

# North Thames Estuary & Marshes Terrestrial Invertebrates Survey 2024 Report: Low Street Pit (J1), European Metal Recycling Plant (J2).

February 2026

Natural England Commissioned Report NECR607

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Catalogue code: NECR607

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### Keywords

Terrestrial invertebrates, survey, East Tilbury, protected species

### Acknowledgements

Thank you to landowners and European Metal Recycling for arranging access permissions.

### Citation

Baker Consultants Ltd. 2025. North Thames Estuary & Marshes Terrestrial Invertebrates Survey 2024 Report: Low Street Pit (J1), European Metal Recycling Plant (J2). *Natural England Commissioned Report*. NECR607 Natural England.



# Foreword

Surveys took place in 2024 at two sites namely Low Street Pit and the European Metal Recycling plant both located south-west of East Tilbury. The surveys were to determine the quality of the site for terrestrial invertebrates and to collect evidence to assess the case for notification as a Site of Special Scientific Interest (SSSI).

The report itself does not make a case for notification, rather it provides an objective record of survey findings to support Natural England's independent assessment of special interest.

Natural England commission a range of reports from external contractors to provide evidence and advice to assist us in delivering our duties. The views in this report are those of the authors and do not necessarily represent those of Natural England.

# Executive summary

## The Proposal

This document provides the results of a terrestrial invertebrate survey. This was requested in relation to proposals by Natural England which is considering an extension of Mucking Flats & Marshes Site of Special Scientific Interest (SSSI), to recognise the national importance of a series of habitats and the species which they support.

This report describes the terrestrial invertebrate species found within the survey areas J1 (Low Street Pit) and J2 (European Metal Recycling). An additional area J3 was also surveyed opportunistically, and is reported in Appendix 1.

## Invertebrates recorded

The terrestrial invertebrate survey recorded the following protected and/or notable <sup>1</sup> invertebrate species:

- A spider *Argenna subnigra*, Nationally Scarce (J1)
- A beetle *Agrilus viridis*, Nationally Scarce (J2)
- A beetle *Phalacrus championi*, Notable A (J1)
- Cinnabar moth *Tyria jacobaeae*, NERC S41 (research only) (J1)

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<sup>1</sup> Nationally Scarce species occurring in 16-100 hectads in Great Britain (includes Notable A, Notable B and NS includes) or are locally importance within Essex

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# Introduction

## Study Area

The two areas surveyed are located south-east of East Tilbury in south Essex. The wider Natural England project to which this survey contributes refers to this area as 'compartment J: Low Street Pit and surrounds'. The area is divided into three sub-compartments, two of which were requested for terrestrial invertebrate survey. The sub-compartments are shown on Figure 1 below.

The J1 sub-compartment, Low Street Pit is centred at O.S. Grid Ref TQ672774 and consists of a mosaic of grassland and scattered scrub with areas of wet woodland.

The J2 sub-compartment, European Metal Recycling, is centred at O.S. Grid Ref TQ670776 consists of scattered scrub with grassland clearings and includes several semi-demolished abandoned buildings to the north. This sub-compartment also includes an area of grassland to the west which is grazed by horses.

## Survey Area Location



Figure 1: Sub-Compartment survey locations. Base map imagery © Google Satellite 2024.

## Methods

### Surveyor Qualifications and Experience

Invertebrate Ecologist Meg Skinner *BSc (Hons) MSc ACIEEM* has over 5 years' consultancy experience and 9 years' experience of recording and identifying invertebrates. Meg also holds a Natural England survey license for great crested newt. Meg carried out the site surveys, specimen identifications and authored this report.

Senior Invertebrate Ecologist David Goddard *BSc (Hons) MCIEEM* has over 15 years' consultancy experience of undertaking invertebrate surveys and also holds Natural

England survey licenses for great crested newt, white-clawed crayfish, barn owl and dormouse. David assisted with identification of specimens and reviewed this report.

Wherever appropriate during surveys, Natural England's Standing Advice on Protected Species (Natural England & DEFRA, 2023) was taken into account, along with a wide range of other best practice guidance on survey methods. These are referenced in the text below. However, the professional judgement of the surveyors was also applied in relation to the site conditions and target species/habitats being considered. This may have required changes from the published guidance.

## Invertebrate Survey

Invertebrates exist in all habitats, but certain habitat types are potentially of higher value and were therefore considered closely in the survey. These include semi-natural vegetation, scrub edge, wetland margins, grassland and open mosaics.

An invertebrate survey was undertaken by Meg Skinner on 12<sup>th</sup> and 13<sup>th</sup> June 2024. The invertebrate survey methods followed active techniques recommended for the J2 (European Metal Recycling) site by Natural England and standard guidance for terrestrial species (Joint Nature Conservation Committee, 2008; English Nature, 2005). The available survey window of the commission did not permit the use of passive sampling techniques such as pitfall trapping and malaise trapping.

The habitats within the site and surrounding land were appraised for their suitability to support protected and/or notable invertebrate species or assemblages.

On the 12<sup>th</sup> and 13<sup>th</sup> June, walkover surveys of the sites were conducted sampling the invertebrates using several different techniques as per Eyre, (1996); Hill *and others*, (2006); and Sutherland, (2006). The invertebrate survey methods followed standard guidance for terrestrial species (Joint Nature Conservation Committee, 2008; English Nature, 2005). The following techniques were used during the walkover surveys.

**Sweep netting:** this involves netting invertebrates in low vegetation using a stout-handled net which was moved vigorously through the vegetation to dislodge resting invertebrates. This method is considered to be quantitative, when carried out using a standardised amount of effort. This method was undertaken within the grassland areas of the survey area for 10 sweeps on each occasion.

**Aerial Netting:** netting and capturing for identification any flying invertebrate species. This technique was undertaken in suitable habitats throughout the survey area. Aerial netting was undertaken throughout the survey area where flying invertebrates were found.

**Beating tray:** beating trees and bushes with a stick using a sharp tap to dislodge the invertebrates which then fall onto the beating tray held beneath. This technique was effective in sampling arboreal invertebrate species. This technique was undertaken in suitable habitats within the site – around the more mature trees and bushes i.e. those over circa 3m in height.

**Grubbing:** looking for invertebrates in suitable habitats or microhabitats for example, under stones, logs, under bark, in crevices within walls and rocks, leaf litter, around the

base of plants, dead and decaying fungi, dung and carrion. All suitable debris within the survey area was investigated for any invertebrates hiding underneath.

**Direct searching:** looking for invertebrates in the suitable habitats or microhabitats for species known or considered likely to occur within the site.

**Vacuum sampling:** vacuuming scrub and short vegetation using a leaf blower to collect ground-dwelling invertebrates into a sample bag. This technique results in high sample yields in a short amount of time and can be effective for small invertebrates in dense vegetation.

Weather conditions during the surveys are shown in Table 1.

**Table 1: Survey dates and weather condition**

| Date       | Start Time | End Time | Temperature °C | Cloud Cover (%) | Wind Speed (Beaufort) | Wind Direction | Rain |
|------------|------------|----------|----------------|-----------------|-----------------------|----------------|------|
| 12/06/2024 | 09:09      | 13:57    | 12 → 17        | 90 → 100        | 0 → 1                 | W              | Nil  |
| 13/06/2024 | 09:07      | 12:03    | 17 → 18        | 30 → 90         | 1 → 2                 | E              | Nil  |

The sites J1 (Low Street Pit) and J2 (EMR) were surveyed on both dates within areas that were accessible.

## Invertebrate Identification

The identification work was completed by Meg Skinner with assistance from David Goddard.

Whenever possible, species were identified when observed on site. Specimens that could not be identified to species level in the field were taken off site for identification using appropriate taxonomic keys to species level as far as possible. Immature specimens of groups such as spiders were identified to genus level when they could not be identified to species.

# Results

## Study Limitations

Whilst every effort was made in the field survey to provide a comprehensive description of the site, no investigation can ensure the complete characterisation and prediction of the natural environment. Also, natural and semi-natural habitats are subject to change, species may colonise the site after surveys have taken place and results included in this report may become less reliable over time.

The wet and mild spring may have affected the terrestrial invertebrate species and numbers present on the sites during the survey as some of the vegetation was showing signs of having flowered later than usual. Thus, their ability to support the typical range and number of species may have been reduced. The Met Office has published summary data regarding the mild and wet February (Met Office, 2024). It is thought that such conditions may significantly have affected larval survival for many species and individuals (caused by factors such as fungal attack, lack of resources, waterlogging and immersion).

Sub-compartments J1 (Low Street Pit) and J2 (EMR) were both surveyed on the 12<sup>th</sup> and 13<sup>th</sup> June 2024. Many areas within both sub-compartments were not easily accessible for surveying, due to large areas of unmanaged and overgrown scrub blocking access to clearer regions. As a result, approximately half of each area was not surveyed for terrestrial invertebrates due to these restrictions. Areas accessed and surveyed are shown on Figure 2. Nevertheless, accessible characteristic vegetation and habitats from each sub-compartment were sampled repeatedly to minimise significant effects on the findings of the survey.

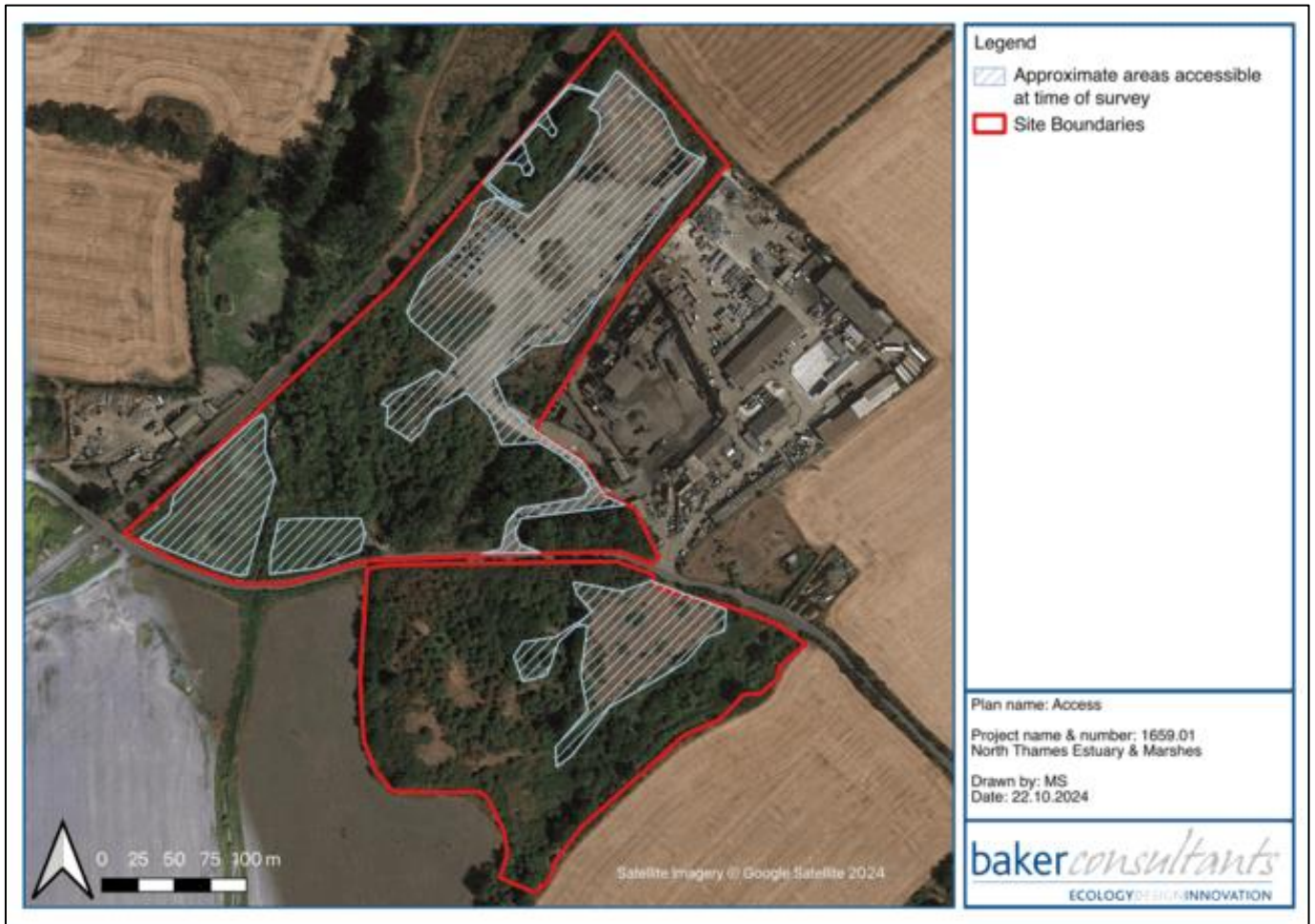


Figure 2: Approximate areas accessed. Base map imagery © Google Satellite 2024.

## Invertebrates Recorded

The species recorded on the site are summarised in the following sections.

### Daytime Terrestrial Survey

During the terrestrial invertebrate survey 67 invertebrate species were recorded. The species recorded are summarised in Table 2 along with their status. Species recorded for sub-compartment J1 (Low Street Pit) are shown in Table 3 and Figure 3. Species recorded for sub-compartment J2 (EMR) are shown in Table 4 and Figure 4.

**Table 2: Terrestrial Survey – All Species Recorded in J1 (Low Street Pit) and J2 (EMR). Cells blank where status not recorded.**

Key for terms used in table 2:

LC - IUCN GB Red List Post 2001 Least Concern

NS - Nationally Scarce - Occurring in 16-100 hectads in Great Britain

Notable A - Nationally Scarce A – species occurring in 16-30 hectads in Great Britain

S41 - Species listed on the NERC S41 list

| Scientific Name                      | Common Name              | Status |
|--------------------------------------|--------------------------|--------|
| <i>Adalia bipunctata</i>             | 2-spot Ladybird          |        |
| <i>Aelia acuminata</i>               | Bishop's mitre shieldbug | LC     |
| <i>Agapanthea villosoviridescens</i> | A longhorn beetle        |        |
| <i>Agelena labyrinthica</i>          | Labyrinth spider         | LC     |
| <i>Agrilus cuprescens</i>            | A beetle                 |        |
| <i>Agrilus viridis</i>               | A beetle                 |        |
| <i>Anthophila fabriciana</i>         | Nettle moth              |        |
| <i>Apis mellifera</i>                | Honey bee                |        |
| <i>Argenna subnigra</i>              | A spider                 | LC, NS |
| <i>Armadillidium vulgare</i>         | Pill woodlouse           | LC     |
| <i>Bathyphantes approximatus</i>     | A spider                 |        |
| <i>Bombus pratorum</i>               | Early bumblebee          |        |
| <i>Cantharis lateralis</i>           | A soldier beetle         | LC     |
| <i>Cassida vibex</i>                 | Tortoise beetle          |        |
| <i>Cassida viridis</i>               | Green tortoise beetle    | LC     |
| <i>Cephus pygmeus</i>                | Wheat stem sawfly        |        |
| <i>Ceratapion onopordi</i>           | A beetle                 |        |
| <i>Chloromyia formosa</i>            | Broad Centurion fly      | LC     |
| <i>Coccinella septempunctata</i>     | 7-spot Ladybird          |        |
| <i>Cordylepherus viridis</i>         | A beetle                 | LC     |
| <i>Coreus marginatus</i>             | Dock bug                 | LC     |
| <i>Crambus pascuella</i>             | A moth                   |        |
| <i>Dolichopus griseipennis</i>       | A fly                    |        |
| <i>Enallagma cyathigerum</i>         | Common blue damselfly    | LC     |
| <i>Enoplognatha ovata s.l.</i>       | A spider                 |        |

| Scientific Name                   | Common Name                      | Status |
|-----------------------------------|----------------------------------|--------|
| <i>Episyrphus balteatus</i>       | Marmalade hoverfly               |        |
| <i>Eurydema oleracea</i>          | Brassica shieldbug               | LC     |
| <i>Eurygaster testudinaria</i>    | Tortoise shieldbug               | LC     |
| <i>Formica cunicularia</i>        | A wood ant                       |        |
| <i>Gonocerus acuteangulatus</i>   | Box bug                          | LC     |
| <i>Heliophanus sp.</i>            | A spider                         |        |
| <i>Hylaeus hyalinatus</i>         | Hairy yellow-face bee            |        |
| <i>Hypera sp.</i>                 | A beetle                         |        |
| <i>Ichneumon sp.</i>              | A wasp                           |        |
| <i>Ischnura elegans</i>           | Blue-tailed damselfly            | LC     |
| <i>Larinioides cornutus</i>       | A spider                         | LC     |
| <i>Lasioglossum villosulum</i>    | A bee                            |        |
| <i>Lasius niger</i>               | An ant                           |        |
| <i>Leptopterna dolabrata</i>      | A bug                            |        |
| <i>Libellula quadrimaculata</i>   | Four-spotted chaser              | LC     |
| <i>Maniola jurtina</i>            | Meadow brown butterfly           | LC     |
| <i>Meligethes sp.</i>             | A beetle                         |        |
| <i>Myrmica rubra</i>              | An ant                           |        |
| <i>Myrmica ruginodis</i>          | An ant                           |        |
| <i>Nalassus laevioctostriatus</i> | A beetle                         | LC     |
| <i>Nedyus quadrimaculatus</i>     | A weevil                         |        |
| <i>Neocrepidodera ferruginea</i>  | A beetle                         | LC     |
| <i>Notiophilus biguttatus</i>     | Common springtail stalker beetle | LC     |
| <i>Nysius sp.</i>                 | A bug                            |        |
| <i>Ochlodes sylvanus</i>          | Large Skipper                    | LC     |
| <i>Ocypus olens</i>               | Devil's coach-horse beetle       |        |
| <i>Oedemera lurida</i>            | A beetle                         | LC     |
| <i>Oedemera nobilis</i>           | Swollen-thighed beetle           |        |
| <i>Ozyptila praticola</i>         | A spider                         | LC     |
| <i>Paradromius linearis</i>       | A beetle                         | LC     |

| Scientific Name               | Common Name        | Status              |
|-------------------------------|--------------------|---------------------|
| <i>Pardosa pullata</i>        | A spider           | LC                  |
| <i>Phalacrus championi</i>    | A beetle           | LC, Notable A       |
| <i>Philodromus sp.</i>        | A spider           |                     |
| <i>Phyllobius virideaeris</i> | A weevil           |                     |
| <i>Pisaura mirabilis</i>      | Nursery web spider |                     |
| <i>Pseudovadonia livida</i>   | A longhorn beetle  | LC                  |
| <i>Stenodema laevigata</i>    | A bug              |                     |
| <i>Syrphus ribesii</i>        | A hoverfly         |                     |
| <i>Tibellus oblongus</i>      | A spider           | LC                  |
| <i>Trechus obtusus</i>        | A beetle           | LC                  |
| <i>Tyria jacobaeae</i>        | Cinnabar moth      | S41 (Research only) |
| <i>Zilla diodia</i>           | A spider           | LC                  |

**Table 3: Terrestrial Survey - Species Recorded in Site J1 (Low Street Pit). Cells blank where status not recorded.**

Key for terms used in table 3:

LC - IUCN GB Red List Post 2001 Least Concern

NS - Nationally Scarce - Occurring in 16-100 hectads in Great Britain

Notable A - Nationally Scarce A – species occurring in 16-30 hectads in Great Britain

S41 - Species listed on the NERC S41 list

| Scientific Name                      | Common Name       | Status |
|--------------------------------------|-------------------|--------|
| <i>Agapanthea villosoviridescens</i> | A longhorn beetle |        |
| <i>Anthophila fabriciana</i>         | Nettle moth       |        |
| <i>Apis mellifera</i>                | Honey bee         |        |
| <i>Argenna subnigra</i>              | A spider          | LC, NS |
| <i>Armadillidium vulgare</i>         | Pill woodlouse    | LC     |
| <i>Bathyphantes approximatus</i>     | A spider          |        |
| <i>Crambus pascuella</i>             | A moth            |        |
| <i>Gonocerus acuteangulatus</i>      | Box bug           | LC     |
| <i>Ichneumon sp.</i>                 | A wasp            |        |
| <i>Larinioides cornutus</i>          | A spider          | LC     |

| Scientific Name                   | Common Name            | Status              |
|-----------------------------------|------------------------|---------------------|
| <i>Lasius niger</i>               | An ant                 |                     |
| <i>Leptopterna dolabrata</i>      | A bug                  |                     |
| <i>Libellula quadrimaculata</i>   | Four-spotted chaser    | LC                  |
| <i>Myrmica ruginodis</i>          | An ant                 |                     |
| <i>Nalassus laevioctostriatus</i> | A beetle               | LC                  |
| <i>Neocrepidodera ferruginea</i>  | A beetle               | LC                  |
| <i>Ochlodes sylvanus</i>          | Large Skipper          | LC                  |
| <i>Oedemera nobilis</i>           | Swollen-thighed beetle |                     |
| <i>Phalacrus championi</i>        | A beetle               | LC, Notable A       |
| <i>Phyllobius virideaeris</i>     | A weevil               |                     |
| <i>Pisaura mirabilis</i>          | Nursery web spider     |                     |
| <i>Tyria jacobaeae</i>            | Cinnabar moth          | S41 (Research only) |

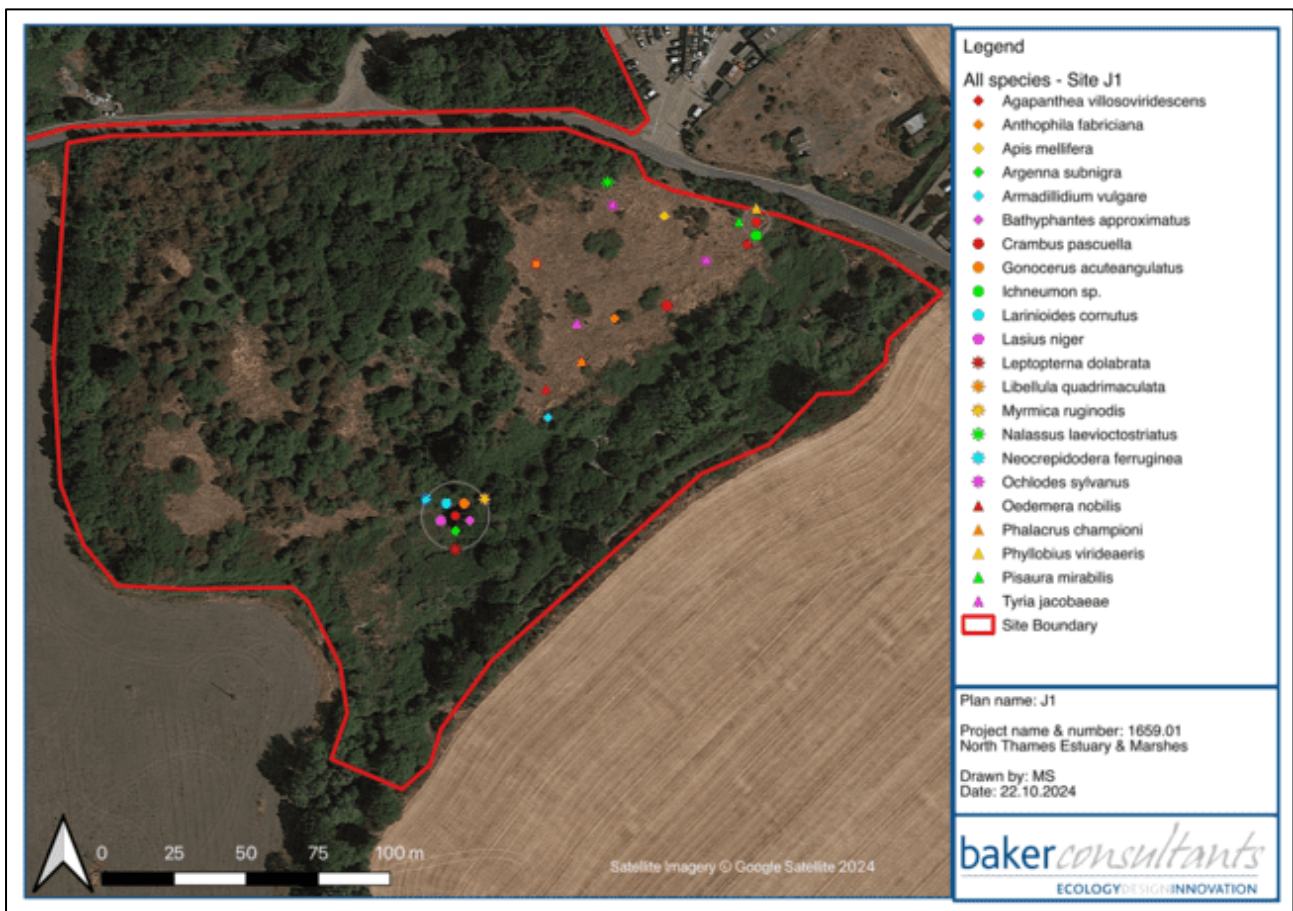


Figure 3: Species recorded at site J1 (Low Street Pit). Base map imagery © Google Satellite 2024

**Table 4: Terrestrial Survey - Species Recorded in Site J2 (EMR). Cells blank where status not recorded.**

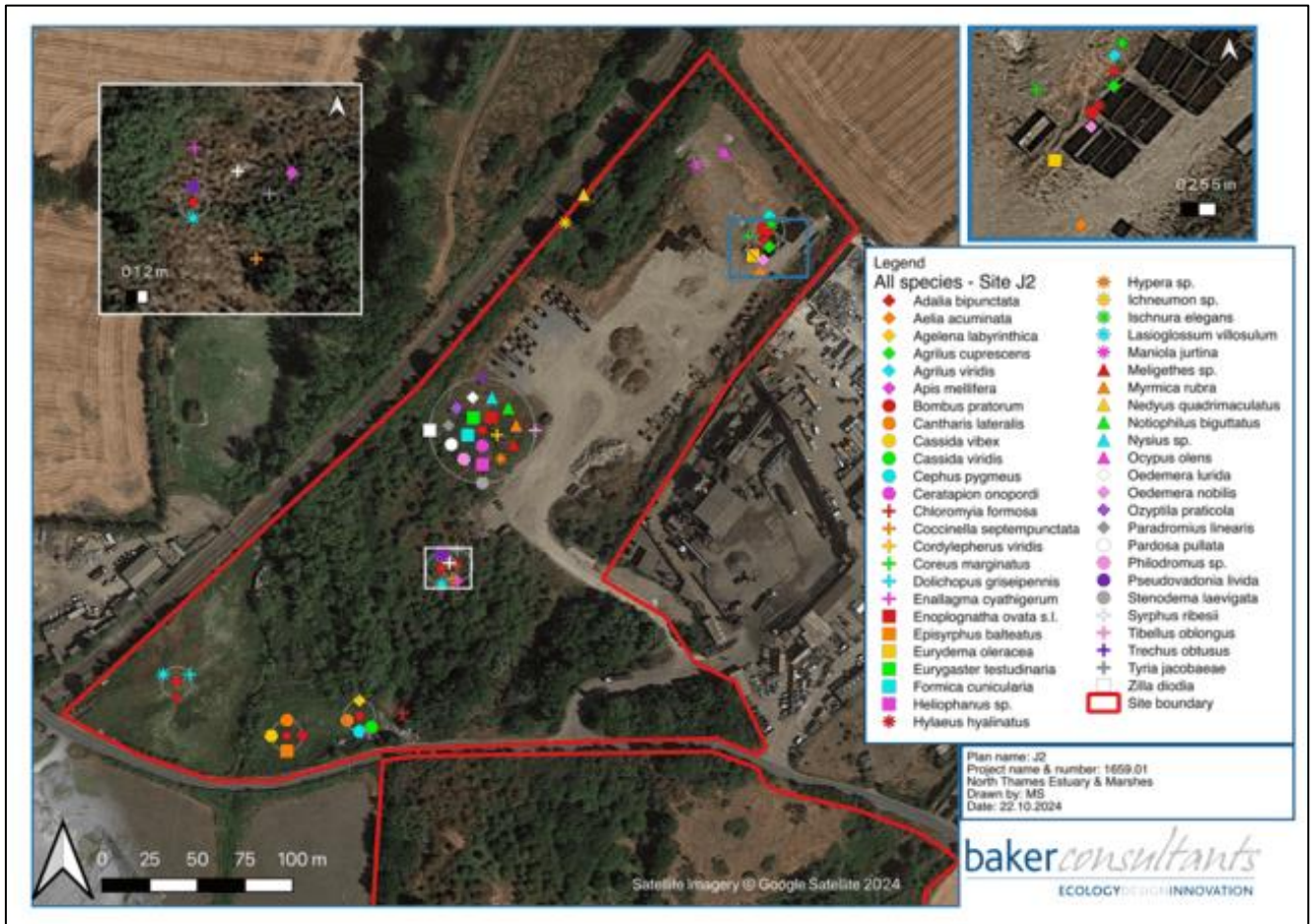
Key for terms used in table 4:

LC - IUCN GB Red List Post 2001 Least Concern

S41 - Species listed on the NERC S41 list

| <b>Scientific Name</b>           | <b>Common Name</b>       | <b>Status</b> |
|----------------------------------|--------------------------|---------------|
| <i>Adalia bipunctata</i>         | 2-spot Ladybird          |               |
| <i>Aelia acuminata</i>           | Bishop's mitre shieldbug | LC            |
| <i>Agelena labyrinthica</i>      | Labyrinth spider         | LC            |
| <i>Agrilus cuprescens</i>        | A beetle                 |               |
| <i>Agrilus viridis</i>           | A beetle                 |               |
| <i>Apis mellifera</i>            | Honey bee                |               |
| <i>Bombus pratorum</i>           | Early bumblebee          |               |
| <i>Cantharis lateralis</i>       | A soldier beetle         | LC            |
| <i>Cassida vibex</i>             | Tortoise beetle          |               |
| <i>Cassida viridis</i>           | Green tortoise beetle    | LC            |
| <i>Cephus pygmeus</i>            | Wheat stem sawfly        |               |
| <i>Ceratapion onopordi</i>       | A beetle                 |               |
| <i>Chloromyia formosa</i>        | Broad Centurion fly      | LC            |
| <i>Coccinella septempunctata</i> | 7-spot Ladybird          |               |
| <i>Cordylepherus viridis</i>     | A beetle                 | LC            |
| <i>Coreus marginatus</i>         | Dock bug                 | LC            |
| <i>Dolichopus griseipennis</i>   | A fly                    |               |
| <i>Enallagma cyathigerum</i>     | Common blue damselfly    | LC            |
| <i>Enoplognatha ovata s.l.</i>   | A spider                 |               |
| <i>Episyrphus balteatus</i>      | Marmalade hoverfly       |               |
| <i>Eurydema oleracea</i>         | Brassica shieldbug       | LC            |
| <i>Eurygaster testudinaria</i>   | Tortoise shieldbug       | LC            |
| <i>Formica cunicularia</i>       | A wood ant               |               |
| <i>Heliophanus sp.</i>           | A spider                 |               |
| <i>Hylaeus hyalinatus</i>        | Hairy yellow-face bee    |               |

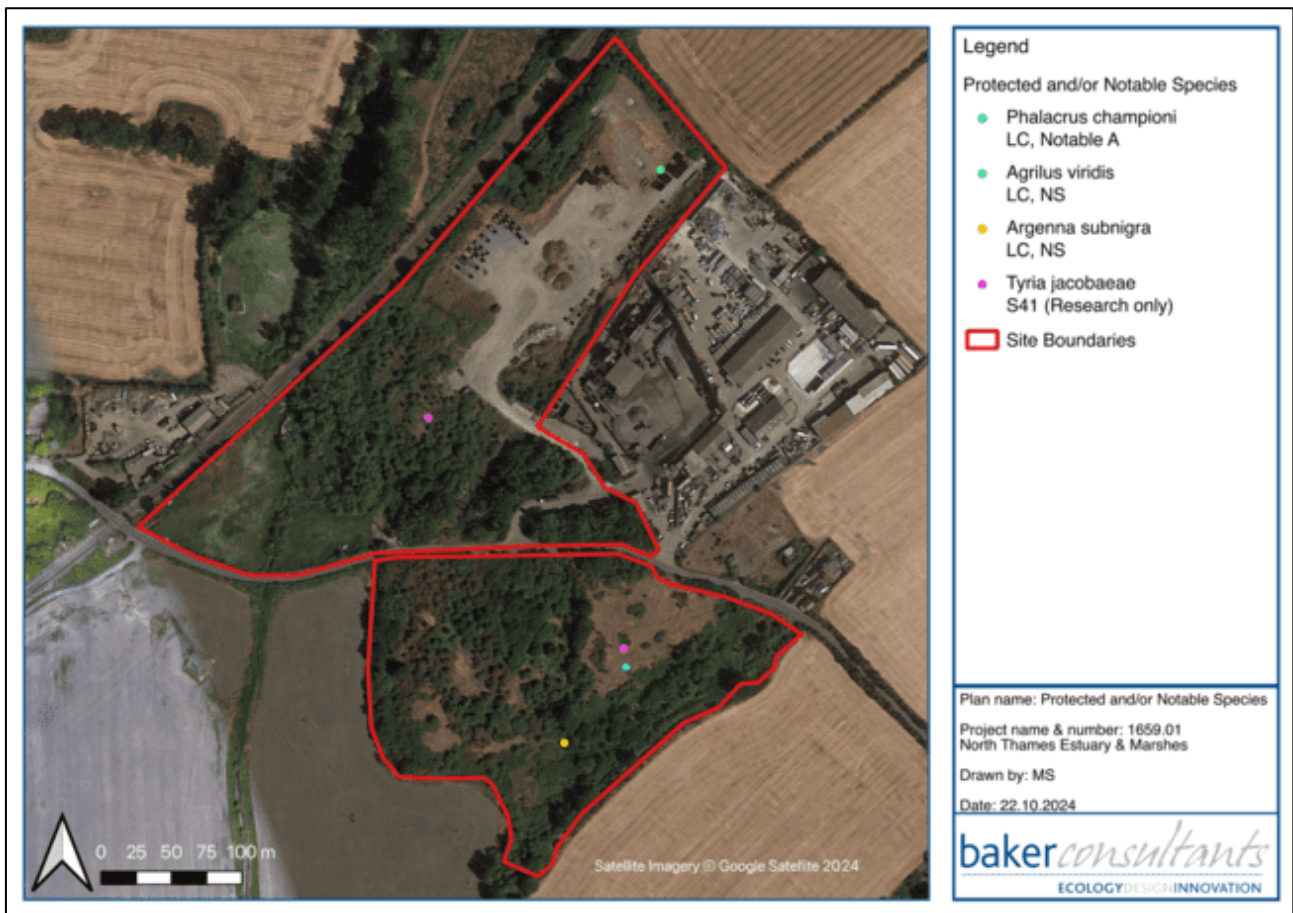
| <b>Scientific Name</b>         | <b>Common Name</b>               | <b>Status</b>       |
|--------------------------------|----------------------------------|---------------------|
| <i>Hypera sp.</i>              | A beetle                         |                     |
| <i>Ichneumon sp.</i>           | A wasp                           |                     |
| <i>Ischnura elegans</i>        | Blue-tailed damselfly            | LC                  |
| <i>Lasioglossum villosulum</i> | A bee                            |                     |
| <i>Maniola jurtina</i>         | Meadow brown butterfly           | LC                  |
| <i>Meligethes sp.</i>          | A beetle                         |                     |
| <i>Myrmica rubra</i>           | An ant                           |                     |
| <i>Nedyus quadrimaculatus</i>  | A weevil                         |                     |
| <i>Notiophilus biguttatus</i>  | Common springtail stalker beetle | LC                  |
| <i>Nysius sp.</i>              | A bug                            |                     |
| <i>Ocyopus olens</i>           | Devil's coach-horse beetle       |                     |
| <i>Oedemera lurida</i>         | A beetle                         | LC                  |
| <i>Oedemera nobilis</i>        | Swollen-thighed beetle           |                     |
| <i>Ozyptila praticola</i>      | A spider                         | LC                  |
| <i>Paradromius linearis</i>    | A beetle                         | LC                  |
| <i>Pardosa pullata</i>         | A spider                         | LC                  |
| <i>Philodromus sp.</i>         | A spider                         |                     |
| <i>Pseudovadonia livida</i>    | A longhorn beetle                | LC                  |
| <i>Stenodema laevigata</i>     | A bug                            |                     |
| <i>Syrphus ribesii</i>         | A hoverfly                       |                     |
| <i>Tibellus oblongus</i>       | A spider                         | LC                  |
| <i>Trechus obtusus</i>         | A beetle                         | LC                  |
| <i>Tyria jacobaeae</i>         | Cinnabar moth                    | S41 (Research only) |
| <i>Zilla diodia</i>            | A spider                         | LC                  |



**Figure 4: Species recorded at site J2 (EMR). Base map imagery © Google Satellite 2024.**

## Protected and/or Notable Species

Four species recorded during the terrestrial survey are protected and/or notable. Figure 5 shows a map of their locations.



**Figure 5: Protected and/or Notable species recorded. Base map imagery © Google Satellite 2024.**

### **A spider *Argenna subnigra*, Nationally Scarce**

The spider occurs under stones and at the base of vegetation, usually in open sparsely vegetated areas of grasslands, dunes, old quarries and waste ground. It is sometimes found on bushes (British Arachnological Society, 2024a).

### **A beetle *Agrilus viridis*, Nationally Scarce**

This species is a woodboring jewel beetle and a pest of trees. Its host species include beech, hazel, birch and willow (Pellegrino and others, 2017).

## **A beetle *Phalacrus championi*, Notable A**

This species is found in a variety of habitats including saltmarsh, arable margins, downland and woodland, where it may be associated with smutted grasses and possibly also sedges *Carex*, although there is much uncertainty about its specific requirements in Britain. The larvae are likely to feed on the fungal spores (Lane, 2021).

## **Cinnabar moth *Tyria jacobaeae*, NERC S41 (Research only)**

The cinnabar moth it is generally nocturnal but is quite often disturbed during the day from long grass and low herbage. The caterpillar feeds gregariously on ragwort *Senecio jacobaea* and other related plants (Kimber, 2024).

# Appendix 1: Site J3 (Station Road Lake area)

## Introduction

An additional site 'J3' was opportunistically surveyed on June 13<sup>th</sup>, 2024. The methods employed were as described for sites J1 and J2.

## Study Area

The J3 site (Figure 1), Station Road Lake, is centred at O.S. Grid Ref TQ671778 and consists of scattered scrub and small areas of woodland surrounding a small lake with associated wetland areas to the north-west.

## Invertebrates Recorded

The species recorded on the site are summarised in the following sections.

## Daytime Terrestrial Survey

During the terrestrial invertebrate survey 46 invertebrate species were recorded. The species recorded are summarised in Table 5 and Figure 6 along with their status.

### **Table 5: Terrestrial Survey - Species Recorded in J3 (Station Road Lake area). Cells blank where status not recorded.**

Key for terms used in table 5:

*Bern-A3 - Bern Convention Appendix 3 listed species*

*HabDir-A2\*- Habitats Directive Appendix 2 listed species*

*LC - IUCN GB Red List Post 2001 Least Concern*

*DD - IUCN GB Red List Post 2001 Data Deficient*

*NA - IUCN GB Red List Post 2001 Not Applicable*

*NS - Nationally Scarce - Occurring in 16-100 hectads in Great Britain*

*Notable A - Nationally Scarce A – species occurring in 16-30 hectads in Great Britain*

*Notable B - Nationally Scarce B – species occurring in 31-100 hectads in Great Britain*

*WACA-Sch5\_sect9.5a - Species listed on The Wildlife and Countryside Act 1981*

*Schedule 5 Section 9.5a*

*S41 - Species listed on the NERC S41 list*

*Essex endangered - Essex red listed endangered species*

*Essex threatened - Essex red listed threatened species*

*Essex regionally important - Essex red listed regionally important species*

| <b>Scientific Name</b>          | <b>Common Name</b>           | <b>Status</b>                                     |
|---------------------------------|------------------------------|---|
| <i>Agonum marginatum</i>        | A ground beetle              | LC  |
| <i>Agrilus cuprescens</i>       | A beetle                     |   |
| <i>Anaspis pulicaria</i>        | A beetle                     | LC  |
| <i>Andrena bimaculata</i>       | A mining bee                 | Notable B, Essex Threatened                       |
| <i>Andrena fulvago</i>          | A bee                        | Notable A, Essex Regionally Important             |
| <i>Anthrenus verbasci</i>       | Varied carpet beetle         | NA  |
| <i>Apis mellifera</i>           | Honey bee                    |   |
| <i>Closterotomus norwegicus</i> | A bug                        |   |
| <i>Clubiona sp.</i>             | A spider                     |   |
| <i>Clytus arietis</i>           | Wasp beetle                  | LC  |
| <i>Cordylepherus viridis</i>    | A malachite beetle           | LC  |
| <i>Cryptocephalus moraei</i>    | A beetle                     | LC  |
| <i>Enallagma cyathigerum</i>    | Common blue damselfly        | LC  |
| <i>Episyrphus balteatus</i>     | Marmalade hoverfly           |   |
| <i>Euura proxima</i>            | Willow Redgall Sawfly (gall) |   |
| <i>Halictus rubicundus</i>      | A bee                        |   |
| <i>Ichneumon sp.</i>            | A wasp                       |   |
| <i>Ischnura elegans</i>         | Blue-tailed damselfly        | LC  |
| <i>Kochiura aulica</i>          | A spider                     | LC, NS, Essex Endangered                          |
| <i>Liparus coronatus</i>        | A weevil                     | Notable B   |
| <i>Lucanus cervus</i>           | Greater stag beetle          | Bern-A3, HabDir-A2*, NS, S41, WACA-Sch5_ssect9.5a |
| <i>Mangora acalypha</i>         | Cricket bat spider           | LC  |
| <i>Metrioptera roeselii</i>     | Roesel's bush-cricket        |   |
| <i>Nedyus quadrimaculatus</i>   | A weevil                     |   |
| <i>Neottiura bimaculata</i>     | A spider                     | LC  |
| <i>Notiophilus biguttatus</i>   | A beetle                     | LC  |

| <b>Scientific Name</b>                       | <b>Common Name</b>        | <b>Status</b> |
|--|---------------------------|---------------|
| <i>Palomena prasina</i>                      | Green shieldbug           | LC            |
| <i>Paranchus albipes</i>                     | A ground beetle           | LC            |
| <i>Patrobis assimilis</i>                    | A ground beetle           | LC            |
| <i>Philonthus corvinus</i>                   | A beetle                  | Notable A     |
| <i>Phyllobius roboretanus</i>                | A weevil                  |               |
| <i>Protapion fulvipes</i>                    | A beetle                  |               |
| <i>Protapion trifolii</i>                    | A weevil                  |               |
| <i>Psyllobora vigintiduopunctata</i>         | 22-spot Ladybird          |               |
| <i>Quedius truncicola</i>                    | A rove beetle             | Notable B     |
| <i>Rhagonycha fulva</i>                      | Common red soldier beetle | LC            |
| <i>Rhyzobius litura</i>                      | A beetle                  |               |
| <i>Rutpela maculata</i>                      | A longhorn beetle         | LC            |
| <i>Sicus ferrugineus</i>                     | A thick-headed fly        |               |
| <i>Sitona lineatus</i>                       | A weevil                  |               |
| <i>Subcoccinella vigintiquatuor punctata</i> | 24-spot Ladybird          |               |
| <i>Sympetrum striolatum</i>                  | Common darter             | DD, LC        |
| <i>Tetragnatha sp.</i>                       | A spider                  |               |
| <i>Tibellus oblongus</i>                     | A spider                  | LC            |
| <i>Tytthaspis sedecimpunctata</i>            | 16-spot ladybird          |               |
| <i>Vanessa atalanta</i>                      | Red Admiral               | LC            |

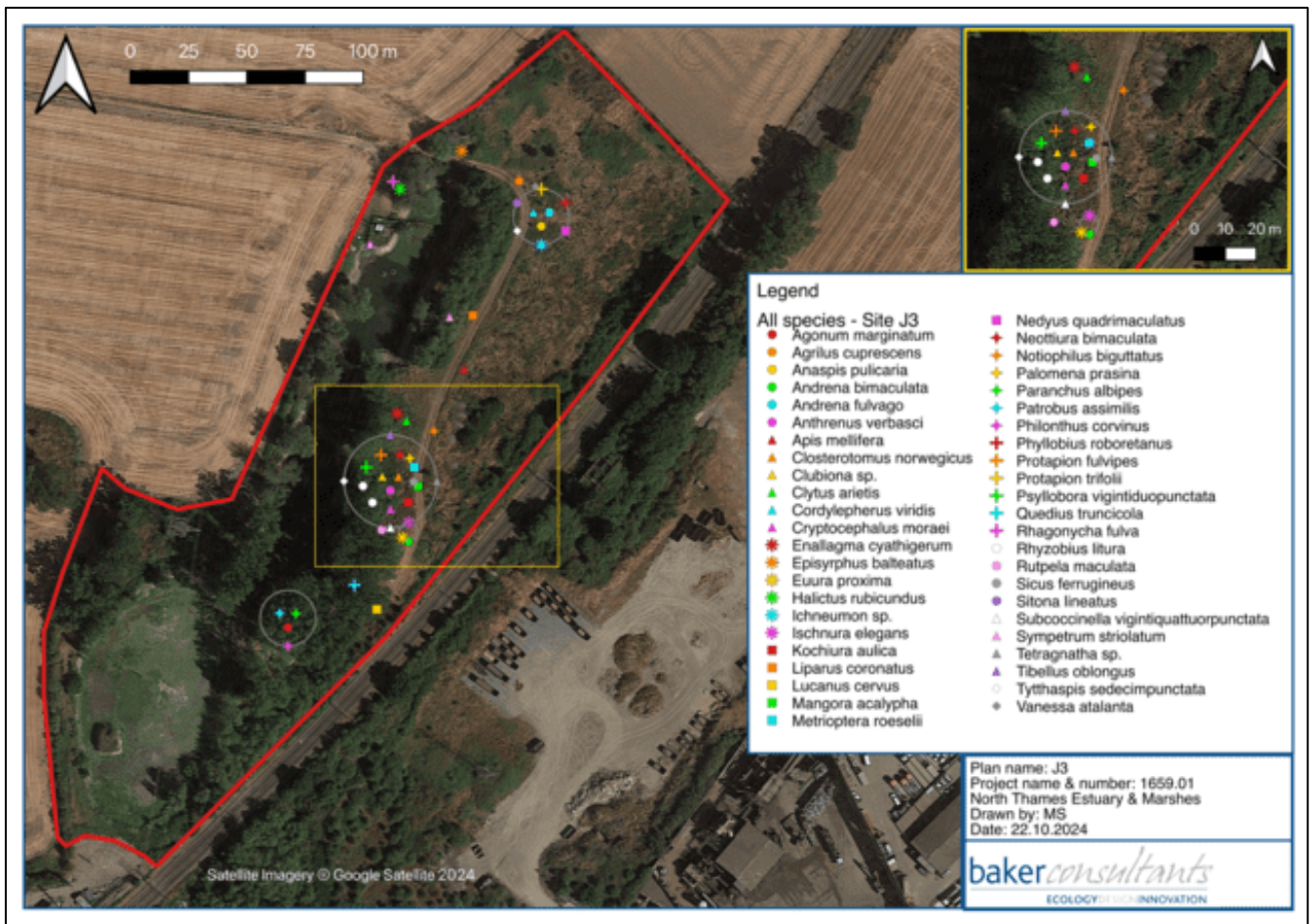


Figure 6: Species recorded in J3 (Station Road Lake area). Base map imagery © Google Satellite 2024.

## Protected and/or Notable Species

Seven species recorded during the terrestrial survey are protected and/or notable.

### Large gorse mining bee *Andrena bimaculata*, Notable B, Essex threatened

A species associated almost entirely with light, sandy soils, such as heaths, commons and sandpits. It has been encountered at about 330 metres above sea level on Dartmoor, South Devon. Nests are excavated in sandy soil and occur either singly or in very small aggregations of perhaps only two or three burrows. The spring brood visits daisy *Bellis perennis* and gorse *Ulex* sp., and the summer brood visits ragwort *Senecio* sp (Bees Wasps & Ants Recording Society, 2020a)..

## **Hawks-beard mining bee *Andrena fulvago*, Notable A, Essex regionally important**

This species is associated with open grasslands, flying from May to July. Usually, it nests singly but has been reported in small aggregations. All floral observations, for both males and females, have been on yellow-flowered Asteraceae (Bees Wasps & Ants Recording Society, 2020b)

## **A spider *Kochiura aulica*, Nationally Scarce, Essex endangered**

This species is typically found on gorse *Ulex* sp. on lowland heathland and coastal grasslands. It spins a small web near the end of gorse branches. The species has also been recorded from low vegetation on post-industrial land supporting habitat with heathland characteristics (British Arachnological Society, 2024b).

## **A weevil *Liparus coronatus*, Notable B**

*Liparus coronatus* larvae feed on the roots of larger umbelliferous plants such as cow parsley *Anthriscus sylvestris*, wild carrot *Daucus* and parsnip *Pastinaca*, on open ground (Behre, Hölzer & Lemdahl, 2005).

## **Greater stag beetle *Lucanus cervus*, Bern-A3, HabDir-A2\*, Nationally Scarce, NERC S41**

The species exhibits a largely urban distribution in the UK, while in Europe it is associated with more densely wooded areas. They lay eggs in soil near rotting wood or near tree roots. In Britain, larvae have been recorded from 60 different hosts, and although the most prevalent was oak *Quercus*, the preferred host in Europe. *Lucanus cervus* is threatened by human activity, primarily habitat loss. As dispersal of this species is limited and larvae feed for several years before pupation, local populations are therefore slow to recover (Harvey and others, 2011).

## **A beetle *Philonthus corvinus*, Notable A**

A scarce beetle with a very scattered distribution across Britain. In moss and litter, usually in high quality, undisturbed calcicolous fens where the vegetation cover is relatively open and there is an abundant growth of 'brown mosses'. It has also been collected in similar microhabitats in late-successional dune slacks (Boyce, 2022).

## **A beetle *Quedius truncicola*, Notable B**

This scarce species has a scattered distribution in England and Wales and recently found in Scotland for the first time. This species is found in rotten heartwood of a range of broadleaved trees (Boyce, 2022).

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