistrelle bats are echolocating at a peak frequency of 50kHz these recordings will be described as 'pipistrelle sp.'. If bats were not echolocating and the nature of the habitats and / or bat flight patterns could not provide an identification to species level then the term 'bat' is used.

Horses within the field during the transect survey meant that the transect route was largely around the field edges for safety reasons.

It is not considered that any of the constraints outlined above have affected the conclusions of survey work at Cleator Mills.

5.2 Potential impacts in the absence of mitigation

Although the full development plan has not been provided, the following impacts may occur during the proposed works in the absence of mitigation:

Initial impacts

- Loss of habitats of parish value to bats
- Harm to protected species such as badger and otter which may be present on site during construction
- Loss of potential crevice roosting locations which may provide opportunistic or transient roost sites used by individual pipistrelle or myotis bats over the summer months;
- Loss of crevices with potential to be used by pipistrelle bats as hibernation sites within buildings;
- Harm to individual bats which could use such crevices at the time that works to the buildings are undertaken;
- Loss of vegetation that bats utilise for foraging and commuting;
- Loss of trees of low roost potential through vegetation clearance; and
- Disturbance through increased noise, vibration, dust levels and light levels during construction.
- Harm to pearl mussel population through silt run off into the River Ehen through construction.

Long-term impacts

- Permanent loss of badger foraging and otter commuting habitat;
- Permanent loss of potential roosting locations;
- Disturbance during the day when the site is in use; and
- Increased light spill to surrounding vegetation used as foraging and commuting routes by several bat species.
- Disturbance to pearl mussel population through run off or increased footfall around the River Ehen.

Predicted scale of impacts

The habitats on site and within the wider area are considered to be of parish value to bats and likely to be an important commuting route to the River Ehen. A mitigation licence from Natural England will be required for any works that will disturb or destroy roosts within the building.

No evidence sufficient to conclude the presence of roosting bats was found within the trees on site, however it is considered that some of the more mature trees are considered of low risk of supporting transient individual crevice roosting bats.

Further details of the proposed development will enable a more robust assessment of the impacts associated with the development and the likely mitigation required.

5.3 Mitigation strategy

A full mitigation plan can be provided once finalised plans are provided, including the amounts of vegetation to be removed as a result of the proposals and the scale of the works to be completed. A risk assessment with regards to the SAC can also be completed once development plans are available.

5.4 Further survey work

It is considered that the survey work undertaken is sufficient to meet the requirements of the Local Planning Authority, with mitigation measures and working methods to be confirmed once final development plans are provided. Consultation with the LPA and Natural England will be required with regards to the adjacent River Ehen SAC.

As a bat licence is required for any works to the main factory building, it is recommended that the survey data is kept up to date, from the previous summer, in order to prevent delays in getting the licence from Natural England.

If no works commence within 12 months of this report then updating survey in the following active season is recommended.

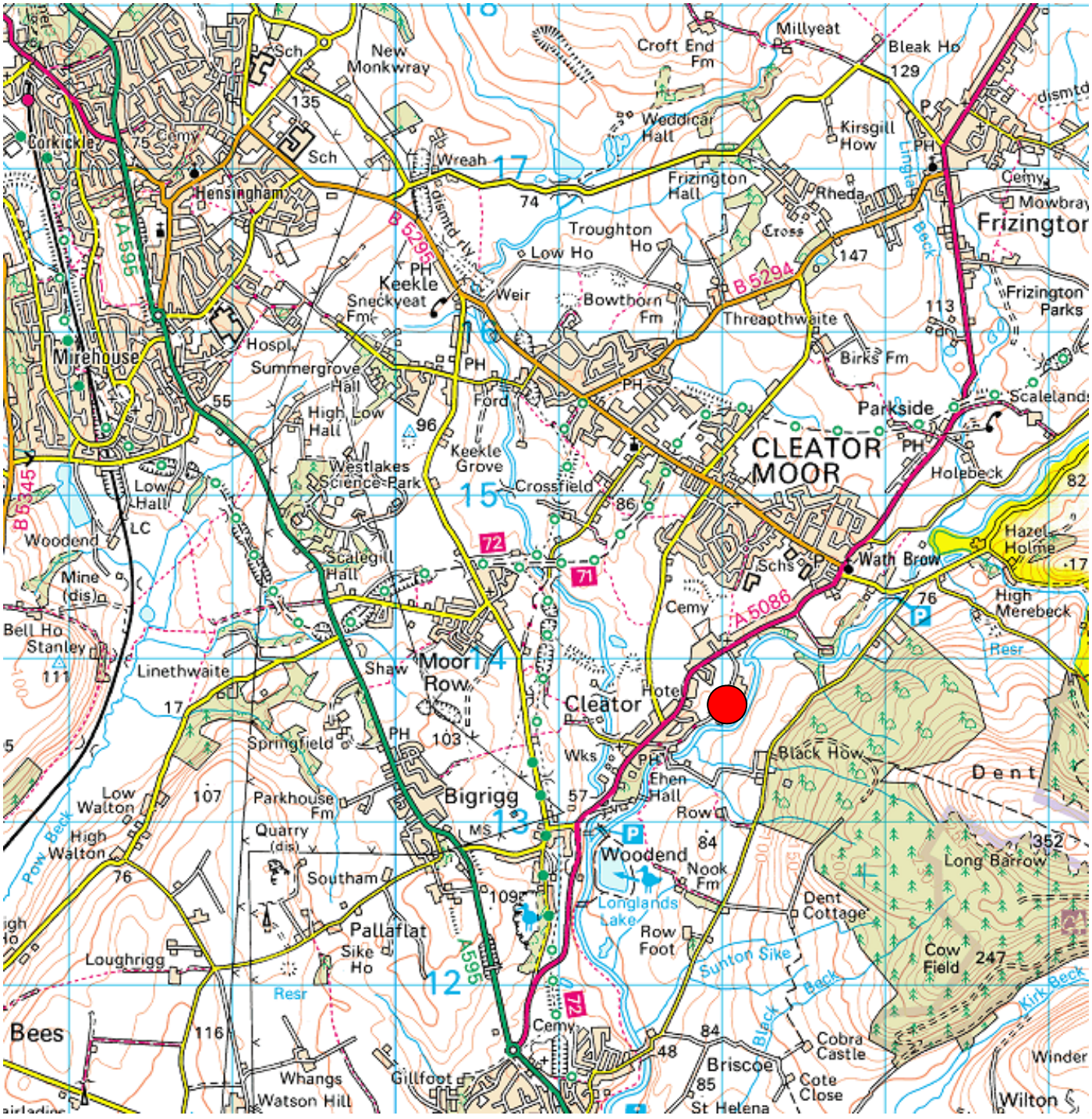
6 REFERENCES

1. Collins, (2016), Bat Survey Guidelines for Professional Ecologists: Good Practice Guidelines; 3rd edition.
2. JNCC, (2010), Handbook for Phase 1 habitat survey - a technique for environmental audit.
3. CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal
4. Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10(4), 143-155.
5. Chanin P (2003). Monitoring the Otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No. 10, English Nature, Peterborough.
6. Strachan, R., Moorhouse, T. and Gelling, M. (2011) Water vole Conservation Handbook (third edition).
7. Froglife (1999). Froglife Advice Sheet 10: reptile survey.
8. The Mammal Society (2012) UKBAP Mammals Interim Guidance.
9. Inverness Badger Survey 2003. Scottish Natural Heritage Commissioned Report No. 096.
10. The Mammal Society, Publication 9 – Surveying Badgers.

APPENDICES

Appendix 1. Location Map

Location Map



Project Code: EES17-091

Version Status: Final

Drawn by: D White

Reviewed by: T Elliott

Approved by: T Elliott

Site

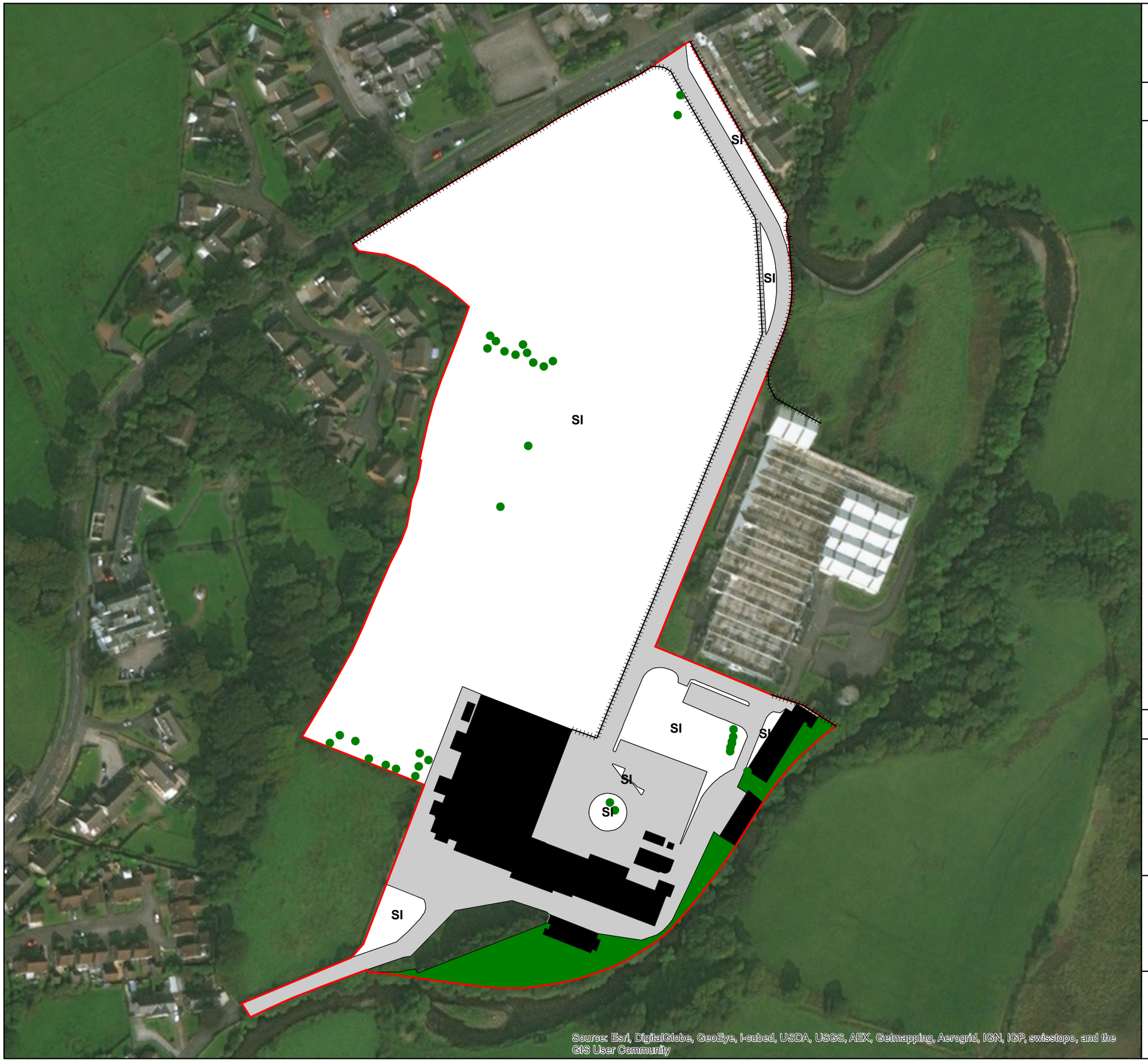
N

Scale@A4 1:50,000

ELLIOTT
Environmental Surveyors

EES17-091 Cleator Mills, Cleator Moor
16th May 2018

Appendix 2. Habitat Map



Phase 1 Habitat Map

Cleator Mills

Fence

Boundary

Habitat

Building

Hardstanding

SI grassland

Woodland

Version number: 1 **Version state: Final**

Design by: DW	Date: 16/05/18
Drawn by: DW	Date: 16/05/18
Reviewed by: TE	Date: 16/05/18
Approved by: TE	Date: 16/05/18

Drawing ref: Cleator Mills Habitat Map
File ref: EES17-091
Grid ref: NY020137

N

Scale @ A3 1:1,750

ELLIOTT
Environmental Surveyors

Mallan House
Bridge End
Hexham
Northumberland
NE46 4DQ
Tel No: 01434609345
Fax No: 01434609344

Appendix 3. Bat Survey Maps

Transect Route and Anabat Locations

Cleator Mills

Anabats

Transect route

Boundary

Version number: 1 **Version state: Final**

Design by: DW	Date: 16/05/18	
Drawn by: DW	Date: 16/05/18	
Reviewed by: TE	Date: 16/05/18	
Approved by: TE	Date: 16/05/18	

Drawing ref: Cleator Mills Bat Survey
File ref: EES17-091
Grid ref: NY020137

N

Scale @ A3 1:1,750

ELLIOTT
Environmental Surveyors

Mallan House
Bridge End
Hexham
Northumberland
NE46 4DQ
Tel No: 01434609345
Fax No: 01434609344

Bat Survey
Surveyor Locations

Cleator Mills

Surveyor location

Boundary

Version number: 1 **Version state: Final**

Design by: DW	Date: 16/05/18	
Drawn by: DW	Date: 16/05/18	
Reviewed by: TE	Date: 16/05/18	
Approved by: TE	Date: 16/05/18	

Drawing ref: Cleator Mills Bat Survey
File ref: EES17-091
Grid ref: NY020137

N

Scale @ A3 1:1,750

ELLIOTT
Environmental Surveyors

Mallan House
Bridge End
Hexham
Northumberland
NE46 4DQ
Tel No: 01434609345
Fax No: 01434609344

Trees Inspected for Bats

Cleator Mills

Trees surveyed

Boundary

Version number: 1 **Version state: Final**

Design by: DW	Date: 16/05/18	
Drawn by: DW	Date: 16/05/18	
Reviewed by: TE	Date: 16/05/18	
Approved by: TE	Date: 16/05/18	

Drawing ref: Cleator Mills Trees
File ref: EES17-091
Grid ref: NY020137

N

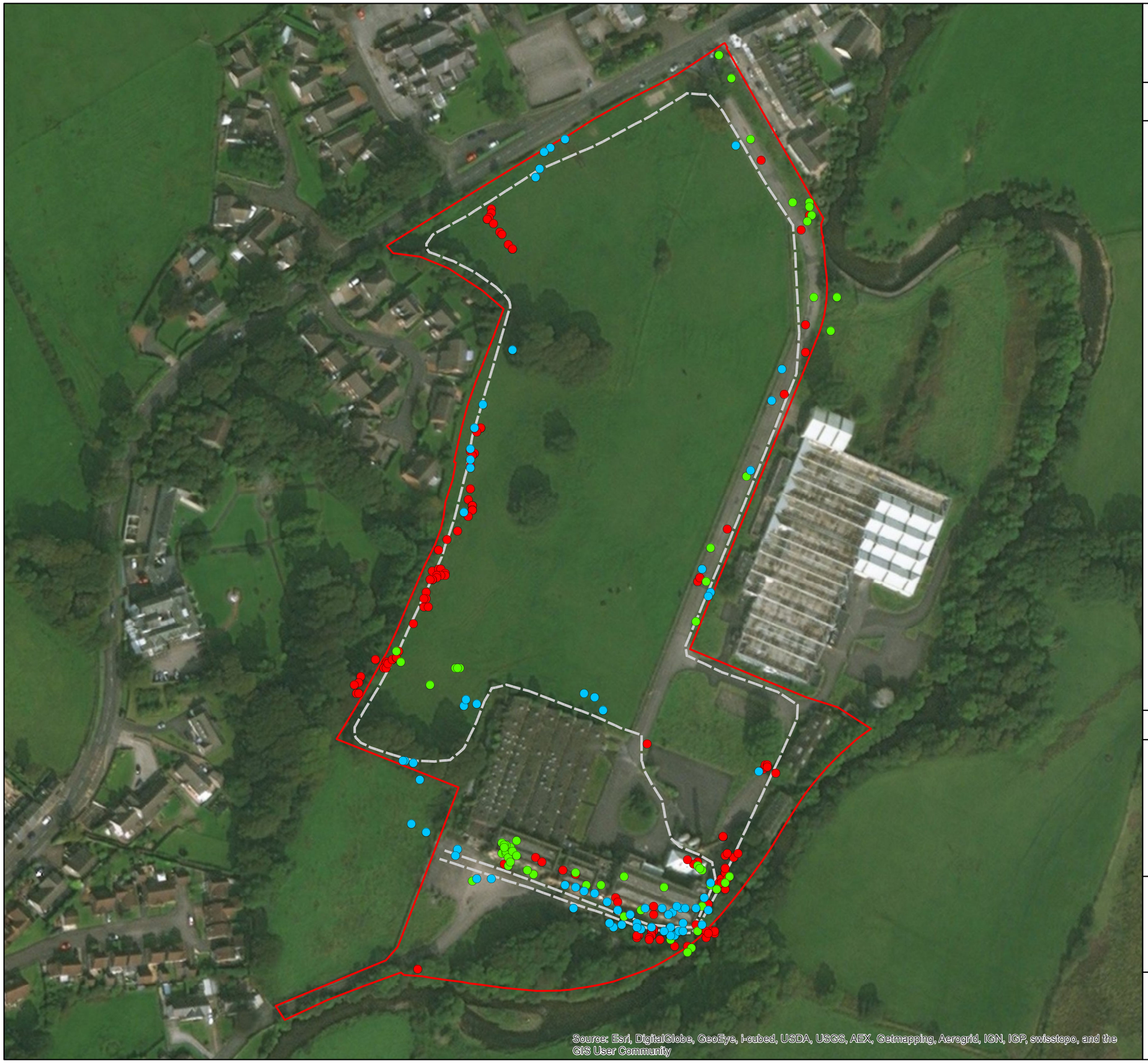
Scale @ A3 1:1,750

ELLIOTT
Environmental Surveyors

Mallan House
Bridge End
Hexham
Northumberland
NE46 4DQ
Tel No: 01434609345
Fax No: 01434609344

Bat Activity Survey
All Surveys

Cleator Mills



- September survey
- August survey
- July survey
- Transect route
- Boundary

Version number: 1 **Version state: Final**

Design by: DW	Date: 16/05/18	
Drawn by: DW	Date: 16/05/18	
Reviewed by: TE	Date: 16/05/18	
Approved by: TE	Date: 16/05/18	

Drawing ref: Cleator Mills Bat Activity
File ref: EES17-091
Grid ref: NY020137

N

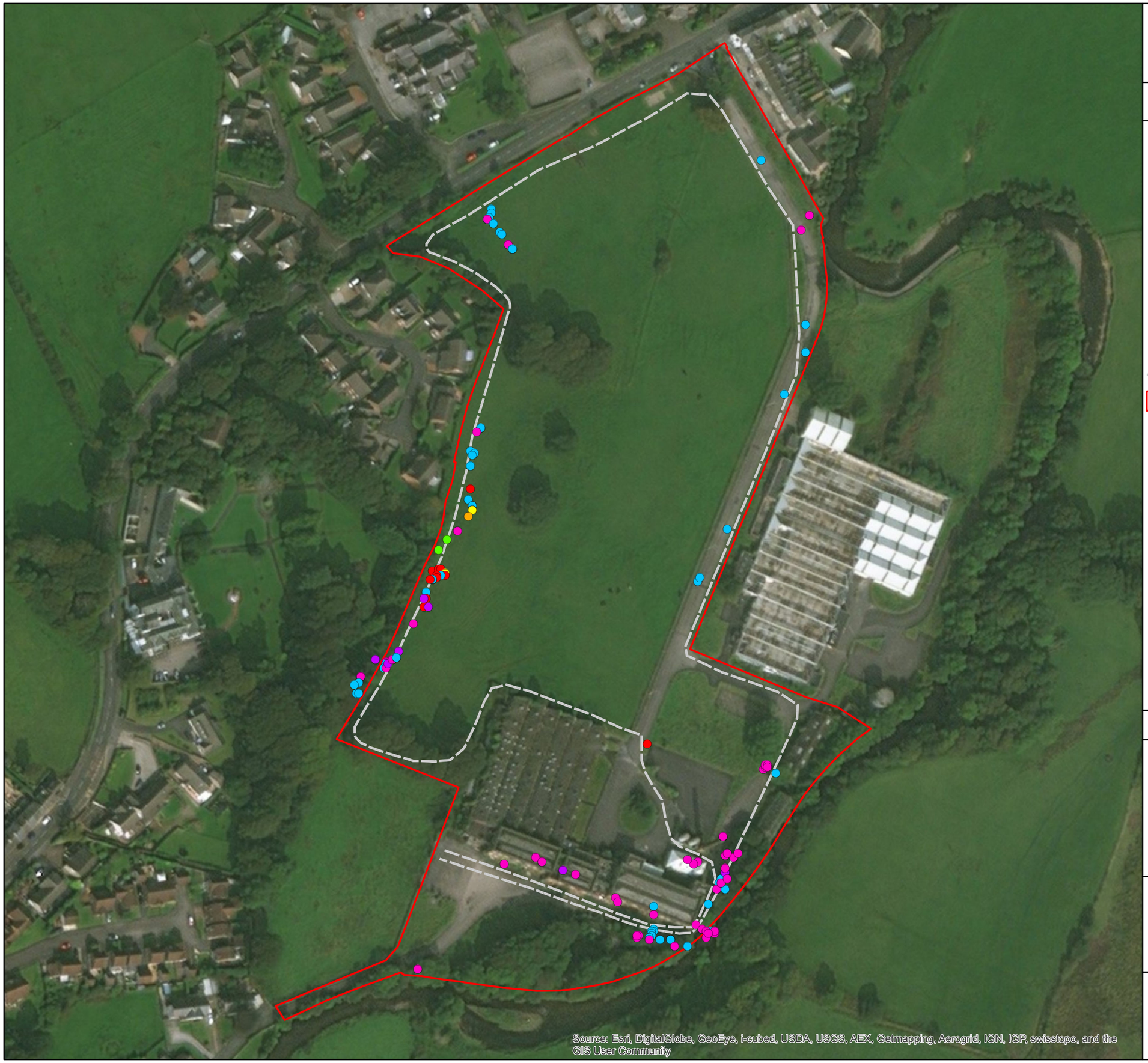
Scale @ A3 1:1,750

ELLIOTT
Environmental Surveyors

Mallan House
Bridge End
Hexham
Northumberland
NE46 4DQ
Tel No: 01434609345
Fax No: 01434609344

Bat Activity Survey
July

Cleator Mills



- Pipistrelle social call
- Pipistrelle social call and Brandt's
- Pipistrelle social call and common pipistrelle
- Pipistrelle social call and soprano pipistrelle
- Common pipistrelle
- Common pipistrelle and soprano pipistrelle
- Soprano pipistrelle
- Transect route
- Boundary

Version number: 1 **Version state: Final**

Design by: DW	Date: 16/05/18	
Drawn by: DW	Date: 16/05/18	
Reviewed by: TE	Date: 16/05/18	
Approved by: TE	Date: 16/05/18	

Drawing ref: Cleator Mills Bat Activity
File ref: EES17-091
Grid ref: NY020137

N

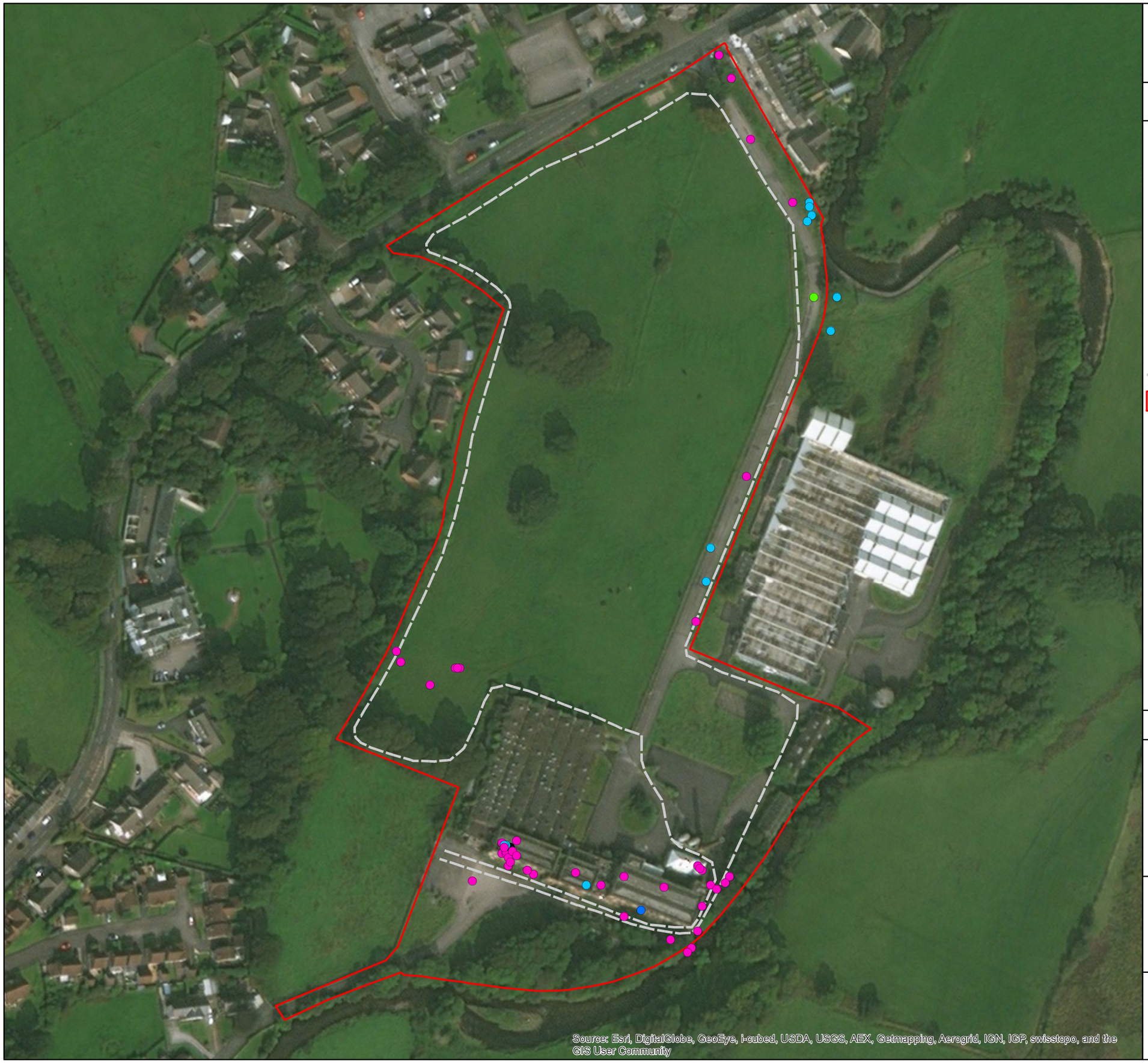
Scale @ A3 1:1,750

ELLIOTT
Environmental Surveyors

Mallan House
Bridge End
Hexham
Northumberland
NE46 4DQ
Tel No: 01434609345
Fax No: 01434609344

Bat Activity Survey
August

Cleator Mills



- Noctule
- Common pipistrelle
- Pipistrelle social call and pipistrelle sp.
- Soprano pipistrelle
- Pipistrelle social call and soprano pipistrelle
- Transect route
- Boundary

Version number: 1 **Version state: Final**

Design by: DW	Date: 16/05/18	
Drawn by: DW	Date: 16/05/18	
Reviewed by: TE	Date: 16/05/18	
Approved by: TE	Date: 16/05/18	

Drawing ref: Cleator Mills
Bat Activity
File ref: EES17-091
Grid ref: NY020137

N

Scale @ A3 1:1,750

ELLIOTT
Environmental Surveyors

Mallan House
Bridge End
Hexham
Northumberland
NE46 4DQ
Tel No: 01434609345
Fax No: 01434609344

Bat Activity Survey September

Cleator Mills

Pipistrelle social call

Pipistrelle social call and common pipistrelle

Pipistrelle soical called, common and soprano pipistrelle

Pipistrelle social call and soprano pipistrelle

Common pipistrelle

Common pipistrelle and soprano pipistrelle

Soprano pipistrelle

Transect route

Boundary

Version number: 1 **Version state: Final**

Design by: DW	Date: 16/05/18
Drawn by: DW	Date: 16/05/18
Reviewed by: TE	Date: 16/05/18
Approved by: TE	Date: 16/05/18

Drawing ref: Cleator Mills Bat Activity
File ref: EES17-091
Grid ref: NY020137

N

Scale @ A3 1:1,750

ELLIOTT
Environmental Surveyors

Mallan House
Bridge End
Hexham
Northumberland
NE46 4DQ
Tel No: 01434609345
Fax No: 01434609344

Roost Location

Cleator Mills

Roost

Boundary

Version number: 1 **Version state: Final**

Design by: DW	Date: 16/05/18	
Drawn by: DW	Date: 16/05/18	
Reviewed by: TE	Date: 16/05/18	
Approved by: TE	Date: 16/05/18	

Drawing ref: Cleator Mills Bat Survey
File ref: EES17-091
Grid ref: NY020137

N

Scale @ A3 1:1,750

ELLIOTT
Environmental Surveyors

Mallan House
Bridge End
Hexham
Northumberland
NE46 4DQ
Tel No: 01434609345
Fax No: 01434609344