# Connah's Quay Low Carbon Power

## Environmental Statement Volume IV Appendix 11-K: Terrestrial Invertebrate Technical Appendix

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This report presents a survey of a larger area which was considered for the Proposed Development during the application and assessment process. As such there are areas surveyed and presented in this report which are no longer within the Order limits. This does not impact on the conclusions of this report.

# Richard Wilson Ecology Limited

## Terrestrial Invertebrate Surveys, Connah's Quay Power Station, Flintshire, North Wales

Prepared for AECOM UK Limited

October 2024

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# Notice

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# Executive Summary


- AECOM UK Limited commissioned Richard Wilson Ecology Limited to undertake terrestrial invertebrate surveys within the existing Connah's Quay Power Station and adjacent land parcels ('the Study Area') to support and inform the Ecological Impact Assessment of the proposed Connah's Quay Low Carbon Power project (the 'Proposed Development'). The Study Area comprises land within the Development Consent Order Limits (the 'Order limits') and adjacent land parcels allied to the proposals, comprising saltmarsh and grass and scrub mosaics in an old quarry.

- The Study Area is located on the south side of the River Dee, in Flintshire, north Wales, adjacent to the Dee Estuary Site of Special Scientific Interest (SSSI). For the purposes of the invertebrate survey, six compartments were studied in detail, representing the range of habitats present within the Order limits: Open Mosaic Habitat, grasslands, scrub and hedgerows, and saltmarsh.

- Four of the compartments studied fall within the Order limits, whilst two are technically outside. These two compartments represent an area of saltmarsh acting as a proxy for the Water Connection Corridor as it is safer to survey than the actual footprint of saltmarsh in the Water Connection Corridor; and an area of grassland and scrub mosaics in an old quarry, acting as a proxy for vegetation clearance within the Order limits.

- Five survey visits were completed between April and July 2024. Various active methods were used to sample invertebrates including vacuum sampling targeting ground-dwelling invertebrates, sweeping and beating the vegetation for those inhabiting the field and shrub layers, and aerial netting for flying insects. This effort was supplemented by pitfall trapping at two locations, one in the Open Mosaic Habitat (Compartment 4), and the second in the grasslands in Compartment 2.

- A total of 495 species were identified in all compartments; though it varied (range: 79 – 225 species) between compartments. Of the 495 species recorded, 28 taxa have a nature conservation status ('Key Species'), representing 5.6 % of the assemblage. Other than the old quarry, all compartments recorded Key Species, though again it varied. In absolute terms, the numbers ranged from 2 to 11 Key Species, representing a proportional range of between 2.1 % (sheep-grazed grassland and scrub) to 13.9 % (saltmarsh).

- Several taxa were the first recent records for north Wales or Flintshire, including two spiders (*Mangora acalypha* and *Nigma puella*) that are expanding their ranges in England and have recently arrived in south-east Wales in very recent times. Whilst they are currently rare in the country, they are expected to rapidly increase in range given the ongoing expansion of the species' range in England, and their significance to the Proposed Development is considered on this basis.

- One Welsh Biodiversity List taxa was recorded, the Cinnabar Moth *Tyria jacobaeae*. However, this is a widespread species and it is not considered to be of note. Of some consideration is the noted absence of at least two butterfly species, Dingy Skipper *Erynnis tages* and Small heath *Coenonympha pamphilus*, identified from the ecological desk study as being present within the ecological landscape that the Study Area is located in. Dingy Skipper *Erynnis tages,* associated with Bird's-foot Trefoil *Lotus corniculatus*, and Small heath *Coenonympha pamphilus*, which requires various grasses in dry grasslands was anticipated to be present within the Open Mosaic Habitats present within Compartment 4. Their absence is discussed in the context of the cooler and wetter spring and summer experienced during 2024, in north Wales and elsewhere in Britain. For the purposes of evaluation, a precautionary approach is taken and the butterflies have been assumed to be present. A rationale is presented to explain this justification.

- The baseline analysis compares the invertebrate assemblages recorded in the six compartments and for the purposes of evaluation, considers those that support grassland and scrub mosaics (Compartments 1, 2, 3 and 6), Open Mosaic Habitat (Compartment 4) and saltmarsh (Compartment 5) separately.

- Based on the nature conservation evaluation, the invertebrate assemblages associated with the grasslands and scrub mosaics are assessed to be of district nature conservation importance whilst the Open Mosaic Habitat and saltmarsh assemblages are assessed to be of county nature conservation importance.

# 1 Introduction

## 1.1 Background

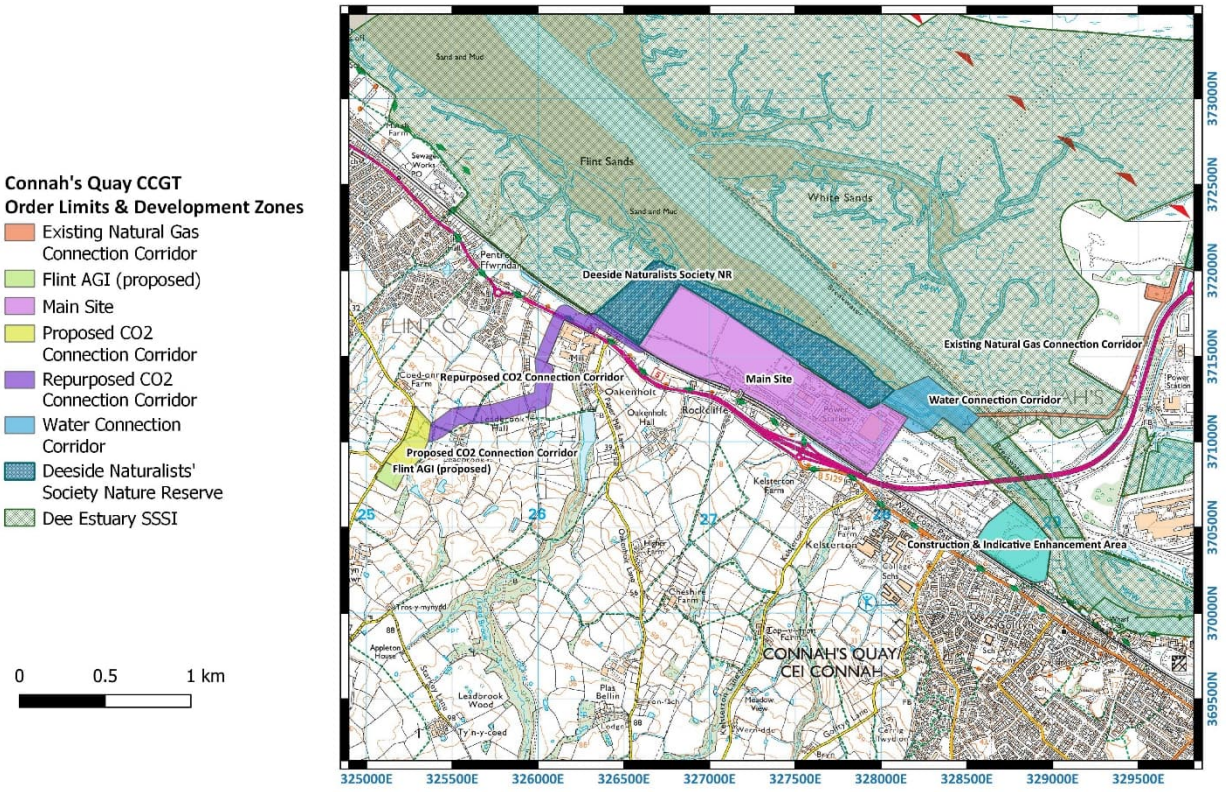
Richard Wilson Ecology Limited was commissioned by AECOM UK Limited ('AECOM') in early March 2024 to complete a baseline terrestrial invertebrate survey associated with the proposed Connah's Quay Low Carbon Power Project (the 'Proposed Development'), adjacent saltmarsh, and grassland/ scrub mosaics associated with an old quarry, collectively referred to as the Study Area.

The invertebrate surveys have been undertaken to support and inform the Ecological Impact Assessment of the Proposed Development, defined by the Development Consent Order limits (see Figure 1) (hereafter referred to as 'the Order limits'). The Study Area is thus the Order limits *plus* selected adjacent land parcels surveyed for invertebrates. The rationale for including additional land parcels outside the Order limits is explained in Section 1.2.

An interim technical advice note (TAN) was prepared following a review of historical invertebrate data provided by COFNOD (North Wales' biological recording centre) and a walkover scoping survey which was completed on the 23rd April 2024 (see Appendix A). The walkover covered various pre-defined sectors within the Order limits and was primarily aiming to scope in/ out land parcels for further survey.

This report presents the results, analysis and narratives based on detailed survey work completed between May and July 2024, following on from the earlier spring scoping visit.

Figure 1: Connah's Quay Low Carbon Power Order limits & Development Zones in context with the Dee Estuary SSSI and Deeside Naturalists' Society Nature Reserve.



## 1.2 Connah's Quay Low Carbon Capture Project

The Order limits is mostly located within the existing Connah's Quay Power Station (SJ 275 712) on the coastal frontage of the south bank of the River Dee (Afon Dyfrdwy), immediately north-west of Golftyn, a suburb of Connah's Quay (Cei Connah) and approximately 3.5 km east of Flint (Y-Fflint) within Flintshire (vice-county 51: Flintshire). It includes various land parcels associated with the existing operational Power Station, land on the demolished coal-fired Power Station (the 'A Site') to the east, and narrower corridors of land which traverse the coastal frontage and some agricultural hinterland to the south that collectively occupy approximately 115 ha (see Figure 1 for divisions within the Order limits and terminology). The April 2024 walkover scoped out the agricultural hinterland as the habitats supported limited resources for invertebrates, being managed for silage or sheep pasture with fields divided by clipped hedgerows. This agricultural land to the south is not considered further in this report.

The Order limits' footprint which was taken forward for detailed invertebrate survey in 2024 falls within the existing Connah's Quay Power Station and two adjacent land parcels. The two adjacent compartments are located outside the Order limits and were surveyed as representative of habitats elsewhere within the Order limits. A section of saltmarsh immediately adjoining the 'A Site' was surveyed as a proxy for the actual footprint of the Water Connection Corridor because it was safer to access. Finally, a small area of land within an old quarry, located off Dee View Road, Golftyn and approximately 50 m east of the 'A Site' was surveyed as a proxy for vegetation clearance that had occurred within the Order limits.

For the purposes of the invertebrate survey, six compartments were defined and surveyed as they represent the range of habitats within the Order limits. Details of these land parcels and the compartments is provided in Section 1.2.2.

### 1.2.1 Previous Invertebrate Surveys

Some invertebrate recording has been undertaken within the Study Area though of an age (mid-1970s to early 1980s) and focussed on occasional observations or more formal transects covering butterflies and some moth-trapping. A reference to a study by the University of Liverpool undertaken in 1993 in Richard Tofts Ecology (2015) where approximately 110 species were recorded in the saltmarsh, approximating to the same land parcel surveyed for this study. Most of the taxa (not listed or included in the report's Appendices) are described as common with just three species: a water-beetle *Helophorus fulgidicollis*, a broad-nosed weevil *Tropiphorus terricola* and a mining bee *Andrena nigriceps,* referred to as 'Notable-B' species (in current terminology, Nationally Scarce (Nb) – see Appendix 0 for definitions).

No other formal invertebrate survey has been completed and reported within the Study Area to the author's knowledge.

### 1.2.2 Invertebrate Survey Compartments

The six compartments within the Study Area are described below and illustrated in Figure 2 (after Table 2). Compartments 1, 2, 3 and 4 are within the Order limits; Compartments 5 and 6 are outside the Order limits, but within the Study Area. Compartments 1, 2 and 3 are located within the Main Development Area to the west of the Existing Connah's Quay Power Station, whilst Compartment 4 represents the footprint of the demolished coal-fired Power Station (the 'A Site'), but for the purposes of the Proposed Development, it is referred to as the Construction and Indicative Enhancement Area (C&IEA).

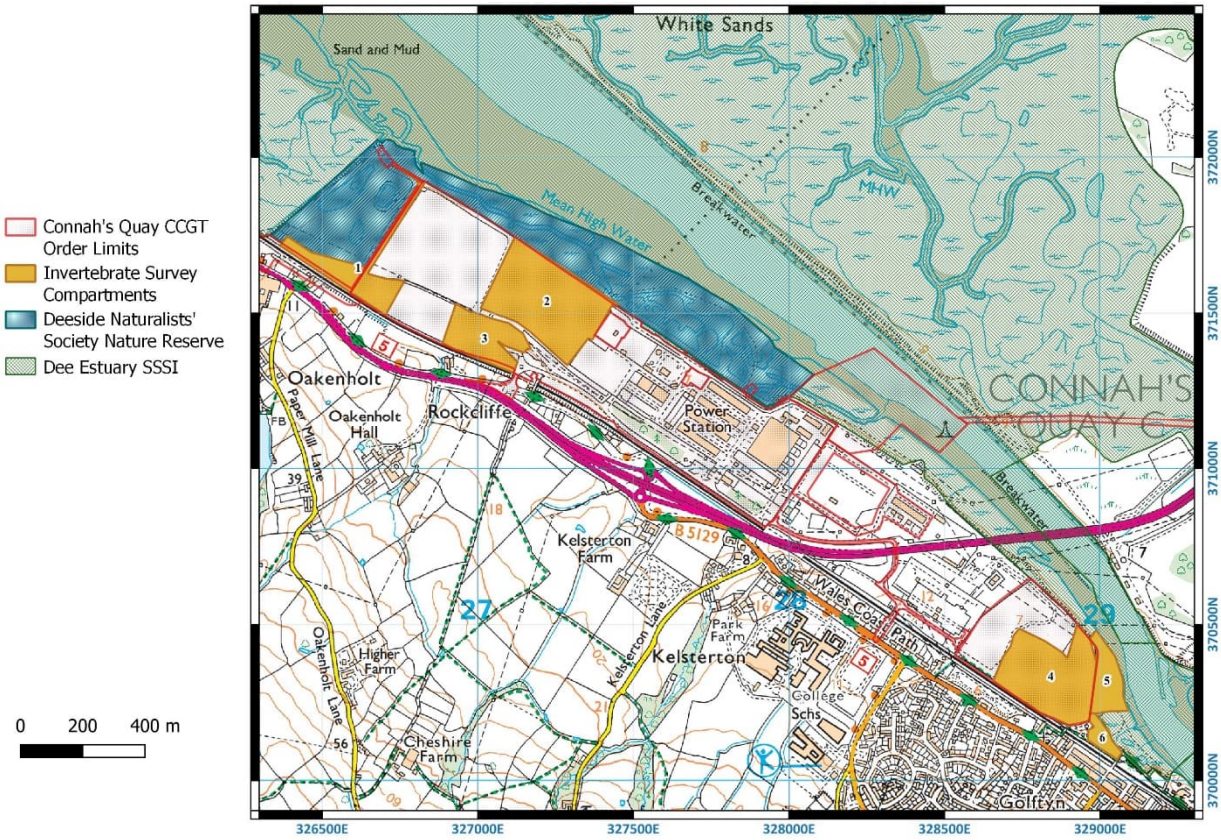
Table 1: Description of invertebrate survey compartments within the Study Area.

| Compartment Number (and name) | Grid Reference (centroid) | Description |
|---|---|---|
| 1 | SJ 2663 7163 | A mature hedgerow with a mix of woody species including Common Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*), Gorse (*Ulex* |

| Compartment Number (and name) | Grid Reference (centroid) | Description |
|---|---|---|
| (Deeside Naturalists Society Reserve) | | *europaeus*) and Bramble (*Rubus fruticosus* agg.) that acts as a buffer between the Connah's Quay Nature Reserve (to the west) and the large sheep-grazed fields to the east within the Main Development Area. Accessed via a track (permitted access). This opens out at the southern end to a small rectangular field which supports an ungrazed grassland with a more open flower-rich sward. Two vegetated small spoil mounds add a structural element which is in contrast to the sheep-grazed grasslands elsewhere within the Main Development Area. |
| 2<br>(Sheep-grazed Fields) | SJ 2722 7153 | The eastern of three sheep-grazed fields. A species-poor, grass-dominated sward except for the western and southern boundary which has developed a moderate increase in floristic diversity that included umbellifers such as Cow Parsley (*Anthriscus sylvestris*) and Common Hogweed (*Heracleum sphondylium*) as it grades towards a grassland and scrub mosaic to the south.<br>The internal access road divides the two larger fields. The verge supports a vegetation community that includes Common Nettle (*Urtica dioica*), Black Horehound (*Ballota nigra*), False Oat-grass (*Arrhenatherum elatius*), Cock's-foot (*Dactylis glomerata*) with a mature Hawthorn hedgerow on one side and patchy bramble-scrub on the opposite. |
| 3<br>(Landscaped scrub & grasslands) | SJ 2701 7142 | The smaller of the three sheep-grazed fields. Musk Thistle (*Carduus nutans*) is locally abundant along the northern edge within an otherwise species-poor sward. Field boundaries include mature scrub with trees. Second area comprises a mosaic of landscape planting of shrubs with open areas of grassland under the 'canopy' of powerlines and pylons. |
| 4<br>(CIEA) | SJ 2884 7032 | The footprint of the former 'A Site' power station, now demolished. Central area forms a shallow depression comprising patchy, short perennial vegetation overgrowing a gravelly substrate. Floristically diverse with frequent Common Bird's-foot Trefoil (*Lotus corniculatus*), St-John's-wort (*Hypericum* sp.) and other flowers with a low percentage of graminoids. The eastern area has developed a more continuous sward and scattered tree saplings and scrub. The western area is predominantly a broken hardstanding surface with recently cleared scrubby vegetation, understood to have been cut during autumn 2023 or winter 2023/ 2024.<br>The habitat can be considered an example of Open Mosaic Habitat on Previously Developed Land (OMH). |
| 5<br>(Saltmarsh) | SJ 2902 7031 | An area of saltmarsh on the south bank of the River Dee, that wraps round the coastal frontage of the CIEA. It supports a sequence of typical lower to upper saltmarsh vegetation communities as described by Rodwell (2000). The community that forms a species-poor closed sward of fine-leaved grasses is dominated by Common Saltmarsh-grass (*Puccinellia maritima*) and a few associates such as Sea-milkwort (*Lysimachia maritima*). This grades into two communities, either a Sea Purslane (*Atriplex portulacoides*) dominated, or a Common Couch (*Elytrigia repens*) species-poor grassland community. An ephemeral waterbody is located centrally to this compartment, which dried out by early summer. To the south of this waterbody, is a continuation of saltmarsh vegetation and a dense stand of Common Reed (*Phragmites communis*) swamp that becomes drier as the land subtly rises, with an increase in Bracken (*Pteridium aquilinum*) and ranker grassland towards the interface with the access path that leads from the housing estate to the south.<br>This area was surveyed as a proxy to the Water Connection Corridor which is indicated as occurring further downstream of the CIEA. |
| 6<br>(The Rock Quarry) | SJ 2900 7013 | A small, enclosed area known as The Rock, formed from an exposure of Carboniferous sandstone which was historically quarried as building stone for the construction of walls, stations and buildings of the adjacent railway. The vegetation communities have developed a mosaic of flower-rich grassland and dense scrub. Some habitat management has taken place in the past, including planting of a community orchard and the provision of a shell path (made from crushed cockle shells) but these features have been largely lost to scrub invasion. |

| Compartment Number (and name) | Grid Reference (centroid) | Description |
|---|---|---|
| | | The site was surveyed as a proxy for the observed vegetation clearance within the western section of the CIEA (Compartment 4). |

Figure 2: Invertebrate survey compartments (described in Table 1).




## 1.3 Survey Limitations

### 1.3.1 [1]Weather Limitations

The winter of 2023/ 2024 was wetter than the average with north Wales experiencing between 110 and 130 % of the long-term average (1961 – 1990 average) rainfall. Despite it being cloudier than average, the winter was warm with mean temperatures more than 2.0° C above average. Spring 2024 was exceptionally wet with more than 170 % of the long-term average, though summer was about average in terms of rainfall and sunshine, but warmer. Overall, Spring 2024 was dull, wet and warm; whereas Summer 2024 was the coolest since 2015 but was typical in terms of rainfall.

### 1.3.2 Implications

The weather experienced during 2024 continues to follow a trend in recent years of above average temperatures coinciding with extremes in rainfall; either excessive or droughted. For example, summer 2022 was generally settled, being hot and dry, which was followed by a warm and wetter autumn compared to the average. Summer 2023 continued the theme of being warmer than average, but wetter, which extended through the autumn and winter 2023/ 2024. Seasonal stability appears to have been replaced by more extreme weather events as illustrated by the number of days experiencing > 10 mm rainfall above the long-term average. Between January and July 2024, only June failed to exceed the long-term average number of days where rainfall exceeded 10 mm in a 24 hour period, a measure for extreme weather. This pattern of extreme weather such as consecutive seasons of above average

[1] Weather trends and data from Met Office website: https://www.metoffice.gov.uk/research/climate/maps-and-data/uk-actual-and-anomaly-maps; last accessed on the 2nd October 2024.

temperatures, coupled with an increase in stochastic events such as storms is very likely having a measurable negative effect on certain insect groups, which was observed at Connah's Quay and elsewhere in Wales and Britain; and not just by this surveyor.

In the context of this study, flying insects, in particular obvious pollinator groups such as hoverflies (Diptera, Syrphidae) and solitary bees and wasps (Hymenoptera, Apoidea) were seemingly scarce as flora typically attractive to such insects such as umbellifers, brambles and hawthorn appeared to lack these pollinators in numbers that would ordinarily be expected. Whether this is down to the habitats and context with the wider environment, or due to the prevailing seasonal climatic conditions experienced across several recent years is challenging to evaluate. However, observations by Richard Wilson Ecology across several sites in Britain, and through conversations with other applied entomologists surveying elsewhere, suggest that whilst this is not universally the case, there nevertheless seems to be a consistent noticeable lack of certain insect faunas.

The 2024 survey season appears to represent a continuation of ongoing shifting weather patterns which is increasingly resulting in actual or perceived changes in the ease of recording of certain groups. It is anticipated that species-richness for these faunas may have been negatively affected within the habitats surveyed, perhaps amplified within the OMH vegetation community as the vegetation becomes stressed more easily during periods of prolonged dry weather, or exposed to intense rainfall, with limited features where adults can shelter.

Therefore, the results presented in this report, particularly relating to those fauna associated with the OMH are potentially reflecting the effects of these weather-induced stresses. This may have had a disproportionate effect on certain species, including those with a nature conservation status, reducing the proportion of these taxa in the overall assemblage, and potentially under-playing the evaluation.

# 2 Legislation

## 2.1 Legislation

Sixteen species of invertebrate present in the United Kingdom are protected through international law. These were originally included in Appendices to the European Union's Habitats Directive and transposed into domestic legislation by the Conservation of Habitats and Species Regulations 2017 (as amended) (2017 Regulations). Since January 2021, following the UK's departure and the end of the transition period, retained EU-derived legislation has been carried over via Sections 2 and 3 of the European Union (Withdrawal Agreement) Act 2018 (as amended) (2018 Act). This 2018 Act ensures the retention of the 2017 Regulations on and after departure day (1st January 2021). Further, for the purposes of biodiversity, the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 have been made to address failures of retained EU law to operate effectively and other deficiencies, by amending the 2017 Regulations to ensure their validity.

Approximately 50 species of invertebrate are included in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

Section 6 of the Environment (Wales) Act 2016 requires all local authorities to introduce an enhanced biodiversity and resilience of ecosystems duty (the Section 6 duty) in the exercise of functions in relation to Wales. The duty requires that public authorities must seek to maintain and enhance biodiversity so far as consistent with the proper exercise of their functions and in so doing promote the resilience of ecosystems. Further, Section 7 provides for a list of species and habitats of principal importance, of which 188 invertebrate taxa are listed.

A full list of all species covered by legislation and policy is available via the Biodiversity Wales' [2]website.

## 2.2 Policy

Paragraphs 6.4.1 to 6.5.20 inclusive of *Planning Policy Wales* conveys Welsh policy on conserving and enhancing the natural environment including protecting habitats and biodiversity in the planning system (Welsh Government, 2024). Guidance underpinning Planning Policy Wales is available via the *Technical Advice Note 5: Nature Conservation and Planning* (Welsh Government, 2009) which provides a detailed narrative on considerations to protect and enhance biodiversity as part of the planning process.

The original Welsh National Pollinator Strategy (Welsh Government, 2013) is particularly relevant for nature conservation of pollinators and emphasised the then duty under Section 42 of the Natural Environment and Rural Communities Act 2006 for local authorities to have regard to biodiversity. This has now been [3]updated to reflect the Environment (Wales) Act 2016 and the Well-being of Future Generations (Wales) Act 2015.

[2] See https://www.biodiversitywales.org.uk/File/56/en-GB; last accessed on the 12th February 2021.
[3] See https://www.gov.wales/sites/default/files/publications/2019-04/action-plan-for-pollinators-review-and-future-actions-en.pdf; last accessed on 9th October 2024.

# 3 Methodology

## 3.1 Desk Study

Relevant ecological data was provided by COFNOD, the North Wales Environmental Information Centre. Additional information has been taken from Connah's Quay Power Station's *Conservation Areas Management Plan* (Richard Tofts Ecology, 2015). Reference to the author's own library and literature resources has been undertaken as needed.

## 3.2 Field Survey

The purpose of the work was to undertake an appraisal of the Study Area's nature conservation value for terrestrial invertebrates and is therefore not intended to provide an exhaustive list of invertebrate taxa present. In achieving these aims, the surveys followed the methodologies described in Drake *et al*. (2007). Surveys thus employed a variety of techniques, including sweeping of vegetation and aerial netting for flying invertebrates using a light-weight butterfly net as well as a more heavy-duty sweep-net. This was complemented by vacuum sampling (using a commercially available modified garden blow-vac), sieving leaf-litter, searching under refugia and direct observation. Supplementing the active collecting was the use of two arrays of pitfall traps to collect ground-dwelling (epigeic) invertebrates. Each pitfall trap consisted of a plastic drinking cup with the aperture set flush with, or slightly below, the surface and approximately one-third filled with a preservative, in this instance, monoproyplene glycol, diluted to 50 % with tap water. Chicken wire was pegged down over the top to minimise unwanted bycatch and each was individually marked with a red flag to aid relocating through the season. Details on the locations are provided in Section 4.2.

Specimens that could be reliably identified in the field such as butterflies were noted, but most were retained for subsequent microscopic identification. Surveys paid particular attention to those groups most useful for site assessment, namely Arachnida (spiders, harvestmen and pseudoscorpions), Coleoptera (beetles), Diptera (flies), Hemiptera (bugs), Hymenoptera (bees, wasps, sawflies and ants), Lepidoptera (butterflies and moths), and Orthoptera (grasshoppers and crickets), though representatives of other groups such as millipedes, centipedes and woodlice were noted.

## 3.3 Evaluation Methodologies

There is currently no standard frame of reference to evaluate the nature conservation value of invertebrate assemblages, though increasingly, in addition to placing reliance on professional judgement of the surveyor and associates, the use of Pantheon (Webb *et al*., 2018) is being applied.

In evaluating the results of the baseline survey, consideration has been given to the proportion of Key Species (explained in Section 3.3.1), Species Quality Indices (SQI) and assemblage representation using Pantheon, the online analytical tool developed by Natural England and the Centre for Ecology and Hydrology (see Section 3.3.2). The assemblage recorded has been evaluated against local wildlife site criteria for the purposes of understanding the baseline's value.

### 3.3.1 Proportion of Key Species

An initial indication of a Study Area's nature conservation value is the proportion of species with a nature conservation status recorded, i.e. Key Species. Key Species are those that are assigned a formal status based on three systems applied to British invertebrates since the late 1980s. Details are provided in Appendix 0 but in summary, all are assigned a formal status which initially included Red Data Book (Shirt, 1987; Bratton, 1991), and Nationally Notable species (by various species status reviews administered by the Joint Nature Conservation Committee). Since 2001, consideration of a species threat to survival such as through habitat loss, based on the International Union for

the Conservation of Nature's (IUCN) criteria (IUCN, 2012) has been adopted and this is gradually replacing the old Red Data Book categories. Running parallel with the IUCN criteria are two British rarity categories, which are based on the hectad system, which again are being defined by [4]updating species status reviews.

There is no formal published guidance on thresholds, i.e. at what point does the proportion of Key Species reach a milestone? In Ecological Impact Assessment, Telfer (2017) considered that the higher the percentage of Key Species, the more important the Study Area is, splitting them into two groups: Rare Key Species, which are those taxa assigned Red Data, IUCN Threatened and Data Deficient, and Nationally Rare status; and Scarce Key Species, which are those assigned IUCN Near Threatened, and Nationally Scarce/ Notable status. A rule of thumb that has been adopted is that if close to 10 % of the species recorded are Key Species; and more than 1 % are Rare Key Species, it is suggestive that the Study Area is potentially of national significance for its invertebrate fauna.

### 3.3.2 Invertebrate Assemblages and SQIs

In considering species assemblages, the taxa recorded within the Study Area have been entered into Pantheon, a database tool developed by Natural England and the Centre for Ecology & Hydrology to analyse invertebrate sample data (Webb *et al*., 2018). Pantheon has incorporated the Invertebrate Species-habitat Information System (ISIS) developed by Derek Lott and referenced in Drake *et al*., (2007) but takes the analysis further by attaching associated habitats and resources, habitat fidelity scores and other ecological information against each species. This is currently based on approximately 13,000 invertebrate species out of an estimated 37,000 species known from the UK. The taxa primarily used for this analysis are Coleoptera, Diptera, Hemiptera, Lepidoptera, aculeate Hymenoptera and Araneae; hence the focus on these groups for survey. As for the original ISIS, some caution must be applied as strictly speaking, survey effort would normally require standardisation such as timed sweeps. Further, there are known errors within the database (and undoubtedly others yet to be acknowledged) and a degree of professional judgement has been applied when presenting tabulated results or conveying interpretation in this report to address obvious instances.

The methods have allowed what [5]Webb *et al*. (2018) describe as a semi-ISIS approach, stated to include some standardised methods such as timed vacuum sampling, static trapping such as pitfall or Malaise trapping; but extending to include more freeform sampling such as focussed searches for pollinators in a non-standardised way. Nevertheless, Pantheon can at least inform which invertebrate assemblages recorded are of particular importance within a site, such as those associated with wood decay, floristically rich habitats or both. A positive aspect of this approach is that attention is given to assemblages rather than solely relying on the national status of individual species, though the latter can also be indicative, as mentioned above.

Pantheon interrogates the composition of the terrestrial invertebrate assemblage in terms of biotopes, habitats, and the distribution of stenotopic species i.e. those terrestrial invertebrates with very specific and restricted habitat requirements and have an intrinsic nature conservation value; referred to as [6]Specific Assemblage Types (SAT) (Webb *et al*., 2018). In doing so, the limitations of Pantheon as a tool have been recognised based on the semi-ISIS compliant approach and confidence in the reported condition is therefore medium. To mitigate this confidence level, professional judgement has been applied where necessary to assist robust valuation.

Pantheon can only identify whether a site is in favourable or unfavourable condition expected for SSSIs, and condition is not strictly analogous with value. However, if favourable condition is concluded then this can, considering other factors, provide evidence that objectives for sites of national value (SSSIs) are being met and this seems a reasonable proxy in this instance for national value. However, use of unfavourable condition to argue

[4] Updated species status reviews are published on the JNCC website: https://jncc.gov.uk/our-work/conservation-designations-for-uk-taxa/; last accessed on 7th February 2025.
[5] See http://www.brc.ac.uk/pantheon/lexicon/reported-condition; last accessed on the 7th February 2025.
[6] SATs are characterised by species restricted to certain features within habitats (= stenotopic species) such as types of decaying wood (e.g. sapwood, or heartwood), fluctuating marsh or rich flower resource. Some SATs such as rich flower resource are cross-cutting, i.e. can be present in more than one habitat.

against national value is more problematic and requires a degree of caution and application of professional judgement to determine the appropriate geographic scale of nature conservation value. In addition, as the survey did not strictly comply with methods described in Drake *et al.* (2007), such as timed sweeps, a degree of caution and professional judgement is likewise necessary to accommodate for any bias (detracting or enhancing) within the analysis that might introduce subjectivity into the evaluation.

Thus, whilst Pantheon remains a useful guide when assessing the nature conservation value for the Reserve's invertebrates, professional judgement incorporating other evidence is necessary to come to a defensible evaluation.

Finally, strictly speaking, Pantheon was designed with the English invertebrate fauna in mind. Thus montane and submontane faunas associated with the Welsh mountains (e.g. Snowdonia) would be poorly reflected in any analysis. Given that the Study Area is coastal, and close to England border, that it is in Wales is irrelevant for the purposes of evaluating the invertebrate assemblage recorded.

#### 3.3.2.1 Quality Indices

One of the outputs that Pantheon calculates is an assemblage's Species Quality Index (SQI). A quality index is based on a scoring system where 'rarer' taxa are scored more highly than ubiquitous species. Pantheon has also considered 'threat levels', based on IUCN criteria, when assigning scores. The principle is that each taxa is assigned a score, which is then summed to produce a Species Quality Score (SQS) for the assemblage. This is then divided by the number of species in the assemblage to produce the SQI (the scoring species, which may be less than the total species). For ease of reading, some authors multiple the sum by 100 and convey the SQI as a whole number, whereas others multiply by 10. Pantheon and this report present the SQI as a decimal number, with the lowest score for which an assemblage can achieve being 1.0.

Pantheon recommends that a minimum of fifteen taxa are required to trust the SQI, though this is considered a relatively low threshold by the author. This latter point is relevant if considering individual SATs where the number of taxa recorded could be close to this threshold, but less relevant for assemblages recorded at the site or compartment level.

### 3.3.3 Designated Site Guidelines

#### 3.3.3.1 Statutory Sites

The Joint Nature Conservation Committee (JNCC) has updated and [7]published its guidance on invertebrates for the selection of biological SSSIs (Curson *et al*., 2019). This document has been useful in considering the Study Area's nature conservation value based on the presence of, for example, Key Species, edge of range species or species assemblages, and placing this in context with the Area of Search, which for the purpose of this approach, is taken to be the relevant Welsh National Landscape Character Areas (NLCA). The relevant NLCA profile to the Study Area is the Deeside and Wrexham NLCA (Natural Resource Wales, 2014). This can also act as a proxy for national value.

In summary, Curson *et al*. (2019) state that any species which are Critically Endangered, Endangered or Vulnerable (IUCN); or Nationally Rare (British rarity status) should be represented in SSSIs; and Near Threatened and Nationally Scarce taxa should also be considered if certain caveats apply. The presence of any such designated species at a site is not in itself sufficient for that site to be formally designated, but it would reach a threshold *for it to be considered*. The presence of Near Threatened or Nationally Scarce species in the absence of any of the previous four categories would need to consider additional factors such as their status in the vice-county/ region. A Near Threatened or Nationally Scare species that is new, or rare in the vice-county would potentially merit consideration; whereas if it is frequent, it will likely fall short of the threshold for consideration.

[7] Guidance is available via their website: https://hub.jncc.gov.uk/assets/747968a5-a8a7-4bd6-b12c-3329c3b5b6ca; last accessed on 7th February 2025.

#### 3.3.3.2 Non-Statutory Sites

Guidelines for designating non-statutory sites within Flintshire have not been obtained, despite a request to the local authority (e-mail to County Ecologist at Flinshire County Council, 7th October 2024); and none have been located online. In the absence of local guidelines, recourse to an adjacent and relevant, in biogeographical terms, guidelines have been referred to, which in this instance is Cheshire's (Cheshire Wildlife Trust, 2014), which are available to the public [8]on-line, and can act as a proxy for county value. The guidelines provide criteria for butterflies (Lepidoptera) (S1), dragonflies and damselflies (Odonata) (S4), and terrestrial and freshwater invertebrates in general, including moths (S9). As there are no waterbodies within the Study Area, the guidance for Odonata is not relevant. However, the guidance for butterflies and all other invertebrates is presented in the table below.

Table 2: Invertebrate criteria for designating Local Wildlife Sites in Cheshire.

| Group | Summary of Criteria |
|---|---|
| S1: Butterflies | • Probable breeding populations of White-letter Hairstreak, Small Pearl-bordered Fritillary, Small Heath, Wall, Grayling or Dingy Skipper; or<br>• an assemblage of species with a minimum total score of 16 points [taken from a table published in the guidance]. |
| S9: Terrestrial/ freshwater invertebrates | Sites should be selected that regularly support either:<br>• significant populations of any Priority Species, or Red Data Book listed species, or Nationally Rare/ Nationally Scarce species; or<br>• significant assemblages of any terrestrial or freshwater invertebrates.<br>(*A locally significant bee assemblage is 8+ species of social bumble bee or 4+ species of cuckoo bee. A locally significant assemblage of macro-moths is 350 species which equates to 65 % of the current list for VC 58* [Cheshire]). |

The second criterion within S9 is assumed to refer specifically to bumblebee species (social or cuckoo) in the genus *Bombus*, or moth species. The threshold of any Priority Species, Red Data Book (or now IUCN Threatened) or Nationally Rare/ Nationally Scarce (i.e. Key Species as defined in Appendix 0) is assumed to mean just one species. This is an incredibly low threshold as with sufficient survey visits, many sites will record just one species.

## 3.4 Personnel

The invertebrate survey (field visits) was undertaken by Richard Wilson CEnv MCIEEM Mem.RES MSc. Richard is an experienced ecologist and field entomologist, and a [9]recognised arachnid (spiders, harvestmen and pseudoscorpion) specialist though he is familiar with a wider range of taxonomic groups. In addition to the arachnids, Richard identified some Diptera families including hoverflies (Syrphidae) and a loose grouping of other fly families referred to as the larger Brachycera which include robberflies (Asiliidae), soldierflies (Stratiomyidae) and horseflies (Tabanidae); and aculeate Hymenoptera in addition to groups readily identifiable in the field such as the Lepidoptera (butterflies and moths) and Odonata (dragonflies and damselflies). Assisting Richard with morphological identification were Steven Falk FRES, who is a recognised specialist in pollinators and identified other Diptera families (e.g. Muscidae), and Steve Lane who identified most of the Coleoptera and Hemiptera.

[8] Available https://www.cheshirewildlifetrust.org.uk/sites/default/files/2018-06/Cheshire%20LWS%20selection%20criteria.pdf; last accessed on the 8th October 2024.
[9] Richard is the YNU's spider recorder, the Yorkshire, County Durham and Northumberland recorder for the national spider recording Project; and sits on the conservation committee of the British Arachnological Society.

# 4 Results and Interpretation

## 4.1 Desk Study

COFNOD provided records of invertebrates with a national (British) conservation status and/ or included on the Welsh Biodiversity List within 2 km of the study area. However, no map or geospatial data was included to identify where they were recorded.

Of the 110 species listed, 35 species of moth are included on the Welsh Biodiversity List. A further 30 species of invertebrate have been included as specialists have identified them as being of local importance in a Welsh context, but have no formal conservation status. Of the remaining 45 species with a genuine British rarity status, or extinction threat status (i.e. Critically Endangered, Endangered or Vulnerable), a third are associated with coastal habitats such as saltmarsh and brackish pools; another third is associated with grassland/ scrub mosaics, and the remainder are associated with wetland habitats of some description (see Table 3).

Table 3: List of noteworthy invertebrate species recorded within 2 km of Connah's Quay CCGT held by COFNOD.

| Order | Family | Species | Conservation status | Wetlands & Running Water | Coastal Habitats | Grassland/ Scrub |
|---|---|---|---|---|---|---|
| Araneae | Linyphiidae | *Halorates reprobus* | Nationally Scarce | | ● | |
| Araneae | Linyphiidae | *Lessertia dentichelis* | Nationally Scarce | | | ● |
| Araneae | Linyphiidae | *Saaristoa firma* | Nationally Scarce | ● | | |
| Araneae | Linyphiidae | *Silometopus ambiguus* | Nationally Scarce | | ● | |
| Araneae | Lycosidae | *Xerolycosa miniata* | Nationally Scarce | | | ● |
| Coleoptera | Carabidae | *Bembidion iricolor* | Nationally Scarce | | ● | |
| Coleoptera | Chrysomelidae | *Agelastica alni* | Data Deficient; Nationally Rare | | | ● |
| Coleoptera | Curculionidae | *Polydrusus pulchellus* | Nationally Scarce (Nb) | | ● | |
| Coleoptera | Curculionidae | *Tropiphorus terricola* | Nationally Scarce (Nb) | | | ● |
| Coleoptera | Dytiscidae | *Hygrotus nigrolineatus* | Nationally Scarce | ● | | |
| Coleoptera | Dytiscidae | *Hygrotus parallellogrammus* | Nationally Scarce | | ● | |
| Coleoptera | Erirhinidae | *Grypus equiseti* | Nationally Scarce (Nb) | ● | | |
| Coleoptera | Helophoridae | *Helophorus fulgidicollis* | Nationally Scarce | | ● | |

| Order | Family | Species | Conservation status | Wetlands & Running Water | Coastal Habitats | Grassland/ Scrub |
|---|---|---|---|---|---|---|
| Coleoptera | Hydraenidae | *Ochthebius auriculatus* | Nationally Scarce | | ● | |
| Coleoptera | Scarabaeidae | *Liothorax plagiatus* | Nationally Scarce | | ● | |
| Diptera | Chloropidae | *Thaumatomyia rufa* | pNationally Scarce | | | ● |
| Diptera | Cylindrotomidae | *Phalacrocera replicata* | Notable | ● | | |
| Diptera | Dolichopodidae | *Dolichopus notatus* | Nationally Scarce | | ● | |
| Diptera | Limoniidae | *Cheilotrichia imbuta* | Notable | ● | | |
| Diptera | Muscidae | *Coenosia dubiosa* | pData Deficient | | ● | |
| Diptera | Muscidae | *Coenosia karli* | pNationally Scarce | | ● | |
| Diptera | Syrphidae | *Platycheirus immarginatus* | Nationally Scarce | | ● | |
| Hemiptera | Corixidae | *Corixa affinis* | Nationally Scarce | | ● | |
| Hymenoptera | Andrenidae | *Andrena nigriceps* | Nationally Scarce (Nb) | | | ● |
| Hymenoptera | Andrenidae | *Andrena similis* | Nationally Scarce (Nb) | | | ● |
| Lepidoptera | Crambidae | *Crambus pratella* | Nationally Scarce (Nb) | | | ● |
| Lepidoptera | Crambidae | *Pediasia aridella* | Nationally Scarce (Nb) | | ● | |
| Lepidoptera | Geometridae | *Chiasmia clathrata* | Near Threatened | | | ● |
| Lepidoptera | Geometridae | *Ennomos erosaria* | Near Threatened | | | ● |
| Lepidoptera | Geometridae | *Ennomos fuscantaria* | Near Threatened | | | ● |
| Lepidoptera | Hesperiidae | *Erynnis tages* | Welsh Biodiversity List | | | ● |
| Lepidoptera | Hesperiidae | *Pyrgus malvae* | Vulnerable | | | ● |
| Lepidoptera | Lycaenidae | *Satyrium w-album* | Vulnerable | | | ● |
| Lepidoptera | Noctuidae | *Cirrhia icteritia* | Near Threatened | | | ● |
| Lepidoptera | Noctuidae | *Cosmia diffinis* | Nationally Scarce | | | ● |
| Lepidoptera | Noctuidae | *Eugnorisma glareosa* | Near Threatened | | | ● |
| Lepidoptera | Nymphalidae | *Boloria selene* | Vulnerable | | | ● |

| Order | Family | Species | Conservation status | Wetlands & Running Water | Coastal Habitats | Grassland/ Scrub |
|---|---|---|---|---|---|---|
| Lepidoptera | Nymphalidae | *Coenonympha pamphilus* | Vulnerable | | | ● |
| Lepidoptera | Nymphalidae | *Hipparchia semele* | Endangered | | | ● |
| Lepidoptera | Nymphalidae | *Lasiommata megera* | Endangered | | | ● |
| Lepidoptera | Nymphalidae | *Speyeria aglaja* | Near Threatened | | | ● |
| Pulmonata | Arionidae | *Arion ater* | Data Deficient | | | ● |
| Pulmonata | Ellobiidae | *Myosotella myosotis* | Data Deficient | | ● | |
| Trichoptera | Beraeidae | *Ernodes articularis* | Nationally Scarce | ● | | |
| Trichoptera | Polycentropodidae | *Plectrocnemia brevis* | Nationally Scarce | ● | | |

The Study Area is situated within a sensitive ecological landscape associated with the Dee Estuary, which is protected by various designations including a Ramsar wetland and Site of Special Scientific Interest (SSSI). The SSSI has been designated for its internationally important wintering waterfowl populations, its intertidal, mud and sandflats, saltmarsh and transitional habitats that support nationally scarce plant assemblages and one species of moth, the North Wales subspecies of the Sandhill Rustic (*Luperina nickerlii* ssp. *gueneei*) whose foodplants, Sand Couch (*Elymus junceiformis*), Common Saltmarsh-grass and Red Fescue (*Festuca rubra* agg.) are associated with coastal grasslands.

Fifteen of the noteworthy invertebrate species recorded within the vicinity of the Study Area are associated with the SSSI's coastal habitats, some of which are present within Compartment 5 (outside the Order limits). A further 17 species are associated with the mosaics of grassland and scrub, evidence of which is present within the Order limits (refer back to Table 1).

## 4.2 Field Survey

### 4.2.1 Summary of Survey Results

Five survey visits were completed between late April and July 2024 during generally reasonable to optimal weather conditions for the time of year, though temperatures in April and June were cooler than would normally be preferred but this reflected the prevailing seasonal conditions experienced during 2024 (refer back to Section 1.3.1).

Table 4: Weather conditions for survey visits.

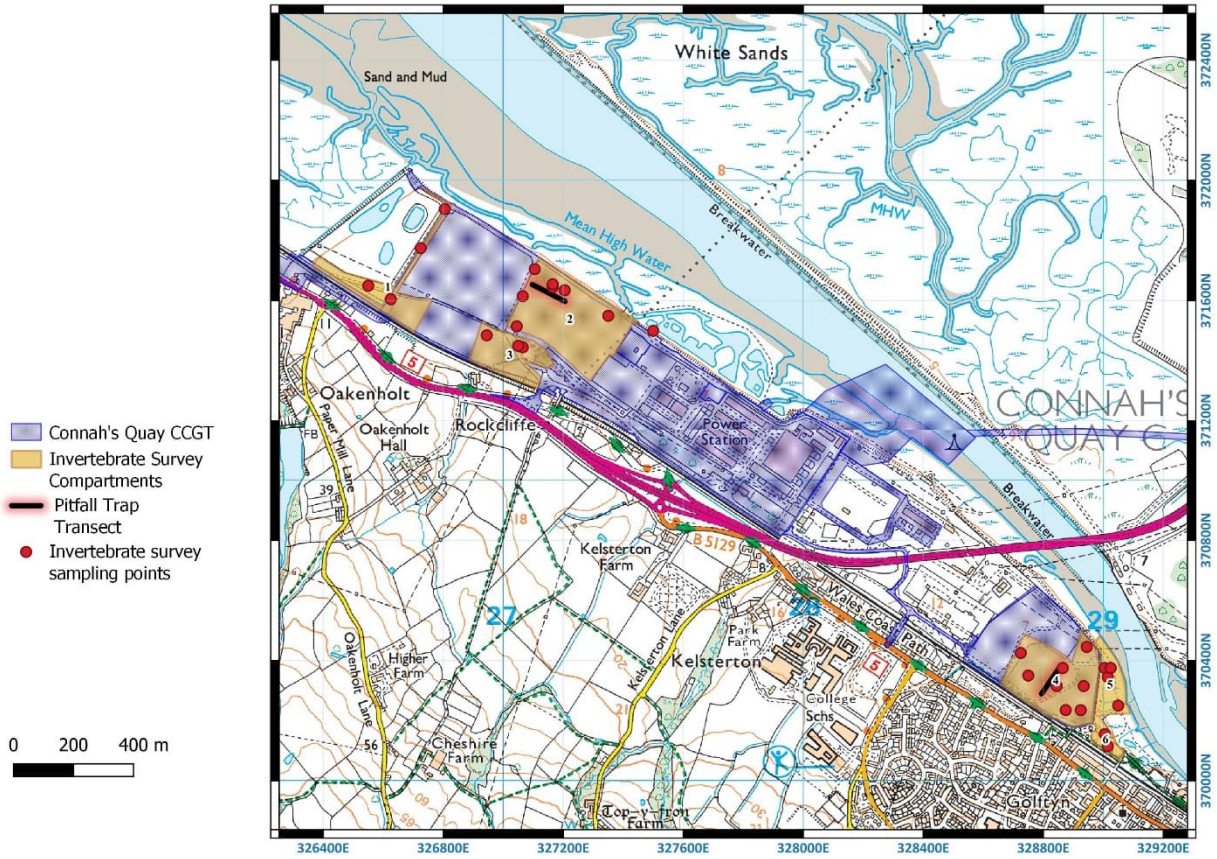
| Date | Weather | Notes |
|---|---|---|
| 23rd April 2024 | Cloud[10]: 4/8 (hazy, high clouds); Temperature: 12°C; Wind Speed[11]: Light breeze; E but chilly | Installed pitfall traps and general collecting. |
| 9th May 2024 | Cloud: 3/8; Temperature: 18°C; Wind Speed: Light air; NNW | Serviced pitfall traps and general collecting. |
| 3rd June 2024 | Cloud: 8/8; Temperature: 13°C to 15°C; Wind Speed: Light air to light breeze; W. Cool with drizzle from 09:30 to 10:00 hrs | Serviced pitfall traps and general collecting. |

[10] Cloud cover measured in octets.
[11] Wind speed is reported using the Beaufort scale

| Date | Weather | Notes |
|---|---|---|
| 27th June 2024 | Cloud: 4/8 to 6/8; Temperature: 17°C to 19°C; Wind Speed: Light breeze; SW | Serviced pitfall traps and general collecting. |
| 23rd July 2024 | Cloud: 0/8; Temperature: 21°C; Wind Speed: Light breeze; W. Constant breeze. | Serviced and retrieved pitfall traps and general collecting. |

One transect, consisting of six pitfall traps was located within Compartment 2, and a second transect of six pitfall traps were set in Compartment 4 (see Figure 3).

Figure 3: Location of sampling point (centroids) and pitfall trap arrays.




A total of 495 species were recorded across all compartments by all methods and a full species list is presented in Table 11 (Appendix B). Species-richness varied across the six survey compartments (range: 79 – 225 species). Combining Compartments 1, 2 and 3, a total of 296 species were recorded within the Main Development Area, which compares with 225 species that were recorded within Compartment 4. Within the Order limits (Compartments 1 to 4), a total of 400 species were recorded (see Table 5).

Table 5: Species data for Connah's Quay invertebrate survey compartments.

| | Cpt 1 | Cpt 2 | Cpt 3 | Cpt 4 | Cpt 5 | Cpt 6 | Cpts 1 to 3 (Combined) | Cpts 1 to 4 (Combined) |
|---|---|---|---|---|---|---|---|---|
| Species Richness | 119 | 133 | 95 | 225 | 79 | 96 | 296 | 400 |
| Key Species | 5 | 4 | 2 | 10 | 11 | 0 | 9 | 18 |
| Proportion of Key Species | 4.2% | 3.0% | 2.1% | 4.4% | 13.9% | 0.0% | 3.0% | 4.5 % |
| Scoring Species | 108 | 118 | 82 | 211 | 77 | 91 | 260 | 363 |

| | Cpt 1 | Cpt 2 | Cpt 3 | Cpt 4 | Cpt 5 | Cpt 6 | Cpts 1 to 3 (Combined) | Cpts 1 to 4 (Combined) |
|---|---|---|---|---|---|---|---|---|
| SQS | 123 | 130 | 85 | 245 | 110 | 94 | 284 | 418 |
| SQI | 113.9 | 110.2 | 103.7 | 116.1 | 142.9 | 103.3 | 109.2 | 115.2 |

### 4.2.2 Key Species Recorded

A total of 28 species with a nature conservation status (Key Species after Telfer (2017)) were recorded across all survey compartments, representing 5.6 % of the assemblage (listed with species' ecologies in Table 6). Breakdown by compartment/ combined compartments is provided in Table 5 above. Key Species definitions are provided in Appendix A.

Other than Compartment 6, all areas surveyed recorded Key Species (range: 2 – 11 species; 2.1 % to 13.9 % of the assemblage within each compartment). The saltmarsh assemblage (Compartment 5) had the highest proportion and except for the picture-winged fly *Meliera picta*, which was also recorded in Compartment 4, they were all only recorded in this habitat. Nine Key Species were recorded within the Main Development Area (Compartments 1 to 3) and a further eight from the OMH (Compartment 4). Only one species, the ground beetle *Syntomus truncatellus*, was recorded in both the OMH and grasslands within the Main Development Area. This suggests that for Key Species, the Saltmarsh, OMH and grassland/ scrub mosaics within the Main Development Area support a separate invertebrate assemblage.

Table 6: Key species recorded within Study Area.

| Taxon | National Status | Compartment(s) | Ecologies |
|---|---|---|---|
| *Walckenaeria kochi* (Araneae, Linyphiidae) | Nationally Scarce | 5 | A partially subterranean money-spider associated with the roots and basal leaves of brackish grasslands, saltmarsh and other wetland environments (e.g. wet heath and marshes).<br>This is the first modern record for Flintshire (VC 51); the last dating back to 1975. |
| *Silometopus ambiguus* (Araneae, Linyphiidae) | Nationally Scarce | 5 | A widespread species present around the British coastline and associated with saltmarshes. Previously recorded from the saltmarsh at Connah's Quay Power Station in 1993. |
| *Typhochrestus digitatus* (Araneae, Linyphiidae) | Nationally Scarce | 4 | A declining species associated with sparsely vegetated dry grasslands or heaths; though in central Europe, it has an association with coastal habitats. The spider constructs its horizontal sheet-web across shallow depressions in the sandy/ gravelly substrate. Only one previous record for VC 51, from February 2022. |
| *Pardosa agrestis* (Araneae, Lycosidae) | Nationally Scarce | 5 | A wolf-spider associated with clay-soils in various situations including saltmarsh and coastal grasslands. Other than on Anglesey, it is rare in Wales, and the record for the |

| Taxon | National Status | Compartment(s) | Ecologies |
|---|---|---|---|
| | | | Connah's Quay saltmarsh represents the first for VC 51. |
| *Xerolycosa miniata* (Araneae, Lycosidae) | Nationally Scarce | 4 | A coastal species of wolf-spider associated with fixed sand dunes or sparsely vegetated rocky terrain. It has previously been recorded from Flint Marsh in July 1993 on a promontory west of the town's industrial estate, a few kilometres up the coast from Connah's Quay Power Station. |
| *Nigma puella* (Araneae, Dictynidae | Nationally Scarce | 1 | A species associated with bushes, scrub and other woody vegetation, potentially with a coastal influence. The species may be increasing its range given recent records elsewhere in England. Prior to this record, there are only six hectads (one in Scotland and the rest in the English Midlands) north of an imaginary line linking Suffolk and south Wales (Glamorgan).<br>The spider was beaten from the mature hedgerow that separates the Main Development Area and the Deeside Naturalists Society Reserve, representing the first record for North Wales and a remarkable north-west range extension. |
| *Cheiracanthium virescens* (Araneae, Cheiracanthiidae) | Nationally Scarce | 4 | A ground-dwelling spider requiring loose stones or similar refugia to hide under, within heathland, brownfield sites, quarries or sand dunes. A scarce species in Wales, with only one other record in VC 51 (May 2012). |
| *Syntomus truncatellus Coleoptera, Carabidae* | Nationally Scarce | 1,2 & 4 | This small black predatory ground beetle inhabits open grassland sites such as grassland verges, field edges and grey dunes. Its main area of distribution is in eastern England although it is distributed throughout England and Wales with scattered records north to Yorkshire and outliers in Scotland. |
| *Saprinus aeneus* (Coleoptera, Histeridae) | Nationally Scarce | 4 | This is a beetle of open habitats on free-draining soils, including sand dunes, breck grassland and heathland. It is almost always associated with carrion and dung. All active stages of the beetle predate the developing stages of other invertebrates in decaying organic material. Adults have been recorded between April and October. It is a widely distributed |

| Taxon | National Status | Compartment(s) | Ecologies |
|---|---|---|---|
| | | | species Nationally, but has declined historically. Currently, it is most frequent along the coastal fringes of England and Wales, but it also maintains a significant stronghold inland in the Breckland region of East Anglia. |
| *Agathidium marginatum* (Coleoptera, Leiodidae) | Notable | 2 | This is a small round, convex shiny black beetle which can retract its legs and roll into a 'sphere', and potentially be mistaken for a seed. It inhabits open ground including sand dunes and chalk downland, where it is found at the roots of grasses, in grass tufts and rabbit warrens. Adults have been recorded in most months of the year. The beetle is widespread but local in England, Wales and Scotland, with widely scattered records. |
| *Aclypea opaca* (Coleoptera, Silphidae) | [Nationally Scarce (Na)] | 5 | A phytophage historically associated with sugar beet and turnip crops as a pest species, but since, much declined. Present distribution throughout Britain has a strong coastal bias, there having been muh decline at inland localities. Occurs in a wide variety of habitats including fixed dunes, machair, high altitude montane localities, brownfield sites in lowland England and in arable crops and margins on sandy soils. Univoltine, overwintering in the adult stage. Main period of adult activity is April through to August. |
| *Aleochara brevipennis* (Coleoptera, Staphylinidae) | Notable | 2 | This small and nondescript brown rove beetle is an inhabitant of the ground layer in grassland habitats and is usually recorded either in pitfall traps or by sieving grass tussocks. Both the adults and the larvae are probably predatory on smaller invertebrates. The adults have been found all year round. The species is widely distributed but local in Britain. Some sources suggest that there have been recent declines, particularly in southern England. |
| *Oxypoda lurida* (Coleoptera, Staphylinidae) | Notable | 4 | A small aleocharine rove beetle associated with open ground, where it has been recorded at the roots of herbage in grassland, coastal shingle, sand and gravel pits, gardens and parkland. |

| Taxon | National Status | Compartment(s) | Ecologies |
|---|---|---|---|
| **Agelastica alni* | Data Deficient; National Rare | 4 | This conspicuous purple species inhabits open sunny locations in wetlands, especially alder carr and also river banks and wet woodland flushes. It is phytophagous on young Alder (*Alnus glutinosa*) and Grey Alder (*A. incana*), sometimes Hazel (*Corylus avellana*), hybrid Black Poplars (*Populus x canadensis*), Goat Willow (*Salix caprea*) and Silver Birch (*Betula pendula*). It was previously considered extinct but was rediscovered in the Manchester area in 2004, with a series of records since then from Lancashire and Cheshire indicating a population had re-established in north-west England. More recently, it has rapidly expanded its range, being found in Wales in 2013 and recently colonising Hampshire (New Forest region) and southwards from Lancashire and Cheshire into Staffordshire and east into Lincolnshire etc. It no longer deserves this conservation status. |
| *Longitarsus lycopi* (Coleoptera, Chrysomelidae) | Nationally Scarce | 5 | This small yellowish flea beetle has, like others in the group, modified hind femora for leaping to avoid predation. It is very similar to several other species in what is widely considered a difficult genus. The beetle is most often associated with short sward grassland habitats where it is phytophagous on members of the Lamiaceae, including Ground-ivy (*Glechoma hederacea*) (commonly), Self-heal (*Prunella vulgaris*) and calamint. It is widespread but local in southern England, becoming more local in northern England, Scotland and Wales. |
| *Catapion pubescens* (Coleoptera, Apionidae) | [Nationally Scarce (Nb)] | 1 | This is a small grey-black seed weevil found locally throughout England and Wales in grassland where it feeds on clovers both as an adult and larva. The larva feeds in stem galls on the host-plant. In Norfolk, the species is fairly localised in distribution, with records from 20 hectads of the National Grid in the two vice-counties as at September 2019. As of October 2021, the species had been recorded from more than 150 hectads of the National Grid (pers comm Mark Gurney), so this |

| Taxon | National Status | Compartment(s) | Ecologies |
|---|---|---|---|
| | | | species effectively no longer merits Nationally Scarce status (upper threshold is 100 hectads), although status re-evaluation has yet to be formalised. |
| *Tychius squamulatus* (Coleoptera, Curculionidae) | Nationally Scarce (Nb) | 4 | This small weevil is covered in orange-brown scales, giving it a pale appearance in the field. It is associated primarily with bird's-foot trefoil in short sward grassland on free-draining substrates at sites such as verges, brownfield, disturbed ground and grey dunes. The larvae feed in the pods of the food-plant. Adults have been recorded in most months of the year but are most obvious between May and August. |
| *Ceutorhynchus atomus* (Coleoptera, Curculionidae) | [Nationally Scarce (Na)] | 1 | This is a very small black weevil for which the food-plant is Thale Cress (*Arabidopsis thaliana*). It is found primarily on disturbed ground, particularly in sandy and chalky districts. Habitats occupied include waste ground brown-field sites as well as coastal salt-marsh and shingle. Adults are most often encountered in the field from early April into July. The beetle is widely but very locally distributed throughout Britain. |
| *Cathormiocerus aristatus* (Coleoptera, Curculionidae) | Nationally Scarce (Nb) | 2 | This is a small dull brown, ground-dwelling weevil with conspicuous erect scales on the wing-cases. It inhabits grassland, coastal cliffs and quarries with a preference for calcareous soils. The species is phytophagous and probably polyphagous. There may be an association with plantains (*Plantago* spp.). The weevil is widely distributed but very locally so, with records throughout Britain. |
| *Polydrusus formosus* (Coleoptera, Curculionidae) | [Nationally Scarce (Na)] | 1 & 3 | A weevil associated with a range of broad-leaved trees and shrubs, widespread in southern England with a few records associated with coastal Wales. The species no longer deserves its conservation status. |
| **Polydrusus pulchellus* (Coleoptera, Curculionidae) | Nationally Scarce (Nb) | 5 | A metallic green weevil associated with various coastal plants such as Sea Wormwood (*Artemesia maritima*) of saltmarsh and brackish marshes. |
| *Sitona waterhousei* (Coleoptera, Curculionidae) | Nationally Scarce (Nb) | 4 | This is a small weevil, with characteristic convex protruding eyes. |

| Taxon | National Status | Compartment(s) | Ecologies |
|---|---|---|---|
| | | | It is found throughout much of England and Wales, although its distribution is predominantly coastal. Sites such as coastal undercliffs, coastal shingle and coastal quarries are examples of its typical haunts. The species feeds on bird's-foot trefoil as both a larva and adult. Adults have been recorded between February and September. |
| *Tanymecus palliates* (Coleoptera, Curculionidae) | Nationally Scarce (Nb) | 5 | This moderately large weevil superficially resembles a very large *Sitona* in appearance. It is phytophagous, the adults being associated primarily with plants in the thistle family, although its food-plant associations may well be broader than this. The beetle is found in verge and other more-or-less open grassland habitats where it is usually observed by sweeping vegetation. It is a widespread but locally distributed species, occurring throughout England and Wales and north into West Perthshire in Scotland. |
| *Meliera picta* (Diptera, Uliidae) | pNationally Scarce | 4 & 5 | A saltmarsh species of picture-winged fly that would appear to be largely confined to the North Sea and Channel coastline in England, south of the Humber. The record from Connah's Quay saltmarsh and the OMH within Compartment 4 represents the first records for North Wales and a substantial northwards range extension in western Britain. |
| *Macrosteles sordipennis* Hemiptera, Cicadellidae | Nationally Scarce (Nb) | 5 | A leafhopper associated with saltmarsh vegetation, with possibly only one record in Wales prior to this occurrence. It may be associated with Common saltmarsh-grass. |
| *Species previously reported within the 2 km search radius by COFNOD. | | | |

A further two species of spider, an orb-web spider *Mangora acalypha* (Araneidae) and a mesh-web weaver *Nigma puella* (Dictynidae) were first records for VC 51 (Flintshire) and are rare in Wales. However, these are spreading northwards from their south-east England core areas so it is probable that they will become more frequently encountered in Wales in the near future. Four species previously recorded within the 2 km search radius as supplied by COFNOD were recorded within the Study Area (identified by the '*') and their ecologies are described in the above table.

Furthermore, there are up to four species of butterfly, known to be present within the 2 km radius that were not recorded within the Study Area during 2024, which may reflect the cooler, wetter summer experienced this year, or a consequence of a warmer, wetter winter 2023/ 2024. The OMH within Compartment 4 supported suitable habitat,

and abundant food plants in suitable conditions for Dingy Skipper (*Erynnis tages*), Small Heath (*Coenonympha pamphilus*), Wall (*Lasiommata megera*) and Grayling (*Hipparche semele*). The Dingy Skipper foodplant is Common Bird's-foot Trefoil, which was locally abundant within the OMH, especially in the 'bowl' created by the demolition of the Power Station 'A Site'. The other butterflies foodplants are grasses where they grow in short or patchy swards. Given the nature of the OMH and the vegetation and substrates' structure (typically free-draining gravelly material arising from, for example, the weathering of concrete and hardstanding), it was anticipated that at least some of the four species would be recorded, of which Dingy Skipper and Small Heath were thought to be most likely. This has relevance as if any of these butterfly species are genuinely present, this would potentially be sufficient to meet Local Wildlife Site status, if the Cheshire criteria were applied in the absence of guidance specific to Flintshire (see Section 3.3.3.2 for details).

## 4.3 Baseline Invertebrate Assemblage Analysis

The following section describes the invertebrate assemblages recorded within the Study Area. The species list has been analysed using Pantheon to identify the habitat associations and dependencies of the terrestrial invertebrate assemblage associated within the Study Area. The analysis considers stenotopic species i.e. those terrestrial invertebrates with very specific and [12]restricted habitat requirements. They are considered to have an intrinsic nature conservation value as stenotopic species are generally only recorded on sites that are of nature conservation value. Following this, the analysis considers the Species Quality Index for each of the compartments studied, which will enable comparisons, taking into consideration the BNG Grade assigned using all species, and pitfall trap data.

Of the 495 species recorded within the Study Area, 455 have been analysed by Pantheon. This has identified 75 stenotopic taxa dependent on the habitats present, representing 15.2 % of the invertebrate fauna recorded (see Table 12; Appendix 0 for the list). Just under half of the stenotopic fauna (33 species), of which nine are Key Species, are associated with short swards and bare ground. These can probably be interpreted as fauna associated with the OMH habitat within Compartment 4; though an additional six species were recorded within the Main Development Area (Compartments 1 to 3), and another, a soft-winged flower-beetle *Cordylepherus viridis* (Melyridae), whilst only actually recorded in Compartment 6, is probably present within similar flower-rich grassland elsewhere within the Order Limits.

Three species, including the Nationally Scarce weevil, *Polydrusus pulchellus*, are restricted to the saltmarsh and brackish marshes within Compartment 5 and thus likely to be present in the Water Connection Corridor; with an additional taxon, a picture-winged fly *Melieria picta* also recorded from the adjacent Compartment 4, though this was probably a wandering individual since it is dependent on Saltmarsh-grass.

The remainder are associated with the scrub (including its dead wood resource) and taller grasslands present within the study area. Table 7 compares the SQIs across the different survey compartments, which identifies that the saltmarsh and OMH (alongside the taller grassland swards) within Compartment 4 support the highest value stenotopic assemblage. The habitats within Compartment 1, which includes the mature hedgerow and more flower-rich grasslands in the small field in the Study Area's south-west, are the most important, whereas the sheep-grazed fields (Compartment 2) and scrub mosaics and fields (Compartment 3) are of least value.

Table 7: Comparison of the stenotopic fauna between invertebrate survey compartments at Connah's Quay CCGT.

| | Cpt 1 | Cpt 2 | Cpt 3 | Cpt 4 | Cpt 5 | Cpt 6 | Cpts 1, 2 & 3 (Combined) |
|---|---|---|---|---|---|---|---|
| Stenotopic Species | 11 | 12 | 4 | 41 | 12 | 11 | 29 |

[12] Referred to as Specific Assemblage Types (SAT) in Pantheon (Webb *et al*. 2018).

| | Cpt 1 | Cpt 2 | Cpt 3 | Cpt 4 | Cpt 5 | Cpt 6 | Cpts 1, 2 & 3 (Combined) |
|---|---|---|---|---|---|---|---|
| Proportion of total Assemblage | 9.2% | 9.0% | 4.2% | 18.2% | 15.2% | 11.5% | 9.8% |
| SQS | 14 | 12 | 4 | 65 | 27 | 11 | 32 |
| SQI | 127.3 | 100.0 | 100.0 | 158.5 | 225.0 | 100.0 | 110.3 |

# 5 Nature Conservation Evaluation

As stated in Section 3.3, there is no standard frame of reference to evaluate a study area's invertebrate assemblages' nature conservation value. Instead, reliance is placed on various sources, including proportion of Key Species recorded, and analysis using Pantheon (Webb *et al*., 2018). Added to this is recent guidance which considers how individual Key Species can best be represented in protected sites (SSSIs) (Curson *et al.*, 2019). Whilst the presence of individual Key Species in themselves, is not a sole indication of national value, it is considered a useful guide as to where a particular site may sit in a geographical hierarchy.

In considering a land parcel's potential for SSSI status, Curson *et al*. (2019) suggests that sites can be valued based on:

- individual species that are considered to be threatened species (IUCN and British rarity, see this report's Appendix 0 for details), species of country conservation priority (i.e. SoPI), species with restricted or disjunct ranges, and edge of range species; and

- assemblages of specialised habitats and habitat-based assemblages such as Open Mosaic Habitat faunas, and habitat heterogeneity/ mosaics.

In addition to the above, it remains relevant to assess the invertebrate assemblage recorded against non-statutory site guidelines. The guidelines applied for the Study Area places greater reliance on Cheshire's guidelines, as set out in Section 3.3.3.2.

This approach forms the basis for the following evaluation and in doing so, takes into consideration the criteria referred to above and more general points such as SQIs, the relative value of how terrestrial invertebrate assemblages relate to both the importance and uniqueness of the habitats present, and the characteristics of the assemblage itself. The assessment first considers the presence of individual species recorded, followed by the assemblages recorded (i.e. not just the rarer taxa).

The evaluation has separately considered three subdivisions within the Study Area: the grasslands & scrub communities (represented by Compartments 1, 2, 3 and 6), saltmarsh (Compartment 5) and OMH (Compartment 4) in line with the distinction identified by the baseline analysis. Relevant data is presented in Table 8 and is discussed under the relevant headings below.

Table 8: Data associated with the Study Area's subdivisions.

| | Cpts 1,2,3 & 6 (Grassland & Scrub) | Cpt 4 (OMH) | Cpt 5 (Saltmarsh) |
|---|---|---|---|
| Species Richness | 312 | 225 | 79 |
| Key Species | 9 | 10 | 11 |
| Proportion of Key Species | 2.9% | 4.4% | 13.9% |
| Scoring Species | 279 | 211 | 77 |
| SQS | 306 | 245 | 110 |
| SQI | 109.7 | 116.1 | 142.9 |

Following assessment of this, as explained in more detail below, the Study Area is considered to support an assemblage of terrestrial invertebrates of district to county nature conservation importance.

## 5.1 Individual Species

Out of a total species list of 495 recorded in the Study Area, 28 are Key Species, of which two are considered Rare Key Species (based on Telfer, 2017), though the two Rare Key Species and four other taxa (Scarce Key Species) are considered to warrant downgrading as they no longer merit a conservation status. Nevertheless, Key Species represent 5.6 % and 0.4 % of the assemblage respectively. Both these proportions fall below the proposed threshold for national importance (Key Species (10 %) and Rare Key Species (1 %)).

A similarly low proportion of Key Species are present within the grassland & scrub vegetation communities and OMH, suggesting that the invertebrate assemblages fall below a threshold of national significance. However, the proportion of Key Species within the saltmarsh community exceeds 10 %, though no Rare Key Species were recorded. This suggests that the saltmarsh invertebrate assemblage has an amplified value compared to elsewhere within the Study Area, or Order limits.

Applying Curson *et al*. (2019), no species recorded in 2024 are of conservation priority in Wales, i.e. IUCN Threatened, though one species, the Cinnabar Moth (*Tyria jacobaea*) is included on the Welsh Biodiversity List. At least two spiders (*Mangora acalypha* and *Nigma puella*) are new county records and rare in Wales, though both are spreading rapidly across England. It would therefore be unwise to consider their current status as stable and therefore indicative of an assemblage of heightened value.

Whilst one species, *Agelastic alni* is Nationally Rare, this has rapidly spread in recent years and a forthcoming review on the leaf-beetles (Chrysomelidae) will downgrade this taxon and remove its conservation status. For Nationally Scarce species, the SSSI guidelines generally expect that they are best conserved as part of an appropriate, habitat-based invertebrate assemblage unless a population could be affected adversely by generic habitat management.

The Study Area's location within the ecological landscape is discussed in Section 5.2.1, but within the context of designated sites, Compartment 5 falls within the Dee Estuary SSSI. One invertebrate species, the Sandhill Rustic (a moth) is associated with the Dee Estuary SSSI but the known populations are associated with sand dunes, a habitat absent from within the Study Area and Order limits, so is not considered likely to be present and is not considered further. The saltmarsh vegetation communities recorded within Compartment 5 support the highest value invertebrate assemblage within the Study Area as defined by its SQI. This is interpreted as reflecting the relative importance of the saltmarsh compared to terrestrial habitats elsewhere.

## 5.2 Habitat Assemblages

The relative value of the terrestrial invertebrate assemblages relates to both the importance and uniqueness of the habitats present, and the characteristics of the assemblage itself.

### 5.2.1 Landscape context

The Study Area is located immediately adjacent to a landscape designated for its saltmarshes, mudflats and other coastal environment, designated primarily for the associated avifauna present. Apart from the Water Connection Corridor, the Study Area's footprint falls outside the SSSI. Until February 2025, the Water Connection Corridor's footprint within the SSSI was just over 9.5 hectares (95,603 $m^2$), though only about a third (*c*. 3.2 hectares) is saltmarsh, the rest being mudflats and the channel of the Dee. This represents about 10 % of the saltmarsh resource across the Power Station's frontage, including the CIEA (former 'A Site'). Subsequently, the Water Connection Corridor footprint has been reduced.

The Compartments outside the SSSI are all located within the existing Connah's Quay Power Station, though outside the core operational areas. Compartments 1, 2 and 3 coincide with sheep-grazed fields, associated hedgerows and scrub, including landscape planting, a combination largely shared with Compartment 6. The character of these habitats is replicated throughout the coastal strip and hinterland to the south of existing Connah's Quay Power Station, outside the settlements that define a more urban environment. This largely agricultural (pastoral) landscape here is similarly characterised by fields, divided by hedgerows and penetrated by minor watercourses fringed with woodland and scrub. The grazed grasslands within the Study Area occupy approximately 24 hectares. Within Flintshire, there is an estimated area of 28,412 hectares of agricultural grassland ([13]data from 2017), meaning that the grassland resource within the Study Area represents approximately 0.08 % of the county's resource.

Compartment 4 sits within the former Power Station 'A Site', now demolished and supports an area of OMH that is estimated to be approx. 6.12 hectares. There is no publicly available data on the total OMH resource in Flintshire, including on the Wales Biodiversity Partnership [14]website, so it is not possible to accurately determine the extent of the resource within the county. However, given the dominance of agriculture within the landscape, it is likely that OMH is a relatively scarce resource, probably restricted to the larger settlements such as Flint, Connah's Quay, Buckley and Mold.

In the contexts described above, the invertebrate assemblages recorded within the saltmarsh are likely present across the coastal frontage in similar habitat, including within the Connah's Quay Nature Reserve. Likewise, the invertebrate assemblage associated with the grassland and scrub habitats are similarly likely to reflect the abundance of these habitats within the landscape, except for the two recently recorded spiders, *Mangora acalypha* and *Nigma puella*. However, these are likely to spread further into Flintshire, and western and northern Wales more generally. However, the OMH habitat is likely to be a relative scarce resource within Flintshire, certainly away from the settlements associated with the Dee and its immediate hinterland. In this context, the fauna associated with this habitat is likely to be scarcer compared with the assemblages associated with the saltmarsh and grassland and scrub.

### 5.2.2 Stenotopic Species

As explained in Section 3.3, stenotopic species are dependent on quite specific and restricted habitat conditions that are rarely encountered in the wider landscape. Therefore, stenotopic species are considered to have an intrinsic nature conservation value and generally only occur in association with sites of relatively high nature conservation importance.

Table 9: Stenotopic invertebrate species-richness recorded within the Study Area's subdivisions.

| SAT | Threshold (Species) | Cpt 4 (OMH) | Cpt 5 (Saltmarsh) | Cpts 1,2,3 & 6 (Grassland & scrub) |
|---|---|---|---|---|
| F002: Rich flower resource | 15 | 10 | 1 | 8 |
| F112: Open short sward | 13 | 10 | 4 | 5 |
| F001: Scrub edge | 11 | 4 | 1 | 7 |
| F003: Scrub-heath & moorland | 9 | 4 | 0 | 7 |
| F111: Bare sand & chalk | 19 | 11 | 3 | 3 |
| A212: Bark & sapwood decay | 19 | 2 | 0 | 2 |
| M311: Saltmarsh & transitional brackish marsh | 9 | 1 | 4 | 0 |
| Amber-shaded cells ≥ 75 % of threshold published in Drake *et al.* (2007) | | | | |

[13] Data taken from the Welsh Government website: https://statswales.gov.wales/Catalogue/Agriculture/Agricultural-Survey/Area-Survey-Results/type-of-agricultural-land-to-area; last accessed on the 7th October 2024.
[14] See https://www.biodiversitywales.org.uk/Urban-Brownfield-Ecosystem; accessed on the 8th October 2024.

None of the vegetation communities support a stenotopic invertebrate assemblage that exceed the thresholds published in Drake *et al*. (2007), as conveyed in Table 9. No SATs have therefore exceeded or met the threshold considered to represent Favourable Condition. Two SATs (shaded in amber) exceed the 75 % proportion to threshold suggesting that the fauna here is of heightened value; the open short sward (F112) which is interpreted as a component of the OMH, and the Scrub-heath & moorland (F003) within the grassland and scrub mosaics. That the open short sward within Compartment 4 is of heightened value amplifies the value of the OMH, particularly given the likely scarcity of the resource within Flintshire. The scrub-heath and moorland SAT is typically present on nutrient-poor acid soils where herbaceous or small shrubs are frequent. The mature hedgerow and possibly the smaller, more flower-rich, ungrazed field within Compartment 1 is potentially influencing this assemblage.

## 5.3 Taxonomic Assemblages

In addition to the guidelines for statutory site designation (refer back to Section 5.1), there are published guidelines for non-statutory site designation (refer back to Section 3.3.3.2). The guidelines intend to provide a coherent means by which the study area can be assessed.

Multiple Key Species have been recorded in each of the subdivisions within the Study Area which if applying Cheshire's guidelines uncritically would suggest that all areas would justify designation as a Local Wildlife Site, a proxy for county importance. Of these, some such as the spider *Walckenaeria kochi* and *Silometopus ambiguus* are rare in the vice-county where as other taxa such as *Pardosa agrestis* are new. Further, whilst Dingy Skipper and Small Heath were not recorded within the Study Area, suitable habitat for at least these two butterflies and potentially Wall and Grayling is present within Compartment 4 within the OMH. Applying the butterfly total score based on Cheshire's criteria, Compartment 4 scores 10 points from eight butterfly species recorded, as do the combined compartments with grassland and scrub predominating. This falls short of the 16 points threshold necessary for Local Wildlife Site status. All of the butterfly species recorded are widespread and common in the British countryside, including north Wales.

## 5.4 Conclusion

The invertebrate assemblage recorded within the Study Area is best evaluated based on the three subdivisions defined by the habitats present. Each of the subdivisions support an invertebrate assemblage and individual species of nature conservation importance as indicated by the presence of Key Species in all three, and indeed five out of the six compartments studied. Apart from the saltmarsh, the proportion of Key Species falls below the suggested threshold of national significance, but the presence of several Key Species including several new species for the county, warrant consideration whether the OMH and/ or the grassland and scrub mosaic present within the Main Development Area are of county importance.

Returning to the saltmarsh, whilst the threshold of national significance has been passed, none of the SATs present, and especially the M311 saltmarsh and transitional brackish marsh are, or approach, favourable condition, as a proxy for national importance. It is therefore evaluated that this habitat too falls below the threshold of national significance for its invertebrate fauna. Nevertheless, like the OMH and/ or grassland and scrub mosaic, it is considered to warrant consideration for county importance. The high proportion of Key Species are largely supported by taxa that are associated with saltmarsh, though not necessarily highly dependent on it as evidenced by the number stenotopic taxa falling short of the SAT thresholds. The resource falls within a SSSI, which has in part been designated for its saltmarsh vegetation communities. The invertebrate fauna recorded likely reflects this habitat quality to an extent in that it is of heightened value above what one might consider a background level typical of any saltmarsh community, though it is interpreted as falling short of being of sufficient value to warrant designating in its own right. If applying Cheshire's Local Wildlife Site criteria, the presence of multiple Key Species, including several that are rare in a North Wales context, would suggest that the fauna is of sufficient value to warrant

designation as a non-statutory site, as a proxy for county importance. The evidence supports this interpretation and therefore the invertebrate assemblage within Compartment 5 is evaluated to be of county importance.

In considering the invertebrate assemblage associated with the OMH within Compartment 4, the resource is likely to be relatively scarce within Flintshire and so a fauna that includes several rarely recorded Key Species in the county such as the wolf-spider *Xerolycosa miniata* is likely to be amplified in terms of its importance. Further, consideration is given to whether the absence of Dingy Skipper and Small Heath in particular is a genuine absence, or whether the poor summer has contributed to suppressing the population. Site visits aimed to coincide with suitable weather but the early June survey when the butterfly could be expected to be in flight fell within a period of suboptimal conditions. Given the abundance of the foodplant, that Dingy Skipper and Small Heath are known from within a 2 km radius of the Order limits, and the presence of other Key Species, and a relevant SAT is approaching favourable condition are all indicative of a high value site. It seems plausible that these butterflies could be present but at a very low level sufficient to avoid detection in 2024. On this basis, taking a precautionary approach, it is also evaluated that the invertebrate assemblage within the OMH within Compartment 4 is of county importance.

Finally, the grasslands and scrub that are present within Compartments 1, 2, 3 and 6 are considered. The habitats support a fauna that is of some interest, and it is notable that the SAT associated with scrub is approaching favourable condition. However, the resource is present throughout the county, in coastal areas and further inland. The value of the invertebrate assemblage in this context is diluted because of this. On this basis, it is evaluated that the invertebrate assemblage in these habitats within this subdivision are of district importance.

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# Appendix A: Nature Conservation Status Categories (Definitions)

## Introduction

The up to date status of species of conservation concern have been taken from Pantheon, the web-based analytical package maintained by the national biological records centre and developed by Webb *et al*. (2018) but reference to the various published Species Status Reviews; and the [15]Joint Nature Conservation Committee database of species designations has been undertaken where the author is aware there might be a discrepancy. However, no guarantee is given that this has been entirely comprehensive and reliance has largely been placed on Pantheon's accuracy.

## Great Britain Rarity Status

Nationally Rare (NR) species are those that have been recently reassessed and are roughly equivalent to the old Red Data Book categories. These are defined as occurring in 15 or fewer hectads (10 km Ordnance Survey grid squares) and where there is reasonable confidence that intensive recording effort won't increase the number of hectads above 15.

Nationally Scarce (NS) species are those that are not NR and which have not been recorded in more than 100 hectads, and where there is reasonable confidence that intensive recording effort won't increase the number of hectads above 100.

Where taxa have yet to be reassessed under the Species Status Reviews, they formally retain their status based on historical reviews, which may date back to the late 1980s or early 1990s. These status' should be treated with caution as it is likely a significant proportion are no longer accurate, either due to a better understanding of their ecology, or have subsequently spread due to climate change or other amenable factors (e.g. they are more frequent and no longer deserve a nature conservation status); or they have declined; and may merit upgrading to a threat category.

Nationally Notable - species recorded, or likely to be restricted to 16 - 100 hectads in Britain. Historically, for some better recorded invertebrate taxa, they were further divided between Notable-A (Na) for species thought to occur in 30 or fewer hectads, and Notable-B (Nb) for those thought to occur between 31-100 hectads. These are referred to as Nationally Scarce (Na), or Nationally Scarce (Nb). Within Pantheon, some status' have been placed in square brackets, e.g. [Nationally Scarce (Nb)]. This denotes that in the professional judgement of the specialists (Webb et. al., 2018), this status is unreliable, but they have not been formally assessed against up to date criteria. The species are included in the relevant table in this report for the avoidance of doubt.

Red Data Book (RDB) species –species occurring in fewer than 16 10-km squares of the National Grid, divided as:

- RDB 1: Endangered - for species known from a single population or in continuous recent decline and now known from five or fewer 10-km squares;
- RDB 2: Vulnerable - likely to become endangered (RDB 1) if causal factors continue;
- RDB 3: Rare: - species at risk but not qualifying as vulnerable; and
- RDB K: Insufficiently Known - species likely to qualify at least as rare.

[15] Joint Nature Conservation Committee, http://jncc.defra.gov.uk/page-3408

## UK Biodiversity Action Planning

Species of Principal Importance as listed in Section 41 of the National Environment and Rural Communities Act, 2006. These are abbreviated as NERC-S41. Approximately 70 species of moth have been included in a list which proposes 'for Research only'; a frequently encountered example is the Cinnabar moth (*Tyria jacobaeae*). These are widespread species which are believed to have experienced a decline and have been included to enable funding to be allocated for research.

## UK Legal Protection

Approximately 50 species of invertebrate species in Britain receive legal protection through Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). About half receive limited protection; for example, it is illegal to sell, or advertise for sale, a number of butterfly species. The remaining 28 species are more strictly protected, for example it is an offence to take or kill specimens without an appropriate licence. These species are generally extremely rare, restricted to a few, or a single site and none are likely to occur anywhere in the region.

## IUCN Threat Categories

In recent years, invertebrate taxa in Great Britain have been assessed against the International Union for the Conservation of Nature's (IUCN) threat criteria that considers factors influencing a species survival. These include population decline or geographic contraction through habitat loss. These assessments are ongoing as part of the Species Status Reviews, overseen by the Joint Nature Conservation Committee and mostly published by Natural England. The criteria are defined by the IUCN, which places an assessed taxon in one of seven categories from Extinct down to Least Concern, based on one of the five main criteria. The following categories are defined as Threatened (Red List):

Critically Endangered (CR): A taxon is Critically Endangered when the best available evidence indicates that it is considered to be facing an extremely high risk of extinction in the wild.

Endangered (EN): A taxon is Endangered when the best available evidence indicates that it is considered to be facing a very high risk of extinction in the wild.

Vulnerable (VU): A taxon is Vulnerable when the best available evidence indicates that it is considered to be facing a high risk of extinction in the wild.

A further category, Near Threatened (NT), is applied to a taxon, which following assessment, came close to, but failed to qualify as a Threatened species. However, it is considered that if the factors influencing its assessment continue, it is likely to move in to one of the threat categories; and thus it acts as a watching brief.

# Appendix B: Technical Advice Note

E

# Technical Advice Note

| | |
|---|---|
| Job Number | RWE0302 |
| Project | Connah's Quay CCGT with Carbon Capture |
| To | Hannah Procter |
| Date | 3rd July 2024 |
| Subject | Initial site walkover and scoping within the Development Consent Order Footprint. |
| Reference | RW-HP-001-RWE0302-TAN/Inverts |

## Introduction

The following technical advice note (TAN) is provided for AECOM Limited to inform an initial scoping exercise for further terrestrial invertebrate survey work within the existing Connah's Quay Power Station complex and surrounding landscape in north-east Wales ('the Study Area').

The information collated to inform the contents of the TAN has drawn from ecological data obtained by AECOM from Cofnod (North Wales Environmental Information Service) – the biological records centre – and a site walkover completed in late April 2024, supplemented by some initial collecting.

## Brief

Richard Wilson Ecology Limited was commissioned in early March 2024 to complete a scoping visit within the Study Area, focussing on pre-defined sectors (refer to Figure 1 for terminology and locations) within the proposed development (Zones) where permission to access land had already been obtained. The initial commission excluded the Existing Natural Gas Connection Corridor (to the north of the Dee), the Repurposed $CO_2$ Connection Corridor (RCCC) which links the Main Development Area with the Proposed $CO_2$ Connection Corridor (PCCC) and the Flint AGI in the far west, other than where access could be made via the Public Right of Way which crossed parts of the RCCC and the PCCC.

The purpose of the scoping survey was to review third party ecological data and in combination with an initial scoping walkover survey, target land parcels which supported habitats, features and resources that had the potential to support terrestrial invertebrate assemblages of interest. In doing so, this would identify if further survey was required during 2024.

## Background

Connah's Quay Power Station is located in north-east Wales, on the coastal frontage of the south bank of the River Dee (Afon Dyfrdwy), immediately north-west of Golftyn, a suburb of Connah's Quay (Cei Connah) and approximately 3.5 km east of Flint (Y-Fflint) within Flintshire (vice-county 51: Flintshire). The Power Station comprises two unequal sections, split by the main road (A548) that links north Wales' coastal settlements such as Llandudno and Conwy with The Wirral and Cheshire in England. The smaller eastern section, comprising existing infrastructure and the footprint of the demolished coal-fired Power Station (referred to by employees as the 'A Site' but for the purposes of the project, the Indicative Enhancement Area (IEA)) is to the east of the A548 (centred on SJ 286 705). The remainder, comprising the majority of the infrastructure and associated greenspace lies to the west, and is centred on SJ 275 713.

The proposed development is for a new CCGT Power Station that includes for a carbon capture technology that would be piped to an offshore storage facility located within the repurposed offshore Liverpool Gas Fields as part of the

HyNet Industrial Cluster ([16]Uniper, 2022). Therefore, the Study Area's footprint extends beyond the curtilage of the Power Station itself and includes land within its immediate environs. This has been divided into various zones based on the proposed end use/ functional purpose.

## Ecological Desk Study

COFNOD provided records of invertebrates with a national (British) conservation status and/ or included on the Welsh Biodiversity List within 2 km of the study area. However, no map or geospatial data was included to identify where they were recorded.

Of the 110 species listed, 35 species of moth are included on the Welsh Biodiversity List. A further 30 species of invertebrate have been included as local specialists have identified them as being of local importance in a Welsh context but have no formal conservation status. Of the remaining 45 species with a genuine British rarity status, or extinction threat status (i.e. Critically Endangered, Endangered or Vulnerable), a third are associated with coastal habitats such as saltmarsh and brackish pools; another third is associated with grassland/ scrub mosaics and the remainder are associated with wetland habitats of some description (see Table 1).

Table 10: List of noteworthy invertebrate species recorded within 2 km of Connah's Quay CCGT held by COFNOD.

| Order | Family | Species | [17]Conservation status | Wetlands | Scrub | Coastal Habitats | Running water | Grassland/ Scrub |
|---|---|---|---|---|---|---|---|---|
| Araneae | Linyphiidae | *Halorates reprobus* | Nationally Scarce | | | • | | |
| Araneae | Linyphiidae | *Lessertia dentichelis* | Nationally Scarce | | | | | • |
| Araneae | Linyphiidae | *Saaristoa firma* | Nationally Scarce | • | | | | |
| Araneae | Linyphiidae | *Silometopus ambiguus* | Nationally Scarce | | | • | | |
| Araneae | Lycosidae | *Xerolycosa miniata* | Nationally Scarce | | | | | • |
| Coleoptera | Carabidae | *Bembidion iricolor* | Nationally Scarce | | | • | | |
| Coleoptera | Chrysomelidae | *Agelastica alni* | Data Deficient; Nationally Rare | | • | | | |
| Coleoptera | Curculionidae | *Polydrusus pulchellus* | Nationally Scarce (Nb) | | | • | | |
| Coleoptera | Curculionidae | *Tropiphorus terricola* | Nationally Scarce (Nb) | | | | | • |
| Coleoptera | Dytiscidae | *Hygrotus nigrolineatus* | Nationally Scarce | • | | | | |
| Coleoptera | Dytiscidae | *Hygrotus parallellogrammus* | Nationally Scarce | | | • | | |
| Coleoptera | Erirhinidae | *Grypus equiseti* | Nationally Scarce (Nb) | • | | | | |
| Coleoptera | Helophoridae | *Helophorus fulgidicollis* | Nationally Scarce | | | • | | |

[16] Uniper. (2022) *Connah's Quay Low Carbon Power*. Uniper Energy Website: https://www.uniper.energy/connahs-quay-low-carbon-power; last accessed on the 30th April 2024

[17] Definitions of conservation statuses are appended to this TAN.

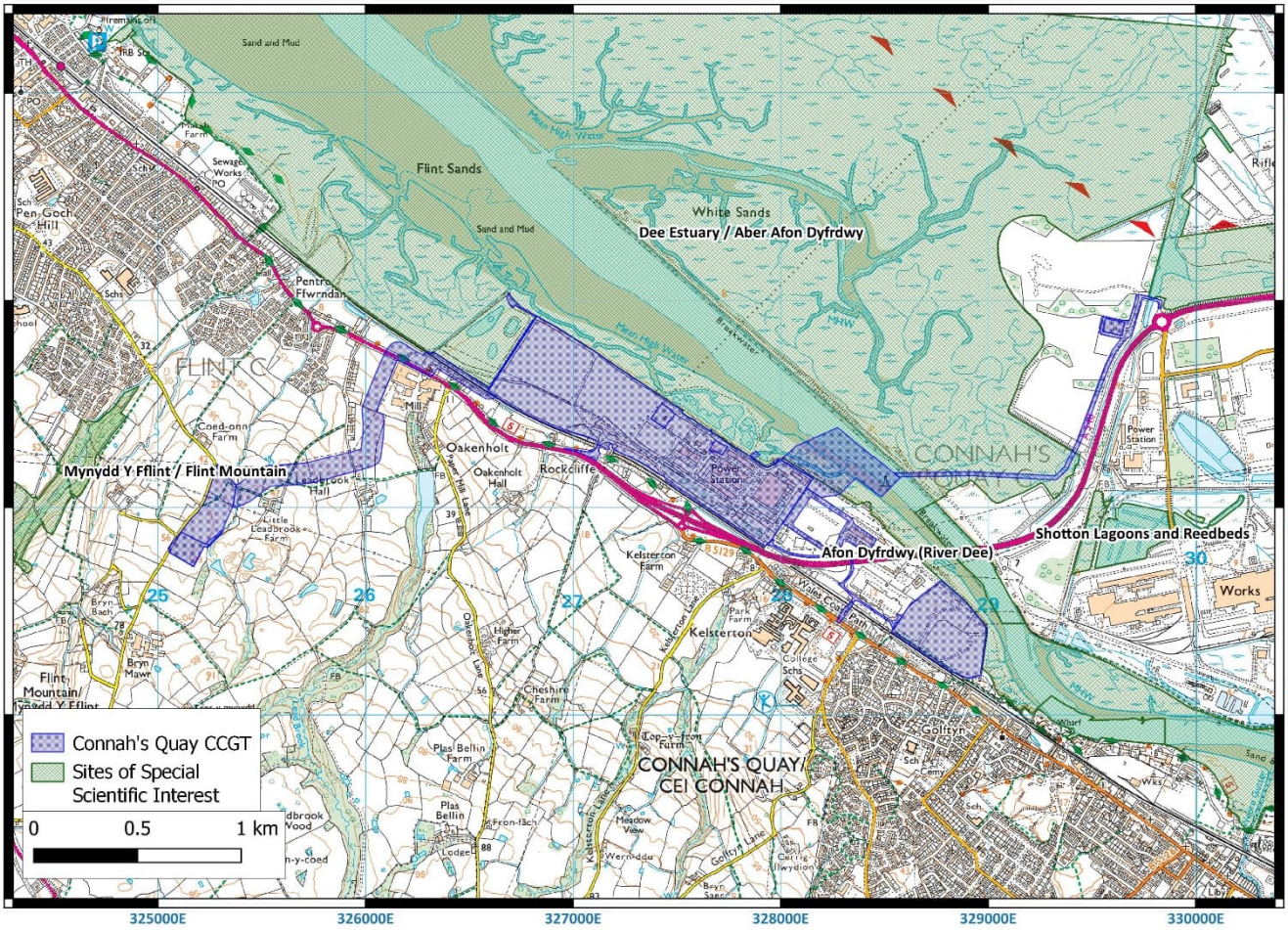
| Order | Family | Species | [17]Conservation status | Wetlands | Scrub | Coastal Habitats | Running water | Grassland/ Scrub |
|---|---|---|---|---|---|---|---|---|
| Coleoptera | Hydraenidae | *Ochthebius auriculatus* | Nationally Scarce | | | • | | |
| Coleoptera | Scarabaeidae | *Liothorax plagiatus* | Nationally Scarce | | | • | | |
| Diptera | Chloropidae | *Thaumatomyia rufa* | pNationally Scarce | | | | | • |
| Diptera | Cylindrotomidae | *Phalacrocera replicata* | Notable | • | | | | |
| Diptera | Dolichopodidae | *Dolichopus notatus* | Nationally Scarce | | | • | | |
| Diptera | Limoniidae | *Cheilotrichia imbuta* | Notable | | | | • | |
| Diptera | Muscidae | *Coenosia dubiosa* | pData Deficient | | | • | | |
| Diptera | Muscidae | *Coenosia karli* | pNationally Scarce | | | • | | |
| Diptera | Syrphidae | *Platycheirus immarginatus* | Nationally Scarce | | | • | | |
| Hemiptera | Corixidae | *Corixa affinis* | Nationally Scarce | | | • | | |
| Hymenoptera | Andrenidae | *Andrena nigriceps* | Nationally Scarce (Nb) | | | | | • |
| Hymenoptera | Andrenidae | *Andrena similis* | Nationally Scarce (Nb) | | | | | • |
| Lepidoptera | Crambidae | *Crambus pratella* | Nationally Scarce (Nb) | | | | | • |
| Lepidoptera | Crambidae | *Pediasia aridella* | Nationally Scarce (Nb) | | | • | | |
| Lepidoptera | Geometridae | *Chiasmia clathrata* | Near Threatened | | | | | • |
| Lepidoptera | Geometridae | *Ennomos erosaria* | Near Threatened | | • | | | |
| Lepidoptera | Geometridae | *Ennomos fuscantaria* | Near Threatened | | • | | | |
| Lepidoptera | Hesperiidae | *Erynnis tages* | Welsh Biodiversity List | | | | | • |
| Lepidoptera | Hesperiidae | *Pyrgus malvae* | Vulnerable | | | | | • |
| Lepidoptera | Lycaenidae | *Satyrium w-album* | Vulnerable | | • | | | |
| Lepidoptera | Noctuidae | *Cirrhia icteritia* | Near Threatened | | • | | | |
| Lepidoptera | Noctuidae | *Cosmia diffinis* | Nationally Scarce | | • | | | |
| Lepidoptera | Noctuidae | *Eugnorisma glareosa* | Near Threatened | | | | | • |
| Lepidoptera | Nymphalidae | *Boloria selene* | Vulnerable | | | | | • |
| Lepidoptera | Nymphalidae | *Coenonympha pamphilus* | Vulnerable | | | | | • |
| Lepidoptera | Nymphalidae | *Hipparchia semele* | Endangered | | | | | • |
| Lepidoptera | Nymphalidae | *Lasiommata megera* | Endangered | | | | | • |

| Order | Family | Species | [17]Conservation status | Wetlands | Scrub | Coastal Habitats | Running water | Grassland/ Scrub |
|---|---|---|---|---|---|---|---|---|
| Lepidoptera | Nymphalidae | *Speyeria aglaja* | Near Threatened | | | | | ● |
| Pulmonata | Arionidae | *Arion (Arion) ater* | Data Deficient | | | | | ● |
| Pulmonata | Ellobiidae | *Myosotella myosotis* | Data Deficient | | | ● | | |
| Trichoptera | Beraeidae | *Ernodes articularis* | Nationally Scarce | | | | ● | |
| Trichoptera | Polycentropodidae | *Plectrocnemia brevis* | Nationally Scarce | | | | ● | |

The proposed new CCGT Power Station is situated within a sensitive ecological landscape associated with the Dee Estuary, which is protected by various designations including a Ramsar wetland and Site of Special Scientific Interest (SSSI) (see Figure 2). The SSSI has been designated for its internationally important wintering waterfowl populations, its intertidal, mud and sandflats, saltmarsh and transitional habitats that support nationally scarce plant assemblages and one species of moth, the North Wales subspecies of the Sandhill Rustic (*Luperina nickerlii* ssp. *gueneei*) whose foodplants, Sand Couch (*Elymus junceiformis*), Common Saltmarsh-grass (*Puccinellia maritima*) and Red Fescue (*Festuca rubra* agg.) are associated with coastal grasslands.

Fifteen of the noteworthy invertebrate species recorded within the vicinity of the proposed CCGT are associated with the SSSI's coastal habitats that occur adjacent to the proposed CCGT. The Water Connection Corridor Zone (refer back to Figure 1) is located within the SSSI, and similar habitat forms a buffer between the intertidal mudflats and River Dee right across the Power Station's frontage, including the Indicative Enhancement Area Zone which is contemporaneous with the former Power Station 'A Site'. A further 17 species are associated with the mosaics of grassland and scrub, evidence of which is present at the western end of the Main Development Area (see further description under the Site Walkover heading).

Figure 4: Location of the proposed Connah's Quay CCGT within the ecological landscape.




## Conservation Areas Management Plan

AECOM provided a detailed *Conservation Areas Management Plan* ([18]Richard Tofts Ecology, 2015). This provides a substantial amount of ecological data which will be summarised in depth in the final report. At this stage, it would appear that detailed vegetation community surveys have been completed within the saltmarsh habitats including land adjacent to the Indicative Enhancement Area coincident with Compartment 5 of this study. Some invertebrate survey work has been undertaken though of an age (mid-1970s to early 1980s) and focussed on occasional observations or more formal transects covering butterflies and some moth-trapping. A reference to a study by the University of Liverpool undertaken in 1993 where approximately 110 species were recorded in the saltmarsh community within the current study's Compartment 5 was referred to. Most of the taxa (not listed or included in the Appendices) are described as common with just three species: a water-beetle *Helophorus fulgidicollis*, a broad-nosed weevil *Tropiphorus terricola* and a mining bee, *Andrena nigriceps* referred to as 'Notable-B' species (in current terminology, Nationally Scarce (Nb) – see Conservation Status definitions appended to this TAN).

## Site Walkover (April 2024)

A site walkover was completed on the 23rd April 2024 by an experienced applied entomologist (Richard Wilson CEnv MCIEEM Mem.RES). The purpose of the walkover was to appraise the habitats within the CCGT study area and identify focal compartments to survey, based on the likely habitats that would support important invertebrate assemblages.

[18] Richard Tofts Ecology. (2015) *Connah's Quay Power Station. Conservation Areas Management Plan*. Version: July 2015.

The site visit commenced at approximately 10:00 hrs and continued until shortly after 17:00 hrs. The site visit was supplemented by some limited recording using a light-weight butterfly net (for flying insects) and a vacuum sampler (for faunas within the field layer), primarily to sample spring faunas associated with the scrub and grassland mosaics and the coastal grasslands.

Weather conditions were reasonable for the time of year and purposes of the visit; shade temperature was approximately 12°C with an easterly chilly wind (Beaufort Scale 2) and cloud cover (4/8).

There remained some access restrictions in place of which the RCCC, PCCC and Flint AGI (see Figure 1 for footprints) were the most significant. The RCCC, PCCC and Flint AGI were partially scoped as access via the public right of way was used and this was, in combination with aerial photography, sufficient to conclude the habitats' likely value for invertebrates. The Existing Natural Gas Connection Corridor (north of the Dee) was not accessed.

## Main Development Area

The initial area walked over was located within the operational zone of the Main Development Area; a rectangular field occupying approximately 1.6 ha. Its appearance from readily available aerial photography was that of an abandoned playing field and this was confirmed by Andy Black (Uniper). The playing field was historically managed as a football pitch but in recent years, it fell out of use. The grass is now cut on a regular basis throughout the season and an occasional hay cut is taken by a local farmer. The sward is species poor and of uniform structure, offering limited foraging habitat. It is therefore scoped out for further invertebrate survey, it acting as a resource like any other amenity grassland verge that is present elsewhere within the Power Station.

Remaining within the Main Development Area but to the west of this operational area are three fields, occupying approximately 24.7 ha. The eastern of the three was being grazed by sheep in April 2024, whereas no livestock was present in the others. The fields are defined by mature intact hedgerows and post-and rail fencing, except for the

Photograph 1: Former football pitch within the operational area of the Main Development Area (April 2024).


boundary facing the Dee which is just fencing. The smaller of the three fields, which takes the form of a stretched trapezoid, supports a more structurally diverse grassland with the western and eastern ends forming more complex relationships with hedgerows and scrub. Its southern boundary is defined by the railway line.

The Main Development Area sits on made ground, which is understood to be capped with Pulverised Fuel Ash, resulting in a raised platform above the natural topography of the coastal frontage. This platform slopes down towards

Photograph 2: Sheep-grazed fields within the Main Development Area .



a coastal grassland/ saltmarsh vegetation community incised by narrow creeks, protected from erosion by a rock-constructed façade. An internal single-carriageway road defines the edge of this platform in combination with a narrow line of scrub/ trees.

To the west of the Main Development Area are a series of waterbodies and grasslands overseen by the Deeside Naturalists' Society as a Nature Reserve. Whilst these fall outside the study area, the scrub/ hedgerow and grasslands which form the boundary between the Main Development Area and the Nature Reserve very likely influences the invertebrate fauna within the study area.

## Indicative Enhancement Area & Coastal Grasslands

The Indicative Enhancement Area (IEA) is located within the footprint of the demolished coal-fired Power Station. It forms an approximate rectangular area occupying *c*. 12. 8 ha. It can be divided into three unequal sections. The eastern sector comprises a closed sward of grassland; a central triangular area within a shallow topographic depression defined by a perimeter informal track maintained by regular use by off-road bikes; and a western sector separated by a dilapidated fence line that consists of broken hardstanding. Aerial photography suggested that a substantial proportion of the IEA potentially supported a mosaic of short perennial vegetation and scattered scrub which could be defined as Open Mosaic Habitat on Previously Developed Land (OMH). The evidence observed on the ground suggests that in recent months, estimated to be at the latter end of 2023 due to the lack of regrowth observed, the scattered scrub element had been cleared with the cut material (brash) removed from site. This has left a predominantly open environment with limited cover remaining other than patchy areas of short perennial vegetation.As illustrated on Figure 1, the Water Connection Corridor Zone is located within the coastal frontage, within the SSSI habitats that lie adjacent to the existing Power Station. Following liaison with AECOM and considering similar habitat that can be straightforwardly and safely accessed, the coastal habitats comprising the approximate 30 m to 75 m wide grassland and saltmarsh communities adjacent to the IEA and east of the A548 (the overbridge viewable

in Photograph 6) was walked over as a proxy for the Water Connection Corridor. This is accessed from informal desire lines that lead off the Public Right of Way (Wales Coastal Path) from Dee View Road and through a break in the fence-line that otherwise encloses the IEA. This coastal habitat supports a grassland community with stands of Typha swamp and inundation areas with tidal leaf-litter, with an area of scattered scrub and grassland on higher ground.

Photograph 3: Indicative Enhancement Area with closed sward (top) and cleared


The vegetation clearance within much of the IEA has restricted the survey methods likely to enable an understanding of the baseline within this section of the Study Area. Just outside the IEA, is the area of higher ground referred to above and which may act as a proxy for what was present within the IEA prior to the vegetation clearance. Therefore, in combination with pitfall trapping and other active methods within the IEA, this area will be included for as a representation of the invertebrate assemblage that utilises the wider Study Area and which can then inform habitat mitigation going forward.

## CO2 Connection Corridor and Above Ground Installation (AGI)

At the western end of the of the study area are two fields, linked to the Main Development Area by a narrow strip, the Repurposed CO2 Connection Corridor (RCCC). Access to this area was restricted to the Public Right of Way that links Leadbrook Hall with Little Leadbrook Farm and the minor country road (Allt-Goch Lane). The northern field is being managed for silage and is bounded by intact hedgerows; its eastern boundary defined by the riparian woodland associated with the Lead Brook. Walking the Public Right of Way which closely follows the line of the RCCC, the track passes through this narrow broadleaved woodland either side of the Lead Brook and then continues through sheep-grazed fields as far as could be walked or observed. Subject to checking the length of the Lead Brook which forms the eastern boundary of the westernmost fields, this section of the Study Area can be scoped out for further work.

Photograph 4: Lead Brook woodland (left image) and the Lead Brook (right).

## Species Recorded

Just under 50 species were recorded during the scoping visit based on field observations and specimens collected that have been identified. This included several spring bees such as *Andrena fulva*, *Andrena nigroaenea*, *Andrena haemorrhoa*, *Andrena scotica*, *Lasioglossum fratellum* and *Nomada marshamella* which were swept from flowering Hawthorn (*Crataegus monogyna*) and Gorse (*Ulex europaeus*) scrub. A vacuum sample was taken within the coastal grasslands which recorded the small ground-beetle *Bembidion minimum* which is associated with saltmarshes, and several specimens of the Nationally Scarce money-spiders, *Silometopus ambiguus* and *Walckenaeria kochi*, plus the saltmarsh wolf-spider, *Pardosa purbeckensis*.

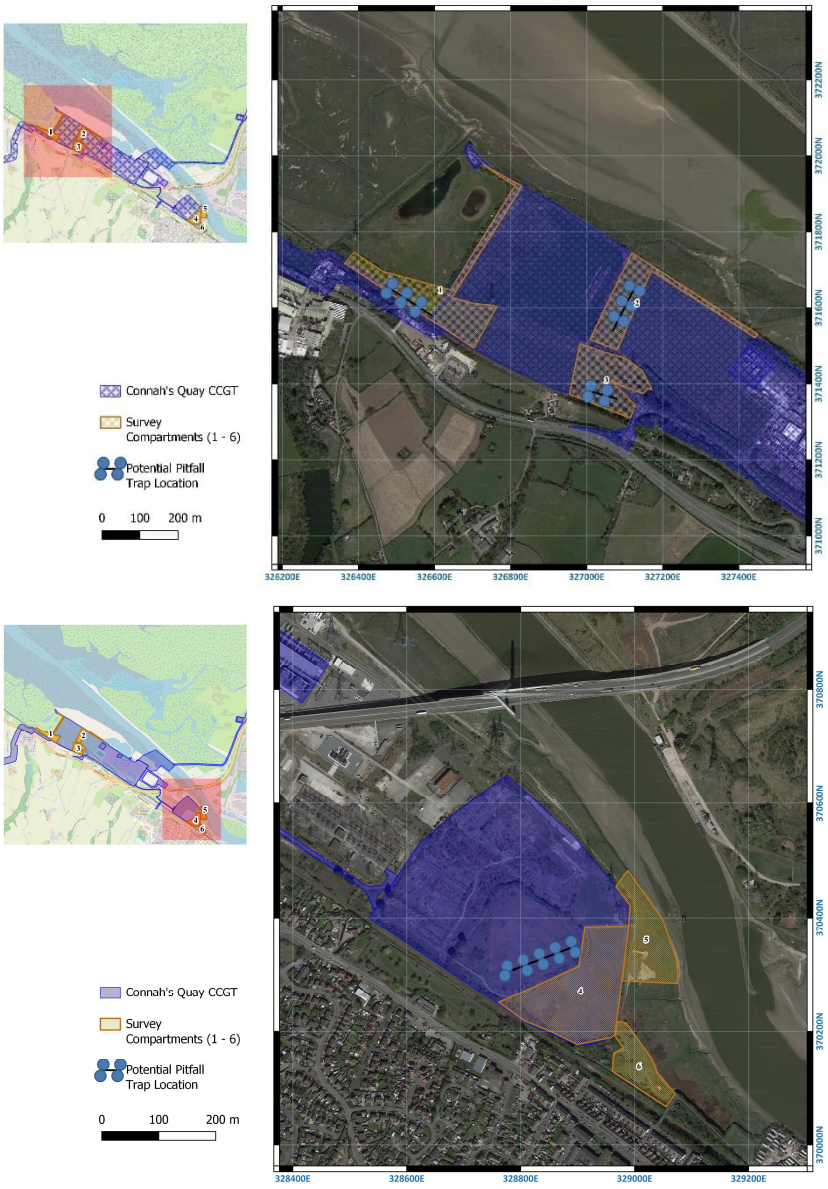
## Conclusions and Recommendations

The presence of two Nationally Scarce spiders within the limited surveys completed during the scoping survey is suggestive that there are higher value habitats within the study area. One of these, *S. ambiguus*, was highlighted as a potential taxon by COFNOD (see Table 1).

Based on this initial work, it is recommended that six distinct survey compartments are focussed on for further survey work as illustrated in Figure 3. Three of the compartments are associated with the grassland and scrub, including hedgerows, within the Main Development Area; and three are at the eastern end, within and adjacent to the IEA. Proposed pitfall trap locations are also highlighted and it is probable that of the four, one will be within the IEA (assuming the substrate permits the insertion of traps); and one from the three locations within the grasslands would be selected.

At the time of writing, it is proposed that the first main visit will be in early May 2024 with three subsequent visits separated by about four weeks to a month.

Figure 5: Location of the proposed six invertebrate survey compartments within the Connah's Quay CCGT Application.



# Appendix C: Species Lists

Table 11: Species list for the Connah's Quay CCGT Order Limits in 2024.

| Class | Order | Family | Species | Vernacular Name | Conservation Status | SQS | Cpt 1 (Grassland & Hedgerow) | Cpt 2 (Sheep-grazed field) | Cpt 3 (Grass/ Scrub) | Cpt 4 (OMH) | Cpt 5 (Saltmarsh) | Cpt 6 (Old Quarry) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arachnida | Araneae | Theridiidae | *Anelosimus vittatus* | | | 1 | ● | | ● | | | ● |
| Arachnida | Araneae | Theridiidae | *Phylloneta sisyphia* | | | 1 | | | ● | | | ● |
| Arachnida | Araneae | Theridiidae | *Phylloneta impressa* | | | 1 | | | | | ● | |
| Arachnida | Araneae | Theridiidae | *Theridion varians* | | | 1 | ● | | | | | |
| Arachnida | Araneae | Theridiidae | *Neottiura bimaculata* | | | 1 | | | | | | ● |
| Arachnida | Araneae | Theridiidae | *Enoplognatha ovata sens. str.* | | | 1 | | | ● | | ● | |
| Arachnida | Araneae | Theridiidae | *Enoplognatha latimana* | | | 1 | | | | ● | | |
| Arachnida | Araneae | Theridiidae | *Enoplognatha thoracica* | | | 1 | | ● | | | | |
| Arachnida | Araneae | Linyphiidae | *Walckenaeria kochi* | | Nationally Scarce | 4 | | | | | ● | |
| Arachnida | Araneae | Linyphiidae | *Dicymbium nigrum* | | | 1 | | ● | ● | | | |
| Arachnida | Araneae | Linyphiidae | *Entelecara acuminata* | | | 1 | ● | | | | | |
| Arachnida | Araneae | Linyphiidae | *Hylyphantes graminicola* | | | 1 | ● | | | | | |
| Arachnida | Araneae | Linyphiidae | *Dismodicus bifrons* | | | 1 | | | | | | ● |
| Arachnida | Araneae | Linyphiidae | *Pocadicnemis pumila sens. str.* | | | 1 | | ● | | | | |
| Arachnida | Araneae | Linyphiidae | *Pocadicnemis juncea* | | | 1 | | | | | | ● |
| Arachnida | Araneae | Linyphiidae | *Oedothorax fuscus* | | | 1 | | ● | ● | ● | ● | |
| Arachnida | Araneae | Linyphiidae | *Oedothorax retusus* | | | 1 | | | ● | | | |
| Arachnida | Araneae | Linyphiidae | *Silometopus ambiguus* | | Nationally Scarce | 4 | | | | | ● | |
| Arachnida | Araneae | Linyphiidae | *Cnephalocotes obscurus* | | | 1 | | | | ● | | ● |
| Arachnida | Araneae | Linyphiidae | *Tiso vagans* | | | 1 | ● | ● | | | | |
| Arachnida | Araneae | Linyphiidae | *Savignia frontata* | | | 1 | | | ● | | | |
| Arachnida | Araneae | Linyphiidae | *Typhochrestus digitatus* | | Nationally Scarce | 4 | | | | ● | | |
| Arachnida | Araneae | Linyphiidae | *Erigone dentipalpis* | | | 1 | | ● | ● | ● | ● | |
| Arachnida | Araneae | Linyphiidae | *Erigone atra* | | | 1 | | | ● | | ● | |
| Arachnida | Araneae | Linyphiidae | *Prinerigone vagans* | | | 1 | | | | | ● | |
| Arachnida | Araneae | Linyphiidae | *Mermessus trilobatus* | | | | | ● | | | | |
| Arachnida | Araneae | Linyphiidae | *Agyneta rurestris* | | | 1 | ● | ● | | | | |
| Arachnida | Araneae | Linyphiidae | *Agyneta saxatilis sens. str.* | | | 1 | | | | | | ● |
| Arachnida | Araneae | Linyphiidae | *Bathyphantes gracilis* | | | 1 | ● | | ● | ● | ● | ● |
| Arachnida | Araneae | Linyphiidae | *Obscuriphantes obscurus* | | | 1 | ● | | | | | |
| Arachnida | Araneae | Linyphiidae | *Tenuiphantes tenuis* | | | 1 | ● | ● | ● | ● | ● | ● |
| Arachnida | Araneae | Linyphiidae | *Palliduphantes ericaeus* | | | 1 | | | | ● | | ● |
| Arachnida | Araneae | Linyphiidae | *Neriene clathrata* | | | 1 | | | | | ● | |
| Arachnida | Araneae | Linyphiidae | *Microlinyphia pusilla* | | | 1 | ● | | | | ● | |
| Arachnida | Araneae | Tetragnathidae | *Tetragnatha extensa* | | | 1 | ● | ● | ● | | ● | |
| Arachnida | Araneae | Tetragnathidae | *Tetragnatha montana* | | | 1 | ● | | ● | | | |

| Class | Order | Family | Species | Vernacular Name | Conservation Status | SQS | Cpt 1 (Grassland & Hedgerow) | Cpt 2 (Sheep-grazed field) | Cpt 3 (Grass/ Scrub) | Cpt 4 (OMH) | Cpt 5 (Saltmarsh) | Cpt 6 (Old Quarry) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arachnida | Araneae | Tetragnathidae | *Pachygnatha clercki* | | | 1 | | | | | ● | |
| Arachnida | Araneae | Tetragnathidae | *Pachygnatha degeeri* | | | 1 | ● | ● | | ● | ● | ● |
| Arachnida | Araneae | Tetragnathidae | *Metellina mengei* | | | 1 | | | | | | ● |
| Arachnida | Araneae | Araneidae | *Araneus diadematus* | Garden Spider | | 1 | | | | ● | ● | |
| Arachnida | Araneae | Araneidae | *Araneus quadratus* | | | 1 | | | | | ● | |
| Arachnida | Araneae | Araneidae | *Larinioides cornutus* | | | 1 | ● | | | | | |
| Arachnida | Araneae | Araneidae | *Araniella opisthographa* | | | 1 | ● | | | | | |
| Arachnida | Araneae | Araneidae | *Mangora acalypha* | | | 1 | | | | | | ● |
| Arachnida | Araneae | Lycosidae | *Pardosa agricola* | | | 1 | | | | ● | | |
| Arachnida | Araneae | Lycosidae | *Pardosa agrestis* | | Nationally Scarce | 4 | | | | | ● | |
| Arachnida | Araneae | Lycosidae | *Pardosa purbeckensis* | | | 1 | | ● | | | ● | |
| Arachnida | Araneae | Lycosidae | *Pardosa palustris* | | | 1 | | ● | ● | ● | | |
| Arachnida | Araneae | Lycosidae | *Pardosa pullata* | | | 1 | ● | ● | | ● | | ● |
| Arachnida | Araneae | Lycosidae | *Pardosa prativaga* | | | 1 | | | | | ● | |
| Arachnida | Araneae | Lycosidae | *Xerolycosa miniata* | | Nationally Scarce | 4 | | | | ● | | |
| Arachnida | Araneae | Lycosidae | *Alopecosa pulverulenta* | | | 1 | | ● | | ● | | ● |
| Arachnida | Araneae | Lycosidae | *Trochosa ruricola* | | | 1 | | ● | | ● | | |
| Arachnida | Araneae | Lycosidae | *Arctosa perita* | | | 1 | | | | ● | | |
| Arachnida | Araneae | Pisauridae | *Pisaura mirabilis* | | | 1 | ● | | | ● | ● | ● |
| Arachnida | Araneae | Agelenidae | *Agelena labyrinthica* | | | 1 | | | | ● | | ● |
| Arachnida | Araneae | Hahniidae | *Hahnia nava* | | | 1 | | | | ● | | |
| Arachnida | Araneae | Dictynidae | *Dictyna arundinacea* | | | 1 | ● | | | ● | | |
| Arachnida | Araneae | Dictynidae | *Dictyna uncinata* | | | 1 | ● | | | ● | | |
| Arachnida | Araneae | Dictynidae | *Nigma puella* | | Nationally Scarce | 4 | ● | | | | | |
| Arachnida | Araneae | Clubionidae | *Clubiona reclusa* | | | 1 | ● | | | | | |
| Arachnida | Araneae | Clubionidae | *Clubiona stagnatilis* | | | 1 | | | | | ● | |
| Arachnida | Araneae | Clubionidae | *Clubiona terrestris* | | | 1 | ● | | | | | |
| Arachnida | Araneae | Clubionidae | *Clubiona comta* | | | 1 | ● | | | | | |
| Arachnida | Araneae | Clubionidae | *Clubiona brevipes* | | | 1 | | | ● | | | |
| Arachnida | Araneae | Cheiracanthiidae | *Cheiracanthium virescens* | | Nationally Scarce | 4 | | | | ● | | |
| Arachnida | Araneae | Gnaphosidae | *Drassodes lapidosus* | | | 1 | | | | ● | | |
| Arachnida | Araneae | Gnaphosidae | *Haplodrassus signifer* | | | 1 | | | | ● | | |
| Arachnida | Araneae | Gnaphosidae | *Zelotes latreillei* | | | 1 | | | | ● | | |
| Arachnida | Araneae | Gnaphosidae | *Drassyllus pusillus* | | | 1 | | | | ● | | |
| Arachnida | Araneae | Philodromidae | *Philodromus aureolus* | | | 1 | ● | | ● | | | |
| Arachnida | Araneae | Philodromidae | *Philodromus cespitum* | | | 1 | | ● | | ● | | |
| Arachnida | Araneae | Thomisidae | *Xysticus cristatus* | | | 1 | ● | ● | | ● | ● | ● |

| Class | Order | Family | Species | Vernacular Name | Conservation Status | SQS | Cpt 1 (Grassland & Hedgerow) | Cpt 2 (Sheep-grazed field) | Cpt 3 (Grass/ Scrub) | Cpt 4 (OMH) | Cpt 5 (Saltmarsh) | Cpt 6 (Old Quarry) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arachnida | Araneae | Thomisidae | *Ozyptila sanctuaria* | | | 1 | | | | ● | | |
| Arachnida | Araneae | Salticidae | *Heliophanus flavipes* | | | 1 | | | | ● | ● | |
| Arachnida | Araneae | Salticidae | *Euophrys frontalis* | | | 1 | ● | | | | | |
| Arachnida | Araneae | Salticidae | *Talavera aequipes* | | | 1 | | | | | ● | |
| Gastropoda | Pulmonata | Helicidae | *Cepaea nemoralis* | Brown-lipped Snail | | 1 | | | | ● | | |
| Gastropoda | Pulmonata | Helicidae | *Cornu aspersum* | Garden Snail | | 1 | | | | ● | | |
| Insecta | Coleoptera | Carabidae | *Nebria brevicollis* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Carabidae | *Nebria salina* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Carabidae | *Notiophilus substriatus* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Carabidae | *Bembidion aeneum* | | | 1 | | | | | ● | |
| Insecta | Coleoptera | Carabidae | *Bembidion minimum* | | | 1 | | | | | ● | |
| Insecta | Coleoptera | Carabidae | *Bembidion properans* | | | 1 | | | ● | ● | | |
| Insecta | Coleoptera | Carabidae | *Bembidion varium* | | | 1 | | | | | ● | |
| Insecta | Coleoptera | Carabidae | *Pogonus chalceus* | | | 1 | | | | | ● | |
| Insecta | Coleoptera | Carabidae | *Poecilus cupreus* | | | 1 | | ● | | | | |
| Insecta | Coleoptera | Carabidae | *Poecilus versicolor* | | | 1 | | ● | | ● | | |
| Insecta | Coleoptera | Carabidae | *Pterostichus madidus* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Carabidae | *Pterostichus niger* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Carabidae | *Pterostichus strenuus* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Carabidae | *Pterostichus vernalis* | | | 1 | | ● | ● | | | |
| Insecta | Coleoptera | Carabidae | *Amara aenea* | | | 1 | | | ● | ● | | |
| Insecta | Coleoptera | Carabidae | *Amara communis* | | | 1 | | ● | | | | |
| Insecta | Coleoptera | Carabidae | *Amara familiaris* | | | 1 | ● | ● | | ● | | |
| Insecta | Coleoptera | Carabidae | *Amara lunicollis* | | | 1 | | ● | | | | |
| Insecta | Coleoptera | Carabidae | *Amara plebeja* | | | 1 | ● | | | | | |
| Insecta | Coleoptera | Carabidae | *Amara tibialis* | | | 1 | ● | | | ● | | |
| Insecta | Coleoptera | Carabidae | *Badister bullatus sens. lat.* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Carabidae | *Dicheirotrichus gustavii* | | | 1 | | | | | ● | |
| Insecta | Coleoptera | Carabidae | *Harpalus affinis* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Carabidae | *Harpalus rubripes* | | | 1 | | ● | | ● | | |
| Insecta | Coleoptera | Carabidae | *Harpalus rufipes* | | | 1 | | ● | | ● | | |
| Insecta | Coleoptera | Carabidae | *Calathus cinctus* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Carabidae | *Calathus fuscipes* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Carabidae | *Olisthopus rotundatus* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Carabidae | *Paradromius linearis* | | | 1 | | | | | | ● |
| Insecta | Coleoptera | Carabidae | *Syntomus foveatus* | | | 1 | ● | ● | | ● | ● | ● |
| Insecta | Coleoptera | Carabidae | *Syntomus truncatellus* | | Nationally Scarce | 4 | ● | ● | | ● | | |

| Class | Order | Family | Species | Vernacular Name | Conservation Status | SQS | Cpt 1 (Grassland & Hedgerow) | Cpt 2 (Sheep-grazed field) | Cpt 3 (Grass/ Scrub) | Cpt 4 (OMH) | Cpt 5 (Saltmarsh) | Cpt 6 (Old Quarry) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Insecta | Coleoptera | Helophoridae | *Helophorus brevipalpis* | | | 1 | | ● | | | | |
| Insecta | Coleoptera | Helophoridae | *Helophorus grandis* | | | 1 | | ● | | | | |
| Insecta | Coleoptera | Hydrophilidae | *Megasternum concinnum* | | | | ● | ● | ● | | | |
| Insecta | Coleoptera | Histeridae | *Saprinus aeneus* | | Nationally Scarce | 1 | | | | ● | | |
| Insecta | Coleoptera | Histeridae | *Kissister minimus* | | | 1 | | ● | ● | | | |
| Insecta | Coleoptera | Histeridae | *Margarinotus purpurascens* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Histeridae | *Margarinotus ventralis* | | | 1 | | ● | | | | |
| Insecta | Coleoptera | Leiodidae | *Agathidium marginatum* | | Notable | 4 | | ● | | | | |
| Insecta | Coleoptera | Leiodidae | *Leiodes ferruginea* | | | | | ● | | | | |
| Insecta | Coleoptera | Leiodidae | *Leiodes rufipennis* | | | | | ● | | ● | | |
| Insecta | Coleoptera | Leiodidae | *Choleva oblonga* | | | | | ● | | | | |
| Insecta | Coleoptera | Silphidae | *Thanatophilus sinuatus* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Silphidae | *Aclypea opaca* | | [Nationally Scarce (Na)] | 4 | | | | | ● | |
| Insecta | Coleoptera | Staphylinidae | *Philorinum sordidum* | | | 1 | ● | | | | | |
| Insecta | Coleoptera | Staphylinidae | *Sepedophilus nigripennis* | | | 1 | | ● | | ● | | ● |
| Insecta | Coleoptera | Staphylinidae | *Tachinus corticinus* | | | 1 | | ● | | | | |
| Insecta | Coleoptera | Staphylinidae | *Tachyporus dispar* | | | 1 | ● | ● | ● | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Tachyporus hypnorum* | | | 1 | ● | ● | ● | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Tachyporus nitidulus* | | | 1 | ● | | | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Tachyporus pusillus* | | | 1 | | ● | | | | |
| Insecta | Coleoptera | Staphylinidae | *Tachyporus tersus* | | | 1 | | ● | | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Mycetoporus longulus* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Aleochara brevipennis* | | Notable | 4 | | ● | | | | |
| Insecta | Coleoptera | Staphylinidae | *Tinotus morion* | | | 1 | | | ● | | | |
| Insecta | Coleoptera | Staphylinidae | *Oxypoda lurida* | | Notable | 4 | | | | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Cypha longicornis* | | | 1 | ● | ● | | ● | | ● |
| Insecta | Coleoptera | Staphylinidae | *Amischa analis* | | | 1 | ● | ● | ● | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Brundinia marina* | | | 1 | | | | | ● | |
| Insecta | Coleoptera | Staphylinidae | *Mocyta amplicollis* | | | 1 | | | | | | ● |
| Insecta | Coleoptera | Staphylinidae | *Mocyta fungi* | | | 1 | ● | | | | | |
| Insecta | Coleoptera | Staphylinidae | *Mocyta fungi agg.* | | | | | ● | ● | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Acrotona exigua* | | | 1 | ● | | | | | |
| Insecta | Coleoptera | Staphylinidae | *Drusilla canaliculata* | | | 1 | | ● | | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Pella limbata* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Stenus aceris* | | | 1 | ● | | | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Stenus brunnipes* | | | 1 | ● | ● | ● | | | |
| Insecta | Coleoptera | Staphylinidae | *Stenus clavicornis* | | | 1 | | ● | ● | ● | | |

| Class | Order | Family | Species | Vernacular Name | Conservation Status | SQS | Cpt 1 (Grassland & Hedgerow) | Cpt 2 (Sheep-grazed field) | Cpt 3 (Grass/ Scrub) | Cpt 4 (OMH) | Cpt 5 (Saltmarsh) | Cpt 6 (Old Quarry) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Insecta | Coleoptera | Staphylinidae | *Stenus fulvicornis* | | | 1 | | | ● | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Stenus nanus* | | | 1 | | ● | | | | |
| Insecta | Coleoptera | Staphylinidae | *Stenus ossium* | | | 1 | ● | | | ● | | ● |
| Insecta | Coleoptera | Staphylinidae | *Stenus similis* | | | 1 | ● | | | | | |
| Insecta | Coleoptera | Staphylinidae | *Rugilus erichsonii* | | | 1 | | ● | | | | |
| Insecta | Coleoptera | Staphylinidae | *Othius laeviusculus* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Xantholinus elegans* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Xantholinus longiventris* | | | 1 | | ● | | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Quedius boops* | | | 1 | | ● | | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Quedius levicollis* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Quedius persimilis* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Quedius semiaeneus* | | | 1 | | ● | | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Tasgius ater* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Tasgius globulifer* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Staphylinidae | *Philonthus carbonarius* | | | 1 | | ● | | | | |
| Insecta | Coleoptera | Staphylinidae | *Philonthus cognatus* | | | 1 | | ● | | | | |
| Insecta | Coleoptera | Scarabaeidae | *Melinopterus prodromus* | | | 1 | | ● | | | | |
| Insecta | Coleoptera | Scarabaeidae | *Hoplia philanthus* | Welsh Chafer | | 1 | | ● | | | | |
| Insecta | Coleoptera | Byrrhidae | *Byrrhus fasciatus* | Banded Pill Beetle | | 1 | | | | ● | | |
| Insecta | Coleoptera | Byrrhidae | *Byrrhus pilula* | Pill Beetle | | 1 | | ● | | ● | | |
| Insecta | Coleoptera | Throscidae | *Trixagus dermestoides* | | | 1 | | | ● | | | |
| Insecta | Coleoptera | Elateridae | *Agrypnus murinus* | | | 1 | | | | ● | | ● |
| Insecta | Coleoptera | Elateridae | *Agriotes lineatus* | | | 1 | | ● | | | | |
| Insecta | Coleoptera | Elateridae | *Agriotes obscurus* | | | 1 | ● | ● | | ● | | |
| Insecta | Coleoptera | Elateridae | *Agriotes sputator* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Elateridae | *Athous haemorrhoidalis* | | | 1 | ● | | | ● | | ● |
| Insecta | Coleoptera | Elateridae | *Limonius poneli* | | | 1 | ● | | | ● | | |
| Insecta | Coleoptera | Cantharidae | *Cantharis cryptica* | | | 1 | ● | | ● | | | |
| Insecta | Coleoptera | Cantharidae | *Cantharis flavilabris* | | | 1 | | | ● | | ● | |
| Insecta | Coleoptera | Cantharidae | *Cantharis nigricans* | | | 1 | ● | | | | | |
| Insecta | Coleoptera | Cantharidae | *Cantharis rustica* | | | 1 | ● | ● | | | | |
| Insecta | Coleoptera | Cantharidae | *Rhagonycha fulva* | | | 1 | | ● | | | | |
| Insecta | Coleoptera | Dermestidae | *Anthrenus verbasci* | | | 1 | | | | | | ● |
| Insecta | Coleoptera | Melyridae | *Cordylepherus viridis* | | | 1 | | | | | | ● |
| Insecta | Coleoptera | Byturidae | *Byturus tomentosus* | Raspberry Beetle | | 1 | | | | | | ● |
| Insecta | Coleoptera | Cryptophagidae | *Micrambe ulicis* | | | | ● | | | | | |
| Insecta | Coleoptera | Cryptophagidae | *Atomaria apicalis* | | | | ● | | | | | |

| Class | Order | Family | Species | Vernacular Name | Conservation Status | SQS | Cpt 1 (Grassland & Hedgerow) | Cpt 2 (Sheep-grazed field) | Cpt 3 (Grass/ Scrub) | Cpt 4 (OMH) | Cpt 5 (Saltmarsh) | Cpt 6 (Old Quarry) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Insecta | Coleoptera | Cryptophagidae | *Atomaria atricapilla* | | | | | | ● | | | |
| Insecta | Coleoptera | Phalacridae | *Olibrus aeneus* | | | | | | | | | ● |
| Insecta | Coleoptera | Phalacridae | *Olibrus liquidus* | | | | ● | ● | ● | ● | | |
| Insecta | Coleoptera | Phalacridae | *Stilbus testaceus* | | | | | | | | | ● |
| Insecta | Coleoptera | Kateretidae | *Brachypterus glaber* | | | 1 | ● | ● | | ● | | |
| Insecta | Coleoptera | Kateretidae | *Brachypterus urticae* | Nettle Pollen Beetle | | 1 | ● | ● | | | | |
| Insecta | Coleoptera | Nitidulidae | *Epuraea aestiva* | | | 1 | ● | ● | | | | ● |
| Insecta | Coleoptera | Nitidulidae | *Meligethes aeneus* | Common Pollen Beetle | | | | ● | ● | ● | | ● |
| Insecta | Coleoptera | Nitidulidae | *Meligethes carinulatus* | | | | | | | ● | ● | |
| Insecta | Coleoptera | Nitidulidae | *Meligethes morosus* | | | | ● | | | | | |
| Insecta | Coleoptera | Coccinellidae | *Coccidula rufa* | | | 1 | | | | | ● | |
| Insecta | Coleoptera | Coccinellidae | *Rhyzobius chrysomeloides* | | | | ● | | | | | |
| Insecta | Coleoptera | Coccinellidae | *Rhyzobius litura* | | | 1 | ● | ● | | ● | | ● |
| Insecta | Coleoptera | Coccinellidae | *Scymnus frontalis* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Coccinellidae | *Adalia bipunctata* | 2-spot Ladybird | | 1 | ● | | ● | ● | ● | ● |
| Insecta | Coleoptera | Coccinellidae | *Coccinella septempunctata* | 7-spot Ladybird | | 1 | ● | | | ● | | |
| Insecta | Coleoptera | Coccinellidae | *Halyzia sedecimguttata* | Orange Ladybird | | 1 | | | | | | ● |
| Insecta | Coleoptera | Coccinellidae | *Harmonia axyridis* | Harlequin Ladybird | | | | ● | | | | |
| Insecta | Coleoptera | Coccinellidae | *Propylea quattuordecimpunctata* | 14-spot Ladybird | | 1 | ● | | | | | |
| Insecta | Coleoptera | Coccinellidae | *Psyllobora vigintiduopunctata* | 22-spot Ladybird | | 1 | ● | ● | | | | ● |
| Insecta | Coleoptera | Coccinellidae | *Tytthaspis sedecimpunctata* | 16-spot Ladybird | | 1 | | ● | ● | ● | ● | |
| Insecta | Coleoptera | Coccinellidae | *Subcoccinella vigintiquattuorpunctata* | 24-spot Ladybird | | 1 | ● | | | ● | | ● |
| Insecta | Coleoptera | Latridiidae | *Enicmus transversus* | | | | ● | | | | | |
| Insecta | Coleoptera | Latridiidae | *Corticarina minuta* | | | | | ● | | | | ● |
| Insecta | Coleoptera | Latridiidae | *Cortinicara gibbosa* | | | | ● | | | | | |
| Insecta | Coleoptera | Tenebrionidae | *Isomira murina* | | | 1 | ● | | | ● | | |
| Insecta | Coleoptera | Oedemeridae | *Oedemera lurida* | | | 1 | | | ● | ● | | ● |
| Insecta | Coleoptera | Oedemeridae | *Oedemera nobilis* | Swollen-thighed Beetle | | 1 | | ● | ● | ● | | ● |
| Insecta | Coleoptera | Scraptiidae | *Anaspis frontalis* | | | 1 | | | | | | ● |
| Insecta | Coleoptera | Scraptiidae | *Anaspis maculata* | | | 1 | ● | | ● | | | ● |
| Insecta | Coleoptera | Cerambycidae | *Tetrops praeustus* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Chrysomelidae | *Bruchus loti* | | | 1 | ● | | | | | |
| Insecta | Coleoptera | Chrysomelidae | *Cryptocephalus fulvus* | a pot beetle | | 1 | | | | ● | ● | |
| Insecta | Coleoptera | Chrysomelidae | *Cryptocephalus moraei* | a pot beetle | | 1 | | | | ● | | |
| Insecta | Coleoptera | Chrysomelidae | *Cassida rubiginosa* | Thistle Tortoise Beetle | | 1 | | | ● | | | |
| Insecta | Coleoptera | Chrysomelidae | *Cassida vibex* | | | 1 | | | | | | ● |
| Insecta | Coleoptera | Chrysomelidae | *Cassida vittata* | | | 1 | | | | | ● | |

| Class | Order | Family | Species | Vernacular Name | Conservation Status | SQS | Cpt 1 (Grassland & Hedgerow) | Cpt 2 (Sheep-grazed field) | Cpt 3 (Grass/ Scrub) | Cpt 4 (OMH) | Cpt 5 (Saltmarsh) | Cpt 6 (Old Quarry) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Insecta | Coleoptera | Chrysomelidae | *Chrysolina hyperici* | | | 1 | | | | ● | ● | |
| Insecta | Coleoptera | Chrysomelidae | *Phaedon tumidulus* | Celery Leaf Beetle | | 1 | | | ● | | | |
| Insecta | Coleoptera | Chrysomelidae | *Phratora laticollis* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Chrysomelidae | *Agelastica alni* | | Data Deficient; Nationally Rare | 8 | | | | ● | | |
| Insecta | Coleoptera | Chrysomelidae | *Lochmaea crataegi* | Hawthorn Leaf Beetle | | 1 | ● | | | | | ● |
| Insecta | Coleoptera | Chrysomelidae | *Altica carinthiaca* | | | 1 | | | | | | ● |
| Insecta | Coleoptera | Chrysomelidae | *Chaetocnema hortensis* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Chrysomelidae | *Longitarsus jacobaeae* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Chrysomelidae | *Longitarsus lycopi* | | Nationally Scarce | 4 | | | | | ● | |
| Insecta | Coleoptera | Chrysomelidae | *Longitarsus pratensis* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Chrysomelidae | *Longitarsus suturellus* | | | 1 | | ● | | | | |
| Insecta | Coleoptera | Chrysomelidae | *Neocrepidodera ferruginea* | | | 1 | ● | ● | | | | ● |
| Insecta | Coleoptera | Chrysomelidae | *Sphaeroderma testaceum* | | | 1 | | | ● | | | |
| Insecta | Coleoptera | Rhynchitidae | *Tatianaerhynchites aequatus* | Apple Fruit Rhynchites | | 1 | ● | | | | | ● |
| Insecta | Coleoptera | Apionidae | *Catapion pubescens* | | [Nationally Scarce (Nb)] | 4 | ● | | | | | |
| Insecta | Coleoptera | Apionidae | *Ceratapion gibbirostre* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Apionidae | *Ceratapion onopordi* | | | 1 | ● | | ● | | | ● |
| Insecta | Coleoptera | Apionidae | *Eutrichapion ervi* | | | 1 | | | | | | ● |
| Insecta | Coleoptera | Apionidae | *Exapion ulicis* | Gorse Weevil | | 1 | ● | | | | | |
| Insecta | Coleoptera | Apionidae | *Holotrichapion pisi* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Apionidae | *Ischnopterapion loti* | | | 1 | | | | ● | ● | ● |
| Insecta | Coleoptera | Apionidae | *Ischnopterapion virens* | | | 1 | | ● | ● | | | |
| Insecta | Coleoptera | Apionidae | *Oxystoma craccae* | | | 1 | | | ● | ● | | ● |
| Insecta | Coleoptera | Apionidae | *Oxystoma pomonae* | | | 1 | ● | ● | ● | ● | | ● |
| Insecta | Coleoptera | Apionidae | *Perapion curtirostre* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Apionidae | *Perapion violaceum* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Apionidae | *Protapion apricans* | | | 1 | | | ● | | | |
| Insecta | Coleoptera | Apionidae | *Protapion assimile* | | | 1 | | ● | ● | | | |
| Insecta | Coleoptera | Apionidae | *Protapion fulvipes* | White Clover Seed Weevil | | 1 | ● | ● | | ● | | |
| Insecta | Coleoptera | Apionidae | *Protapion nigritarse* | | | 1 | ● | ● | ● | ● | | |
| Insecta | Coleoptera | Apionidae | *Protapion trifolii* | | | 1 | | | ● | | | ● |
| Insecta | Coleoptera | Curculionidae | *Anthonomus rubi* | Strawberry Blossom Weevil | | 1 | ● | | | | | ● |
| Insecta | Coleoptera | Curculionidae | *Mecinus pascuorum* | | | 1 | ● | | | ● | | ● |
| Insecta | Coleoptera | Curculionidae | *Mecinus pyraster* | | | 1 | ● | ● | | ● | | |
| Insecta | Coleoptera | Curculionidae | *Tychius picirostris* | | | 1 | ● | | | | | |
| Insecta | Coleoptera | Curculionidae | *Tychius squamulatus* | | Nationally Scarce (Nb) | 4 | | | | ● | | |
| Insecta | Coleoptera | Curculionidae | *Ceutorhynchus atomus* | | [Nationally Scarce (Na)] | 4 | ● | | | | | |

| Class | Order | Family | Species | Vernacular Name | Conservation Status | SQS | Cpt 1 (Grassland & Hedgerow) | Cpt 2 (Sheep-grazed field) | Cpt 3 (Grass/ Scrub) | Cpt 4 (OMH) | Cpt 5 (Saltmarsh) | Cpt 6 (Old Quarry) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Insecta | Coleoptera | Curculionidae | *Glocianus distinctus* | | | 1 | | ● | | | | ● |
| Insecta | Coleoptera | Curculionidae | *Nedyus quadrimaculatus* | Small Nettle Weevil | | 1 | ● | | ● | | | |
| Insecta | Coleoptera | Curculionidae | *Parethelcus pollinarius* | | | 1 | | ● | ● | | | |
| Insecta | Coleoptera | Curculionidae | *Trichosirocalus troglodytes* | | | 1 | | ● | | ● | | ● |
| Insecta | Coleoptera | Curculionidae | *Andrion regensteinense* | | | 1 | ● | | | | | |
| Insecta | Coleoptera | Curculionidae | *Cathormiocerus aristatus* | | Nationally Scarce (Nb) | 4 | | ● | | | | |
| Insecta | Coleoptera | Curculionidae | *Exomias pellucidus* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Curculionidae | *Otiorhynchus ligneus* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Curculionidae | *Otiorhynchus singularis* | Raspberry Weevil | | 1 | | ● | | | | |
| Insecta | Coleoptera | Curculionidae | *Philopedon plagiatum* | Marram Weevil | | 1 | | | | ● | | |
| Insecta | Coleoptera | Curculionidae | *Phyllobius maculicornis* | Green Leaf Weevil | | 1 | ● | | | ● | | |
| Insecta | Coleoptera | Curculionidae | *Phyllobius pomaceus* | | | 1 | ● | | | | | |
| Insecta | Coleoptera | Curculionidae | *Phyllobius pyri* | Common Leaf Weevil | | 1 | | | | ● | | ● |
| Insecta | Coleoptera | Curculionidae | *Phyllobius roboretanus* | Small Green Nettle Weevil | | 1 | ● | | | | | |
| Insecta | Coleoptera | Curculionidae | *Phyllobius virideaeris* | Green Nettle Weevil | | 1 | ● | | | ● | | |
| Insecta | Coleoptera | Curculionidae | *Polydrusus formosus* | | [Nationally Scarce (Na)] | 4 | ● | | ● | | | |
| Insecta | Coleoptera | Curculionidae | *Polydrusus pulchellus* | Sea-wormwood Weevil | Nationally Scarce (Nb) | 4 | | | | | ● | |
| Insecta | Coleoptera | Curculionidae | *Romualdius angustisetulus* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Curculionidae | *Romualdius scaber* | | | 4 | | | | ● | | |
| Insecta | Coleoptera | Curculionidae | *Sitona hispidulus* | | | 1 | | ● | | ● | | |
| Insecta | Coleoptera | Curculionidae | *Sitona lineatus* | | | 1 | | | ● | ● | | ● |
| Insecta | Coleoptera | Curculionidae | *Sitona obsoletus* | | | 1 | | ● | | ● | | |
| Insecta | Coleoptera | Curculionidae | *Sitona suturalis* | | | 1 | ● | | | | | ● |
| Insecta | Coleoptera | Curculionidae | *Sitona waterhousei* | | Nationally Scarce (Nb) | 4 | | | | ● | | |
| Insecta | Coleoptera | Curculionidae | *Tanymecus palliatus* | | Nationally Scarce (Nb) | 4 | | | | | ● | |
| Insecta | Coleoptera | Curculionidae | *Hypera nigrirostris* | | | 1 | | ● | ● | | | |
| Insecta | Coleoptera | Curculionidae | *Hypera plantaginis* | | | 1 | | | | ● | | |
| Insecta | Coleoptera | Curculionidae | *Hypera postica* | Clover Leaf Weevil | | 1 | | | | ● | | |
| Insecta | Coleoptera | Curculionidae | *Hypera venusta* | | | 1 | | ● | ● | | | |
| Insecta | Dermaptera | Forficulidae | *Forficula auricularia* | Common Earwig | | 1 | ● | | ● | ● | | |
| Insecta | Diptera | Tipulidae | *Nephrotoma flavescens* | | | 1 | | | | | ● | |
| Insecta | Diptera | Tipulidae | *Tipula vernalis* | | | 1 | | | | ● | | ● |
| Insecta | Diptera | Limoniidae | *Symplecta stictica* | | | 1 | | ● | | | | |
| Insecta | Diptera | Bibionidae | *Bibio marci* | | | 1 | | ● | | | | |
| Insecta | Diptera | Tabanidae | *Haematopota pluvialis* | | | 1 | | | | | | |
| Insecta | Diptera | Stratiomyidae | *Nemotelus notatus* | | | 1 | | ● | ● | | ● | |
| Insecta | Diptera | Stratiomyidae | *Nemotelus uliginosus* | | | 1 | | | ● | | ● | |

| Class | Order | Family | Species | Vernacular Name | Conservation Status | SQS | Cpt 1 (Grassland & Hedgerow) | Cpt 2 (Sheep-grazed field) | Cpt 3 (Grass/ Scrub) | Cpt 4 (OMH) | Cpt 5 (Saltmarsh) | Cpt 6 (Old Quarry) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Insecta | Diptera | Stratiomyidae | *Pachygaster atra* | | | 1 | | | | | | |
| Insecta | Diptera | Stratiomyidae | *Chloromyia formosa* | | | 1 | ● | | | ● | | ● |
| Insecta | Diptera | Asilidae | *Machimus cingulatus* | | | 1 | | ● | | | | |
| Insecta | Diptera | Asilidae | *Leptogaster cylindrica* | | | 1 | | | ● | | | |
| Insecta | Diptera | Asilidae | *Dioctria rufipes* | | | 1 | ● | | | | | |
| Insecta | Diptera | Empididae | *Empis livida* | | | 1 | ● | | | | | |
| Insecta | Diptera | Empididae | *Rhamphomyia simplex* | | | 1 | | | | | ● | |
| Insecta | Diptera | Dolichopodidae | *Chrysotus cilipes* | | | 1 | | | ● | | | |
| Insecta | Diptera | Dolichopodidae | *Chrysotus gramineus* | | | 1 | | ● | | | | |
| Insecta | Diptera | Dolichopodidae | *Chrysotus neglectus* | | | 1 | | | ● | | | |
| Insecta | Diptera | Dolichopodidae | *Dolichopus claviger* | | | 4 | | | | | | ● |
| Insecta | Diptera | Dolichopodidae | *Dolichopus griseipennis* | | | 1 | | | | ● | | |
| Insecta | Diptera | Dolichopodidae | *Dolichopus nubilus* | | | 1 | | | ● | | | |
| Insecta | Diptera | Dolichopodidae | *Dolichopus ungulatus* | | | 1 | | | ● | | | ● |
| Insecta | Diptera | Dolichopodidae | *Dolichopus diadema* | | | 4 | | | | | ● | |
| Insecta | Diptera | Dolichopodidae | *Poecilobothrus nobilitatus* | | | 1 | ● | | | | | |
| Insecta | Diptera | Dolichopodidae | *Medetera saxatilis* | | Data Deficient | 1 | | | | | ● | |
| Insecta | Diptera | Lonchopteridae | *Lonchoptera bifurcata* | | | 1 | | ● | | | | |
| Insecta | Diptera | Syrphidae | *Melanostoma mellinum* | a hoverfly | | 1 | | ● | | ● | | |
| Insecta | Diptera | Syrphidae | *Melanostoma scalare* | a hoverfly | | 1 | | ● | | ● | | |
| Insecta | Diptera | Syrphidae | *Platycheirus albimanus* | a hoverfly | | 1 | | | | | | |
| Insecta | Diptera | Syrphidae | *Platycheirus splendidus* | a hoverfly | | 1 | | ● | | | | |
| Insecta | Diptera | Syrphidae | *Epistrophe eligans* | a hoverfly | | 1 | | | | ● | | |
| Insecta | Diptera | Syrphidae | *Sphaerophoria interrupta* | a hoverfly | | 1 | | | | | | |
| Insecta | Diptera | Syrphidae | *Sphaerophoria scripta* | a hoverfly | | 1 | | | | ● | | |
| Insecta | Diptera | Syrphidae | *Cheilosia pagana* | a hoverfly | | 1 | | | | | | |
| Insecta | Diptera | Syrphidae | *Cheilosia ranunculi* | a hoverfly | | 1 | | | | | | ● |
| Insecta | Diptera | Syrphidae | *Neoascia podagrica* | a hoverfly | | 1 | | ● | | | | |
| Insecta | Diptera | Syrphidae | *Eristalis arbustorum* | a hoverfly | | 1 | | | | | | |
| Insecta | Diptera | Syrphidae | *Eristalis horticola* | a hoverfly | | 1 | | ● | | | | |
| Insecta | Diptera | Syrphidae | *Eristalis pertinax* | a hoverfly | | 1 | | | | ● | | |
| Insecta | Diptera | Syrphidae | *Eristalis tenax* | a hoverfly | | 1 | | | | ● | | |
| Insecta | Diptera | Syrphidae | *Merodon equestris* | a hoverfly | | 1 | | | | | | ● |
| Insecta | Diptera | Syrphidae | *Volucella bombylans* | a hoverfly | | 1 | | | | ● | | |
| Insecta | Diptera | Syrphidae | *Tropidia scita* | a hoverfly | | 1 | | | | | | ● |
| Insecta | Diptera | Pipunculidae | *Pipunculus campestris* | | | 1 | | | | | | |
| Insecta | Diptera | Pipunculidae | *Tomosvaryella palliditarsis* | | | 1 | | | | ● | | |

| Class | Order | Family | Species | Vernacular Name | Conservation Status | SQS | Cpt 1 (Grassland & Hedgerow) | Cpt 2 (Sheep-grazed field) | Cpt 3 (Grass/ Scrub) | Cpt 4 (OMH) | Cpt 5 (Saltmarsh) | Cpt 6 (Old Quarry) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Insecta | Diptera | Conopidae | *Sicus ferrugineus* | | | 1 | | | | | ● | |
| Insecta | Diptera | Ulidiidae | *Melieria omissa* | a picture-winged fly | | 1 | | | | | ● | |
| Insecta | Diptera | Ulidiidae | *Melieria picta* | a picture-winged fly | pNationally Scarce | 4 | | | | ● | ● | |
| Insecta | Diptera | Tephritidae | *Urophora stylata* | | | 1 | | | | ● | | |
| Insecta | Diptera | Tephritidae | *Campiglossa plantaginis* | | | 1 | | | | ● | ● | |
| Insecta | Diptera | Tephritidae | *Terellia tussilaginis* | | | 1 | | | | | | |
| Insecta | Diptera | Lauxaniidae | *Minettia tabidiventris* | | | | | | ● | ● | | |
| Insecta | Diptera | Lauxaniidae | *Minettia fasciata* | | | 1 | | | | | | ● |
| Insecta | Diptera | Lauxaniidae | *Sapromyza quadripunctata* | | | | | | | ● | | ● |
| Insecta | Diptera | Sciomyzidae | *Pherbellia cinerella* | | | 1 | | ● | | ● | | ● |
| Insecta | Diptera | Sciomyzidae | *Coremacera marginata* | | | 1 | | ● | | | | |
| Insecta | Diptera | Sciomyzidae | *Dichetophora obliterata* | | | 1 | | | | ● | | |
| Insecta | Diptera | Sciomyzidae | *Limnia unguicornis* | | | 1 | ● | | | | | |
| Insecta | Diptera | Sepsidae | *Sepsis cynipsea* | | | 1 | | ● | | | | |
| Insecta | Diptera | Opomyzidae | *Opomyza germinationis* | | | 1 | | | ● | | | |
| Insecta | Diptera | Anthomyzidae | *Anthomyza gracilis* | | | 1 | | | ● | | | |
| Insecta | Diptera | Chloropidae | *Cetema elongatum* | | | 1 | | | ● | | | |
| Insecta | Diptera | Chloropidae | *Chlorops scalaris* | | | 1 | | | | ● | | |
| Insecta | Diptera | Chloropidae | *Thaumatomyia notata* | | | 1 | | | ● | | | |
| Insecta | Diptera | Chloropidae | *Dicraeus fennicus* | | | 1 | | | | | ● | |
| Insecta | Diptera | Ephydridae | *Psilopa leucostoma* | | | 1 | | | | | ● | |
| Insecta | Diptera | Scathophagidae | *Scathophaga stercoraria* | | | 1 | | | ● | | | ● |
| Insecta | Diptera | Anthomyiidae | *Anthomyia pluvialis* | | | | | | | | | |
| Insecta | Diptera | Anthomyiidae | *Botanophila striolata sens. str.* | | | | | | | | | |
| Insecta | Diptera | Anthomyiidae | *Hylemya vagans* | | | 1 | | | ● | | | |
| Insecta | Diptera | Anthomyiidae | *Hylemya variata* | | | | | ● | | | | |
| Insecta | Diptera | Anthomyiidae | *Pegoplata aestiva* | | | | | | ● | | | |
| Insecta | Diptera | Anthomyiidae | *Pegoplata infirma* | | | | | | | | | |
| Insecta | Diptera | Muscidae | *Coenosia antennata* | | | 1 | | | | | ● | |
| Insecta | Diptera | Muscidae | *Coenosia mollicula* | | | 1 | | | | | | ● |
| Insecta | Diptera | Muscidae | *Coenosia pedella* | | | 1 | ● | | | | | |
| Insecta | Diptera | Muscidae | *Coenosia tigrina* | | | 1 | | | | | ● | |
| Insecta | Diptera | Muscidae | *Hydrotaea irritans* | | | | | ● | ● | | | |
| Insecta | Diptera | Muscidae | *Eudasyphora cyanella* | | | 1 | | | ● | | | |
| Insecta | Diptera | Muscidae | *Neomyia cornicina* | | | | | | ● | | | |
| Insecta | Diptera | Muscidae | *Myospila meditabunda* | | | | | | ● | | | |
| Insecta | Diptera | Muscidae | *Helina reversio* | | | 1 | | ● | | ● | ● | |

| Class | Order | Family | Species | Vernacular Name | Conservation Status | SQS | Cpt 1 (Grassland & Hedgerow) | Cpt 2 (Sheep-grazed field) | Cpt 3 (Grass/ Scrub) | Cpt 4 (OMH) | Cpt 5 (Saltmarsh) | Cpt 6 (Old Quarry) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Insecta | Diptera | Muscidae | *Helina setiventris* | | | | | | | ● | | |
| Insecta | Diptera | Muscidae | *Helina trivittata* | | | | | ● | | | | |
| Insecta | Diptera | Calliphoridae | *Calliphora vicina* | | | 1 | | | | | ● | ● |
| Insecta | Diptera | Polleniidae | *Pollenia angustigena* | | | 1 | | | ● | ● | ● | |
| Insecta | Diptera | Polleniidae | *Pollenia pediculata* | | | | | | ● | ● | | |
| Insecta | Diptera | Polleniidae | *Pollenia rudis* | | | 1 | | ● | ● | ● | | |
| Insecta | Diptera | Rhinophoridae | *Rhinophora lepida* | | | | | | | ● | | |
| Insecta | Diptera | Sarcophagidae | *Sarcophaga pumila* | | | 1 | | | | ● | | |
| Insecta | Diptera | Sarcophagidae | *Sarcophaga teretirostris* | | | 1 | | | | | ● | |
| Insecta | Diptera | Sarcophagidae | *Sarcophaga nigriventris* | | | 1 | | | | | ● | |
| Insecta | Diptera | Sarcophagidae | *Sarcophaga carnaria* | | | 1 | | | | | | |
| Insecta | Diptera | Tachinidae | *Estheria cristata* | | | | | | | | | |
| Insecta | Diptera | Tachinidae | *Phryxe vulgaris* | | | | | | | ● | | |
| Insecta | Diptera | Tachinidae | *Exorista rustica* | | | | | | | | | |
| Insecta | Diptera | Tachinidae | *Platymya fimbriata* | | | | | | ● | | | |
| Insecta | Diptera | Tachinidae | *Phasia pusilla* | | | | | | | ● | | |
| Insecta | Diptera | Tachinidae | *Siphona geniculata* | | | | | ● | | | | |
| Insecta | Hemiptera, Auchenorrhyncha | Cercopidae | *Cercopis vulnerata* | Red-and-black Froghopper | | 1 | | | | ● | | ● |
| Insecta | Hemiptera, Auchenorrhyncha | Aphrophoridae | *Aphrophora alni* | a froghopper | | 1 | ● | | | | | |
| Insecta | Hemiptera, Auchenorrhyncha | Aphrophoridae | *Neophilaenus lineatus* | a froghopper | | 1 | | | | | ● | |
| Insecta | Hemiptera, Auchenorrhyncha | Aphrophoridae | *Philaenus spumarius* | a froghopper | | 1 | | | | ● | | |
| Insecta | Hemiptera, Auchenorrhyncha | Cicadellidae | *Aphrodes bicincta* | a leafhopper | | 1 | | | | ● | | |
| Insecta | Hemiptera, Auchenorrhyncha | Cicadellidae | *Aphrodes makarovi* | a leafhopper | | 1 | | | | ● | | |
| Insecta | Hemiptera, Auchenorrhyncha | Cicadellidae | *Euscelis incisus* | a leafhopper | | 1 | | | | ● | | |
| Insecta | Hemiptera, Auchenorrhyncha | Cicadellidae | *Euscelis lineolatus* | a leafhopper | | 1 | | ● | | | | |
| Insecta | Hemiptera, Auchenorrhyncha | Cicadellidae | *Macrosteles sordidipennis* | a leafhopper | Nationally Scarce (Nb) | 4 | | | | | ● | |
| Insecta | Hemiptera, Auchenorrhyncha | Cicadellidae | *Mocydia crocea* | a leafhopper | | 1 | | | | ● | | |
| Insecta | Hemiptera, Auchenorrhyncha | Cicadellidae | *Mocydiopsis attenuata* | a leafhopper | | 1 | | | | ● | | |
| Insecta | Hemiptera, Auchenorrhyncha | Cicadellidae | *Psammotettix putoni* | a leafhopper | | | | | | | ● | |
| Insecta | Hemiptera, Auchenorrhyncha | Cicadellidae | *Megophthalmus scanicus* | a leafhopper | | 1 | | | | | ● | |
| Insecta | Hemiptera, Auchenorrhyncha | Cicadellidae | *Eupteryx aurata* | a leafhopper | | 1 | ● | | | | | |
| Insecta | Hemiptera, Auchenorrhyncha | Cixiidae | *Cixius nervosus* | a lacehopper | | 1 | | | | ● | | |
| Insecta | Hemiptera, Auchenorrhyncha | Delphacidae | *Javesella pellucida* | a planthopper | | 1 | | | | ● | | |
| Insecta | Hemiptera, Auchenorrhyncha | Delphacidae | *Stenocranus minutus* | a planthopper | | 1 | | | | | | ● |
| Insecta | Hemiptera, Heteroptera | Cydnidae | *Sehirus luctuosus* | Forget-me-not Shieldbug | | 1 | | | | ● | ● | |
| Insecta | Hemiptera, Heteroptera | Pentatomidae | *Aelia acuminata* | Bishop's Mitre Shieldbug | | 1 | ● | | | ● | | ● |
| Insecta | Hemiptera, Heteroptera | Pentatomidae | *Dolycoris baccarum* | Hairy Shieldbug | | 1 | ● | | | ● | | ● |

| Class | Order | Family | Species | Vernacular Name | Conservation Status | SQS | Cpt 1 (Grassland & Hedgerow) | Cpt 2 (Sheep-grazed field) | Cpt 3 (Grass/ Scrub) | Cpt 4 (OMH) | Cpt 5 (Saltmarsh) | Cpt 6 (Old Quarry) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Insecta | Hemiptera, Heteroptera | Pentatomidae | *Eurydema oleracea* | Crucifer Shieldbug | | 1 | | | | ● | | |
| Insecta | Hemiptera, Heteroptera | Pentatomidae | *Palomena prasina* | Common Green Shieldbug | | 1 | | | ● | | | |
| Insecta | Hemiptera, Heteroptera | Pentatomidae | *Piezodorus lituratus* | Gorse Shieldbug | | 1 | ● | | | | | |
| Insecta | Hemiptera, Heteroptera | Coreidae | *Coreus marginatus* | Dock Bug | | 1 | | | | ● | | |
| Insecta | Hemiptera, Heteroptera | Coreidae | *Coriomeris denticulatus* | Denticulate Leatherbug | | 1 | | | | ● | | |
| Insecta | Hemiptera, Heteroptera | Rhopalidae | *Rhopalus subrufus* | | | 1 | | | | ● | | ● |
| Insecta | Hemiptera, Heteroptera | Lygaeidae | *Drymus sylvaticus* | | | 1 | | | | ● | | ● |
| Insecta | Hemiptera, Heteroptera | Lygaeidae | *Heterogaster urticae* | | | 1 | | | ● | | | |
| Insecta | Hemiptera, Heteroptera | Lygaeidae | *Kleidocerys resedae* | | | 1 | | | ● | | | |
| Insecta | Hemiptera, Heteroptera | Lygaeidae | *Megalonotus chiragra* | | | 1 | | | | ● | | |
| Insecta | Hemiptera, Heteroptera | Lygaeidae | *Peritrechus geniculatus* | | | 1 | | | | | | ● |
| Insecta | Hemiptera, Heteroptera | Lygaeidae | *Peritrechus lundii* | | | 1 | | | | ● | | |
| Insecta | Hemiptera, Heteroptera | Lygaeidae | *Scolopostethus decoratus* | | | 1 | | | | ● | | |
| Insecta | Hemiptera, Heteroptera | Lygaeidae | *Stygnocoris fuligineus* | | | 1 | | | | ● | ● | |
| Insecta | Hemiptera, Heteroptera | Berytidae | *Berytinus minor* | | | 1 | ● | | | ● | | |
| Insecta | Hemiptera, Heteroptera | Piesmatidae | *Parapiesma quadratum* | | | 1 | | | | | ● | |
| Insecta | Hemiptera, Heteroptera | Tingidae | *Physatocheila confinis/dumetorum* | | | | ● | | | | | |
| Insecta | Hemiptera, Heteroptera | Nabidae | *Nabis rugosus* | | | 1 | | | ● | | | |
| Insecta | Hemiptera, Heteroptera | Anthocoridae | *Anthocoris nemoralis* | | | 1 | ● | | ● | | | ● |
| Insecta | Hemiptera, Heteroptera | Anthocoridae | *Anthocoris nemorum* | | | 1 | | ● | ● | ● | | |
| Insecta | Hemiptera, Heteroptera | Anthocoridae | *Orius laevigatus* | | | 1 | ● | | | | | |
| Insecta | Hemiptera, Heteroptera | Miridae | *Closterotomus norwegicus* | | | 1 | | | ● | ● | | |
| Insecta | Hemiptera, Heteroptera | Miridae | *Deraeocoris flavilinea* | | | | | | | | | |
| Insecta | Hemiptera, Heteroptera | Miridae | *Leptopterna dolabrata* | | | 1 | ● | ● | | | | |
| Insecta | Hemiptera, Heteroptera | Miridae | *Leptopterna ferrugata* | | | 1 | | ● | | | ● | |
| Insecta | Hemiptera, Heteroptera | Miridae | *Liocoris tripustulatus* | | | 1 | ● | ● | | | | |
| Insecta | Hemiptera, Heteroptera | Miridae | *Lygocoris pabulinus* | | | 1 | ● | ● | | | | |
| Insecta | Hemiptera, Heteroptera | Miridae | *Lygus pratensis* | | [RDB 3] | 1 | | | ● | | | |
| Insecta | Hemiptera, Heteroptera | Miridae | *Notostira elongata* | | | 1 | | | | | | ● |
| Insecta | Hemiptera, Heteroptera | Miridae | *Orthops campestris* | | | 1 | | ● | | | | |
| Insecta | Hemiptera, Heteroptera | Miridae | *Orthotylus moncreaffi* | | | 1 | | | | | ● | |
| Insecta | Hemiptera, Heteroptera | Miridae | *Phytocoris varipes* | | | 1 | | | | ● | | |
| Insecta | Hemiptera, Heteroptera | Miridae | *Plagiognathus arbustorum* | | | 1 | | ● | | | | |
| Insecta | Hemiptera, Heteroptera | Miridae | *Plagiognathus chrysanthemi* | | | 1 | | | | ● | ● | |
| Insecta | Hemiptera, Heteroptera | Miridae | *Stenodema calcarata* | | | 1 | | | | ● | | |
| Insecta | Hemiptera, Heteroptera | Miridae | *Stenodema laevigata* | | | 1 | ● | | | ● | | ● |
| Insecta | Hemiptera, Heteroptera | Miridae | *Stenotus binotatus* | | | 1 | | ● | ● | | | |

| Class | Order | Family | Species | Vernacular Name | Conservation Status | SQS | Cpt 1 (Grassland & Hedgerow) | Cpt 2 (Sheep-grazed field) | Cpt 3 (Grass/ Scrub) | Cpt 4 (OMH) | Cpt 5 (Saltmarsh) | Cpt 6 (Old Quarry) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Insecta | Hemiptera, Heteroptera | Saldidae | *Salda littoralis* | | Nationally Scarce | 4 | | | | | ● | |
| Insecta | Hymenoptera | Tenthredinidae | *Dolerus picipes* | a sawfly | | | | | | ● | | |
| Insecta | Hymenoptera | Tenthredinidae | *Tenthredo arcuata* | a sawfly | | | | ● | | | | |
| Insecta | Hymenoptera | Crabronidae | *Dryudella pinguis* | a digger wasp | | 1 | | | | | | |
| Insecta | Hymenoptera | Crabronidae | *Crabro cribrarius* | Slender Bodied Digger Wasp | | 1 | | | | | | |
| Insecta | Hymenoptera | Crabronidae | *Crossocerus megacephalus* | a digger wasp | | 1 | | | | ● | | |
| Insecta | Hymenoptera | Andrenidae | *Andrena fulva* | Tawny Mining Bee | | 1 | | ● | | ● | | ● |
| Insecta | Hymenoptera | Andrenidae | *Andrena scotica* | Chocolate Mining Bee | | 1 | | ● | | | | |
| Insecta | Hymenoptera | Andrenidae | *Andrena nigroaenea* | Buffish Mining Bee | | 1 | | ● | | | | |
| Insecta | Hymenoptera | Andrenidae | *Andrena nitida* | Grey-patched Mining Bee | | 1 | | | | ● | | |
| Insecta | Hymenoptera | Andrenidae | *Andrena dorsata* | Short-fringed Mining Bee | | 1 | | | | ● | | |
| Insecta | Hymenoptera | Andrenidae | *Andrena wilkella* | Wilke's Mining Bee | | 1 | | | | | | |
| Insecta | Hymenoptera | Andrenidae | *Andrena haemorrhoa* | Orange-tailed Mining Bee | | 1 | | ● | | | | |
| Insecta | Hymenoptera | Apidae | *Bombus lucorum sens. lat.* | White-tailed Bumblebee | | | ● | | ● | ● | | |
| Insecta | Hymenoptera | Apidae | *Bombus terrestris* | Buff-tailed Bumblebee | | 1 | | | | ● | | |
| Insecta | Hymenoptera | Apidae | *Bombus lapidarius* | Red-tailed Bumblebee | | 1 | | | | ● | | |
| Insecta | Hymenoptera | Apidae | *Bombus pratorum* | Early Bumblebee | | 1 | | | | ● | | ● |
| Insecta | Hymenoptera | Apidae | *Bombus pascuorum* | Common Carder Bee | | 1 | | | ● | ● | | ● |
| Insecta | Hymenoptera | Apidae | *Nomada leucophthalma* | Early Nomad Bee | | 1 | | | | ● | | |
| Insecta | Hymenoptera | Apidae | *Nomada marshamella* | Marsham's Nomad Bee | | 1 | | ● | | | | |
| Insecta | Hymenoptera | Colletidae | *Hylaeus communis* | Common Yellow-face Bee | | 1 | | | | | | |
| Insecta | Hymenoptera | Halictidae | *Lasioglossum morio* | Green Furrow Bee | | 1 | | | | ● | | |
| Insecta | Hymenoptera | Halictidae | *Lasioglossum calceatum* | Common Furrow Bee | | 1 | | | | ● | | |
| Insecta | Hymenoptera | Halictidae | *Lasioglossum fratellum* | Smooth-faced Furrow Bee | | 1 | | ● | | | | |
| Insecta | Hymenoptera | Halictidae | *Sphecodes monilicornis* | Box-headed Blood Bee | | 1 | | | | ● | | |
| Insecta | Hymenoptera | Megachilidae | *Osmia spinulosa* | Spined Mason Bee | | 1 | | | | | ● | |
| Insecta | Hymenoptera | Formicidae | *Lasius flavus* | an ant | | 1 | ● | ● | | | | ● |
| Insecta | Hymenoptera | Formicidae | *Lasius niger sens. lat.* | an ant | | | ● | | | | | |
| Insecta | Hymenoptera | Formicidae | *Myrmica scabrinodis* | an ant | | 1 | | | | ● | | |
| Insecta | Hymenoptera | Pompilidae | *Arachnospila anceps* | a spider-hunter wasp | | 1 | | | | | ● | |
| Insecta | Lepidoptera | Zygaenidae | *Zygaena filipendulae* | Six-spot Burnet | | 1 | | | | ● | | |
| Insecta | Lepidoptera | Hesperiidae | *Thymelicus sylvestris* | Small Skipper | | 1 | | ● | | ● | | |
| Insecta | Lepidoptera | Hesperiidae | *Ochlodes sylvanus* | Large Skipper | | 1 | | | ● | | | |
| Insecta | Lepidoptera | Pieridae | *Anthocharis cardamines* | Orange-tip | | 1 | | | | ● | | ● |
| Insecta | Lepidoptera | Pieridae | *Pieris brassicae* | Large White | | 1 | | | | ● | | |
| Insecta | Lepidoptera | Pieridae | *Pieris napi* | Green-veined White | | 1 | | | | | | ● |
| Insecta | Lepidoptera | Nymphalidae | *Maniola jurtina* | Meadow Brown | | 1 | | ● | | ● | | |

| Class | Order | Family | Species | Vernacular Name | Conservation Status | SQS | Cpt 1 (Grassland & Hedgerow) | Cpt 2 (Sheep-grazed field) | Cpt 3 (Grass/ Scrub) | Cpt 4 (OMH) | Cpt 5 (Saltmarsh) | Cpt 6 (Old Quarry) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Insecta | Lepidoptera | Nymphalidae | *Pyronia tithonus* | Gatekeeper | | 1 | | | | ● | | |
| Insecta | Lepidoptera | Nymphalidae | *Vanessa atalanta* | Red Admiral | | 1 | | | | | | |
| Insecta | Lepidoptera | Nymphalidae | *Aglais io* | Peacock | | 1 | ● | | | ● | | |
| Insecta | Lepidoptera | Nymphalidae | *Aglais urticae* | Small Tortoiseshell | | 1 | | | | ● | | |
| Insecta | Lepidoptera | Lycaenidae | *Polyommatus icarus* | Common Blue | | 1 | | | ● | ● | | ● |
| Insecta | Lepidoptera | Geometridae | *Camptogramma bilineata* | Yellow Shell | | 1 | | | | ● | | ● |
| Insecta | Lepidoptera | Erebidae | *Tyria jacobaeae* | Cinnabar | SoPI (Research Only) | 1 | | | | | | ● |
| Insecta | Lepidoptera | Noctuidae | *Charanyca trigrammica* | Treble Lines | | 1 | | | | ● | | |
| Insecta | Neuroptera | Chrysopidae | *Chrysopa perla* | | | 1 | | | ● | | | |
| Insecta | Odonata | Coenagriidae | *Enallagma cyathigerum* | Common Blue Damselfly | | 1 | ● | | | | | |
| Insecta | Odonata | Libellulidae | *Orthetrum cancellatum* | Black-tailed Skimmer | | 1 | | | | | | |
| Insecta | Orthoptera | Conocephalidae | *Conocephalus dorsalis* | Short-winged Conehead | | 1 | | | | | ● | |
| Insecta | Orthoptera | Phaneropteridae | *Leptophyes punctatissima* | Speckled Bush Cricket | | 1 | ● | ● | | | | |
| Insecta | Orthoptera | Acrididae | *Chorthippus brunneus* | Common Field Grasshopper | | 1 | | | | ● | | |
| Malacostraca | Isopoda | Philosciidae | *Philoscia muscorum* | Common Striped Woodlouse | | 1 | ● | | | ● | | ● |
| Malacostraca | Isopoda | Armadillidiidae | *Armadillidium vulgare* | Common Pill Woodlouse | | 1 | | ● | | ● | ● | ● |
| Malacostraca | Isopoda | Porcellionidae | *Porcellio scaber* | Common Rough Woodlouse | | 1 | ● | | | ● | | ● |
| | | | 495 | | 28 | | | | | | | |
| | | Species Richness | | | | 119 | 133 | 95 | 225 | 79 | 96 | |

Table 12: Stenotopic taxa recorded within the Connah's Quay CCGT Order Limits in 2024.

| Order | Family | Species | SQS | Conservation status | Broad biotope | Habitat | Specific assemblage type |
|---|---|---|---|---|---|---|---|
| Coleoptera | Cerambycidae | *Tetrops praeustus* | 1 | | Tree-associated | Decaying wood | A212: Bark & sapwood decay |
| Coleoptera | Scraptiidae | *Anaspis frontalis* | 1 | | Tree-associated | Decaying wood | A212: Bark & sapwood decay |
| Coleoptera | Scraptiidae | *Anaspis maculata* | 1 | | Tree-associated | Decaying wood | A212: Bark & sapwood decay |
| Hymenoptera | Crabronidae | *Crossocerus megacephalus* | 1 | | Open habitats; tree-associated | Decaying wood | A212, F001: Bark & sapwood decay; Scrub edge |
| Araneae | Agelenidae | *Agelena labyrinthica* | 1 | | Open habitats | Tall sward & scrub | F001: Scrub edge |
| Araneae | Salticidae | *Heliophanus flavipes* | 1 | | Open habitats | Tall sward & scrub | F001: Scrub edge |
| Coleoptera | Curculionidae | *Anthonomus rubi* | 1 | | Open habitats | Tall sward & scrub | F001: Scrub edge |
| Diptera | Asilidae | *Dioctria rufipes* | 1 | | Open habitats | Tall sward & scrub | F001: Scrub edge |
| Hemiptera | Rhopalidae | *Rhopalus (Rhopalus) subrufus* | 1 | | Open habitats | Tall sward & scrub | F001: Scrub edge |
| Lepidoptera | Nymphalidae | *Pyronia tithonus* | 1 | | Open habitats | Tall sward & scrub | F001: Scrub edge |
| Orthoptera | Phaneropteridae | *Leptophyes punctatissima* | 1 | | Open habitats | Tall sward & scrub | F001: Scrub edge |
| Coleoptera | Apionidae | *Exapion ulicis* | 1 | | Open habitats | | F001, F003: Scrub edge; Scrub-heath & moorland |
| Coleoptera | Curculionidae | *Andrion regensteinense* | 1 | | Open habitats | | F001, F003: Scrub edge; Scrub-heath & moorland |
| Hemiptera | Pentatomidae | *Piezodorus lituratus* | 1 | | Open habitats | | F001, F003: Scrub edge; Scrub-heath & moorland |
| Hymenoptera | Andrenidae | *Andrena dorsata* | 1 | | Open habitats | Short sward & bare ground | F002: Rich flower resource |
| Hymenoptera | Andrenidae | *Andrena fulva* | 1 | | Open habitats | Short sward & bare ground | F002: Rich flower resource |
| Hymenoptera | Andrenidae | *Andrena haemorrhoa* | 1 | | Open habitats | Short sward & bare ground | F002: Rich flower resource |
| Hymenoptera | Andrenidae | *Andrena nigroaenea* | 1 | | Open habitats | Short sward & bare ground | F002: Rich flower resource |
| Hymenoptera | Andrenidae | *Andrena nitida* | 1 | | Open habitats | Short sward & bare ground | F002: Rich flower resource |
| Hymenoptera | Andrenidae | *Andrena scotica* | 1 | | Open habitats | Short sward & bare ground; tall sward & scrub | F002: Rich flower resource |
| Hymenoptera | Andrenidae | *Andrena wilkella* | 1 | | Open habitats | Short sward & bare ground | F002: Rich flower resource |
| Hymenoptera | Apidae | *Bombus lapidarius* | 1 | | Open habitats | Tall sward & scrub | F002: Rich flower resource |
| Hymenoptera | Apidae | *Bombus pascuorum* | 1 | | Open habitats | Tall sward & scrub | F002: Rich flower resource |
| Hymenoptera | Apidae | *Bombus pratorum* | 1 | | Open habitats; tree-associated | Shaded woodland floor; tall sward & scrub | F002: Rich flower resource |
| Hymenoptera | Apidae | *Bombus terrestris* | 1 | | Open habitats | Tall sward & scrub | F002: Rich flower resource |
| Hymenoptera | Apidae | *Nomada leucophthalma* | 1 | | Open habitats | Short sward & bare ground | F002: Rich flower resource |
| Hymenoptera | Apidae | *Nomada marshamella* | 1 | | Open habitats | Short sward & bare ground | F002: Rich flower resource |
| Hymenoptera | Colletidae | *Hylaeus communis* | 1 | | Open habitats | Tall sward & scrub | F002: Rich flower resource |
| Hymenoptera | Halictidae | *Lasioglossum calceatum* | 1 | | Open habitats | Short sward & bare ground | F002: Rich flower resource |
| Hymenoptera | Halictidae | *Lasioglossum fratellum* | 1 | | Open habitats | Short sward & bare ground | F002: Rich flower resource |
| Hymenoptera | Halictidae | *Lasioglossum morio* | 1 | | Open habitats | Short sward & bare ground | F002: Rich flower resource |
| Hymenoptera | Megachilidae | *Osmia spinulosa* | 1 | | Open habitats | Short sward & bare ground | F002, F111: Rich flower resource; Short sward & bare ground |
| Coleoptera | Byrrhidae | *Byrrhus fasciatus* | 1 | | Open habitats | | F003: Scrub-heath & moorland |
| Coleoptera | Carabidae | *Harpalus rufipes* | 1 | | Open habitats | Tall sward & scrub | F003: Scrub-heath & moorland |
| Coleoptera | Staphylinidae | *Philorinum sordidum* | 1 | | Open habitats | | F003: Scrub-heath & moorland |
| Coleoptera | Staphylinidae | *Quedius boops* | 1 | | Open habitats | | F003: Scrub-heath & moorland |
| Hemiptera | Lygaeidae | *Scolopostethus decoratus* | 1 | | Open habitats | | F003: Scrub-heath & moorland |

| Order | Family | Species | SQS | Conservation status | Broad biotope | Habitat | Specific assemblage type |
|---|---|---|---|---|---|---|---|
| Hemiptera | Miridae | *Lygus pratensis* | 1 | [RDB 3] | Open habitats | | F003: Scrub-heath & moorland |
| Araneae | Gnaphosidae | *Drassodes lapidosus* | 1 | | Open habitats | Short sward & bare ground | F111: Short sward & bare ground |
| Araneae | Linyphiidae | *Typhochrestus digitatus* | 4 | Nationally Scarce | Open habitats | Short sward & bare ground | F111: Short sward & bare ground |
| Araneae | Lycosidae | *Arctosa perita* | 1 | | Open habitats | Short sward & bare ground | F111: Short sward & bare ground |
| Araneae | Lycosidae | *Pardosa agrestis* | 4 | Nationally Scarce | Open habitats | Short sward & bare ground | F111: Short sward & bare ground |
| Araneae | Lycosidae | *Pardosa palustris* | 1 | | Open habitats | Short sward & bare ground | F111: Short sward & bare ground |
| Araneae | Lycosidae | *Xerolycosa miniata* | 4 | Nationally Scarce | Open habitats | Short sward & bare ground | F111: Short sward & bare ground |
| Araneae | Miturgidae | *Cheiracanthium virescens* | 4 | Nationally Scarce | Open habitats | Short sward & bare ground | F111: Short sward & bare ground |
| Araneae | Salticidae | *Talavera aequipes* | 1 | | Open habitats | Short sward & bare ground | F111: Short sward & bare ground |
| Coleoptera | Carabidae | *Calathus cinctus* | 1 | | Open habitats | Short sward & bare ground | F111: Short sward & bare ground |
| Coleoptera | Curculionidae | *Ceutorhynchus atomus* | 4 | [Nationally Scarce (Na)] | Open habitats | Short sward & bare ground | F111: Short sward & bare ground |
| Coleoptera | Curculionidae | *Philopedon plagiatum* | 1 | | Open habitats | Short sward & bare ground | F111: Short sward & bare ground |
| Coleoptera | Curculionidae | *Romualdius angustisetulus* | 1 | | Open habitats | Short sward & bare ground | F111: Short sward & bare ground |
| Coleoptera | Curculionidae | *Romualdius scaber* | 4 | | Open habitats | Short sward & bare ground | F111: Short sward & bare ground |
| Coleoptera | Staphylinidae | *Oxypoda lurida* | 4 | Notable | Open habitats | Short sward & bare ground | F111: Short sward & bare ground |
| Diptera | Asilidae | *Machimus cingulatus* | 1 | | Open habitats | short sward & bare ground; tall sward & scrub | F111: Short sward & bare ground |
| Hymenoptera | Crabronidae | *Crabro cribrarius* | 1 | | Open habitats | Short sward & bare ground | F111: Short sward & bare ground |
| Hymenoptera | Crabronidae | *Dryudella pinguis* | 1 | | Open habitats | Short sward & bare ground | F111: Short sward & bare ground |
| Coleoptera | Chrysomelidae | *Cassida vibex* | 1 | | Open habitats | Short sward & bare ground | F112: Open short sward |
| Coleoptera | Chrysomelidae | *Chrysolina hyperici* | 1 | | Open habitats | Short sward & bare ground | F112: Open short sward |
| Coleoptera | Chrysomelidae | *Chrysolina hyperici* | 1 | | Open habitats | Short sward & bare ground | F112: Open short sward |
| Coleoptera | Chrysomelidae | *Cryptocephalus fulvus* | 1 | | Open habitats | Short sward & bare ground | F112: Open short sward |
| Coleoptera | Chrysomelidae | *Cryptocephalus moraei* | 1 | | Open habitats | Short sward & bare ground | F112: Open short sward |
| Coleoptera | Chrysomelidae | *Longitarsus lycopi* | 4 | Nationally Scarce | Open habitats | Short sward & bare ground | F112: Open short sward |
| Coleoptera | Coccinellidae | *Scymnus frontalis* | 1 | | Open habitats | Short sward & bare ground | F112: Open short sward |
| Coleoptera | Curculionidae | *Sitona waterhousei* | 4 | Nationally Scarce (Nb) | Open habitats | Short sward & bare ground | F112: Open short sward |
| Coleoptera | Curculionidae | *Tychius squamulatus* | 4 | Nationally Scarce (Nb) | Open habitats | Short sward & bare ground | F112: Open short sward |
| Coleoptera | Elateridae | *Agrypnus murinus* | 1 | | Open habitats | Short sward & bare ground | F112: Open short sward |
| Coleoptera | Malachiidae | *Cordylepherus viridis* | 1 | | Open habitats | Short sward & bare ground | F112: Open short sward |
| Coleoptera | Tenebrionidae | *Isomira murina* | 1 | | Open habitats | Short sward & bare ground | F112: Open short sward |
| Hemiptera | Berytidae | *Berytinus (Berytinus) minor* | 1 | | Open habitats | Short sward & bare ground | F112: Open short sward |
| Hemiptera | Cicadellidae | *Mocydiopsis attenuata* | 1 | | Open habitats | Short sward & bare ground | F112: Open short sward |
| Hemiptera | Cydnidae | *Sehirus luctuosus* | 1 | | Open habitats | Short sward & bare ground | F112: Open short sward |
| Hymenoptera | Formicidae | *Lasius flavus* | 1 | | Open habitats | Short sward & bare ground | F112: Open short sward |
| Coleoptera | Curculionidae | *Polydrusus pulchellus* | 4 | Nationally Scarce (Nb) | Coastal | Saltmarsh | M311: Saltmarsh & transitional brackish marsh |
| Coleoptera | Staphylinidae | *Brundinia marina* | 1 | | Coastal | Saltmarsh | M311: Saltmarsh & transitional brackish marsh |
| Diptera | Ulidiidae | *Melieria picta* | 4 | pNationally Scarce | Coastal | Saltmarsh | M311: Saltmarsh & transitional brackish marsh |
| Hemiptera | Cicadellidae | *Macrosteles sordidipennis* | 4 | Nationally Scarce (Nb) | Coastal | Saltmarsh | M311: Saltmarsh & transitional brackish marsh |
| Hemiptera | Miridae | *Orthotylus (Melanotrichus) moncreaffi* | 1 | | Coastal | Saltmarsh | M311: Saltmarsh & transitional brackish marsh |

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