

# H2Teesside Project

## Environmental Statement

Volume III – Appendices

Appendix 12E: Invertebrate Survey Report

Document Reference: 6.4.22

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended)

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(l)



# Richard Wilson Ecology Limited



Terrestrial Invertebrate Survey, H2 Teesside

Final Report

Prepared for AECOM Limited

December 2023

## Document History

JOB NUMBER: RWE0293			DOCUMENT REF: RW-CS-001-RWE0293-INV		
Revision	Purpose Description	Date	Checked by Client	Amended by Richard Wilson Ecology	Final Version Issued
0.1	Draft for Client	22 November 2023	13 December 2023		
1.0	Final Issue				14 December 2023

# Table of contents

Chapter	pages
Executive Summary	i
1 Introduction	1
1.1 Background	1
1.2 Study Site	1
1.3 Survey Limitations	6
1.4 Previous Invertebrate Surveys	7
2 Legislation	8
2.1 Legislation	8
2.2 Policy	8
3 Methodology	9
3.1 Desk Study	9
3.2 Field Survey	9
3.3 Evaluation Methodologies	9
3.4 Personnel	12
4 Results and Interpretation	13
4.1 Desk Study	13
4.2 Field Survey	14
4.3 Baseline Invertebrate Assemblage Analysis	24
5 Nature Conservation Evaluation	26
5.1 Individual Species	27
5.2 Habitat Assemblages	27
5.3 Taxonomic Assemblages	30
5.4 Conclusion	32
6 Mitigation Proposals	34
7 References	36

## Tables

Table 1: Description of habitats within each sub-compartment.	3
Table 2: Weather conditions for survey visits in 2023.	14
Table 3: Key Species recorded within the Survey Areas.	16
Table 4: Key species solely recorded within sub-compartments C and D.	22
Table 5: Overlapping compartments surveyed by Godfrey (2015) with sub-compartment B.	22
Table 6: Species recorded within the Survey Areas during 2023 at beyond their known northern (N) limit.	23
Table 7: Assemblage analysis by sub-compartment.	25
Table 8: Evaluation of stenotopic species assemblages by Sub-compartment.	26
Table 9: Invertebrate assemblage assessment for Proposed Development (all sub-compartments).	28
Table 10: Examples of substrates available for ecological landscaping (after Wilson and Little, 2023).	34
Table 11: Species recorded from the H2 study area in 2023 and those recorded by Richard Wilson Ecology (2018).	A
Table 12: Stenotopic species recorded within the study area, both in 2023 and from Richard Wilson Ecology (2018) combined.	KK
Table 13: Species list for Sub-compartment F.	UU

## Annex

- |    |  |    |
|----|--|----|
| A. | Annex 1: Nature Conservation Status Categories (Definitions) | A  |
| B. | Annex 2: Species Lists                                       | D  |
| C. | Annex 3: Sub-compartment F Survey Data                       | SS |

# Executive Summary

- AECOM Limited commissioned Richard Wilson Ecology Limited in early April 2023 to undertake terrestrial invertebrate surveys to inform the ecological baseline for the H2 Teesside project.
- The Proposed Development Site is located within the former Teesside Steelworks and ancillary industrial infrastructure, either side of the River Tees, thus straddling Cleveland, North Yorkshire and County Durham, to the east of Stockton-upon-Tees. There is a core plot located within the former steelworks, and disseminating from this, various corridors of variable width. Whilst the core plot proposed footprint lies entirely within previously developed land, the corridors pass through a wider ecological landscape that includes a more complex mosaic of coastal habitats including dune systems, grasslands, wetlands and saltmarsh that are also designated as part of the extensive Teesmouth and Cleveland Coast Site of Special Scientific Interest (SSSI).
- For the purposes of the invertebrate survey, an initial seven sub-compartments were identified using a combination of aerial photography, prior knowledge of the landscape and existing/ ongoing ecology surveys being completed by AECOM. However, after commission, some of these sub-compartments were dropped (sub-compartments E and F, shortly before/ after surveys commenced; and sub-compartments C and D in November, shortly before this report was submitted). Details of which data have been included are provided in Section 1.2.1.
- The habitats across the various sub-compartments comprise a complex inter-connected mosaic of wetlands (including reedbeds and coastal grazing marshes), saltmarsh and transitional wetland habitats, waterbodies of varying descriptions and permanence, drier grasslands, including exposed substrates that grade towards Open Mosaic Habitat, scrub and other woody vegetation. These all occur on variable substrates that form a heterogeneous topography.
- The habitats have been initially considered in the context of the wider ecological landscape, considering the Tees Valley National Character Area, Open Mosaic Habitat resource and the aforementioned complex ecological landscape more generally.
- Four visits took place between early May and late August 2023 across sub-compartments A, B, C and D; three were completed in sub-compartment G (between June and August inclusive); and a single visit to F (in May 2023) before this was excluded from further survey (data presented in Annex 3 for completeness).
- A total of 1,161 species were identified within the study area in 2023 (excluding sub-compartment F), and an additional 90 species were recorded in 2018 but not 2023. Therefore, 1,251 invertebrate species have been identified within H2's footprint across two seasons. Of the 1,251 species recorded, 64 taxa have a nature conservation status ('Key Species'), representing just over 5 % of the assemblage.
- Four Key Species are Species of Principal Importance (SoPI); Small Heath, Dingy Skipper, Grayling and Wall (all butterflies). A further 29 taxa recorded represent range extensions and represent new county records.
- The invertebrate assemblages within parts of the Proposed Development Site have been evaluated to be of national nature conservation value; the important elements being primarily associated with the Open Mosaic Habitats, coastal grasslands, saltmarsh and transitional brackish marsh.
- Each sub-compartment supports an important assemblage, which collectively contribute to the wider site high value.

# 1 Introduction

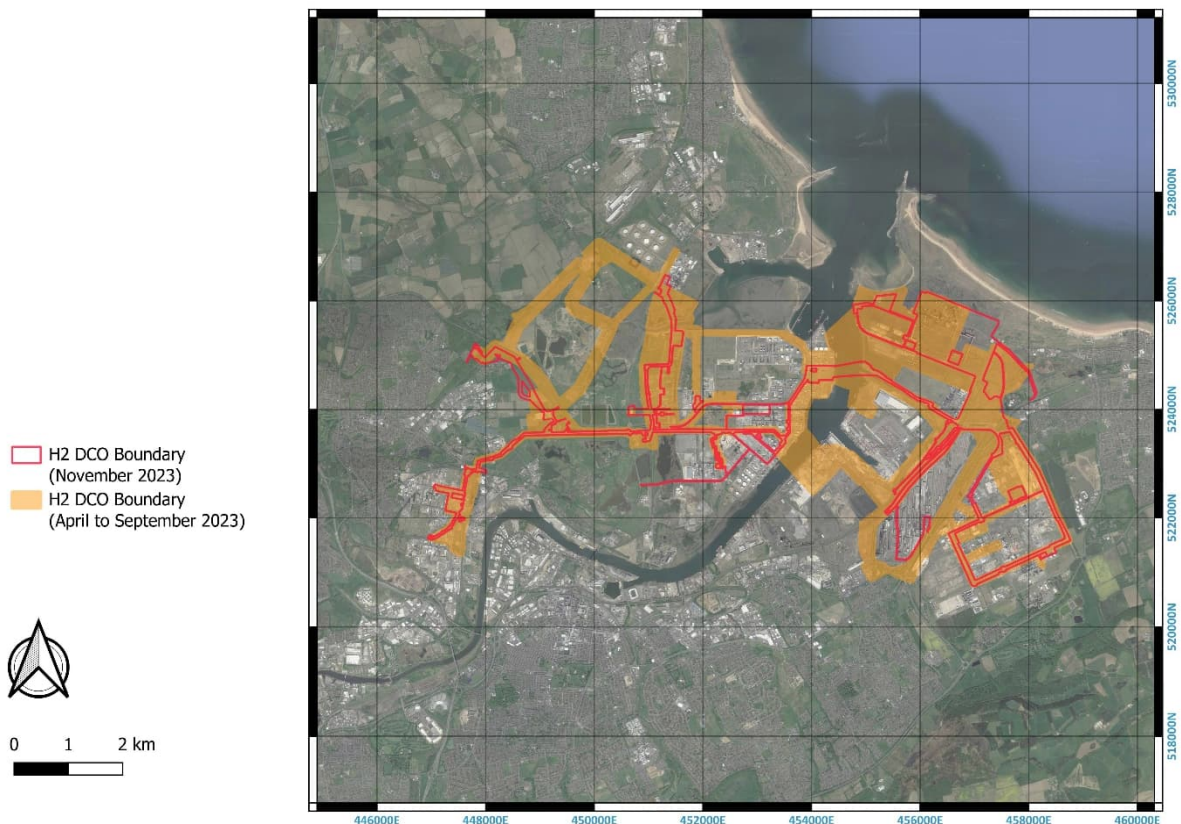
## 1.1 Background

Richard Wilson Ecology Limited was commissioned by AECOM Limited ('the Client') in early April 2023 to undertake terrestrial invertebrate surveys on several land parcels to inform the proposed H2 Teesside development in North-east England. A description of the Proposed Development and terms of reference are provided in Chapter 4: Proposed Development (ES Volume I, EN070009/APP/6.2). The survey was designed to inform the Ecological Impact Assessment (EclA) any required mitigation and biodiversity net gain.

## 1.2 Study Site

The Proposed Development Site (also referred to as 'H2' in this report) is shown in Figure 1 in the context of the wider landscape. The Proposed Development Site has been refined and reduced as part of the iterative EIA process. The Proposed Development comprises a geography that has a core development plot located within the former Teesside Steelworks (demolished in stages between 2021 and on-going). Disseminating from the core plot are the Connection Corridors. Whilst the Main Site sits within an industrial development, the surrounding coastline, including sand dunes, saltmarsh and coastal grasslands sit within the Teesmouth and Cleveland Coast Site of Special Scientific Interest (SSSI), and are known to support important invertebrate assemblages based on recent survey work (Godfrey, 2015; Richard Wilson Ecology, 2020).

Figure 1: Study site in context with adjacent landscape.



The Proposed Development Site will result in one location ('the Main Site') where there will be permanent habitat loss. This is located in H2's north-east as illustrated in Figure 2. The aerial photography was taken before demolition and clearance had been completed. In 2023, the ground cover was predominantly bare ground (made ground comprising variably broken-up hardstanding) with limited vegetation cover. Elsewhere within the



Proposed Development Site, temporary disturbance of existing vegetation communities is predicted with reliance placed on existing infrastructure (supporting racks) wherever possible for the Connection Corridors.

Figure 2: Location of Main Site within the Proposed Development Site



### 1.2.1 H2 Study Sites

An initial appraisal of the Proposed Development Site was completed using a combination of aerial photography, the authors' prior knowledge of the study area based on previous ecology survey work (Richard Wilson Ecology, 2018) and conversations with the EIA team. An initial seven land parcels (referred to as sub-compartments A to G) were identified within the Proposed Development Site footprint that could be safely accessed for survey and act as representative habitat mosaics present throughout the Proposed Development. As the Proposed Development Site was refined, several survey areas were removed, as summarised below. Further information on the sub-compartments considered is provided in Chapter 6: Alternatives and Design Evolution (ES Volume I, EN070009/APP/6.2).

Sub-compartment E was scoped out at a very early stage due to changes to the Proposed Development Site, before invertebrate survey fieldwork commenced and no field survey data is available. Sub-compartment F was also scoped out following changes to the Proposed Development Site, but only following the first visit in May 2023. Data were collected for this sub-compartment, but are not included in most analyses within this report. The baseline results based on this single visit are summarised in Annex 3 (and species listed in Table 13), though the key points of interest are noted where appropriate in the main body of this report.

In mid-November 2023, an amended footprint for the Proposed Development was provided, which indicated that sub-compartments C and D would no longer be impacted. This amendment was confirmed after field work, data analysis and most of the reporting had been written and thus the results for both these sub-compartments are discussed in detail in this report. Certain features within C and D such as the mosaics of bare ground and short perennial vegetation are present elsewhere within the Proposed Development Site. Reliance on this data remains valid for reasons set out in greater detail in Section 4.2.3, but in summary, invertebrate populations and species are distributed throughout H2, across multiple sub-compartments, indicating that it is the network of



resources and features that are of importance in supporting the assemblages present. In other words, each sub-compartment is not supporting an assemblage that is independent of each other.

For practical reasons during fieldwork, sub-compartment F was subdivided into F1 and F2; and the same applied for sub-compartment G, which was subdivided into G1, G2, G3 and G4. However, for the most part, these subdivisions will not be referred to within this report.

The sub-compartments are described in Table 1 and illustrated in Figure 3.

Figure 3: Location of sub-compartments within H2 Teesside.

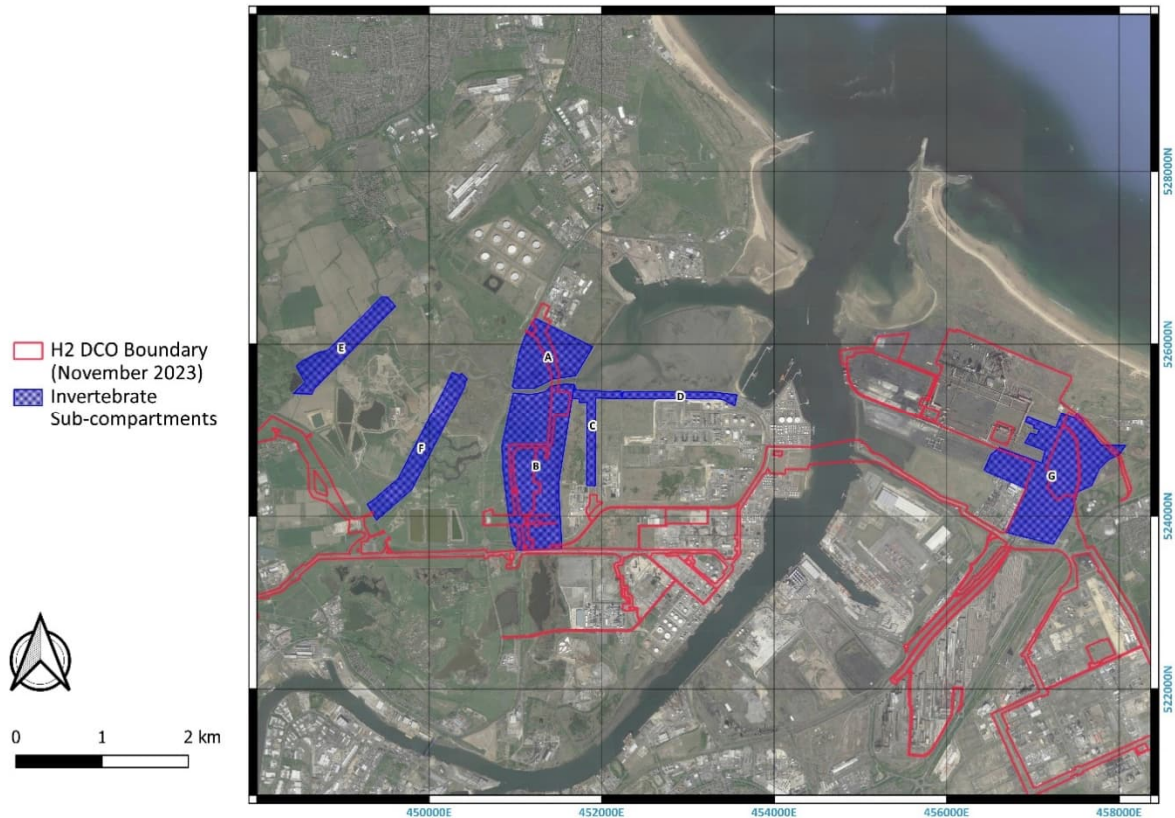


Table 1: Description of habitats within each sub-compartment.

Sub-compartment	Grid Reference (centroid)	Habitat Description
A	NZ 514 259	Mosaic of wet grassland, including scattered water-filled hollows with extensive Common Reed ( <i>Phragmites australis</i> ), Sea Club-rush ( <i>Bolboschoenus maritimus</i> ), Bulrush ( <i>Typha latifolia</i> ) and similar. Some small areas of open water with fringing mud and clear brackish influence, including Sea Aster ( <i>Tripolium pannonicum</i> ), Sea-milkwort ( <i>Lysimachia maritima</i> ), Wild Celery ( <i>Apium graveolens</i> ), glassworts ( <i>Salicornia</i> ), etc. Relatively little scrub but some isolated Sycamore ( <i>Acer pseudoplatanus</i> ), Hawthorn ( <i>Crataegus monogyna</i> ) and sallows ( <i>Salix</i> spp.) More sparsely vegetated ground along access tracks and the surrounding sea-wall, with typical plants including Bird's-foot Trefoil ( <i>Lotus corniculatus</i> ), Common Restharrow ( <i>Ononis repens</i> ), Carlina Thistle ( <i>Carlina vulgaris</i> ), Mugwort ( <i>Artemisia vulgaris</i> ), Hogweed ( <i>Heracleum sphondylium</i> ), Dog Rose ( <i>Rosa canina</i> agg.), Colt's-foot ( <i>Tussilago farfara</i> ), bramble ( <i>Rubus fruticosus</i> agg.), Yellow-rattle ( <i>Rhinanthus minor</i> ), Common Fleabane ( <i>Pulicartia dysenterica</i> ),

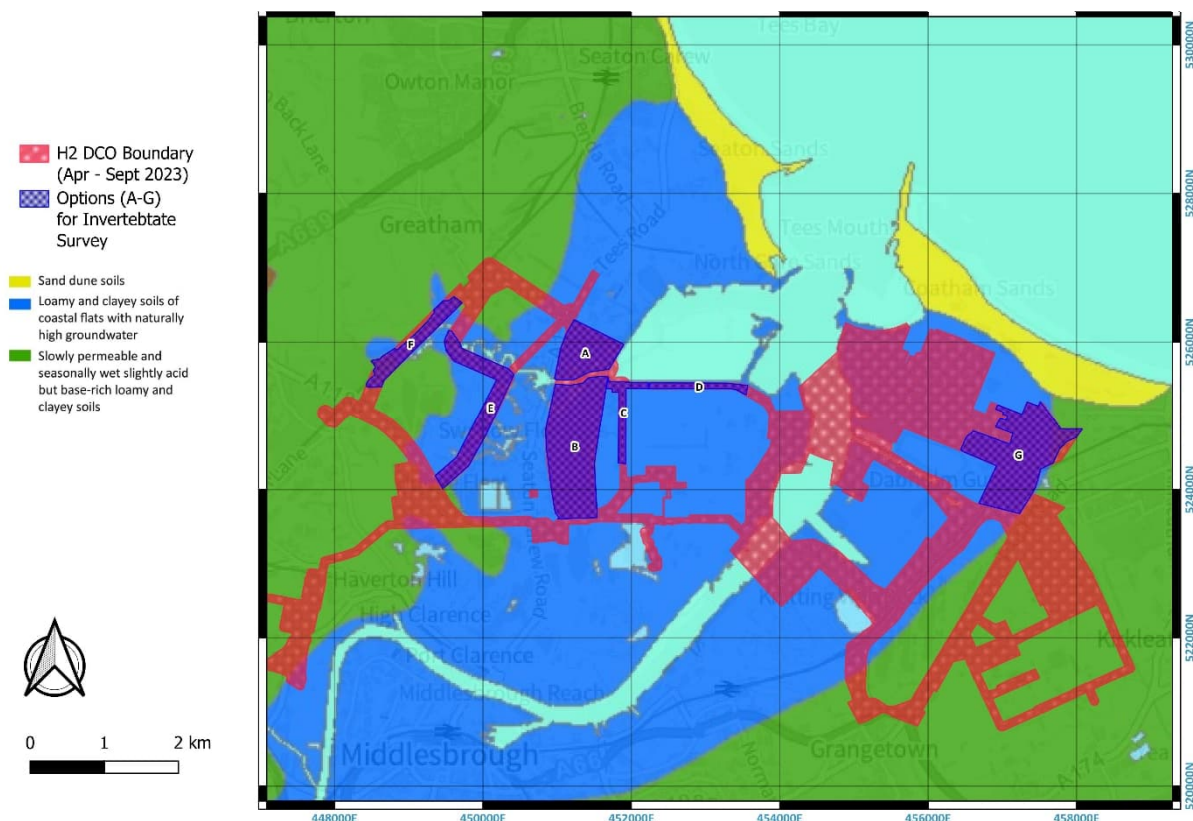
Sub-compartment	Grid Reference (centroid)	Habitat Description
		<p>Great Willowherb (<i>Epilobium hirsutum</i>), Common Ragwort (<i>Jacobaea vulgaris</i>), Hoary Ragwort (<i>J. erucifolia</i>) and Northern Marsh-orchid (<i>Dactylorhiza purpurella</i>).</p> <p>Accessed during May, June, July and August, although the first visit was somewhat short due to poor weather conditions, these causing fumes from adjacent factory to descend to low elevation making for unpleasant working conditions.</p>
B	NZ 514 250	<p>Extensive grassland (with cattle and sheep grazing), interspersed with damp hollows indicating presence of seasonal pools. Given the nature of the site as converted estuarine habitat, the grassland area was strongly brackish in nature. Some ditches persisted as water-filled throughout the summer, with associated fringing vegetation. On slightly higher ground to north-east, mosaic of scrub (mostly willow and birch (<i>Betula</i>) and more open habitats has developed on what satellite photography suggests were prior discrete units. The open habitats in the far north-east corner were the most sparsely vegetated with extensive areas dominated by Biting Stonecrop (<i>Sedum acre</i>), whilst more broadly, other key flowering plants included Common Bird's-foot Trefoil, Creeping Thistle (<i>Cirsium arvense</i>), Tufted Vetch (<i>Vicia cracca</i>), Hare's-foot Clover (<i>Trifolium arvense</i>), Red Clover (<i>T. pratense</i>), Colt's-foot, Goat's-beard (<i>Tragopogon pratensis</i>), Northern Marsh-orchid and Sea Club-rush.</p> <p>Accessed during May, June, July and August, although the final visit was slightly curtailed due to heavy showers.</p> <p>Two separate arrays of six pitfalls were deployed in May, serviced in June and July and removed in August. These were positioned to sample the ground fauna of the brackish grassland and scrub areas respectively.</p>
C	NZ 518 253	<p>Grassland and flower-rich sparsely vegetated ground along the margins of the estuary, grading to a more established grass and scrub mosaic inland. A large brackish pool at the western end with fringing mud and short vegetation. The track running south along the east side of the pool is elevated and well vegetated with a mixture of reeds and scrub.</p> <p>Plants noted included Bird's-foot Trefoil, Red Clover, Blue Fleabane (<i>Erigeron acris</i>), Northern Marsh-orchid, Bee Orchid (<i>Ophrys apifera</i>), Pyramidal Orchid (<i>Anacamptis pyramidalis</i>) and Sea-purslane (<i>Atriplex portulacoides</i>), along with scrubby willows, birch, hawthorn and Alder (<i>Alnus glutinosa</i>).</p> <p>Accessed during May, June, July and August, with no restrictions encountered.</p>
D	NZ 528 254	<p>Grassland and flower-rich sparsely vegetated ground along the margins of the estuary, with flowering plants including Bird's-foot Trefoil, Colt's-foot, Northern Marsh-orchid, Hogweed, Kidney Vetch (<i>Anthyllis vulneraria</i>), Ragwort, Rosebay Willowherb (<i>Chamaenerion angustifolium</i>), Musk Thistle (<i>Carduus nutans</i>) and Perennial Wall-rocket (<i>Diploxys tenuifolia</i>).</p> <p>No areas of scrub but a few scattered bushes of willow and hawthorn. At</p>

Sub-compartment	Grid Reference (centroid)	Habitat Description
		<p>the eastern end there was a small area of sand dunes, dominated by Marram (<i>Ammophila arenaria</i>) which formed a notably discrete habitat. Accessed during May, June, July and August, with no restrictions encountered.</p>
F	NZ 488 258	<p>Adjacent to the line of an existing railway, with habitat falling neatly into two blocks. The western subsection (F1) forms part of the publicly accessible Cowpen Bewley Woodland Park, and is mostly well-vegetated with scrub and woodland, with waterside vegetation around a small lake plus more open grassy/flowery habitat on the small hill here. Plants included Hawthorn, willow, Broom (<i>Cytisus scoparius</i>), Bird Cherry (<i>Prunus padus</i>) and other common woodland plants. The eastern subsection (F) is an area of saltmarsh along the upper reaches of Greatham Creek, backed by scrub along the railway line.</p>
G	NZ 572 238	<p>A complex mosaic of mostly short vegetation and bare ground (including access tracks and disused railway lines), plant species including Common Restharrow, Biting Stonecrop, Common Bird's-foot Trefoil, Common Ragwort, Narrow-leaved Ragwort (<i>Senecio inaequidens</i>), Wild Mignonette (<i>Reseda lutea</i>), Red Valerian (<i>Centranthus ruber</i>), Hogweed, bramble, Kidney Vetch, Meadow Vetchling (<i>Lathyrus pratensis</i>), Cat's-ear (<i>Hypochaeris radicata</i>), Hare's-foot Clover, Wild Carrot (<i>Daucus carota</i>), Mugwort, Yarrow (<i>Achillea millefolium</i>), Creeping Thistle and Rosebay Willowherb. A higher-elevation area (G2) comprised an apparent spoil-heap, with much open stony ground around the higher sections, with extensive areas of Red Valerian, Biting Stonecrop and frequent Viper's Bugloss (<i>Echium vulgare</i>) and Narrow-leaved Ragwort, interspersed with short grass, scrub and some damp flushes containing Sea Club-rush. A series of water-filled pools were also present (G2) with extensive vegetation, both emergent and floating (this latter being largely the invasive non-native Floating Pennywort (<i>Hydrocotyle ranunculoides</i>)). Some areas of scrub were present, densest in the south of the site at subsection G4, including Sea-buckthorn (<i>Hippophae rhamnoides</i>), willows, Buddleia (<i>Buddleja davidii</i>), Hawthorn, Rowan (<i>Sorbus aucuparia</i>), whitebeams (<i>Sorbus</i> spp.) and Sycamore.</p> <p>Surveyed as four discrete blocks:</p> <ul style="list-style-type: none"> <li>• G1 (NZ 572 238),</li> <li>• G2 (NZ 577 246),</li> <li>• G3 (NZ 567 246), and</li> <li>• G4 (NZ 571 235).</li> </ul> <p>Access was not permitted during May, but the areas G1-3 were surveyed in June, July and August, with G4 added for the August survey only. An array of six pitfall traps were deployed in subsection G2 in June, serviced in July and removed in August.</p>

## 1.2.2 Surrounding Landscape Context

The Proposed Development sits within the Tees Lowlands National Character Area (NCA) (Natural England, 2013), described as ‘a broad, open plain dominated by the meandering lower reaches of the River Tees and its tributaries’. The distinct nature of the Teesside area is illustrated by the Soilsmap of the area (LandIS, 2023), shown here as Figure 3, where the dominant underlying soil type is characterised as ‘loamy and clayey soils of coastal flats with naturally high groundwater’, reflecting the area’s historic estuarine character, although heavily

Figure 3: Soilsmap of Teesside (LandIS, 2023).



modified by land-claim over several centuries. In addition to the natural habitats of the area, Teesside has been strongly modified by human activity, initially through conversion of estuary and saltmarsh to farmland, followed by further land-claim using blast furnace slag. Areas of the latter which have remained undeveloped have weathered over the years, creating low-nutrient, high pH (alkaline) habitat, which have developed into floristically diverse grassland and bare ground mosaics over the years. The complex surface structures also result in a range of small wetland features, from temporary pools to the somewhat more extensive Coatham marsh to the east of the site. The sparsely vegetated brownfield habitats are in some ways relatively analogous to the adjacent sand dunes present between Hartlepool and Redcar. These fringing dunes on the edges of the North Sea can arguably be seen as the southernmost limits of the extensive dune systems of the Northumberland coast to the north and are well isolated from the next significant areas of such habitat around the mouth of the Humber, over 100 km to the south. The estuarine habitat around the Tees is similarly isolated, being the most significant expanse between the Humber and Lindisfarne. Further geographical context is provided by the higher ground of the North York Moors to the south, which could act as a brake on northwards range expansion for some less-dispersive species.

## 1.3 Survey Limitations

### 1.3.1 Access Limitations

Access to sub-compartments A, B, C and D was straightforward throughout 2023 and no limitations were encountered.



Similarly, sub-compartment F was accessible in May 2023, after which time survey of the area was deemed no longer required due to changes to the Proposed Development site .

For sub-compartment G, the initial visit was planned for May 2023, however access was not granted until mid-June 2023, resulting in under-representation of spring and early summer species that are typically active early in the season, for example, coinciding with flowering willow and willows. Moreover, access to the southernmost subsection (G4) was not granted until August 2023, hence just a single visit was made to this land parcel. This means that the assessment of this subsection will have been limited both by the low level of survey intensity, as well as missing the period of the year when most species are at peak activity.

It was not possible to make a prior scoping visit to any of the sections, which would normally be preferred in order to make a more guided decision regarding the best areas to survey. In practice, fairly complete coverage was achieved for sub-compartments A, C and D, whilst survey of sub-compartment B was focused around the north-east corner of the land parcel to allow for the highest diversity of habitat. For sub-compartment G, survey areas were largely selected on the basis of availability during the June visit.

### 1.3.2 Weather Limitations

Weather conditions were not a significant limitation for the majority of the survey days as every attempt was made to time them with reasonably warm, dry, and still days. A minority of days did, however, have fieldwork a little curtailed by showery weather, as described in [Table 2](#).

## 1.4 Previous Invertebrate Surveys

Four previous invertebrate surveys are understood to have been completed, for different purposes, that are relevant to this study. Two, in 2018 and 2020, were in support of proposed development. The 2015 and earlier surveys were focussed on intrinsic value of the habitats, including brownfield, for invertebrates, which fed into the decision making process for the proposed designation of the Teesmouth and Cleveland Coast SSSI.

- A survey by Godfrey (2015) covered a wide range of sites in the Teesside area for the purposes of informing the designation of the Teesmouth and Cleveland Coast SSSI. Relevant compartments to this study include those that directly overlapped with survey sub-compartments, i.e. that report's sections BM1 (Brinefield 4 – rich fen), BM2 (Brinefield 4 – saltmarsh), GM3 (Greenabella Marsh – saltmarsh) and SL1 (Seal Sands). Reference to the 2015 survey has been undertaken to place the 2023 surveys in context.
- A Buglife project entitled 'Tees Valley Stepping Stones' focused on four sites within the Teesside area. None of these projects overlapped directly with the H2 area, although one was the BP Central Area Transmission Systems (CATS) site to the east of sub-compartment B covered in the current study. Raw data from the Buglife project were not obtained for the purposes of the current study, although a summary of findings from two of the locations (Maze Park Nature Reserve, Middlesbrough; and Gravel Hole Nature Reserve, Stockton-on-Tees) is reported by Grayson (2015).
- A survey by Richard Wilson Ecology (2018) looked at terrestrial invertebrates on land within the former Redcar Steelworks, which sits within the footprint of the proposed H2 development (sub-compartment G). The specific survey areas covered were adjacent to some of those covered in the present study, as shown in [Figure 4](#) (page 13). The data from this former survey has been made available to the current project as it is directly relevant in describing the invertebrate biodiversity of the H2 development area. These additional data were particularly useful given that access in 2023 was somewhat limited both geographically and temporally (notably with the cancellation of the early season visit to sub-compartment G). As described below, these 2018 data were combined with the 2023 survey data for many of the analyses in the current study.
- Richard Wilson Ecology (2020) reported a survey of invertebrates within the Coatham Dunes section of the Teesmouth and Cleveland Coast SSSI, situated immediately north of sub-compartment G. Again, this data, where relevant to the 2023 study, has been referred to, to place the findings in context.

## 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). 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). This Act ensures the retention of the 2017 Regulations on and after departure day (1 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 40 of the Natural Environment and Rural Communities Act 2006 has recently been amended by Section 102 of the Environment Act 2021. The amended Section 40 now places a duty on local authorities to conserve and enhance biodiversity when undertaking their public duty and in doing so, they *"...must from time to time consider what action the authority can properly take, consistently with the proper exercise of its functions, to further the general biodiversity objective."* (Section 40 (subsection A1) of the 2006 Act). In achieving this, the Government has published a list of Species of Principal Importance (SoPI) for nature conservation in England, which includes invertebrates.

A full list of all species covered by legislation and policy is available via the Buglife website (Buglife, 2014).

### 2.2 Policy

Paragraphs 180 to 194 inclusive of the National Planning Policy Framework (NPPF) conveys national policy on conserving and enhancing the natural environment including protecting habitats and biodiversity in the planning system (Ministry of Housing, Communities and Local Government, 2023). Guidance underpinning the NPPF is available on-line and provides a detailed narrative on considerations to protect and enhance biodiversity as part of the planning process (Department for Levelling Up, Housing and Communities (DLUHC), 2024).

The National Pollinator Strategy is particularly relevant for invertebrate nature conservation and emphasises:

*"The National Planning Policy Framework (2012) [subsequently updated] requires planning authorities to promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations. It prescribes that local plans should have a clear strategy for enhancing the natural, built and historic environment and supporting wider biodiversity networks, including planning at a landscape scale across local authority boundaries and supporting Nature Improvement Areas."* (Defra, 2014; Section 5).



## 3 Methodology

### 3.1 Desk Study

Given the nature of the site, with only limited areas with public access, there are few directly relevant volunteer-derived records for some sub-compartments. However, the data underpinning the study of Redcar Steelworks by Richard Wilson Ecology (2018) was made available to contribute to the study. Records originating from this dataset are differentiated from the 2023 fieldwork in the results and appendices below.

### 3.2 Field Survey

The purpose of the 2023 survey work was to undertake an appraisal of the study area's nature conservation value for terrestrial invertebrates, but was 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) and direct observation.

Supplementing the active collecting was the use of three arrays of six 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, monopropylene 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.

Specimens that could be reliably identified in the field such as butterflies were noted directly, but most specimens collected 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 also.

Resulting identified records were collated and analysed mostly using Microsoft Excel and Pantheon (Webb *et al.*, 2018), including, where relevant, survey data provided by the contiguous survey of Richard Wilson Ecology (2018) as described earlier.

### 3.3 Evaluation Methodologies

There is currently no standard frame of reference to evaluate the nature conservation value of invertebrate assemblages for the purposes of EclA, 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.

#### 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 (NCS) recorded. NCS 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 Annex A but in summary, all NCS species 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 updating species status reviews (Joint Nature Conservation Committee (JNCC), 2023a).

Telfer (2017) provided a means of evaluating a study area's potential nature conservation value by considering the proportion of NCS species present within a study area, on the basis that the higher the percentage of NCS species, the more important the study area is. He refers to NCS species as 'Key Species' and splits this in to 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. As a rule of thumb, 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. A modification of Telfer (2017) is required, to include taxa that are SoPI within the meaning of the 2006 Act referred to in Section 2.1 of this report. For some species such as the butterfly Dingy Skipper (*Erynnis tages*), they have no British rarity or IUCN threatened status, but are SoPI. Note that SoPI listed in the 2006 Act solely for the purpose of drawing attention to research requirements (i.e. many widespread moth species) are not considered Key Species.

### 3.3.2 Invertebrate Assemblages

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.

For the purposes of EclA, the methods have allowed what 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 (Biological Records Centre, 2018). 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, especially as a proportion of the total species recorded.

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 <sup>1</sup>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, taking into account other factors, provide evidence that objectives for sites of national value (SSSIs) are being met and

---

<sup>1</sup> 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.

this seems a reasonable proxy in this instance for national value. However, use of unfavourable condition to argue 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.

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 taxon 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. For ease of reading, some authors multiple the sum by 100 to give a whole number, whereas others multiply by 10. 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.

In an attempt to inject some objectivity into the use of Pantheon SATs to inform evaluation of nature conservation value and to counteract some of the caveats given above, the threshold limits for each of the SATs has been noted with the intention of providing a reasonable judgement. This can be made in terms of the Proportion to Threshold (PtT) achieved for each SAT identified. The threshold referred to is the number of species within a SAT expected to be present if a site is considered to be in favourable condition (FC). Thus, if a SAT records or exceeds the expected threshold, the PtT will be 100 % or greater and this is taken as the basis for considering assigning national value. In the absence of other guidance, where the PtT is < 100 %, professional judgement is used to assist with the rationale for assessing a nature conservation value of the invertebrate assemblage in a sub-national context (i.e. regional, county, district, local). The further away from the threshold, the lower the nature conservation value the SAT. Other factors considered when determining the value include species-richness, proportion of Key Species in the assemblage, proportion of county rarities or significant records (where known), and site context within the landscape (i.e. availability and connectivity to similar semi-natural habitat, whether statutorily protected or not). Thus, whilst Pantheon remains a useful guide when assessing the nature conservation value for each of the land parcels for terrestrial invertebrates, professional judgement incorporating other evidence is necessary to come to a defensible evaluation.

### 3.3.3 Designated Site Guidelines

#### 3.3.3.1 Statutory Sites

The Joint Nature Conservation Committee (JNCC) has updated and published its guidance on invertebrates for the selection of biological SSSIs (Curson *et al.*, 2019) (Joint Nature Conservation Committee (JNCC), 2022). In summary, these guidelines 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*. Therefore, the presence of Critically Endangered, Endangered, Vulnerable (International Union for Conservation of Nature (IUCN), n.d.), or Nationally Rare species in a site can be considered as a proxy for considering national importance. 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 Scarce 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.

### 3.3.3.2 Non-Statutory Sites

All of the Proposed Development Site falls within the envelope covered by the Tees Valley Partnership, a consortium of local authorities which includes Stockton-on-Tees and Redcar and Cleveland (unitary authorities). Guidelines for designating non-statutory sites within the Tees Valley have been published (Tees Valley Biodiversity Partnership, 2010) and are available to the public on-line Tees Valley Partnership (2010). The guidelines provide criteria for butterflies and moths (Lepidoptera) and dragonflies and damselflies (Odonata), but no other invertebrate groups; or even a generic grouping of all other invertebrates. The criteria are presented below:

- Sites which regularly support Green Hairstreak (*Callophrys rubi*) or White-letter Hairstreak (*Satyrrium w-album*), or a significant population (i.e. 10 individuals) of Dingy Skipper; or regularly support 15 or more species of butterfly would potentially qualify.
- The presence of six species of moth (The Forester (*Adscita staitices*), Blomer's Rivulet (*Venusia blomeri*), Crescent Striped (*Apamea oblonga*), Large Red-belted Clearwing (*Synanthedon culiciformis*), Lyme Grass (*Longalatedes elymi*) or Shore Wainscot (*Mythimna litoralis*)) would qualify a site for non-statutory status.
- Three species of dragonfly (Banded Demoiselle (*Calopteryx splendens*), Emperor Dragonfly (*Anax imperator*) and Black-tailed Skimmer (*Orthetrum cancellatum*)) would qualify a site for non-statutory site status.

However, these guidelines are out of date and require revising given recent updates on butterfly, moth and dragonfly statuses (nationally and regionally); and other invertebrate groups such as beetles, flies and bees which are particularly relevant to brownfield sites. Reference has therefore been made to a neighbouring authority's (North Yorkshire) guidelines (North Yorkshire SINC Panel (2017) as in biogeographic terms, the thresholds are valid and these guidelines include a broader spectrum of invertebrate taxa/ groups. Given that sub-compartment G falls within the ceremonial county of North Yorkshire, this adds additional weight to this decision. Applying these guidelines with due professional judgement seems a reasonable proxy in the absence of up-to-date bespoke guidelines for the Tees Valley.

North Yorkshire's guidelines have eleven criteria for invertebrates covering Lepidoptera, Odonata, aculeate Hymenoptera and all other invertebrates. These are detailed and not repeated here, other than the general invertebrate criteria which broadly state that:

- any site supporting a Nationally Rare or legally protected species; or
- any site supporting a population of native species considered rare in North Yorkshire [can be considered for designation].

## 3.4 Personnel

The invertebrate survey field visits were undertaken by Steven Falk and Andy Musgrove, both experienced field entomologists. Steven is a recognised expert on, particularly, Diptera and aculeate Hymenoptera, having authored important books on British bees and hoverflies, amongst others. He focused on these two groups for the purposes of the current study. Andy has extensive experience in survey and identification of a very broad range of biodiversity; he focused on arachnids, beetles, bugs, sawflies and assorted other groups encountered during the current study. Andy also undertook the majority of the data collation and analysis.

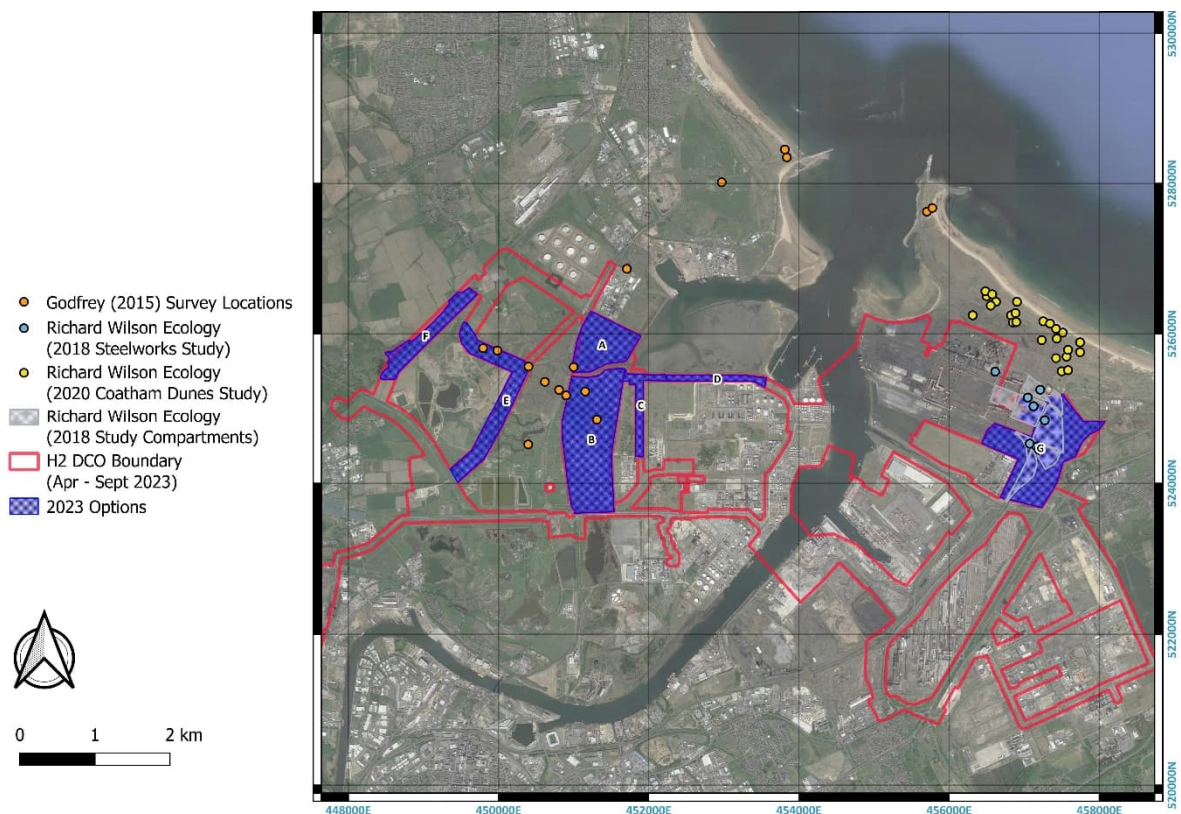
The report was largely authored by Andy Musgrove and Richard Wilson, with input from Steven Falk as required.

# 4 Results and Interpretation

## 4.1 Desk Study

A terrestrial invertebrate survey was completed between early May and mid-July 2018 within the former Redcar steelworks, across nine near contiguous land parcels that substantially overlap with the Proposed Development Site footprint (see Figure 4). However, as mentioned in Section 1.3.1, access restrictions prevented re-survey of these land parcels (shaded in grey in Figure 4), thus additional information has been sought by re-using data collected in 2018. These records were formatted to be consistent with those collected during the 2023 fieldwork, allowing simultaneous analysis of the combined dataset.

Figure 4: Historical sampling locations within and adjacent to the Proposed Development Site study area.



A further detailed invertebrate survey was completed within Coatham Dunes, part of the Teessmouth and Cleveland Coast SSSI between early March and late September 2020 (Richard Wilson Ecology 2020). Whilst this dune system is outside the Proposed Development Site footprint, the nature of the habitats present, which range from foredunes through to dune slacks, coastal grasslands and scrub on free-draining sandy soils, reflect to some extent, the habitats present in the current study area. The data associated with the Coatham Dunes survey have been referred to, to place the current study in context. Sample locations are illustrated in Figure 4.

Similarly, the key species found during survey work reported by Godfrey (2015) are also referred to below, to maximise the information available to the current study; and again, are illustrated in Figure 4.



## 4.2 Field Survey

### 4.2.1 Survey conditions

Four survey visits (Table 2) were completed between early May and late August 2023 during weather conditions suitable for invertebrate survey. The section G visit in May had to be cancelled at short notice, due to a lack of access permissions being granted, whilst one part of this latter section (G4) was only available for survey on the last visit in August. Section F (F1 and F2) was surveyed in May only as it was subsequently removed from the Proposed Development Site.

Table 2: Weather conditions for survey visits in 2023.

Date	Weather	Notes
9 May 2023	Cloud: 6/8; Temperature: max 18 °C; Wind Speed: low. Precipitation: one brief shower, although torrential rain followed end of survey	Only visits to F1 and F2.
10 May 2023	Cloud: 4/8; Temperature: max 16 °C; Wind Speed: moderate. Precipitation: none	First visits to C and D.
11 May 2023	Cloud: 7/8; Temperature: max 16 °C; Wind Speed: low. Precipitation: one light shower	First visit to B, established optimum focal area, deployed two arrays of pitfall traps (scrub and brackish grass), following by active collecting.
12 May 2023	Cloud: 8/8; Temperature: max 10 °C; Wind Speed: fresh breeze. Precipitation: none but misty	First visit to A, curtailed by poor weather and factory fumes being pushed onto site.
12 June 2023	Cloud: 1/8; Temperature: max 25 °C; Wind Speed: moderate. Precipitation: none	Second visits to A and C.
12 June 2023	Cloud: 0/8; Temperature: max 23 °C; Wind Speed: low. Precipitation: none	Second visits to B and D. Serviced pitfall traps in B.
14 June 2023	Cloud: 0/8; Temperature: max 23 °C; Wind Speed: low. Precipitation: none	First visit to G, establishing survey areas from those made accessible. Established pitfall traps (G2) and active collecting (G1-G3).
2 July 2023	Cloud: 5/8; Temperature: max 18 °C; Wind Speed: fresh breeze. Precipitation: none	Third visits to A and C.
3 July 2023	Cloud: 5/8; Temperature: max 18 °C; Wind Speed: moderate. Precipitation: none	Third visits to B and D. Serviced pitfall traps in B.



Date	Weather	Notes
4 July 2023	Cloud: 7/8; Temperature: max 18°C; Wind Speed: low. Precipitation: dry but recent light showers.	Second visit to G. Serviced pitfall traps (G2) and active collecting (G1-G3).
23 August 2023	Cloud: 6/8; Temperature: max 21 °C; Wind Speed: moderate. Precipitation: none	Fourth visits to A and C.
24 August 2023	Cloud: 8/8; Temperature: max 19°C; Wind Speed: low. Precipitation: occasional light showers.	Third visit to G. Serviced and removed pitfall traps (G2) and active collecting (G1-G4).
25 Auguste 2023	Cloud: 7/8; Temperature: max 18 °C; Wind Speed: low. Precipitation: occasional heavy showers	Fourth visits to B and D. Serviced and removed pitfall traps from B.

Two arrays of six pitfall traps were installed in sub-compartment B on 11<sup>th</sup> May 2023, and were serviced (i.e. contents removed and liquid topped up) on each subsequent visit before being collected on the August visit. The first array was on open grazed grassland along a gradient that included a recently dried-out shallow flooded area (centred approximately on NZ 5133 2481). The second array was situated along the scrubby margin of an area of woodland (NZ 5150 2485). In both cases traps were spaced approximately six metres apart.

An array of six pitfall traps were installed in an area of section G2 (centred on approximately NZ 5768 2472), from the 14 June 2023 and serviced on each subsequent visit before being collected on the August visit. Traps were spaced approximately six metres apart along a thinly grass-covered area of rocky substrate (probably blast furnace slag).

#### 4.2.2 Summary of Survey Results

A total of 1,161 invertebrate species were identified within the study area (sub-compartments A-D, G, but excluding F) during 2023. In addition, the data underpinning the surveys by Richard Wilson Ecology (2018) were incorporated where they coincided with the Proposed Development Site footprint. This involved 284 species, of which 90 were additional to those recorded in 2023, leading to a combined total of 1,251 invertebrate species identified around the study area in the two seasons.

The full species list is provided as Table 11 (Annex 2).

#### 4.2.3 Key Species

Amongst the species identified, a total of 64 (5.1%) could be described as Key Species, as described in Section 3.3.1 (and following the reviews listed in Annex 1). These involved 59 (5.1 %) of the species from 2023 and 11 (3.9 %) of those from 2018.

Likewise, a total of 12 species (1.0 %) could be described as Rare Key Species, involving 11 (0.9 %) in 2023 and three (1.1 %) in 2018.

For the totals of Key Species and Rare Key Species, it should be noted that these include species that will likely be downgraded in future, following updated formal status reviews. These species are indicated by their status descriptions being shown in square brackets, and notes are including explaining the considered change in status.

Four butterfly species: Small Heath (*Coenonympha pamphilus*), Dingy Skipper, Grayling (*Hipparchia semele*), and Wall (*Lasiommata megera*) are listed as SoPI under the NERC Act 2006. Of these four species, Small Heath and Grayling have been recorded across all five sub-compartments; and Dingy Skipper in four (sub-compartment C

being the exception). Three additional moth species were noted that are also listed as SoPI by the NERC Act 2006, but these only act as a spur to national-level research, not for the purposes of site-level conservation, and hence these are not considered any further.

Details for the Key Species, including their ecology, distribution and occurrence during the surveys, are conveyed in Table 3. Terminology relating to conservation status is defined in Annex 1.

Table 3: Key Species recorded within the Survey Areas.

Species	Conservation status	Ecology, distribution and occurrence during surveys
<i>Agabus conspersus</i> Coleoptera, Dytiscidae	Nationally Scarce	A medium-sized water beetle, found locally north to southern Scotland, mostly from brackish ditches and pools overlying clay near the sea. Recorded from B in May (pitfalls in brackish grassland).
<i>Agallia brachyptera</i> Hemiptera, Cicadellidae	Nationally Scarce (Nb)	A scarce and local leafhopper largely confined to the east of England. Found mostly in dry sparsely vegetated habitats but sometimes from fens and marshes. Its precise ecological requirements are uncertain. Recorded from G in July and August.
<i>Amara spreta</i> Coleoptera, Carabidae	Near Threatened; Nationally Rare	A medium-sized ground beetle, mostly found in sand dunes. Extremely localised in Britain, particularly from Sandwich Bay, Rye Harbour, Teesside and the dunes of south Wales. Recorded from B in June (pitfalls in brackish grassland).
<i>Andrena ruficrus</i> (Northern Mining Bee) Hymenoptera, Andrenidae	Red Data Book 3 (Rare)	A spring-flying mining bee of heathland, moorland and brownfield sites with plentiful willows and sallows. A northern species, not recorded south of Lancashire and Nottinghamshire. Recorded from B in May around the willow blossom.
<i>Andrena similis</i> (Red-backed Mining Bee) Hymenoptera, Andrenidae	Nationally Scarce (Nb)	A scarce mining bee, found widely in the southern half of Britain with scattered records north to the Scottish Highlands. Flies in spring in a range of legume-rich habitats. Recorded from G in 2018 but not in 2023 (perhaps owing to a relatively late start in the spring).
<i>Argogorytes fargeii</i> Hymenoptera, Crabronidae	Nationally Scarce (Na)	A scarce hunting wasp of assorted open habitats including heathland, brownfield sites and river corridors, especially where umbellifers are abundant, and bramble patches. Nesting occurs in sparsely vegetated light soils or sand (especially slopes and clifflets), and nest cells are stocked with paralysed froghopper nymphs. Recorded from A and G, in June, July and also in 2018. Very close to its northern limit in Britain here.
<i>Botanophila laterella</i> Diptera, Anthomyiidae	pNationally Scarce	An anthomyiid fly, widespread but sparsely recorded in southern and central England. Biology unknown, although recorded from woodland, marshes and dunes. Recorded from B and D in May.
<i>Botanophila sonchi</i> Diptera, Anthomyiidae	pNationally Scarce	A seldom-recorded anthomyiid fly of open habitats, associated with sow-thistles <i>Sonchus</i> where the larvae develop. Has been found sparsely throughout much of Britain, although seemingly much declined. Recorded from G in 2018 but not noted in 2023.
<i>Campiglossa malaris</i> Diptera, Tephritidae	[Red Data Book 1 (Endangered)]	A picture-winged fly, formerly extremely rare but has increased massively and is now fairly frequent north to at least the Midlands. The larvae develop in the flowerheads of Common Ragwort and perhaps Hoary Ragwort. Recorded from A and G in July and August, which is about 165 km north of any NBN record to date.

Species	Conservation status	Ecology, distribution and occurrence during surveys
<i>Cnemacantha muscaria</i> Diptera, Lauxaniidae	pNationally Scarce	A small fly, widespread but localised and usually recorded in dry, rough grassland. The biology is unknown, but larvae of this family are generally believed to develop in decaying vegetable matter, including fallen leaves. Recorded from B in May and June.
<i>Coenonympha pamphilus</i> (Small Heath) Lepidoptera, Nymphalidae	Vulnerable; SoPI	A small brown butterfly, favouring grassy habitats with a short sward. Distributed across almost all of Britain, but with a significant decline noted in many areas in recent years. Recorded from all sections, during June, July and August, and noted in 2018 also.
<i>Coenosia karli</i> Diptera, Muscidae	pNationally Scarce	A muscid fly, widespread but localised around the coastline of Britain, typically in saltmarsh, brackish creeks and dune slacks. The biology is unknown. Recorded from A in June.
<i>Colletes marginatus</i> (Margined Colletes) Hymenoptera, Colletidae	Nationally Scarce (Na)	A medium-sized bee of coastal dunes in southern Britain north to Lancashire of the west coast and Norfolk on the east coast. Nesting occurs in sandy ground whilst foraging occurs on a variety of flowers. Recorded from D in July.
<i>Cyclodinus constrictus</i> Coleoptera, Anthicidae	Nationally Scarce	A small beetle, found in at the margins of salty or brackish water. Can be very common where it occurs, often among decaying litter on salt marsh margins. Very local in the UK, with a range known previously from the Wash to Dorset; hence the records here represent a significant northerly shift in the known range. Recorded from B and C in May, June and August, and found both in pitfalls and by active sampling, suggesting a healthy population is present.
<i>Dioxyna bidentis</i> Diptera, Tephritidae	[Nationally Notable]	A picture-winged fly, whose larvae feed on Trifid Bur-marigold <i>Bidens tripartita</i> and possibly other Asteraceae, widely but locally distributed throughout Britain. Recorded from A and G in June and August.
<i>Dyschirius salinus</i> Coleoptera, Carabidae	Nationally Scarce	A small ground beetle, widespread in saltmarsh habitat around the coast north to the Moray Firth, although most numerous in the south. Recorded from A and B in May and June.
<i>Ectemnius sexcinctus</i> Hymenoptera, Crabronidae	Nationally Scarce (Nb)	A scarce hunting wasp, found in assorted open habitats north to southern Scotland. Nesting apparently occurs both in dead wood and sandy ground, with nest cells provisioned with paralysed flies. Adults visit umbellifer flowers. Recorded from A, D and G in July and August.
<i>Egle parvaeformis</i> Diptera, Anthomyiidae	pNationally Scarce	An anthomyiid fly, sparsely recorded in southern Britain. Associated with fens and damp woodland with willow scrub. Recorded from B in May.
<i>Erynnis tages</i> (Dingy Skipper) Lepidoptera, Hesperidae	SoPI	A small brown butterfly, found locally but widely across much of Britain, although mostly coastal further north. Caterpillars feed on Bird's-foot Trefoil and hence the species tends to be found in open, sunny habitats, often with a mosaic of bare or sparsely vegetated ground. Recorded from all sections, during May and June, and noted during 2018 as well as 2023.
<i>Fannia minutipalpis</i> Diptera, Fanniidae	pNationally Scarce	A small calypterate fly, widespread but localised and with unclear habitat preferences, though it has been reared from soil beneath an oak and from decaying plant material. Recorded from A in July.

Species	Conservation status	Ecology, distribution and occurrence during surveys
<i>Grapholita lunulana</i> (Northern Crescent Piercer)  Lepidoptera, Tortricidae	pNationally Scarce	A tortrix moth, found mostly in the north and west although also in the Midlands. Occurs in a variety of grassy and scrubby habitats, the caterpillars feeding on vetches <i>Vicia</i> . Recorded from D in May.
<i>Hebecnema fumosa</i>  Diptera, Muscidae	pNationally Scarce	A muscid fly, widespread but localised in pastoral landscapes. It has been reared from sheep dung and, on mainland Europe, from fowl, horse and cow dung as well. Recorded from B in May and July.
<i>Helina calceata</i>  Diptera, Muscidae	pNationally Scarce	A muscid fly, recorded across much of Britain but very sparsely. Associations are uncertain; some localities are damp riverine sites or mosses, others are dry broad-leaved woodland, others are dry grassland with scrub or are on sandy soils. Recorded from G in 2018 but not noted in 2023.
<i>Helina intermedia</i>  Diptera, Muscidae	pNear Threatened	A muscid fly, known from a few dune localities in Scotland, along the east coast of England and possibly one inland fen (Norfolk). It seems to like the Marram zone of dunes. Recorded from D in August where such habitat is present.
<i>Helina protuberans</i>  Diptera, Muscidae	pNationally Scarce	A muscid fly, widespread but localised in coastal dunes but also found inland on river shingles in the Spey Valley. Puparia have been found among the roots of Marram. Recorded from D in May.
<i>Helina pubescens</i>  Diptera, Muscidae	pNear Threatened	A muscid fly, widespread but rare with unconfirmed records extending north to Scotland. Habitats preferences are unclear but include broad-leaved woodland, both coastal and inland. Recorded from D in August.
<i>Helina subvittata</i>  Diptera, Muscidae	pNationally Scarce	A muscid fly, sparsely distributed in Scotland, northern England and north Wales, usually in upland areas in both wooded and open country. Recorded from G in 2018 but not noted in 2023.
<i>Helophorus fulgidicollis</i>  Coleoptera, Helophoridae	Nationally Scarce	A small water beetle, found in shallow salt-marsh pools, or in dune-slacks. Widespread in suitable habitat north to the Moray Firth. Recorded from B in June, from pitfall traps in brackish grassland.
<i>Helophorus nubilus</i> (Wheat Mud Beetle)  Coleoptera, Helophoridae	Nationally Scarce	A small semi-aquatic beetle, although much more terrestrial than most other members of its family. Distributed widely north to Moray in a range of habitats, feeding on plant roots and decaying vegetation. Recorded from pitfalls traps in G in June.
<i>Heterocerus flexuosus</i>  Coleoptera, Heteroceridae	Nationally Scarce	A small beetle, found in mud in saline or brackish conditions, found locally north to the Moray Firth. Recorded from B in May and July, from pitfall traps in brackish grassland.
<i>Hipparchia semele</i> (Grayling)  Lepidoptera, Nymphalidae	Endangered; SoPI	A large, well camouflaged butterfly, typical of dry stony or sandy habitats. Occurs north to northern Scotland, mostly coastal but on some inland heaths in the south. Caterpillars feed on a range of grasses. Recorded from all sections, during July and August, and during 2018 as well as 2023.
<i>Hippodamia variegata</i> (Adonis' Ladybird)  Coleoptera, Coccinellidae	[Nationally Scarce (Nb)]	A small, black-spotted red ladybird, found on low vegetation in drier habitats in southern Britain. Sometimes numerous and seems to be spreading. Recorded from all sections, during June, July and August.

Species	Conservation status	Ecology, distribution and occurrence during surveys
<i>Hylaeus signatus</i> (Large Yellow-face Bee)  Hymenoptera, Colletidae	N Nationally Scarce (Nb)	A widespread but localised bee of open habitats (especially brownfield land) north to the Newcastle area. Pollen is obtained exclusively from Wild <i>Reseda luteola</i> and Wild Mignonette <i>R. lutea</i> . Nesting occurs both in hollow plant stems/ twigs and in vertical earth faces. Recorded from D and G in June and August.
<i>Hyperaspis pseudopustulata</i> (False-spotted Ladybird)  Coleoptera, Coccinellidae	Nationally Scarce (Nb)	A small black ladybird with some red spots along its margins. Records suggest a relatively widespread distribution, but there are few recent records. Mostly coastal and favours low vegetation at water margins. Recorded from B and C in May and August.
<i>Isochnus sequensi</i>  Coleoptera, Curculionidae	[Red Data Book (Insufficiently Known)]	A flea weevil, occurring on willows <i>Salix</i> and poplars <i>Populus</i> , with the larvae creating leaf-mines. Frequent across south-eastern Britain and expanding its range. Recorded from C in July.
<i>Lasiambia palposa</i>  Diptera, Chloropidae	pNationally Scarce	A widespread but very scarce chloropid fly, mostly found on dunes and brownfield land, as well as in the Brecks. The larvae are recorded as predators of the egg pods of grasshoppers. Recorded from D and G in July and August, and in 2018 as well as 2023.
<i>Lasiommata megera</i> (Wall)  Lepidoptera, Nymphalidae	Endangered; SoPI	An orange-brown butterfly, widespread in England and Wales (and coastal in southern Scotland), but having experienced a major population decline in recent years. Now quite rare in most inland areas. The caterpillars feed on a range of grasses. Recorded from B and G in August.
<i>Limnephilus politus</i>  Trichoptera, Limnephilidae	Nationally Scarce	A widespread, still water caddisfly, that extends north to the central lowlands of Scotland but is only common in the south east of England and appears to be declining. Recorded from D in August.
<i>Limnospila albifrons</i>  Diptera, Muscidae	pNationally Scarce	A muscid fly, widespread but localised around the coastline of Britain, typically in saltmarsh, brackish creeks and dune slacks. The biology is unknown. Recorded from C in August.
<i>Lygus pratensis</i>  Hemiptera, Miridae	[Red Data Book 3 (Rare)]	Previously a rare southern species, but now a widespread mirid bug throughout much of southern Britain. Tends to be found on fairly low vegetation. Recorded from G in August.
<i>Macrosteles sordidipennis</i>  Hemiptera, Cicadellidae	Nationally Scarce (Nb)	A small leafhopper, found very locally in saltmarsh habitat north to Teesside and the Solway Firth. Found on saltmarshes grasses and rushes. Recorded abundantly in pitfall traps from B in May, June and July.
<i>Nysson trimaculatus</i>  Hymenoptera, Crabronidae	Nationally Scarce (Nb)	A hunting wasp, widespread but localised in the southern half of Britain. A cleptoparasite of the hunting wasps <i>Gorytes quadrifasciatus</i> and <i>Lestiphorus bicinctus</i> which generally occur in scrubby grasslands with plentiful umbellifers and some sparsely vegetated ground. Recorded from A, B and D in July.
<i>Ochsenheimeria taurella</i> (Feathered Stem-moth)  Lepidoptera, Ypsolophidae	pNationally Scarce	A small moth, recorded sparsely across southern Britain but perhaps more widespread than previously realised as the advent of more portable suction-sampling devices is leading to an uptick in records - perhaps this is a moth which flies only rarely. The caterpillars mine the stems of various coarse grasses. Recorded from D in July (found by suction sampler).

Species	Conservation status	Ecology, distribution and occurrence during surveys
<i>Ochthera manicata</i> Diptera, Ephydriidae	pNationally Scarce	A small fly with distinctive swollen front legs. Traditionally best known from the larger fens of East Anglia but it has been proving more widespread recently. Both adults and larvae are predatory. Recorded from B in May.
<i>Orellia falcata</i> Diptera, Tephritidae	Nationally Notable	A picture-winged fly, widespread but localised in rough grassland with the larval foodplant Goatsbeard <i>Tragopogon pratensis</i> . Targeted surveying suggests it is probably under-recorded. Recorded from A, B and G in June.
<i>Orthoceratium sabulosum</i> Diptera, Dolichopodidae	Nationally Scarce	A dolichopid fly, found in coastal wetlands including upper saltmarsh, brackish ponds and ditches on grazing marsh and wet dune slacks. Widespread but very patchily distributed, north to Teesside and Morecambe Bay. Recorded from A and B in June, July and August.
<i>Orthochaetes setiger</i> Coleoptera, Curculionidae	[Nationally Scarce (Nb)]	A weevil, occurring in grasslands and other open areas. Previously considered scarce but further survey has revealed it to be more common, although easily overlooked. Mostly in the southern half of Britain, although recorded north to Orkney. Recorded from A in May.
<i>Parochthiphila coronata</i> Diptera, Chamaemyiidae	pNear Threatened	A chamaemyiid fly, known from a few widely scattered locations in central and east England, from dunes and brownfield sites. The larvae are predatory upon the scale insect <i>Pseudococcus aberrans</i> in the leaf sheaths of Common Couch <i>Elymus repens</i> . Recorded from G in July, which may well be the most northerly British record to date.
<i>Pherbellia knutsoni</i> Diptera, Sciomyzidae	Red Data Book 3 (Rare)	A snail-killing fly, scarce and found on dunes, chalk heath and brownfield sites with sparse vegetation. It is unclear if this is a terrestrial species or associated with snails in very ephemeral pools on sand and other bare substrates. Recorded from D and G in August, which were notable as being about 215 km north of the previously-known northernmost records in Norfolk
<i>Philanthus triangulum</i> (Bee Wolf) Hymenoptera, Crabronidae	[Red Data Book 2 (Vulnerable)]	A large hunting wasp, previously an extreme rarity but has increased rapidly during the 21st century and currently widespread and often common as far north as Yorkshire. Nests in the ground in sandy habitats, and provisions its nests with Honey Bees <i>Apis mellifera</i> and occasionally other bee species. Recorded from G in July and August. These records are about 50 km north of any records shown in the BWARS map.
<i>Phyllobius vespertinus</i> Coleoptera, Curculionidae	Nationally Scarce (Nb)	A broad-nosed weevil, mostly found low coastal vegetation, including saltmarshes and often on Sea Wormwood <i>Artemisia maritima</i> but also on a wider range of herbaceous plants. Most British records are from the English east coast between Kent and Northumberland. Recorded from B in May (from pitfalls in brackish grassland).
<i>Pipunculus zugmayeriae</i> Diptera, Pipunculidae	Nationally Scarce	A pipunculid fly, seldom recorded but appears to be widespread if local. The larvae develop as internal parasitoids of hopper bugs, but the preferred habitat and hosts are unknown. Recorded from B in June and July.
<i>Rhinocyllus conicus</i> Coleoptera, Curculionidae	[Nationally Scarce (Na)]	A weevil, found locally on thistles in open habitats across southern Britain. Has spread significantly since its status was assessed last. Recorded from B in July.



Species	Conservation status	Ecology, distribution and occurrence during surveys
<i>Salda littoralis</i> Hemiptera, Saldidae	Nationally Scarce	A large shorebug, coastal in southern Britain but more widespread in the north. Occurs in vegetated silty margins of rivers and ponds, as well as in brackish habitats. Recorded from A and B in May, June and July (numerous in the pitfalls on brackish grassland in B).
<i>Saldula opacula</i> Hemiptera, Saldidae	Nationally Scarce	A small shorebug, found in a range of habitats including saltmarshes, brownfield sites and the shores of high-altitude lochans and pools. Occurs locally from Sussex to northern Scotland. There is some indication that it may be expanding its range. Recorded from pitfalls on brackish grassland in B in June.
<i>Saldula palustris</i> Hemiptera, Saldidae	Nationally Scarce	A small shorebug, primarily found on estuarine mudflats, where it can withstand tidal inundation, leading a partly subaquatic lifestyle. Occurs in suitable habitat around much of the British coastline. Recorded from A, B and C, during all months; common in pitfalls on brackish grassland.
<i>Silometopus ambiguus</i> Araneae, Linyphiidae	Nationally Scarce	A small spider, found on saltmarshes, tidal estuaries and sand-hills by the sea, in tidal litter and on mud. Widespread around the whole coast of Britain but local in suitable habitat, where the spider may be frequent. Recorded from B in May.
<i>Siphonella oscinina</i> Diptera, Chloropidae	pNationally Scarce	A chloropid fly, widespread but localised and usually found on coastal dunes and brownfield land. It has also been reared from spider eggs and from larvae predacious on scale insects. Recorded from A, C, D and G, in August and in 2018 as well as 2023.
<i>Sphexodes crassus</i> (Swollen-thighed Blood Bee) Hymenoptera, Halictidae	Nationally Scarce (Nb)	A small blood bee, formerly scarce but becoming increasingly frequent. A cleptoparasite of assorted furrow bees, perhaps especially <i>Halictus tumulorum</i> . Recorded from G in July.
<i>Spilogona biseriata</i> Diptera, Muscidae	pNationally Scarce	A muscid fly, found locally around the British coastline in estuarine sites including salt marshes, especially those with mats of <i>Enteromorpha</i> algae on wet mud and sand. Occasionally recorded inland where there is some brackish influence. Recorded from A and C in May, June and July.
<i>Tetanocera punctifrons</i> Diptera, Sciomyzidae	Nationally Notable	A snail-killing fly, found throughout England and Wales and extending thinly into Scotland. It is very catholic in its habitat choice and can turn up in true wetlands but also other damp habitats such as farm ditches, small flushes and the small pools of coastal landslips. Recorded from A and G in July and August.
<i>Trichina opaca</i> Diptera, Hybotidae	Nationally Scarce	A hybotid fly, little known with only a small number scattered records north to the Moray Firth. It has been recorded from woodland and fen to date. Adults are predatory but little is known of its life history. Recorded from D in May.
<i>Trupanea amoena</i> Diptera, Tephritidae	Red Data Book 2 (Vulnerable)	A picture-winged fly, rare and seldom recorded, mostly from coastal sites. Appears to feed on a range of Asteraceae. Recorded from section G in 2018, but not noted during 2023.

Species	Conservation status	Ecology, distribution and occurrence during surveys
<i>Urophora solstitialis</i>  Diptera, Tephritidae	[Red Data Book 3 (Rare)]	A picture-winged fly, formerly considered rare but now known to be more frequent in southern England and the Midlands and with at least one record from Scotland. The larvae develop in the flowerheads of Musk Thistle <i>Carduus nutans</i> . Recorded from D and G in August.

As stated in Section 1.2.1, whilst sub-compartments C and D have been scoped out, invertebrate populations were likely to interchange across H2. Of the 64 Key Species recorded in the survey, just ten were only recorded within sub-compartments C and D, none of which were SoPI (see Table 4). All of these ten species have the potential to be present within the other sub-compartments based on their ecologies and thus scoping out sub-compartments C and D will have no meaningful influence on the study site's evaluation (Section 5).

Table 4: Key species solely recorded within sub-compartments C and D.

Order	Family	Taxon	Status	C	D
Diptera	Hybotidae	<i>Trichina opaca</i>	Nationally Scarce		•
Diptera	Muscidae	<i>Helina intermedia</i>	pNear Threatened		•
Diptera	Muscidae	<i>Helina protuberans</i>	pNationally Scarce		•
Diptera	Muscidae	<i>Helina pubescens</i>	pNear Threatened		•
Hymenoptera	Colletidae	<i>Colletes marginatus</i> (Margined Colletes)	Nationally Scarce (Na)		•
Lepidoptera	Tortricidae	<i>Grapholita lunulana</i> (Northern Crescent Piercer)	pNationally Scarce		•
Lepidoptera	Ypsolophidae	<i>Ochsenheimeria taurella</i> (Feathered Stem-moth)	pNationally Scarce		•
Trichoptera	Limnephilidae	<i>Limnephilus politus</i>	Nationally Scarce		•
Coleoptera	Curculionidae	<i>Isochnus sequensi</i>	[Red Data Book (Insufficiently Known)]	•	
Diptera	Muscidae	<i>Limnospila albifrons</i>	pNationally Scarce	•	

Andy Godfrey, an entomologist specialising in Diptera and other insect groups undertook surveys across various land parcels within the wider Teesmouth landscape in late summer 2015 to inform the designation of the Teesmouth and Cleveland Coast SSSI. Four of his land parcels/ sampling locations coincided with the Proposed Development Site sub-compartment B and he recorded seven Nationally Scarce taxa (five flies and two beetles), details of which are provided in Table 5.

Table 5: Overlapping compartments surveyed by Godfrey (2015) with sub-compartment B.

Compartments	Key species recorded
BM1 (Brinefield 4) – Rich fen. Surveyed on three dates between the 29 July and 10 August 2015. Considered by Andy to be a poor example of a rich fen, perhaps better described as a transitional brackish marsh. Surveys centred around NZ 508 251.	Three Nationally Scarce flies (Diptera): <ul style="list-style-type: none"> <li>• <i>Stratiomys singularior</i> (Stratiomyidae); and</li> <li>• <i>Eriolus slesvicensis</i> and <i>Speccafrons halophila</i> (Chloropidae).</li> </ul> Three Nationally Scarce water-beetles (Coleoptera): <ul style="list-style-type: none"> <li>• <i>Enochrus bicolor</i> and <i>Enochrus halophilus</i> (Hydrophilidae); and</li> <li>• <i>Ochthebius marinus</i> (Hydraenidae).</li> </ul>
BM2 (Brinefield 4) – Saltmarsh. Surveyed on two dates in early August 2015. Pioneer saltmarsh and tidal pools with algal mats.	Two Nationally Scarce flies: <ul style="list-style-type: none"> <li>• <i>Stratiomys singularior</i>; and</li> <li>• <i>Eriolus slesvicensis</i>.</li> </ul>

Compartments	Key species recorded
Surveys centred around NZ 511 252.	Nationally Scarce water-beetle (Coleoptera): <ul style="list-style-type: none"> <li><i>Enochrus bicolor</i>.</li> </ul>
GM3 (Greenabella Marsh) – Saltmarsh. Small stands of Common Reed and Club-rush fringing a lake, with drier grassland surrounding. Surveyed on a single occasion on 25 July 2015.  Surveys centred around NZ 510 255.	Two Nationally Scarce flies: <i>Eriolus slesvicensis</i> and <i>Speccafrons halophila</i> .
SL1 (Seal Sands)- Rich fen. Surveyed on four dates between late July and early September 2015. Edge of reedbed.  Surveys centred around NZ 513 248.	Nationally Scarce fly <i>Oscinella angustipennis</i> (Chloropidae).

#### 4.2.4 Species exhibiting range expansions.

At least 29 invertebrate species were identified during the 2023 fieldwork that appeared to represent the northernmost ever records of these species in Britain, as shown below in Table 6. Whilst some of these cases may simply reflect relatively low levels of recording/ understanding of the species involved, many species of invertebrates are exhibiting significant range expansions in response to climate heating. Different species do have differing capabilities regarding dispersal, with some able to colonise distant habitat patches, whilst others struggle to cross a few km of unsuitable habitat. In all cases, however, the existence of high quality habitat is crucial in supporting the adaptation of climate-shifted invertebrates.

Table 6: Species recorded within the Survey Areas during 2023 at beyond their known northern (N) limit.

Order	Family	Species	Previous N limit
Araneae	Araneidae	<i>Mangora acalypha</i>	Lincoln
Coleoptera	Anthicidae	<i>Cyclodinus constrictus</i>	Gibraltar Point
Coleoptera	Anthribidae	<i>Bruchela rufipes</i>	Doncaster
Coleoptera	Apionidae	<i>Oxystoma craccae</i>	Scarborough
Coleoptera	Chrysomelidae	<i>Epitrix pubescens</i>	York
Coleoptera	Curculionidae	<i>Isochnus sequensi</i>	York
Coleoptera	Curculionidae	<i>Rhinocyllus conicus</i>	York
Coleoptera	Phalacridae	<i>Olibrus corticalis</i>	Scarborough
Diptera	Anthomyiidae	<i>Botanophila laterella</i>	Leeds
Diptera	Chamaemyiidae	<i>Parochthiphila coronata</i>	South Yorkshire
Diptera	Ephydriidae	<i>Ochthera manicata</i>	South Yorkshire
Diptera	Pipunculidae	<i>Pipunculus zugmayeriae</i>	York
Diptera	Sciomyzidae	<i>Pherbellia knutsoni</i>	Norfolk
Diptera	Tachinidae	<i>Catharosia pygmaea</i>	Sheffield
Diptera	Tephritidae	<i>Campiglossa malaris</i>	Grimsby
Diptera	Tephritidae	<i>Tephritis divisa</i>	Leicester
Hemiptera	Cicadellidae	<i>Athysanus argentarius</i>	York
Hemiptera	Cicadellidae	<i>Macropsis scotti</i>	York
Hemiptera	Cicadellidae	<i>Stroggylocephalus agrestis</i>	Southport

Order	Family	Species	Previous N limit
Hemiptera	Lygaeidae	<i>Peritrechus geniculatus</i>	York
Hemiptera	Pentatomidae	<i>Aelia acuminata</i> (Bishop's Mitre)	York
Hymenoptera	Colletidae	<i>Colletes marginatus</i> (Margined Colletes)	Southport
Hymenoptera	Crabronidae	<i>Cerceris rybyensis</i> (Ornate-tailed Digger Wasp)	York
Hymenoptera	Crabronidae	<i>Ectemnius rubicola</i>	Norfolk
Hymenoptera	Crabronidae	<i>Nysson trimaculatus</i>	York
Hymenoptera	Crabronidae	<i>Philanthus triangulum</i> (Bee Wolf)	York
Hymenoptera	Crabronidae	<i>Psenulus concolor</i>	York
Hymenoptera	Megachilidae	<i>Osmia spinulosa</i> (Spined Mason Bee)	Spurn
Lepidoptera	Ypsolophidae	<i>Ochsenheimeria taurella</i> (Feathered Stem-moth)	Hull

### 4.3 Baseline Invertebrate Assemblage Analysis

The following section describes the invertebrate assemblages recorded within the study area, combining the species recorded from both 2018 and 2023, and analysed using Pantheon (Webb *et al.* 2018) to identify the habitat associations and dependencies of the terrestrial invertebrate assemblage associated with the land parcel. The analysis considers stenotopic species i.e. those terrestrial invertebrates with very specific and <sup>2</sup>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 1,251 species recorded across the two seasons, 1,102 were <sup>3</sup>analysed by Pantheon, with an overall Species Quality Index (SQI) for H2 Teesside of 124. Looking in more detail, the Pantheon analysis identified 162 stenotopic taxa dependent on the habitats within the study area, representing 12.9 % of the invertebrate fauna recorded (see Table 12; Annex 2 for list of species). Of these stenotopic species, 136 are associated with open habitats, and within this assemblage, 135 of them are associated with short sward and bare ground ('those proceeded by 'F'), the equivalent to Open Mosaic Habitat.

Just 21 of the 64 Key Species are classified by Pantheon as being amongst these 162 stenotopic species. To some extent, this may be because Key Species are, by definition, often rarer and for many their habitat preferences may not yet be sufficiently clear to have been included. Of these 21 species, 14 were associated with Open Mosaic Habitats. This reinforces the picture that this is the habitat of key importance with the H2 Teesside site.

Additionally, a group of seven Key Species were identified as being associated with brackish pools and saltmarsh habitat (the beetles *Cyclodinus constrictus*, *Phyllobius vespertinus* and *Helophorus fulgidicollis*; the flies *Orthoceratium sabulosum* and *Spilogona biseriata*; and the bugs *Macrosteles sordidipennis* and *Saldula opacula*). These are a strong reminder of the estuarine influence on the invertebrates around the Tees, even where saltmarsh has been converted to grazing marsh for many years.

Just five of the 29 species recorded beyond their previously known northern limits are stenotopic species, i.e. *Parochthiphila 24coronata* (F111), *Campiglossa malaris* (F112), *Cyclodinus constrictus* (M311), *Rhinocyllus conicus* (F111) and *Psenulus concolor* (A212). The chamaemyiid fly, *P. 24coronata* is likely to be quite poorly

<sup>2</sup> Referred to as Specific Assemblage Types (SAT) in Pantheon (Webb *et al.* 2018).

<sup>3</sup> Pantheon analyses species, attaching associated habitats and resources, assemblage types (adapted from the Invertebrate Species-habitat Information System), conservation status, habitat fidelity scores and other information against them.

recorded and its occurrence here may not necessarily represent a true range expansion. However, for most of the others, these would seem to be cases of genuine range expansion.

As well as analysing the combined dataset, Pantheon was also used to enable comparisons between each of the five sub-compartments (A, B, C, D and G). For sub-compartment G, only the 2023 data was included for better comparability. The results are presented in Table 7.

Table 7: Assemblage analysis by sub-compartment.

	Sub-compartment					
	Combined	A	B	C	D	G
Species-richness	1,251	533	774	391	385	494
Analysed by Pantheon	1,102	480	688	348	342	447
Species Quality Index (SQI)	124	117	118	113	120	115
Stenotopic species	162	69	101	54	65	83
% stenotopic (of all species)	12.9 %	12.9 %	13.0 %	13.8 %	16.9 %	16.8 %
Key Species	64	20	29	10	20	22
Rare Key Species	12	3	5	3	4	8
% Key Species	5.1 %	3.8 %	3.7 %	2.6 %	5.2 %	4.5 %
% Rare Key Species	1.0 %	0.6 %	0.6 %	0.8 %	1.0 %	1.6 %

The SQIs for each sub-compartment range from 113 to 120, with sub-compartment D attaining the highest score, suggesting that the assemblage present here is the highest quality within study area. Sub-compartment B has recorded more Key Species than any other section, representing 45 % of all taxa recorded in H2. Furthermore, substantially more stenotopic species, i.e. those dependent on the habitats present, have been recorded in sub-compartment B than the others, almost twice as many compared to sub-compartment C and just over 20 % more than sub-compartment G (the next nearest). However, of the rarest Key Species, sub-compartment G recorded the most, in absolute terms (8 species) and as a proportion of the assemblage recorded (1.6 %). In conclusion, the data in Table 7 suggests that whilst there are differences between the sub-compartments in terms of the assemblages' qualities, collectively, they complement each other through supporting a broader diversity of taxa than each does individually. This is reflected in, for example, the range of Key Species recorded in each sub-compartment (10 – 29 species) which falls substantially short of the total number recorded in the Proposed Development Site as a whole (64).



## 5 Nature Conservation Evaluation

For the purposes of evaluation, the data for the Proposed Development Site, both from 2023 and arising from Richard Wilson Ecology (2018), have been consolidated. As stated in Section 1.2, whilst the Proposed Development Site footprint has contracted, consideration of the species assemblage recorded remains valid. Whilst the only permanent habitat loss will be associated with the Main Site which has been described as predominantly bare ground with limited vegetation cover, it nevertheless plays a contributory role in the disturbance cycle (up to the point of construction) that has relevance to the invertebrate assemblages recorded. Consideration has been given to evaluating each individual sub-compartment as a separate entity. However, given the data presented in Table 7 and its associated narrative; and the data presented in Table 8 below, the differences between each sub-compartment are minor when comparing Specific Assemblage Types (SATs) and the proportion of species to the favourable conservation threshold (FCT). This said, it is worth noting that each sub-compartment exceeds a threshold for at least one SAT (shaded in green) or comes close to doing so (PtT ≥ 80 %) (shaded in amber). On this basis, it is considered justifiable to evaluate the assemblage within the Proposed Development Site as a single entity as the headline conclusions will apply to all sub-compartments. This said, given that some SATs, such as the saltmarsh and transitional brackish marsh (M311), conservation status is based on the sum of its parts (sub-compartments), this likely reflects the landscape scale value of the study area, with each sub-compartment where the habitat is present contributing to its overall importance.

Table 8: Evaluation of stenotopic species assemblages by Sub-compartment.

Broad biotope	Habitat	SAT	FCT	Number of species (Proportion to Threshold)					
				Combined	A	B	C*	D*	G
Open habitats	Cross-cutting	F002: Rich flower resource	15	51 (340%)	26 (173%)	37 (246%)	22 (146%)	24 (160%)	31 (206%)
Open habitats	Short sward & bare ground	F111: Bare sand & chalk	19	34 (178%)	9 (47%)	15 (78%)	11 (57%)	17 (89%)	18 (94%)
Open habitats	Cross-cutting	F001: Scrub edge	11	26 (236%)	13 (118%)	18 (163%)	9 (81%)	12 (109%)	12 (109%)
Tree-associated	Decaying wood	A212: Bark & sapwood decay	19	23 (121%)	8 (42%)	19 (100%)	3 (15%)	7 (36%)	9 (47%)
Open habitats	Short sward & bare ground	F112: Open short sward	13	20 (153%)	11 (84%)	10 (76%)	8 (61%)	12 (92%)	18 (138%)
Open habitats	Cross-cutting	F003: Scrub-heath & moorland	9	11 (122%)	5 (55%)	7 (77%)	2 (22%)	2 (22%)	5 (55%)
Coastal	Saltmarsh	M311: Saltmarsh & transitional brackish marsh	9	10 (111%)	4 (44%)	8 (88%)	3 (33%)		
Wetland	Acid & sedge peats	W314: Reed-fen & pools	11	3 (27%)	2 (18%)	1 (9%)	1 (9%)		
Open habitats	Short sward &	F113: Exposed sea-cliff	n/a	1 (n/a%)	1 (n/a%)				

Broad biotope	Habitat	SAT	FCT	Number of species (Proportion to Threshold)					
				Combined	A	B	C*	D*	G
	bare ground								
Tree-associated	Decaying wood	A215: Epiphyte fauna	3	1 (33%)	1 (33%)			1 (33%)	
Wetland	Running water	W126: Seepage	6	1 (16%)					
Wetland	Marshland	W221: Undisturbed fluctuating marsh	4	1 (25%)			1 (25%)		

\*Survey Area no longer within the Proposed Development Site

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 Key Species can best be represented in protected sites (SSSIs) (Curson *et al.*, 2019). Finally, it remains relevant to assess the invertebrate assemblage recorded against non-statutory site guidelines. Guidelines have been produced by the Tees Valley Biodiversity Partnership, and by the 'Sites of Importance for Nature Conservation in North Yorkshire' (SINC) panel, as set out in Section 3.3.3.2.

## 5.1 Individual Species

Out of a total list of 1,251 species, 64 Key Species (including 12 Rare Key Species) were recorded, representing 5.1 % and 1.0 % of the assemblage respectively. The former proportion is substantially below the proposed threshold for national importance (10 %), although the proportion of Rare Key Species reaches the respective proposed threshold (1 %).

Applying Curson *et al.* (2019), four species recorded in 2018 and 2023 (indeed in 2023 alone) are of conservation priority in England, i.e. IUCN Threatened and/ or SoPI. All of these are butterflies listed as Species of Principal Importance (SoPI) under the 2006 NERC Act (Small Heath, Dingy Skipper, Grayling and Wall); the last two of these are also considered Endangered under IUCN threat criteria, with Small Heath considered Vulnerable under IUCN criteria. Small Heath and Grayling have been recorded in all sub-compartments within the Proposed Development Site.

## 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 Stenotopic Species

The relative value of the notable habitats present for terrestrial invertebrate species can be interrogated in more detail regarding the stenotopic species recorded by the survey. 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.

Pantheon has been used to investigate this further by interrogating the composition of the terrestrial invertebrate assemblage in terms of biotopes, habitats, and the distribution of stenotopic species recorded. In

doing so, the limitations of Pantheon as a tool have been considered, and professional judgement has been applied where necessary to assist robust valuation.

The stenotopic species are listed in Table 12 (Annex 2) and summarised in Table 9. Initial discussion of this element of the analysis is given in Section 4.3.

Following review of the number of stenotopic species recorded and the thresholds published in Drake *et al.* (2007), as conveyed in Table 9 (overleaf), seven SATs have exceeded or met the threshold considered to represent Favourable Condition.

Three of the SATs (rich flower resource (F002), scrub edge (F001), and scrub-heath and moorland (F003)) are considered to be cross-cutting habitats, as they can be found in a number of different situations; as such, these are considered to have a poor discriminatory value in nature conservation terms (i.e. exceeding the threshold is not sufficient on its own to conclude national significance) (Webb *et al.*, 2018). However, two other SATs (open short sward (F112) and bare sand and chalk (F111)) that exceed the favourable condition threshold are better defined as sitting within the 'short sward and bare ground' habitat, analogous to Open Mosaic Habitat. Additionally, SATs aligned with 'saltmarsh' and 'decaying wood' habitats are also identified as important across the combined site.

**Table 9:** Invertebrate assemblage assessment for Proposed Development (all sub-compartments).

Broad biotope	Habitat	SAT	No. of species	Favourable condition threshold	Proportion to threshold
Open habitats	Cross-cutting	F002: Rich flower resource	51	15	340
Open habitats	Cross-cutting	F001: Scrub edge	26	11	236
Open habitats	Short sward & bare ground	F111: Bare sand & chalk	34	19	179
Open habitats	Short sward & bare ground	F112: Open short sward	20	13	153
Open habitats	Cross-cutting	F003: Scrub-heath & moorland	11	9	122
Tree-associated	Decaying wood	A212: Bark & sapwood decay	23	19	121
Coastal	Saltmarsh	M311: Saltmarsh & transitional brackish marsh	10	9	111
Tree-associated	Decaying wood	A215: Epiphyte fauna	1	3	33
Wetland	Acid & sedge peats	W314: Reed-fen & pools	3	11	27
Wetland	Marshland	W221: Undisturbed fluctuating marsh	1	4	25
Wetland	Running water	W126: Seepage	1	6	17
Open habitats	Short sward & bare ground	F113: Exposed sea-cliff	1	n/a	n/a

Seven SATs have reached or exceeded their favourable condition thresholds, representing a complex mix of Open Habitat Mosaic habitat, coastal grassland, saltmarsh and transitional brackish marshes and scrub habitats. This suggests that the invertebrate assemblages within the Proposed Development Site have a genuine above-background nature conservation value and represent a broad range of vegetation communities.

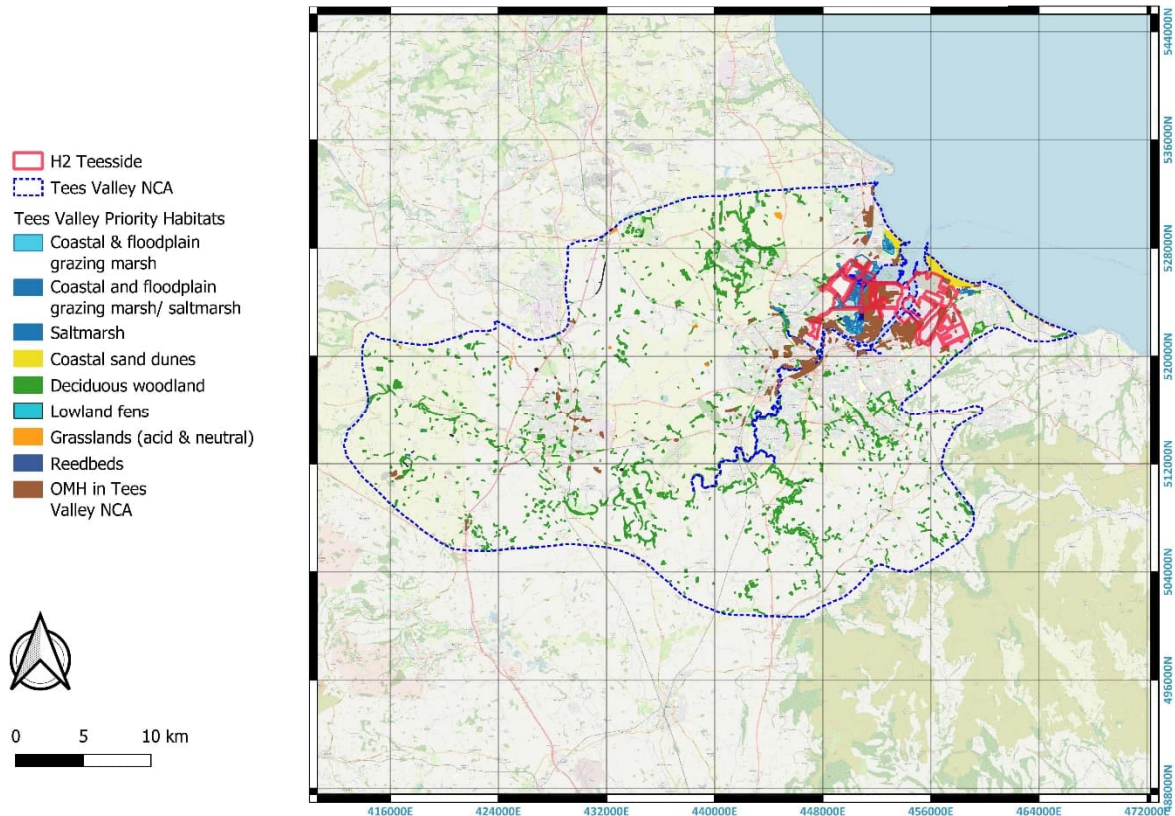
Moreover, as indicated in Table 8, for three SATs (bare sand and chalk (F111), scrub-heath and moorland (F003) and saltmarsh and transitional brackish marsh (M311)), it is the collective contribution of a number of sub-

compartments which result in their exceedance, and not a single habitat parcel in one location. This suggests that it is the presence of habitats within the Survey Areas which contribute to the assemblage's nature conservation value.

## 5.2.2 Landscape context

The Proposed Development is located immediately adjacent to a landscape designated for its coastal habitats, including dune systems saltmarshes, floodplain grasslands, and the associated avifauna and invertebrate assemblages present as mapped in Figure 5. The important habitats within the Proposed Development Site are the Open Mosaic Habitat, represented by the open short sward, and bare sand and chalk SATs; and the various scrub and coastal wetland habitats including saltmarsh and its transitional phases. Open Mosaic Habitat is present throughout the NCA, but clustered within the Teesside industrial area either side of Teessmouth, and Darlington to the west (see Figure 5).

Figure 5: Open Mosaic Habitat mapped in the Lowland Tees NCA (data from MAGIC website).



## 5.3 Taxonomic Assemblages

### 5.3.1 SSSI guidelines

Recent guidance considers how Key Species can best be represented in protected sites (SSSIs) (Curson *et al.*, 2019). Whilst the presence of 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. 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 Annex 1 for details)
  - This condition is met through the presence of Small Heath (VU), Grayling (EN), Wall (EN), *Campiglossa malaris* ([RDB]), *Lygus pratensis* ([RDB]), *Pherbellia knutsoni* (RDB), *Philanthus triangulum* [(RDB)], *Urophora solstitialis* [(RDB)], *Amara spreta* (NR), *Isochnus sequensi* [(RDB)], *Trupanea amoena* (RDB) and *Andrena ruficrus* (RDB).
- Species of country conservation priority (i.e. SoPI),



- This condition is met through the presence of Small Heath, Dingy Skipper, Grayling and Wall.
- Edge of range species
  - This condition is met by the presence of the 29 species listed in Table 6 which were noted during fieldwork but were not previously known at this latitude.
  - In addition, at least a further eight species were noted for which the Teesside area was already known as the current northern limit of the British range, i.e. *Tephritis matricariae*, *Eurybregma nigrolineata*, *Ischnodemus sabuleti*, *Argogorytes fargeii*, *Anthocomus rufus*, *Macrosteles sordidipennis*, *Deraeocoris ruber* and *Stenodema trispinosa*.
- Assemblages of specialised habitats and habitat-based assemblages such as Open Mosaic Habitat faunas, and habitat heterogeneity/ mosaics.
  - Yes, as evidenced by the discussion in Sections 4.3 and 5.1.

### 5.3.2 Local Wildlife Site guidelines

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

#### 5.3.2.1 Tees Valley

Strictly applying the criteria for the majority of invertebrate groups, the study area would potentially meet LWS guidelines as a result of supporting

- 21 species of butterflies;
- 11 species of dragonflies;
- Emperor Dragonfly *Anax imperator*;
- Black-tailed Skimmer *Orthetrum cancellatum*; and
- Dingy Skipper. Note that the guidelines require the presence of a 'significant population (i.e. 10 individuals)' of this species; no dedicated counts were made but given multiple observations in both 2018 and 2023 and the extensive nature of the habitat, it is reasonable to assume this threshold was exceeded.

In reality, apart from picking up on the significance of Dingy Skipper, these criteria seem somewhat ill-suited for making a meaningful contribution to invertebrate conservation at a local scale. Most of the butterflies and dragonflies involved are mobile species and not particular habitat specialists.

#### 5.3.2.2 North Yorkshire

Strictly applying the criteria as set out by the SINC panel, the study area would potentially meet LWS guidelines as a results of supporting:

- BM1: Any site regularly supporting a breeding population of a nationally rare or nationally scarce species of Lepidoptera.

- Yes, two species of micro-moth were noted (*Grapholita lunulana* (Northern Crescent Piercer) and *Ochsenheimeria taurella* (Feathered Stem-moth)) that are provisionally nationally scarce. It should be noted also that moths were relatively poorly recorded by the survey methods used, with no light trapping deployed.
- DD3: Any site regularly supporting an assemblage of breeding populations of 8 or more species of Odonata.
  - Yes, 11 such species were recorded (Table 3), although it should be noted that the nature of the fieldwork undertaken meant that evidence of breeding was not sought. However, the extensive and varied nature of the site means that it is highly likely that some or all of these nine species were breeding on the site.
- H1: Any site supporting a breeding population of any nationally rare or scarce species listed in the most recent version of Red Data Books of aculeate Hymenoptera or a species protected under the Habitats Directive and/or listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).
  - Yes, nine such species were recorded (Table 3), although it should be noted that the nature of the fieldwork undertaken meant that evidence of breeding was not sought. However, the extensive and varied nature of the site means that it is highly likely that some or all of these nine species were breeding on the site.
- H4: Any site supporting five or more species of native species of ant (Formicidae) in Watsonian Yorkshire.
  - Yes, at least eight species of native ants were recorded (Table 5)
- I1: Any site supporting a population of any nationally rare species or a species protected under the Habitats Directive and/or listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).
  - Yes, nine nationally rare species were present (Table 3), although a number of these have increased in range since they were listed as such.

Overall, the fact that these five criteria (BM1, DD3, H1, H4, I1) were met should mean that the area would be worthy of consideration as a LWS in a North Yorkshire context.

## 5.4 Conclusion

A total of 1,161 species of invertebrates were recorded within the study area in 2023, rising to 1,251 species when combined with a relevant dataset from Richard Wilson Ecology (2018). Overall, these included 64 Key Species, 12 Rare Key Species and four SoPI.

Data analysis has identified seven SATs that are in Favourable Condition, i.e. indicate invertebrate assemblages of value. Collectively, these describe a diverse, complex range of habitats inter-connected with the wider ecological landscape within the NCA and County Durham's coastal hinterland. The thresholds for SSSI status (acting as a proxy for national significance) have been met on a number of counts, as have the non-statutory thresholds. Several taxa have been recorded that are substantial range extensions, further amplifying the importance of the various sub-compartments within the Proposed Development Site footprint. In summary, the study area represents an important resource and contributes to invertebrate nature conservation within Teesside and more broadly.

Taking into consideration all of the above, including the proportion of Key Species, it is justifiable to conclude that the study area supports an invertebrate assemblage of national nature conservation value.

On the basis of the survey and evaluation work undertaken, given the national value of the assemblage present, where avoidance cannot be achieved, meaningful and proportionate mitigation will be required to prevent net harm to the baseline invertebrate assemblages. The aim in the landscaping for the Proposed Development should be to secure a long-term resource for invertebrates that will continue to provide and contribute to the metapopulation of sites within the Teesside area. This is to ensure the important invertebrate assemblage persists within the ecological landscape, including acting as an important stepping-stone for species shifting range in response to climate change.

This is also justified as the Proposed Development Site likely makes a substantial contribution to the biodiversity of the Teesside area, especially within the NCA. Populations probably interact strongly with surrounding areas providing adults requirements e.g. flowers for species breeding elsewhere, and larvae requirements for species foraging elsewhere. The principles for this are set out in Section 6.

## 6 Mitigation Proposals

At the time of writing, no draft layouts or firm proposals have been provided, possibly because the ecology surveys will inform detailed design.

Open Mosaic Habitat is a dynamic vegetation community, and a key factor is the provision through retaining the disturbance process that maintain the varied swards and ratios between vegetation cover and bare ground. This is therefore not quite the same as avoidance, using the mitigation hierarchy terminology, as post-construction and during the operational phase of the development, these disturbance processes will form an integral role in ensuring the favourable conservation status is maintained.

A key ingredient to achieving this aim is to ensure that landscaping avoids the introduction of nutrient-rich substrates/ soils. The current substrates act as a growth inhibitor, slowing the succession from bare ground to complete vegetation cover. Whilst ground remediation works may be required, for example to remove contaminants, areas identified for biodiversity should retain the biochemical and physical nature of the existing baseline substrate, i.e. low nutrient, free-draining and uneven topography. Examples of substrates that can replicate suitable media are described in Wilson and Little (2023) and are replicated in the table below.

Table 10: Examples of substrates available for ecological landscaping (after Wilson and Little, 2023).

Substrate Type	Description
Crushed concrete Type 1/3	A useful substrate and readily available as an alternative to mined granite/ limestone type 1. The particle size mix works well, and if not compacted, drains well. Seeds readily germinate into this material and the high pH suits a lot of species associated with open mosaic landscapes.
Crushed ceramic dust from sanitary ware waste.	Smaller particle size (8 mm to dust) which works well at ground-level and on green roofs, providing free draining, low fertility substrate. The high temperature of the firing process in sanitary ware means the resultant crushed waste doesn't clog, which combined with the pieces of glaze, it act likes horticultural grit. This substrate is one of the most useful materials in brownfield landscapes.
Thanet sand.	A fine sand embedded with some silt/ clay, making it a favourite for a range of ground nesting bees as the texture ensures they can dig their nest cavities without collapse. One approach is to mound this sand to form south-facing slopes. By keeping the vegetation down, solitary bees quickly colonise. Using drought-tolerant plants planted towards the apex of the slope ensures the strong capillary action of this fine sand avoids keeping the plants too wet through winter.
Recycled sharp sand	Screened from soils/ waste taken off sites that would otherwise go to landfill. This is a very good substrate for most plants and cheaper than standard sharp sand. It often out-performs this substrate in JL's experience because of its wider particle size enabling moisture retention and some nutrients. A default option for planting, though rarely used by ground nesting invertebrates. An example of recent use is for a sand bed for propagation and a nursery bed. Really works to encourage deep rooting and reduced watering.
Crushed brick and concrete	A wonderful choice as it comes in various grades: 10 mm, 20 mm, 50 mm and 50 – 100 mm; all clean or with fines. Using 50 – 100 mm in 'spoil heaps', or in gabions provides niches and voids for a wide range of invertebrates. The material remains unvegetated for longer, creating a long-term bare ground environment for basking (see Case-Study 1). Using material with fines ensures the clay content from the brick dust retains moisture, in addition to being higher in phosphorus. This tends to invite more competitive forbs and grasses that reduce the plant diversity.

Substrate Type	Description
Crushed glass	<p data-bbox="483 248 1401 309">Sold as a recycled alternative to mined sharp sand, giving you an inert, safe and low fertility planting medium.</p> <p data-bbox="483 315 1326 376">As you might expect, this is one of the most hostile and stressed substrates available, providing superb opportunities to grow species that don't tolerate competition.</p> <p data-bbox="483 383 1369 443">Calcicolous plants thrive in this material, though this is a poor medium for ground nesting invertebrates.</p>



## 7 References

- Biological Records Centre (2018). Biological Records Centre - Pantheon. Reported Condition.
- Bratton, J.H. (1991). *British Red Data Books: 3. Invertebrates other than insects*. Joint Nature Conservation Committee, Peterborough.
- Buglife (2014). Species Status: Lists of Invertebrate Species Covered by Policy and Legislation in the UK
- Curson J., Howe, M., Webb, J., Heaver D. and Tonhasca, A. (2019). *Guidelines for the Selection of Biological SSSIs Part 2: Detailed Guidelines for Habitats and Species Groups. Chapter 20 Invertebrates*. Joint Nature Conservation Committee, Peterborough.
- Department for Levelling Up, Housing and Communities (DLUHC) (2024). *National Planning Policy Framework*.
- Drake, C.M., Lott, D.A., Alexander, K.N.A. and Webb, J. (2007). *Surveying terrestrial and freshwater invertebrates for conservation evaluation*. Natural England Research Report (NERR005). Natural England, Sheffield. 132pp
- Godfrey, A. (2015). *Invertebrate survey of sites around Teesside*. Unpublished report to Natural England.
- Grayson, A. (2015) A Summary of Results from Recent Surveys of Invertebrate Assemblages at Gravel Hole and Maze Park. *Proceedings of the Cleveland Naturalists Field Club*, 11(1): 25 – 40.
- International Union for Conservation of Nature (IUCN) (n.d.). Raw Data to Red List.
- IUCN (2012). *IUCN Red List Categories and Criteria*. Version 3.1, 2<sup>nd</sup> Edition. Gland, Switzerland.
- Joint Nature Conservation Committee (JNCC) (2023a). Conservation Designations for UK taxa
- Joint Nature Conservation Committee (JNCC) (2023b). Conservation Designations for UK taxa
- Joint Nature Conservation Committee (JNCC) (2022). SSSI guidelines
- Ministry of Housing, Communities and Local Government (2021). *National Planning Policy Framework*. London.
- North Yorkshire SINC Panel (2017). *Sites of Importance for Nature Conservation in North Yorkshire*. Version 3.0, dated December 2017. Available on-line: <https://bit.ly/NYorksSINC>; last accessed on the 1 November 2023
- Richard Wilson Ecology (2018). *Terrestrial Invertebrate Survey, Land within Redcar Steelworks, Teesside*. Unpublished report to AECOM Ltd. Document Reference: RW-CM-001-RWE0211-INV; Version 1.0; dated 15 November 2018. Available on-line: [https://bit.ly/Redcar\\_Inverts](https://bit.ly/Redcar_Inverts); last accessed on 2 November 2023
- Richard Wilson Ecology (2020). *Terrestrial Invertebrate Survey, Coatham Dunes, nr. Redcar, Teesside*. Unpublished report to AECOM Ltd. Document Reference: RW-DB-001-RWE0234-INV; Version 1.0; dated 15<sup>th</sup> December 2020. Available on-line: [https://bit.ly/Coatham\\_Inverts](https://bit.ly/Coatham_Inverts); last accessed on 2 November 2023
- Riding, A., Critchley, N., Wilson, L. and Parker, J. (2010). *Definition and mapping of open mosaic habitats on previously developed land: Phase 1 - Final Report*. Report to Defra. Wolverhampton: ADAS UK Ltd.
- Shirt, D. (1987). *British Red Data Books 2: Insects*. Joint Nature Conservation Committee, Peterborough.

Tees Valley Partnership (2010). *Guidelines for the selection of Local Wildlife Sites in the Tees Valley*. Version 7.0, June 2010.

Telfer, M.G. (2017). *Invertebrate survey of Tilbury2*. Report to Bioscan (UK) Ltd.

Webb, J., Heaver, D., Lott, D., Dean, H.J., van Breda, J., Curson, J., Harvey, M., Gurney, M., Roy, D.B., van Breda, A., Drake, M., Alexander, K.N.A. and Foster, G. (2018). *Pantheon - database version 3.7.6*.

Wilson, R. (2018). Terrestrial Invertebrate Survey, Land within Redcar Steelworks, Teesside. Report to AECOM Ltd.

Wilson, R. (2020). Terrestrial Invertebrate Survey, Coatham Dunes, nr Redcar, Teesside. Report to AECOM Ltd.

## A. Annex 1: 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 <sup>4</sup> Joint Nature Conservation Committee database of species designations has been undertaken where the author is aware there might be a discrepancy (Joint Nature Conservation Committee (JNCC), 2023a). 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.

## 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 SoPI. Approximately 70 species of moth have been included in a list which proposes 'for

---

<sup>4</sup> Joint Nature Conservation Committee, <http://jncc.defra.gov.uk/page-3408>

Research only'; a frequently encountered example is the Cinnabar (*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, most 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.



## B. Annex 2: Species Lists

Table 11: Species recorded from the H2 study area in 2023 and those recorded by Richard Wilson Ecology (2018).

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Arachnida	Araneae	Agelenidae	Textrix denticulata						•	
Arachnida	Araneae	Araneidae	Araneus diadematus (Garden Spider)			•	•		•	
Arachnida	Araneae	Araneidae	Araneus quadratus		•	•		•	•	
Arachnida	Araneae	Araneidae	Araniella cucurbitina						•	
Arachnida	Araneae	Araneidae	Araniella opisthographa				•	•		
Arachnida	Araneae	Araneidae	Larinioides cornutus		•	•	•	•		
Arachnida	Araneae	Araneidae	Mangora acalypha					•		
Arachnida	Araneae	Araneidae	Zygiella atrica				•		•	
Arachnida	Araneae	Clubionidae	Clubiona brevipes			•				
Arachnida	Araneae	Clubionidae	Clubiona comta		•					
Arachnida	Araneae	Clubionidae	Clubiona lutescens			•				
Arachnida	Araneae	Clubionidae	Clubiona neglecta			•				
Arachnida	Araneae	Clubionidae	Clubiona pallidula			•				
Arachnida	Araneae	Clubionidae	Clubiona reclusa		•			•		
Arachnida	Araneae	Clubionidae	Clubiona stagnatilis		•	•				
Arachnida	Araneae	Dictynidae	Dictyna arundinacea		•	•	•	•		■
Arachnida	Araneae	Dictynidae	Dictyna uncinata		•					
Arachnida	Araneae	Dysderidae	Dysdera crocata (Woodlouse Spider)						•	
Arachnida	Araneae	Gnaphosidae	Drassodes cupreus			•				■
Arachnida	Araneae	Gnaphosidae	Drassodes lapidosus						•	
Arachnida	Araneae	Gnaphosidae	Haplodrassus signifer			•			•	■
Arachnida	Araneae	Gnaphosidae	Micaria pulicaria		•	•			•	
Arachnida	Araneae	Gnaphosidae	Zelotes latreillei							■
Arachnida	Araneae	Hahniidae	Hahnia nava		•					
Arachnida	Araneae	Linyphiidae	Agyneta decora			•				
Arachnida	Araneae	Linyphiidae	Agyneta saxatilis			•				
Arachnida	Araneae	Linyphiidae	Baryphyma trifrons			•				
Arachnida	Araneae	Linyphiidae	Bathyphantes gracilis		•	•		•		
Arachnida	Araneae	Linyphiidae	Centromerita concinna							■
Arachnida	Araneae	Linyphiidae	Centromerus sylvaticus							■
Arachnida	Araneae	Linyphiidae	Ceratinella brevipes			•				
Arachnida	Araneae	Linyphiidae	Diplocephalus picinus			•				
Arachnida	Araneae	Linyphiidae	Diplostyla concolor							■
Arachnida	Araneae	Linyphiidae	Dismodicus bifrons		•	•	•	•		

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Arachnida	Araneae	Linyphiidae	Erigone atra			•		•	•	
Arachnida	Araneae	Linyphiidae	Erigone dentipalpis			•				
Arachnida	Araneae	Linyphiidae	Erigone longipalpis		•	•				
Arachnida	Araneae	Linyphiidae	Erigone promiscua		•	•				
Arachnida	Araneae	Linyphiidae	Erigonella hiemalis							■
Arachnida	Araneae	Linyphiidae	Gonatium rubens		•				•	
Arachnida	Araneae	Linyphiidae	Hylyphantes graminicola		•					
Arachnida	Araneae	Linyphiidae	Hypomma bituberculatum			•				
Arachnida	Araneae	Linyphiidae	Maso sundevalli		•					
Arachnida	Araneae	Linyphiidae	Micrargus herbigradus			•				■
Arachnida	Araneae	Linyphiidae	Micrargus subaequalis		•	•			•	
Arachnida	Araneae	Linyphiidae	Microlinyphia pusilla		•					
Arachnida	Araneae	Linyphiidae	Oedothorax fuscus		•	•				
Arachnida	Araneae	Linyphiidae	Oedothorax gibbosus		•					
Arachnida	Araneae	Linyphiidae	Oedothorax retusus			•			•	
Arachnida	Araneae	Linyphiidae	Peponocranium ludicrum				•			
Arachnida	Araneae	Linyphiidae	Pocadicnemis pumila			•	•			
Arachnida	Araneae	Linyphiidae	Porrhomma pygmaeum		•	•				
Arachnida	Araneae	Linyphiidae	Silometopus ambiguus	Nationally Scarce		•				
Arachnida	Araneae	Linyphiidae	Tenuiphantes tenuis		•	•	•	•	•	■
Arachnida	Araneae	Linyphiidae	Tiso vagans			•			•	
Arachnida	Araneae	Linyphiidae	Trichopternoides thorelli		•	•	•	•		
Arachnida	Araneae	Linyphiidae	Walckenaeria acuminata							■
Arachnida	Araneae	Linyphiidae	Walckenaeria vigilax			•				
Arachnida	Araneae	Lycosidae	Alopecosa pulverulenta			•			•	■
Arachnida	Araneae	Lycosidae	Pardosa amentata			•				
Arachnida	Araneae	Lycosidae	Pardosa nigriceps		•	•	•	•	•	■
Arachnida	Araneae	Lycosidae	Pardosa palustris			•			•	■
Arachnida	Araneae	Lycosidae	Pardosa pullata		•	•	•		•	■
Arachnida	Araneae	Lycosidae	Pardosa purbeckensis			•	•			
Arachnida	Araneae	Lycosidae	Pirata piraticus			•				
Arachnida	Araneae	Lycosidae	Trochosa ruricola			•				
Arachnida	Araneae	Lycosidae	Trochosa terricola			•			•	
Arachnida	Araneae	Philodromidae	Philodromus aureolus		•	•		•		
Arachnida	Araneae	Philodromidae	Philodromus cespitum		•					

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Arachnida	Araneae	Philodromidae	Tibellus maritimus		•		•			
Arachnida	Araneae	Philodromidae	Tibellus oblongus						•	■
Arachnida	Araneae	Pisauridae	Pisaura mirabilis (Nursery Web Spider)			•	•			■
Arachnida	Araneae	Salticidae	Euophrys frontalis		•	•	•	•	•	■
Arachnida	Araneae	Salticidae	Heliophanus flavipes		•	•	•	•	•	■
Arachnida	Araneae	Salticidae	Salticus scenicus						•	
Arachnida	Araneae	Salticidae	Talavera aequipes				•		•	
Arachnida	Araneae	Tetragnathidae	Metellina mengei			•				
Arachnida	Araneae	Tetragnathidae	Metellina segmentata			•				
Arachnida	Araneae	Tetragnathidae	Pachygnatha degeeri		•	•			•	
Arachnida	Araneae	Tetragnathidae	Tetragnatha extensa		•	•			•	
Arachnida	Araneae	Theridiidae	Anelosimus vittatus		•					
Arachnida	Araneae	Theridiidae	Enoplognatha latimana				•		•	
Arachnida	Araneae	Theridiidae	Enoplognatha ovata				•		•	
Arachnida	Araneae	Theridiidae	Enoplognatha thoracica			•				
Arachnida	Araneae	Theridiidae	Episinus angulatus		•					
Arachnida	Araneae	Theridiidae	Neottiura bimaculata		•		•			
Arachnida	Araneae	Theridiidae	Phylloneta impressa			•		•	•	
Arachnida	Araneae	Theridiidae	Robertus lividus			•				■
Arachnida	Araneae	Thomisidae	Ozyptila brevipes				•			
Arachnida	Araneae	Thomisidae	Ozyptila praticola			•				
Arachnida	Araneae	Thomisidae	Xysticus cristatus		•	•	•	•	•	■
Arachnida	Ixodida	Ixodidae	Ixodes ricinus (Castor Bean Tick)		•	•	•		•	
Arachnida	Opiliones	Phalangidae	Phalangium opilio		•	•			•	
Arachnida	Pseudoscorpiones	Neobisiidae	Roncus lubricus (Reddish Two-eyed Chelifer)			•				
Chilopoda	Lithobiomorpha	Lithobiidae	Lithobius forficatus			•			•	
Chilopoda	Lithobiomorpha	Lithobiidae	Lithobius microps			•				
Diplopoda	Julida	Blaniulidae	Proteroiulus fuscus						•	
Diplopoda	Julida	Julidae	Cylindroiulus caeruleocinctus			•				
Diplopoda	Julida	Julidae	Cylindroiulus punctatus (Blunt-tailed Snake Millipede)			•				
Diplopoda	Julida	Julidae	Ophiulus pilosus			•			•	
Diplopoda	Julida	Julidae	Tachypodoiulus niger (White-legged Snake Millipede)		•	•	•			
Diplopoda	Polydesmida	Polydesmidae	Polydesmus inconstans			•				
Insecta	Coleoptera	Anthicidae	Cyclodinus constrictus	Nationally Scarce		•	•			
Insecta	Coleoptera	Anthicidae	Omonadus floralis		•					

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Coleoptera	Anthribidae	Bruchela rufipes		•	•		•	•	
Insecta	Coleoptera	Apionidae	Betulapion simile			•				
Insecta	Coleoptera	Apionidae	Ceratapion carduorum		•		•			
Insecta	Coleoptera	Apionidae	Ceratapion gibbirostre				•	•	•	
Insecta	Coleoptera	Apionidae	Ceratapion onopordi						•	
Insecta	Coleoptera	Apionidae	Eutrichapion ervi			•			•	
Insecta	Coleoptera	Apionidae	Eutrichapion viciae			•			•	
Insecta	Coleoptera	Apionidae	Holotrichapion pisi		•	•	•	•	•	
Insecta	Coleoptera	Apionidae	Ischnopterapion loti		•	•	•	•	•	
Insecta	Coleoptera	Apionidae	Ischnopterapion virens		•	•			•	
Insecta	Coleoptera	Apionidae	Oxystoma craccae			•	•		•	
Insecta	Coleoptera	Apionidae	Oxystoma subulatum				•		•	
Insecta	Coleoptera	Apionidae	Perapion curtirostre			•				
Insecta	Coleoptera	Apionidae	Protapion apricans		•	•	•	•		
Insecta	Coleoptera	Apionidae	Protapion assimile		•	•		•	•	
Insecta	Coleoptera	Apionidae	Protapion fulvipes		•	•	•	•	•	
Insecta	Coleoptera	Apionidae	Protapion nigritarse			•		•	•	
Insecta	Coleoptera	Apionidae	Stenopterapion tenue			•				
Insecta	Coleoptera	Byrrhidae	Byrrhus pilula (Pill Beetle)		•	•		•	•	
Insecta	Coleoptera	Cantharidae	Cantharis cryptica		•	•				
Insecta	Coleoptera	Cantharidae	Cantharis flavilabris		•	•	•		•	
Insecta	Coleoptera	Cantharidae	Cantharis lateralis		•	•	•	•		
Insecta	Coleoptera	Cantharidae	Cantharis livida			•				
Insecta	Coleoptera	Cantharidae	Cantharis nigricans		•	•				
Insecta	Coleoptera	Cantharidae	Cantharis rufa		•	•				
Insecta	Coleoptera	Cantharidae	Cantharis rustica		•					
Insecta	Coleoptera	Cantharidae	Malthinus flaveolus			•				
Insecta	Coleoptera	Cantharidae	Rhagonycha fulva (Common Red Soldier Beetle)		•	•	•	•	•	■
Insecta	Coleoptera	Cantharidae	Rhagonycha lignosa			•				
Insecta	Coleoptera	Carabidae	Acupalpus dubius			•			•	
Insecta	Coleoptera	Carabidae	Agonum fuliginosum				•			
Insecta	Coleoptera	Carabidae	Agonum marginatum			•				
Insecta	Coleoptera	Carabidae	Amara aenea (Common Sun Beetle)			•	•		•	
Insecta	Coleoptera	Carabidae	Amara eurynota			•				
Insecta	Coleoptera	Carabidae	Amara familiaris						•	

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Coleoptera	Carabidae	<i>Amara lunicollis</i>						•	■
Insecta	Coleoptera	Carabidae	<i>Amara plebeja</i>		•					
Insecta	Coleoptera	Carabidae	<i>Amara spreta</i>	Near Threatened; Nationally Rare		•				
Insecta	Coleoptera	Carabidae	<i>Amara tibialis</i>				•	•	•	
Insecta	Coleoptera	Carabidae	<i>Badister bullatus</i>		•				•	
Insecta	Coleoptera	Carabidae	<i>Bembidion assimile</i>			•				
Insecta	Coleoptera	Carabidae	<i>Bembidion biguttatum</i>			•				
Insecta	Coleoptera	Carabidae	<i>Bembidion clarkii</i>				•			
Insecta	Coleoptera	Carabidae	<i>Bembidion lampros</i>			•			•	
Insecta	Coleoptera	Carabidae	<i>Bembidion minimum</i>			•	•			
Insecta	Coleoptera	Carabidae	<i>Bembidion obtusum</i>			•		•		
Insecta	Coleoptera	Carabidae	<i>Bembidion varium</i>		•	•				
Insecta	Coleoptera	Carabidae	<i>Bradycellus harpalinus</i>						•	
Insecta	Coleoptera	Carabidae	<i>Calathus cinctus</i>			•				
Insecta	Coleoptera	Carabidae	<i>Calathus fuscipes</i>			•			•	■
Insecta	Coleoptera	Carabidae	<i>Carabus violaceus</i> (Violet Ground Beetle)			•				
Insecta	Coleoptera	Carabidae	<i>Cicindela campestris</i> (Green Tiger Beetle)			•		•		
Insecta	Coleoptera	Carabidae	<i>Curtonotus aulicus</i>			•			•	
Insecta	Coleoptera	Carabidae	<i>Demetrias atricapillus</i> (Hairy-templed Thatcher)		•		•			
Insecta	Coleoptera	Carabidae	<i>Dicheirotichus gustavii</i>			•				
Insecta	Coleoptera	Carabidae	<i>Dicheirotichus placidus</i>		•		•			
Insecta	Coleoptera	Carabidae	<i>Dyschirius salinus</i>	Nationally Scarce	•	•				
Insecta	Coleoptera	Carabidae	<i>Harpalus affinis</i>		•	•			•	
Insecta	Coleoptera	Carabidae	<i>Harpalus latus</i>							■
Insecta	Coleoptera	Carabidae	<i>Harpalus rubripes</i>						•	
Insecta	Coleoptera	Carabidae	<i>Harpalus rufipes</i> (Strawberry Seed Beetle)			•				
Insecta	Coleoptera	Carabidae	<i>Leistus terminatus</i> (Black-headed Plate-jaw)				•			
Insecta	Coleoptera	Carabidae	<i>Loricera pilicornis</i> (Hair-trap Ground Beetle)			•				
Insecta	Coleoptera	Carabidae	<i>Nebria brevicollis</i> (Common Heart-shield)			•				■
Insecta	Coleoptera	Carabidae	<i>Notiophilus aquaticus</i> (Black-legged Springtail-stalker)		•	•	•	•	•	
Insecta	Coleoptera	Carabidae	<i>Notiophilus biguttatus</i> (Common Springtail-stalker)						•	
Insecta	Coleoptera	Carabidae	<i>Notiophilus palustris</i> (Rough-necked Springtail-stalker)			•			•	
Insecta	Coleoptera	Carabidae	<i>Notiophilus substriatus</i> (Frosted Springtail-stalker)		•					
Insecta	Coleoptera	Carabidae	<i>Paradromius linearis</i> (Common Bladerunner)		•	•	•	•	•	
Insecta	Coleoptera	Carabidae	<i>Philorhizus melanocephalus</i> (Black-headed Stemrunner)		•		•		•	



Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Coleoptera	Carabidae	Poecilus versicolor (Rainbow Greenclock)			•				
Insecta	Coleoptera	Carabidae	Pterostichus madidus (Black Clock)			•			•	■
Insecta	Coleoptera	Carabidae	Pterostichus niger (Great Blackclock)			•				
Insecta	Coleoptera	Carabidae	Pterostichus strenuus (Rough-chested Blackclock)			•				■
Insecta	Coleoptera	Carabidae	Pterostichus vernalis (Spring Blackclock)			•				
Insecta	Coleoptera	Carabidae	Syntomus foveatus						•	
Insecta	Coleoptera	Carabidae	Trechus quadristriatus						•	
Insecta	Coleoptera	Cerambycidae	Agapanthia villosoviridescens (Golden-bloomed Grey Longhorn Beetle)		•					
Insecta	Coleoptera	Cerambycidae	Clytus arietis (Wasp Beetle)			•				
Insecta	Coleoptera	Cerambycidae	Grammoptera ruficornis (Common Grammoptera)			•				
Insecta	Coleoptera	Chrysomelidae	Altica lythri		•					
Insecta	Coleoptera	Chrysomelidae	Altica palustris		•					
Insecta	Coleoptera	Chrysomelidae	Aphthona euphorbiae (Large Flax Flea Beetle)						•	
Insecta	Coleoptera	Chrysomelidae	Bruchus rufimanus (Bean Seed Beetle)				•			
Insecta	Coleoptera	Chrysomelidae	Cassida rubiginosa (Thistle Tortoise Beetle)			•	•	•	•	
Insecta	Coleoptera	Chrysomelidae	Cassida vittata (Bordered Tortoise Beetle)		•	•				
Insecta	Coleoptera	Chrysomelidae	Chaetocnema hortensis			•			•	
Insecta	Coleoptera	Chrysomelidae	Crepidodera aurata (Willow Flea Beetle)		•	•	•	•	•	
Insecta	Coleoptera	Chrysomelidae	Crepidodera fulvicornis		•	•	•			
Insecta	Coleoptera	Chrysomelidae	Cryptocephalus fulvus		•	•	•	•	•	
Insecta	Coleoptera	Chrysomelidae	Epitrix pubescens		•					
Insecta	Coleoptera	Chrysomelidae	Lochmaea crataegi (Hawthorn Leaf Beetle)		•	•	•	•		
Insecta	Coleoptera	Chrysomelidae	Longitarsus luridus						•	
Insecta	Coleoptera	Chrysomelidae	Neocrepidodera ferruginea (Wheat Flea Beetle)			•				
Insecta	Coleoptera	Chrysomelidae	Neocrepidodera transversa		•	•				
Insecta	Coleoptera	Chrysomelidae	Phratora vulgatissima (Blue Willow Beetle)				•			
Insecta	Coleoptera	Chrysomelidae	Psylliodes chrysocephala (Cabbage-stem Flea Beetle)		•		•	•		
Insecta	Coleoptera	Chrysomelidae	Sphaeroderma rubidum		•		•		•	
Insecta	Coleoptera	Chrysomelidae	Sphaeroderma testaceum		•	•	•	•	•	
Insecta	Coleoptera	Coccinellidae	Adalia bipunctata (2-spot Ladybird)		•	•	•		•	
Insecta	Coleoptera	Coccinellidae	Adalia decempunctata (10-spot Ladybird)				•	•		
Insecta	Coleoptera	Coccinellidae	Anisosticta novemdecimpunctata (Water Ladybird)		•	•				
Insecta	Coleoptera	Coccinellidae	Coccinella septempunctata (7-spot Ladybird)		•	•	•	•	•	
Insecta	Coleoptera	Coccinellidae	Halyzia sedecimguttata (Orange Ladybird)			•				
Insecta	Coleoptera	Coccinellidae	Harmonia axyridis (Harlequin Ladybird)						•	■

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Coleoptera	Coccinellidae	Hippodamia variegata (Adonis' Ladybird)	[Nationally Scarce (Nb)]	•	•	•	•	•	
Insecta	Coleoptera	Coccinellidae	Hyperaspis pseudopustulata (False-spotted Ladybird)	Nationally Scarce (Nb)		•	•			
Insecta	Coleoptera	Coccinellidae	Nephus redtenbacheri (Red-patched Nephus)			•		•		
Insecta	Coleoptera	Coccinellidae	Propylea quattuordecimpunctata (14-spot Ladybird)			•	•	•	•	
Insecta	Coleoptera	Coccinellidae	Psyllobora vigintiduopunctata (22-spot Ladybird)		•	•	•	•	•	
Insecta	Coleoptera	Coccinellidae	Rhyzobius litura (Pointed-keeled Rhyzobius)		•	•	•	•	•	
Insecta	Coleoptera	Curculionidae	Anoplus plantaris			•				
Insecta	Coleoptera	Curculionidae	Anthonomus pedicularius		•			•		
Insecta	Coleoptera	Curculionidae	Anthonomus rubi (Strawberry-blossom Weevil)		•	•	•	•	•	
Insecta	Coleoptera	Curculionidae	Barynotus obscurus			•				
Insecta	Coleoptera	Curculionidae	Ceutorhynchus obstrictus (Cabbage Seed Weevil)		•			•	•	
Insecta	Coleoptera	Curculionidae	Dorytomus rufatus				•			
Insecta	Coleoptera	Curculionidae	Dorytomus taeniatus			•	•	•		
Insecta	Coleoptera	Curculionidae	Exomias pellucidus (Hairy Spider Weevil)		•					■
Insecta	Coleoptera	Curculionidae	Hypera plantaginis						•	
Insecta	Coleoptera	Curculionidae	Hypera postica (Clover Leaf Weevil)			•		•	•	
Insecta	Coleoptera	Curculionidae	Hypera rumicis				•			
Insecta	Coleoptera	Curculionidae	Hypera venusta		•			•	•	
Insecta	Coleoptera	Curculionidae	Isochnus sequensi	[Red Data Book (Insufficiently Known)]			•			
Insecta	Coleoptera	Curculionidae	Mecinus pascuorum		•	•	•	•	•	
Insecta	Coleoptera	Curculionidae	Mecinus pyraeter		•	•		•	•	
Insecta	Coleoptera	Curculionidae	Nedyus quadrimaculatus (Small Nettle Weevil)			•			•	
Insecta	Coleoptera	Curculionidae	Orthochaetes setiger	[Nationally Scarce (Nb)]	•					
Insecta	Coleoptera	Curculionidae	Otiorhynchus ligneus						•	
Insecta	Coleoptera	Curculionidae	Otiorhynchus ovatus (Strawberry-root Weevil)		•	•	•	•	•	
Insecta	Coleoptera	Curculionidae	Otiorhynchus rugosostriatus (Rough Strawberry-root Weevil)			•				■
Insecta	Coleoptera	Curculionidae	Otiorhynchus singularis (Clay-coloured Weevil)			•	•	•		
Insecta	Coleoptera	Curculionidae	Philopeton plagiatum (Marram Weevil)				•	•		
Insecta	Coleoptera	Curculionidae	Phyllobius argentatus (Silver-Green Leaf Weevil)			•				
Insecta	Coleoptera	Curculionidae	Phyllobius oblongus (Brown Leaf Weevil)							■
Insecta	Coleoptera	Curculionidae	Phyllobius pomaceus (Green Nettle Weevil)			•				
Insecta	Coleoptera	Curculionidae	Phyllobius pyri (Common Leaf Weevil)			•	•	•		
Insecta	Coleoptera	Curculionidae	Phyllobius roboretanus (Small Green Nettle Weevil)		•	•	•	•	•	
Insecta	Coleoptera	Curculionidae	Phyllobius vespertinus	Nationally Scarce (Nb)		•				
Insecta	Coleoptera	Curculionidae	Pissodes pini						•	

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Coleoptera	Curculionidae	Polydrusus cervinus			•				
Insecta	Coleoptera	Curculionidae	Rhinocyllus conicus	[Nationally Scarce (Na)]		•				
Insecta	Coleoptera	Curculionidae	Rhinoncus pericarpus						•	
Insecta	Coleoptera	Curculionidae	Rhinusa antirrhini				•		•	
Insecta	Coleoptera	Curculionidae	Romualdius angustisetulus		•	•	•		•	
Insecta	Coleoptera	Curculionidae	Sitona hispidulus (Clover-root Weevil)			•			•	
Insecta	Coleoptera	Curculionidae	Sitona humeralis		•	•	•	•	•	
Insecta	Coleoptera	Curculionidae	Sitona lineatus (Pea-leaf Weevil)		•	•	•	•	•	
Insecta	Coleoptera	Curculionidae	Sitona lineellus				•	•	•	
Insecta	Coleoptera	Curculionidae	Sitona obsoletus			•			•	
Insecta	Coleoptera	Curculionidae	Sitona sulcifrons						•	
Insecta	Coleoptera	Curculionidae	Sitona suturalis						•	
Insecta	Coleoptera	Curculionidae	Trichosirocalus troglodytes		•	•	•	•	•	
Insecta	Coleoptera	Curculionidae	Tychius meliloti		•				•	
Insecta	Coleoptera	Curculionidae	Tychius picirostris		•		•	•		
Insecta	Coleoptera	Dytiscidae	Agabus conspersus	Nationally Scarce		•				
Insecta	Coleoptera	Dytiscidae	Hydroporus palustris			•				
Insecta	Coleoptera	Elateridae	Agriotes acuminatus			•			•	■
Insecta	Coleoptera	Elateridae	Agriotes lineatus			•	•	•	•	
Insecta	Coleoptera	Elateridae	Agriotes obscurus			•	•	•	•	■
Insecta	Coleoptera	Elateridae	Agriotes pallidulus			•				
Insecta	Coleoptera	Elateridae	Agriotes sputator		•	•	•		•	
Insecta	Coleoptera	Elateridae	Athous haemorrhoidalis		•	•	•	•		
Insecta	Coleoptera	Elateridae	Ctenicera cuprea			•				
Insecta	Coleoptera	Elateridae	Dalopius marginatus							■
Insecta	Coleoptera	Elateridae	Limonius poneli			•				
Insecta	Coleoptera	Elateridae	Prosternon tessellatum (Chequered Click Beetle)			•				
Insecta	Coleoptera	Helophoridae	Helophorus brevipalpis			•				
Insecta	Coleoptera	Helophoridae	Helophorus fulgidicollis	Nationally Scarce		•				
Insecta	Coleoptera	Helophoridae	Helophorus nubilus (Wheat Mud Beetle)	Nationally Scarce					•	
Insecta	Coleoptera	Heteroceridae	Heterocerus flexuosus	Nationally Scarce		•				
Insecta	Coleoptera	Hydrophilidae	Sphaeridium marginatum			•				
Insecta	Coleoptera	Latridiidae	Cartodere nodifer							■
Insecta	Coleoptera	Latridiidae	Cortinicara gibbosa						•	
Insecta	Coleoptera	Leiodidae	Catops fuliginosus							■

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Coleoptera	Leiodidae	Nargus wilkini							■
Insecta	Coleoptera	Leiodidae	Sciodrepoides fumatus							■
Insecta	Coleoptera	Melyridae	Anthocomus rufus		•	•	•			
Insecta	Coleoptera	Melyridae	Dasytes aeratus			•				
Insecta	Coleoptera	Melyridae	Malachius bipustulatus (Malachite Beetle)		•	•			•	
Insecta	Coleoptera	Oedemeridae	Nacerdes melanura (Wharf Borer)						•	
Insecta	Coleoptera	Oedemeridae	Oedemera lurida		•	•	•	•	•	■
Insecta	Coleoptera	Oedemeridae	Oedemera nobilis (Swollen-thighed Beetle)				•	•		
Insecta	Coleoptera	Phalacridae	Olibrus corticalis						•	
Insecta	Coleoptera	Rhynchitidae	Deporaus betulae (Birch Leaf Roller)			•				
Insecta	Coleoptera	Scarabaeidae	Acrossus rufipes			•				
Insecta	Coleoptera	Scarabaeidae	Aphodius foetidus			•				
Insecta	Coleoptera	Scarabaeidae	Serica brunnea (Brown Chafer)			•				
Insecta	Coleoptera	Scirtidae	Microcara testacea		•	•			•	
Insecta	Coleoptera	Scraptiidae	Anaspis maculata		•	•			•	
Insecta	Coleoptera	Scraptiidae	Anaspis regimbarti			•				
Insecta	Coleoptera	Silphidae	Nicrophorus vespillo (Common Burying Beetle)			•	•			■
Insecta	Coleoptera	Silphidae	Nicrophorus vespilloides			•				
Insecta	Coleoptera	Silphidae	Silpha tristis			•			•	■
Insecta	Coleoptera	Staphylinidae	Aleochara bipustulata							■
Insecta	Coleoptera	Staphylinidae	Aleochara curtula							■
Insecta	Coleoptera	Staphylinidae	Anotylus complanatus			•				
Insecta	Coleoptera	Staphylinidae	Anotylus rugosus			•				
Insecta	Coleoptera	Staphylinidae	Atheta indubia							■
Insecta	Coleoptera	Staphylinidae	Bledius spectabilis			•				
Insecta	Coleoptera	Staphylinidae	Callicerus rigidicornis							■
Insecta	Coleoptera	Staphylinidae	Drusilla canaliculata			•				
Insecta	Coleoptera	Staphylinidae	Gyrohypnus angustatus			•				
Insecta	Coleoptera	Staphylinidae	Habrocerus capillaricornis							■
Insecta	Coleoptera	Staphylinidae	Liogluta microptera							■
Insecta	Coleoptera	Staphylinidae	Metopsia clypeata						•	
Insecta	Coleoptera	Staphylinidae	Ocypus aeneocephalus			•			•	
Insecta	Coleoptera	Staphylinidae	Ocypus brunnipes			•			•	■
Insecta	Coleoptera	Staphylinidae	Ocypus olens (Devil's Coach-horse)						•	
Insecta	Coleoptera	Staphylinidae	Omalius rivulare							■

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Coleoptera	Staphylinidae	Ontholestes murinus			•				
Insecta	Coleoptera	Staphylinidae	Othius laeviusculus			•				
Insecta	Coleoptera	Staphylinidae	Othius punctulatus		•					■
Insecta	Coleoptera	Staphylinidae	Oxytelus laqueatus			•				
Insecta	Coleoptera	Staphylinidae	Philonthus carbonarius			•				
Insecta	Coleoptera	Staphylinidae	Philonthus cognatus			•				
Insecta	Coleoptera	Staphylinidae	Philonthus decorus							■
Insecta	Coleoptera	Staphylinidae	Philonthus intermedius			•				
Insecta	Coleoptera	Staphylinidae	Philonthus quisquiliarius			•				
Insecta	Coleoptera	Staphylinidae	Philonthus splendens			•				
Insecta	Coleoptera	Staphylinidae	Philonthus tenuicornis			•				
Insecta	Coleoptera	Staphylinidae	Philonthus varians			•				
Insecta	Coleoptera	Staphylinidae	Quedius boops					•		
Insecta	Coleoptera	Staphylinidae	Quedius curtipennis							■
Insecta	Coleoptera	Staphylinidae	Quedius mesomelinus					•		■
Insecta	Coleoptera	Staphylinidae	Quedius molochinus			•				
Insecta	Coleoptera	Staphylinidae	Quedius persimilis			•		•		
Insecta	Coleoptera	Staphylinidae	Quedius schatzmayri			•				
Insecta	Coleoptera	Staphylinidae	Quedius semiobscurus							■
Insecta	Coleoptera	Staphylinidae	Rugilus rufipes							■
Insecta	Coleoptera	Staphylinidae	Sepedophilus marshami			•				
Insecta	Coleoptera	Staphylinidae	Stenus aceris		•	•	•	•	•	
Insecta	Coleoptera	Staphylinidae	Stenus clavicornis			•	•			
Insecta	Coleoptera	Staphylinidae	Stenus flavipes		•	•				
Insecta	Coleoptera	Staphylinidae	Stenus fulvicornis		•	•	•		•	
Insecta	Coleoptera	Staphylinidae	Stenus impressus		•		•	•		
Insecta	Coleoptera	Staphylinidae	Stenus junco			•				
Insecta	Coleoptera	Staphylinidae	Stenus lustrator		•	•	•			
Insecta	Coleoptera	Staphylinidae	Stenus ochropus					•		
Insecta	Coleoptera	Staphylinidae	Stenus ossium		•	•	•	•	•	
Insecta	Coleoptera	Staphylinidae	Stenus pusillus		•			•		
Insecta	Coleoptera	Staphylinidae	Tachinus marginellus			•				
Insecta	Coleoptera	Staphylinidae	Tachinus rufipes			•				■
Insecta	Coleoptera	Staphylinidae	Tachinus subterraneus			•				
Insecta	Coleoptera	Staphylinidae	Tachyporus chrysomelinus			•				

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Coleoptera	Staphylinidae	Tachyporus dispar		•	•		•	•	
Insecta	Coleoptera	Staphylinidae	Tachyporus hypnorum			•				
Insecta	Coleoptera	Staphylinidae	Tachyporus nitidulus		•	•	•	•	•	
Insecta	Coleoptera	Staphylinidae	Tachyporus pusillus			•			•	
Insecta	Coleoptera	Staphylinidae	Tasgius melanarius							■
Insecta	Coleoptera	Staphylinidae	Tasgius winkleri						•	■
Insecta	Coleoptera	Staphylinidae	Xantholinus elegans							■
Insecta	Coleoptera	Staphylinidae	Xantholinus linearis			•				■
Insecta	Coleoptera	Tenebrionidae	Lagria hirta		•	•	•	•	•	
Insecta	Dermaptera	Forficulidae	Forficula auricularia (Common Earwig)		•	•	•	•	•	■
Insecta	Dermaptera	Spongiphoridae	Labia minor (Lesser Earwig)						•	
Insecta	Diptera	Agromyzidae	Cerodontha denticornis							■
Insecta	Diptera	Agromyzidae	Ophiomyia curvipalpis							■
Insecta	Diptera	Anisopodidae	Sylvicola punctatus		•			•		
Insecta	Diptera	Anthomyiidae	Anthomyia confusanea		•				•	
Insecta	Diptera	Anthomyiidae	Anthomyia liturata		•	•	•	•	•	■
Insecta	Diptera	Anthomyiidae	Anthomyia pluvialis		•	•				
Insecta	Diptera	Anthomyiidae	Anthomyia procellaris			•				■
Insecta	Diptera	Anthomyiidae	Botanophila brunneilinea		•		•		•	
Insecta	Diptera	Anthomyiidae	Botanophila fugax		•	•		•	•	
Insecta	Diptera	Anthomyiidae	Botanophila jacobaeae		•		•	•		
Insecta	Diptera	Anthomyiidae	Botanophila laterella	pNationally Scarce		•		•		
Insecta	Diptera	Anthomyiidae	Botanophila seneciella			•	•	•		■
Insecta	Diptera	Anthomyiidae	Botanophila sonchi	pNationally Scarce						■
Insecta	Diptera	Anthomyiidae	Delia florilega		•	•		•	•	■
Insecta	Diptera	Anthomyiidae	Delia platura		•	•	•	•	•	■
Insecta	Diptera	Anthomyiidae	Delia radicum						•	
Insecta	Diptera	Anthomyiidae	Egle parvaeformis	pNationally Scarce		•				
Insecta	Diptera	Anthomyiidae	Fucellia maritima					•		
Insecta	Diptera	Anthomyiidae	Heterostylodes nominabilis			•				
Insecta	Diptera	Anthomyiidae	Heterostylodes pilifer							■
Insecta	Diptera	Anthomyiidae	Heterostylodes pratensis			•				
Insecta	Diptera	Anthomyiidae	Hylemya urbica		•	•	•			
Insecta	Diptera	Anthomyiidae	Hylemya variata			•	•	•		
Insecta	Diptera	Anthomyiidae	Hylemyza partita		•	•				



Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Diptera	Anthomyiidae	Lasiomma seminitidum		•	•	•	•		
Insecta	Diptera	Anthomyiidae	Lasiomma strigilatum		•					
Insecta	Diptera	Anthomyiidae	Pegoplata aestiva		•	•	•	•	•	
Insecta	Diptera	Anthomyiidae	Pegoplata infirma		•	•		•		■
Insecta	Diptera	Anthomyiidae	Phorbia bartaki				•			
Insecta	Diptera	Anthomyiidae	Phorbia fumigata			•				
Insecta	Diptera	Anthomyiidae	Phorbia sepia				•			
Insecta	Diptera	Anthomyiidae	Subhylemyia longula		•	•	•	•	•	■
Insecta	Diptera	Anthomyiidae	Zaphne ambigua			•				
Insecta	Diptera	Anthomyiidae	Zaphne divisa		•	•				■
Insecta	Diptera	Anthomyzidae	Anthomyza collini							■
Insecta	Diptera	Anthomyzidae	Anthomyza dissors							■
Insecta	Diptera	Anthomyzidae	Anthomyza gracilis							■
Insecta	Diptera	Anthomyzidae	Stiphrosoma sabulosum							■
Insecta	Diptera	Asilidae	Dioctria atricapilla (Violet Black-legged Robberfly)						•	
Insecta	Diptera	Asilidae	Dioctria rufipes (Common Red-legged Robberfly)		•	•				
Insecta	Diptera	Asilidae	Dysmachus trigonus (Fan-bristled Robberfly)						•	
Insecta	Diptera	Asilidae	Leptogaster cylindrica (Striped Slender Robberfly)		•	•	•	•	•	■
Insecta	Diptera	Asilidae	Machimus atricapillus (Kite-tailed Robberfly)			•		•		
Insecta	Diptera	Asilidae	Machimus cingulatus (Brown Heath Robberfly)						•	
Insecta	Diptera	Asteiidae	Asteia concinna						•	■
Insecta	Diptera	Bibionidae	Bibio leucopterus (White-winged Bibio)			•	•	•		
Insecta	Diptera	Bibionidae	Bibio marci (St Marks Fly)		•	•	•	•		■
Insecta	Diptera	Bibionidae	Dilophus febrilis (Fever Fly)		•	•	•	•		
Insecta	Diptera	Bibionidae	Dilophus femoratus		•	•	•	•		
Insecta	Diptera	Bombyliidae	Bombylius major (Dark-edged Bee-fly)			•				
Insecta	Diptera	Calliphoridae	Bellardia pandia (Bisetose Emerald-bottle)		•	•	•	•	•	
Insecta	Diptera	Calliphoridae	Bellardia viarum (Dark-veined Emerald-bottle)		•	•	•	•	•	■
Insecta	Diptera	Calliphoridae	Bellardia vulgaris (Pale-veined Emerald-bottle)			•	•			
Insecta	Diptera	Calliphoridae	Calliphora vicina (Common Bluebottle)		•	•	•	•	•	
Insecta	Diptera	Calliphoridae	Cynomya mortuorum (Yellow-faced Blowfly)		•					
Insecta	Diptera	Calliphoridae	Lucilia caesar (Common Greenbottle)		•	•		•	•	
Insecta	Diptera	Calliphoridae	Lucilia illustris (Illustrious Greenbottle)			•		•		
Insecta	Diptera	Calliphoridae	Lucilia richardsi (Richards' Greenbottle)					•	•	
Insecta	Diptera	Calliphoridae	Lucilia sericata (Sheep-strike Greenbottle)		•	•		•	•	

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Diptera	Calliphoridae	Lucilia silvarum (Marsh Greenbottle)		•	•		•	•	
Insecta	Diptera	Calliphoridae	Melanomya nana (Little Black Blowfly)		•	•	•			■
Insecta	Diptera	Calliphoridae	Melinda viridicyanea (Dark-palped Melinda)		•	•	•	•		■
Insecta	Diptera	Canacidae	Pelomyia occidentalis					•		
Insecta	Diptera	Canacidae	Xanthocanace ranula					•		
Insecta	Diptera	Chamaemyiidae	Chamaemyia aridella						•	■
Insecta	Diptera	Chamaemyiidae	Chamaemyia herbarum		•	•	•	•	•	
Insecta	Diptera	Chamaemyiidae	Parochthiphila coronata	pNear Threatened					•	
Insecta	Diptera	Chloropidae	Aphanotrigonum femorellum				•			
Insecta	Diptera	Chloropidae	Calamoncosis duinensis		•					
Insecta	Diptera	Chloropidae	Calamoncosis minima							■
Insecta	Diptera	Chloropidae	Chlorops pumilionis		•	•	•	•		
Insecta	Diptera	Chloropidae	Chlorops speciosus							■
Insecta	Diptera	Chloropidae	Cryptonevra diadema		•					
Insecta	Diptera	Chloropidae	Dicraeus fennicus			•	•			
Insecta	Diptera	Chloropidae	Dicraeus vagans		•	•			•	■
Insecta	Diptera	Chloropidae	Elachiptera cornuta			•				■
Insecta	Diptera	Chloropidae	Eutropha fulvifrons					•		
Insecta	Diptera	Chloropidae	Lasiambia palposa	pNationally Scarce				•	•	■
Insecta	Diptera	Chloropidae	Lipara rufitarsis		•					
Insecta	Diptera	Chloropidae	Melanum laterale		•	•				
Insecta	Diptera	Chloropidae	Meromyza femorata							■
Insecta	Diptera	Chloropidae	Meromyza nigriventris							■
Insecta	Diptera	Chloropidae	Meromyza saltatrix							■
Insecta	Diptera	Chloropidae	Meromyza triangulina							■
Insecta	Diptera	Chloropidae	Oscinella frit		•	•	•	•	•	■
Insecta	Diptera	Chloropidae	Oscinimorpha albisetosa			•				
Insecta	Diptera	Chloropidae	Oscinimorpha minutissima							■
Insecta	Diptera	Chloropidae	Siphonella oscinina	pNationally Scarce	•		•	•		■
Insecta	Diptera	Chloropidae	Thaumatomyia glabra		•		•	•	•	■
Insecta	Diptera	Chloropidae	Thaumatomyia hallandica				•			■
Insecta	Diptera	Chloropidae	Thaumatomyia notata		•	•	•	•	•	■
Insecta	Diptera	Chloropidae	Tricimba cincta			•			•	■
Insecta	Diptera	Chyromyidae	Chyromya femorellum				•			
Insecta	Diptera	Coelopidae	Coelopa frigida					•		

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Diptera	Conopidae	Sicus ferrugineus		•	•	•	•	•	■
Insecta	Diptera	Diastatidae	Diastata adusta			•				
Insecta	Diptera	Diastatidae	Diastata costata							■
Insecta	Diptera	Dolichopodidae	Argyra argyria			•				
Insecta	Diptera	Dolichopodidae	Campsicnemus armatus		•	•	•			
Insecta	Diptera	Dolichopodidae	Campsicnemus scambus			•				
Insecta	Diptera	Dolichopodidae	Chrysotus blepharosceles					•		
Insecta	Diptera	Dolichopodidae	Chrysotus gramineus							■
Insecta	Diptera	Dolichopodidae	Dolichopus brevipennis		•	•				
Insecta	Diptera	Dolichopodidae	Dolichopus clavipes			•				
Insecta	Diptera	Dolichopodidae	Dolichopus diadema		•	•	•			
Insecta	Diptera	Dolichopodidae	Dolichopus griseipennis			•				■
Insecta	Diptera	Dolichopodidae	Dolichopus latilimbatus		•	•				
Insecta	Diptera	Dolichopodidae	Dolichopus nubilus		•	•				■
Insecta	Diptera	Dolichopodidae	Dolichopus plumipes		•	•				
Insecta	Diptera	Dolichopodidae	Dolichopus sabinus		•	•				
Insecta	Diptera	Dolichopodidae	Dolichopus strigipes		•		•			
Insecta	Diptera	Dolichopodidae	Dolichopus trivialis			•				
Insecta	Diptera	Dolichopodidae	Dolichopus unguulatus		•	•	•	•		■
Insecta	Diptera	Dolichopodidae	Hydrophorus balticus		•	•				
Insecta	Diptera	Dolichopodidae	Hydrophorus oceanus		•	•	•	•		
Insecta	Diptera	Dolichopodidae	Hydrophorus praecox		•					
Insecta	Diptera	Dolichopodidae	Machaerium maritimae		•	•	•	•		
Insecta	Diptera	Dolichopodidae	Medetera jacula					•		
Insecta	Diptera	Dolichopodidae	Medetera micacea							■
Insecta	Diptera	Dolichopodidae	Medetera petrophiloides				•			■
Insecta	Diptera	Dolichopodidae	Medetera saxatilis		•	•	•	•	•	
Insecta	Diptera	Dolichopodidae	Medetera truncorum		•	•			•	■
Insecta	Diptera	Dolichopodidae	Micromorphus albipes							■
Insecta	Diptera	Dolichopodidae	Orthoceratium sabulosum	Nationally Scarce	•	•				
Insecta	Diptera	Dolichopodidae	Poecilobothrus nobilitatus		•	•			•	
Insecta	Diptera	Dolichopodidae	Rhaphium consobrinum		•					
Insecta	Diptera	Dolichopodidae	Scellus notatus		•	•	•		•	
Insecta	Diptera	Dolichopodidae	Sympycnus pulicarius			•				■
Insecta	Diptera	Dolichopodidae	Syntormon pallipes		•	•	•	•		

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Diptera	Drosophilidae	Scaptomyza flava					•		
Insecta	Diptera	Drosophilidae	Scaptomyza pallida		•	•				■
Insecta	Diptera	Empididae	Clinocera stagnalis					•		
Insecta	Diptera	Empididae	Empis caudatula			•		•		■
Insecta	Diptera	Empididae	Empis livida			•		•		■
Insecta	Diptera	Empididae	Empis nigripes			•				
Insecta	Diptera	Empididae	Empis nuntia			•				
Insecta	Diptera	Empididae	Empis opaca				•	•		
Insecta	Diptera	Empididae	Empis punctata		•	•	•	•		■
Insecta	Diptera	Empididae	Empis tessellata		•	•				
Insecta	Diptera	Empididae	Empis trigramma		•	•				
Insecta	Diptera	Empididae	Empis verralli				•	•		
Insecta	Diptera	Empididae	Hilara anglodanica							■
Insecta	Diptera	Empididae	Hilara clypeata				•	•		
Insecta	Diptera	Empididae	Hilara cornicula							■
Insecta	Diptera	Empididae	Hilara maura			•				
Insecta	Diptera	Empididae	Hilara pilosa							■
Insecta	Diptera	Empididae	Hilara pseudocornicula		•	•				
Insecta	Diptera	Empididae	Rhamphomyia barbata			•				
Insecta	Diptera	Empididae	Rhamphomyia laevipes			•		•		
Insecta	Diptera	Empididae	Rhamphomyia simplex		•	•	•			
Insecta	Diptera	Empididae	Rhamphomyia subcinerascens		•	•	•			
Insecta	Diptera	Empididae	Rhamphomyia sulcata			•	•			
Insecta	Diptera	Empididae	Rhamphomyia sulcatella			•				
Insecta	Diptera	Empididae	Rhamphomyia tarsata			•	•			
Insecta	Diptera	Ephydriidae	Coenia palustris			•				
Insecta	Diptera	Ephydriidae	Ephydra macellaria		•	•	•			
Insecta	Diptera	Ephydriidae	Gymnoclasiopa plumosa					•		
Insecta	Diptera	Ephydriidae	Hyadina guttata							■
Insecta	Diptera	Ephydriidae	Hydrellia griseola		•	•	•	•	•	■
Insecta	Diptera	Ephydriidae	Hydrellia maura			•	•	•		■
Insecta	Diptera	Ephydriidae	Lamproscatella sibilans					•		■
Insecta	Diptera	Ephydriidae	Limnellia quadrata		•					■
Insecta	Diptera	Ephydriidae	Notiphila cinerea		•	•				
Insecta	Diptera	Ephydriidae	Notiphila riparia			•				

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Diptera	Ephydriidae	Notiphila uliginosa		•	•				
Insecta	Diptera	Ephydriidae	Ochthera manicata	pNationally Scarce		•				
Insecta	Diptera	Ephydriidae	Paracoenia fumosa		•	•				
Insecta	Diptera	Ephydriidae	Parydra coarctata			•				
Insecta	Diptera	Ephydriidae	Parydra fossarum		•					
Insecta	Diptera	Ephydriidae	Philygria flavipes							■
Insecta	Diptera	Ephydriidae	Philygria interstincta				•			■
Insecta	Diptera	Ephydriidae	Philygria stictica				•	•		■
Insecta	Diptera	Ephydriidae	Philygria vittipennis							■
Insecta	Diptera	Ephydriidae	Psilopa nitidula			•				
Insecta	Diptera	Ephydriidae	Scatella lacustris		•	•	•	•		■
Insecta	Diptera	Ephydriidae	Scatella lutosa		•					
Insecta	Diptera	Ephydriidae	Scatella silacea			•				
Insecta	Diptera	Ephydriidae	Scatella stagnalis			•				
Insecta	Diptera	Fanniidae	Fannia armata		•	•	•	•	•	■
Insecta	Diptera	Fanniidae	Fannia canicularis		•	•	•	•		
Insecta	Diptera	Fanniidae	Fannia fuscula		•	•	•	•	•	■
Insecta	Diptera	Fanniidae	Fannia manicata			•				
Insecta	Diptera	Fanniidae	Fannia minutipalpis	pNationally Scarce	•					
Insecta	Diptera	Fanniidae	Fannia polychaeta		•	•				
Insecta	Diptera	Fanniidae	Fannia postica		•					
Insecta	Diptera	Fanniidae	Fannia rondanii			•				
Insecta	Diptera	Fanniidae	Fannia serena		•	•				
Insecta	Diptera	Fanniidae	Fannia similis		•	•				
Insecta	Diptera	Hippoboscidae	Ornithomya chloropus		•					
Insecta	Diptera	Hybotidae	Bicellaria spuria		•	•				
Insecta	Diptera	Hybotidae	Bicellaria vana			•				
Insecta	Diptera	Hybotidae	Elaphropeza ephippiata			•				
Insecta	Diptera	Hybotidae	Hybos culiciformis		•	•				■
Insecta	Diptera	Hybotidae	Hybos femoratus		•					
Insecta	Diptera	Hybotidae	Platypalpus agilis			•	•			
Insecta	Diptera	Hybotidae	Platypalpus annulipes				•			
Insecta	Diptera	Hybotidae	Platypalpus calceatus			•				
Insecta	Diptera	Hybotidae	Platypalpus flavicornis							■
Insecta	Diptera	Hybotidae	Platypalpus longicornis		•	•		•		

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Diptera	Hybotidae	Platypalpus longiseta							■
Insecta	Diptera	Hybotidae	Platypalpus minutus							■
Insecta	Diptera	Hybotidae	Platypalpus notatus			•		•	•	■
Insecta	Diptera	Hybotidae	Platypalpus pallidicornis		•					
Insecta	Diptera	Hybotidae	Platypalpus pallidiventris		•	•		•		■
Insecta	Diptera	Hybotidae	Platypalpus pseudofulvipes							■
Insecta	Diptera	Hybotidae	Trichina opaca	Nationally Scarce				•		
Insecta	Diptera	Lauxaniidae	Calliopum aeneum			•		•	•	
Insecta	Diptera	Lauxaniidae	Cnemacantha muscaria	pNationally Scarce		•				
Insecta	Diptera	Lauxaniidae	Meiosimyza decipiens							■
Insecta	Diptera	Lauxaniidae	Meiosimyza subfasciata			•				
Insecta	Diptera	Lauxaniidae	Minettia fasciata		•	•	•	•	•	
Insecta	Diptera	Lauxaniidae	Minettia tabidiventris							■
Insecta	Diptera	Lauxaniidae	Minettia tubifer		•	•	•	•	•	■
Insecta	Diptera	Lauxaniidae	Sapromyza quadripunctata		•	•	•	•	•	■
Insecta	Diptera	Lauxaniidae	Tricholauxania praeusta			•				
Insecta	Diptera	Limoniidae	Dicranomyia chorea							■
Insecta	Diptera	Limoniidae	Erioconopa trivialis		•					
Insecta	Diptera	Limoniidae	Rhipidia maculata							■
Insecta	Diptera	Limoniidae	Symplecta hybrida							■
Insecta	Diptera	Limoniidae	Symplecta stictica			•	•	•		
Insecta	Diptera	Lonchaeidae	Dasiops mucronatus		•	•				
Insecta	Diptera	Lonchaeidae	Lonchaea scutellaris			•	•			
Insecta	Diptera	Lonchaeidae	Silba fumosa			•				
Insecta	Diptera	Lonchopteridae	Lonchoptera bifurcata					•		■
Insecta	Diptera	Lonchopteridae	Lonchoptera lutea			•			•	■
Insecta	Diptera	Micropezidae	Micropeza corrigiolata							■
Insecta	Diptera	Muscidae	Azelia zetterstedtii			•				
Insecta	Diptera	Muscidae	Coenosia antennata		•	•				
Insecta	Diptera	Muscidae	Coenosia infantula			•	•	•	•	■
Insecta	Diptera	Muscidae	Coenosia karli	pNationally Scarce	•					
Insecta	Diptera	Muscidae	Coenosia lacteipennis			•				■
Insecta	Diptera	Muscidae	Coenosia mollicula		•	•		•	•	■
Insecta	Diptera	Muscidae	Coenosia pedella		•	•		•		■
Insecta	Diptera	Muscidae	Coenosia pumila		•	•	•	•	•	



Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Diptera	Muscidae	Coenosia testacea		•		•	•	•	
Insecta	Diptera	Muscidae	Coenosia tigrina		•	•	•	•		
Insecta	Diptera	Muscidae	Drymeia vicana			•				
Insecta	Diptera	Muscidae	Hebecnema fumosa	pNationally Scarce		•				
Insecta	Diptera	Muscidae	Hebecnema nigra		•	•				
Insecta	Diptera	Muscidae	Hebecnema umbratica		•	•	•			
Insecta	Diptera	Muscidae	Hebecnema vespertina		•	•			•	
Insecta	Diptera	Muscidae	Helina calceata	pNationally Scarce						■
Insecta	Diptera	Muscidae	Helina celsa			•				
Insecta	Diptera	Muscidae	Helina depuncta			•			•	
Insecta	Diptera	Muscidae	Helina evecta			•				
Insecta	Diptera	Muscidae	Helina impuncta			•				■
Insecta	Diptera	Muscidae	Helina intermedia	pNear Threatened				•		
Insecta	Diptera	Muscidae	Helina lasiophthalma		•	•		•	•	■
Insecta	Diptera	Muscidae	Helina obscurata		•	•				
Insecta	Diptera	Muscidae	Helina protuberans	pNationally Scarce				•		
Insecta	Diptera	Muscidae	Helina pubescens	pNear Threatened				•		
Insecta	Diptera	Muscidae	Helina reversio		•	•	•	•	•	■
Insecta	Diptera	Muscidae	Helina setiventris		•	•			•	
Insecta	Diptera	Muscidae	Helina subvittata	pNationally Scarce						■
Insecta	Diptera	Muscidae	Helina trivittata		•	•	•	•	•	
Insecta	Diptera	Muscidae	Hydrotaea irritans			•	•		•	
Insecta	Diptera	Muscidae	Limnophora tigrina			•				
Insecta	Diptera	Muscidae	Limnospila albifrons	pNationally Scarce			•			
Insecta	Diptera	Muscidae	Lispe litorea		•	•				
Insecta	Diptera	Muscidae	Lispe pygmaea		•	•	•	•	•	
Insecta	Diptera	Muscidae	Lispocephala erythrocerata		•	•				
Insecta	Diptera	Muscidae	Mesembrina meridiana (Noon Fly)			•				
Insecta	Diptera	Muscidae	Morellia aenescens			•	•			
Insecta	Diptera	Muscidae	Morellia hortorum			•	•			
Insecta	Diptera	Muscidae	Morellia simplex		•	•				
Insecta	Diptera	Muscidae	Muscina levida			•				
Insecta	Diptera	Muscidae	Muscina prolapsa						•	
Insecta	Diptera	Muscidae	Muscina stabulans		•					
Insecta	Diptera	Muscidae	Mydaea detrita			•				

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Diptera	Muscidae	Mydaea humeralis			•				
Insecta	Diptera	Muscidae	Myospila mediatubunda			•				
Insecta	Diptera	Muscidae	Neomyia cornicina					•		
Insecta	Diptera	Muscidae	Phaonia atriceps							■
Insecta	Diptera	Muscidae	Phaonia errans			•		•		
Insecta	Diptera	Muscidae	Phaonia incana		•	•				
Insecta	Diptera	Muscidae	Phaonia perdita			•				
Insecta	Diptera	Muscidae	Phaonia rufipalpis						•	
Insecta	Diptera	Muscidae	Phaonia serva			•				
Insecta	Diptera	Muscidae	Phaonia trimaculata						•	
Insecta	Diptera	Muscidae	Phaonia tuguriorum		•	•				■
Insecta	Diptera	Muscidae	Schoenomyza litorella		•	•	•	•	•	■
Insecta	Diptera	Muscidae	Spilogona aerea		•					
Insecta	Diptera	Muscidae	Spilogona biseriata	pNationally Scarce	•		•			
Insecta	Diptera	Muscidae	Spilogona marina		•	•	•	•		
Insecta	Diptera	Muscidae	Stomoxys calcitrans (Stable Fly)					•		
Insecta	Diptera	Opomyzidae	Geomyza subnigra							■
Insecta	Diptera	Opomyzidae	Geomyza tripunctata				•			
Insecta	Diptera	Opomyzidae	Opomyza florum							■
Insecta	Diptera	Opomyzidae	Opomyza germinationis			•	•		•	
Insecta	Diptera	Pediciidae	Tricyphona immaculata							■
Insecta	Diptera	Pipunculidae	Cephalops varipes			•				
Insecta	Diptera	Pipunculidae	Dorylomorpha xanthopus		•					
Insecta	Diptera	Pipunculidae	Eudorylas obliquus		•	•				
Insecta	Diptera	Pipunculidae	Eudorylas zonellus			•				
Insecta	Diptera	Pipunculidae	Pipunculus campestris		•				•	
Insecta	Diptera	Pipunculidae	Pipunculus lenis				•			
Insecta	Diptera	Pipunculidae	Pipunculus zugmayeriae	Nationally Scarce		•				
Insecta	Diptera	Pipunculidae	Tomosvaryella geniculata		•					■
Insecta	Diptera	Pipunculidae	Tomosvaryella sylvatica						•	
Insecta	Diptera	Pipunculidae	Verrallia aucta		•					
Insecta	Diptera	Polleniidae	Pollenia angustigena (Narrow-cheeked Clusterfly)			•	•		•	
Insecta	Diptera	Polleniidae	Pollenia pediculata (Tufted Clusterfly)			•	•	•	•	
Insecta	Diptera	Polleniidae	Pollenia rudis (Awkward Clusterfly)			•	•			
Insecta	Diptera	Psilidae	Loxocera aristata		•					

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Diptera	Ptychopteridae	Ptychoptera contaminata			•			•	
Insecta	Diptera	Rhagionidae	Chrysopilus cristatus (Black Snipefly)			•				
Insecta	Diptera	Rhagionidae	Rhagio lineola (Small Fleck-winged Snipefly)			•	•		•	■
Insecta	Diptera	Rhagionidae	Rhagio scolopaceus (Downlooker Snipefly)		•	•	•			
Insecta	Diptera	Rhinophoridae	Phyto discrepans (Five-striped Woodlouse-fly)		•					
Insecta	Diptera	Rhinophoridae	Phyto melanocephala (Three-striped Woodlouse-fly)		•	•	•	•	•	
Insecta	Diptera	Rhinophoridae	Rhinophora lepida (Pouting Woodlouse-fly)						•	
Insecta	Diptera	Sarcophagidae	Amobia signata						•	
Insecta	Diptera	Sarcophagidae	Brachicoma devia			•			•	
Insecta	Diptera	Sarcophagidae	Metopia argyrocephala						•	
Insecta	Diptera	Sarcophagidae	Sarcophaga anaces						•	■
Insecta	Diptera	Sarcophagidae	Sarcophaga crassimargo			•				
Insecta	Diptera	Sarcophagidae	Sarcophaga dissimilis		•	•	•		•	
Insecta	Diptera	Sarcophagidae	Sarcophaga haemorrhhoa		•	•	•		•	
Insecta	Diptera	Sarcophagidae	Sarcophaga incisilobata		•	•	•	•	•	■
Insecta	Diptera	Sarcophagidae	Sarcophaga melanura					•		
Insecta	Diptera	Sarcophagidae	Sarcophaga nigriventris		•	•	•	•	•	■
Insecta	Diptera	Sarcophagidae	Sarcophaga pumila		•	•	•	•	•	■
Insecta	Diptera	Sarcophagidae	Sarcophaga sexpunctata		•	•				
Insecta	Diptera	Sarcophagidae	Sarcophaga teretirostris		•	•	•	•	•	■
Insecta	Diptera	Sarcophagidae	Sarcophaga vagans		•	•	•	•	•	
Insecta	Diptera	Sarcophagidae	Sarcophaga variegata			•	•	•		
Insecta	Diptera	Sarcophagidae	Senotainia conica				•	•	•	
Insecta	Diptera	Scathophagidae	Ceratinostoma ostiorum		•		•	•		
Insecta	Diptera	Scathophagidae	Cleigastra apicalis				•			
Insecta	Diptera	Scathophagidae	Nanna fasciata		•					
Insecta	Diptera	Scathophagidae	Norellisoma spinimanum						•	
Insecta	Diptera	Scathophagidae	Scathophaga furcata		•	•				
Insecta	Diptera	Scathophagidae	Scathophaga litorea		•	•	•	•		
Insecta	Diptera	Scathophagidae	Scathophaga stercoraria (Yellow Dung Fly)		•	•	•	•	•	
Insecta	Diptera	Scathophagidae	Scathophaga suilla		•	•				■
Insecta	Diptera	Scatopsidae	Colobostema triste							■
Insecta	Diptera	Sciomyzidae	Coremacera marginata (Sieve-winged Snailkiller)		•	•	•	•	•	■
Insecta	Diptera	Sciomyzidae	Dichetophora oblitterata				•	•	•	
Insecta	Diptera	Sciomyzidae	Euthycera fumigata (Brown Sieve-winged Snailkiller)							■

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Diptera	Sciomyzidae	Ilione albiseta		•					
Insecta	Diptera	Sciomyzidae	Limnia unguicornis (Stripe-backed Snailkiller)			•				
Insecta	Diptera	Sciomyzidae	Pherbellia cinerella (Stripe-headed Little Snailkiller)		•	•	•	•	•	■
Insecta	Diptera	Sciomyzidae	Pherbellia knutsoni	Red Data Book 3 (Rare)				•	•	
Insecta	Diptera	Sciomyzidae	Pherbina coryleti		•		•		•	■
Insecta	Diptera	Sciomyzidae	Tetanocera arrogans							■
Insecta	Diptera	Sciomyzidae	Tetanocera elata			•				
Insecta	Diptera	Sciomyzidae	Tetanocera ferruginea			•			•	■
Insecta	Diptera	Sciomyzidae	Tetanocera punctifrons	Nationally Notable	•				•	
Insecta	Diptera	Sciomyzidae	Trypetoptera punctulata		•				•	
Insecta	Diptera	Sepsidae	Saltella sphondylii				•			
Insecta	Diptera	Sepsidae	Sepsis cynipsea		•	•	•	•	•	■
Insecta	Diptera	Sepsidae	Sepsis duplicata							■
Insecta	Diptera	Sepsidae	Sepsis fulgens				•	•	•	■
Insecta	Diptera	Sepsidae	Sepsis orthocnemis		•	•	•		•	■
Insecta	Diptera	Sepsidae	Sepsis punctum		•					■
Insecta	Diptera	Sepsidae	Sepsis thoracica				•			
Insecta	Diptera	Sepsidae	Themira lucida		•		•			
Insecta	Diptera	Sepsidae	Themira minor		•					
Insecta	Diptera	Sphaeroceridae	Copromyza stercoraria				•			
Insecta	Diptera	Sphaeroceridae	Lotophila atra					•		
Insecta	Diptera	Stratiomyidae	Beris vallata (Common Orange Legionnaire)		•	•			•	■
Insecta	Diptera	Stratiomyidae	Chloromyia formosa (Broad Centurion)		•	•	•	•	•	
Insecta	Diptera	Stratiomyidae	Chorisops tibialis (Dull Four-spined Legionnaire)			•		•	•	■
Insecta	Diptera	Stratiomyidae	Microchrysa flavicornis (Green Gem)		•	•				
Insecta	Diptera	Stratiomyidae	Microchrysa polita (Black-horned Gem)			•				
Insecta	Diptera	Stratiomyidae	Nemotelus nigrinus (All-black Snout)		•	•			•	
Insecta	Diptera	Stratiomyidae	Nemotelus notatus (Flecked Snout)		•	•	•	•		
Insecta	Diptera	Stratiomyidae	Nemotelus uliginosus (Barred Snout)		•	•	•			
Insecta	Diptera	Stratiomyidae	Oxycera trilineata (Three-lined Soldier)		•	•				
Insecta	Diptera	Stratiomyidae	Stratiomys singularior (Flecked General)			•				
Insecta	Diptera	Syrphidae	Baccha elongata			•				
Insecta	Diptera	Syrphidae	Cheilosia bergenstammi		•	•	•	•		
Insecta	Diptera	Syrphidae	Cheilosia griseiventris			•				
Insecta	Diptera	Syrphidae	Cheilosia impressa		•	•				

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Diptera	Syrphidae	Cheilosia lasiopa			•		•		
Insecta	Diptera	Syrphidae	Cheilosia pagana		•	•	•	•	•	
Insecta	Diptera	Syrphidae	Cheilosia urbana			•	•			
Insecta	Diptera	Syrphidae	Cheilosia vernalis			•				
Insecta	Diptera	Syrphidae	Chrysogaster cemiteriorum		•	•				
Insecta	Diptera	Syrphidae	Chrysotoxum bicinctum		•	•		•	•	
Insecta	Diptera	Syrphidae	Dasysyrphus albostrigatus			•			•	
Insecta	Diptera	Syrphidae	Dasysyrphus venustus			•				
Insecta	Diptera	Syrphidae	Epistrophe eligans						•	
Insecta	Diptera	Syrphidae	Epistrophe grossulariae			•				
Insecta	Diptera	Syrphidae	Episyrphus balteatus (Marmalade Hoverfly)		•	•	•	•	•	■
Insecta	Diptera	Syrphidae	Eristalinus aeneus		•		•			
Insecta	Diptera	Syrphidae	Eristalinus sepulchralis		•	•				
Insecta	Diptera	Syrphidae	Eristalis abusiva		•	•				
Insecta	Diptera	Syrphidae	Eristalis arbustorum						•	
Insecta	Diptera	Syrphidae	Eristalis horticola			•				
Insecta	Diptera	Syrphidae	Eristalis intricaria		•	•	•			
Insecta	Diptera	Syrphidae	Eristalis nemorum			•				
Insecta	Diptera	Syrphidae	Eristalis pertinax (Tapered Dronefly)		•	•			•	
Insecta	Diptera	Syrphidae	Eristalis tenax (Common Dronefly)		•	•	•	•	•	
Insecta	Diptera	Syrphidae	Eumerus strigatus (Lesser Bulb-Fly)				•			
Insecta	Diptera	Syrphidae	Eupeodes corollae		•	•	•	•	•	■
Insecta	Diptera	Syrphidae	Eupeodes latifasciatus			•				
Insecta	Diptera	Syrphidae	Eupeodes luniger		•	•	•	•	•	
Insecta	Diptera	Syrphidae	Helophilus pendulus		•	•			•	■
Insecta	Diptera	Syrphidae	Lejogaster metallina			•				
Insecta	Diptera	Syrphidae	Melangyna compositarum							■
Insecta	Diptera	Syrphidae	Melangyna labiatarum		•	•				
Insecta	Diptera	Syrphidae	Melangyna umbellatarum		•	•	•	•	•	
Insecta	Diptera	Syrphidae	Melanostoma mellinum		•	•	•	•	•	■
Insecta	Diptera	Syrphidae	Melanostoma scalare			•				
Insecta	Diptera	Syrphidae	Meliscaeva auricollis		•				•	
Insecta	Diptera	Syrphidae	Neoascia meticulosa (Yellow-kneed Clubtail)			•				
Insecta	Diptera	Syrphidae	Neoascia tenur		•					
Insecta	Diptera	Syrphidae	Paragus haemorrhous		•	•	•	•	•	■

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Diptera	Syrphidae	Parhelophilus frutetorum			•				
Insecta	Diptera	Syrphidae	Pipiza noctiluca			•				
Insecta	Diptera	Syrphidae	Pipizella viduata		•	•	•	•	•	
Insecta	Diptera	Syrphidae	Platycheirus albimanus		•	•			•	
Insecta	Diptera	Syrphidae	Platycheirus angustatus		•	•	•		•	■
Insecta	Diptera	Syrphidae	Platycheirus clypeatus		•	•	•	•	•	■
Insecta	Diptera	Syrphidae	Platycheirus fulviventris			•				
Insecta	Diptera	Syrphidae	Platycheirus granditarsus		•	•				
Insecta	Diptera	Syrphidae	Platycheirus manicatus		•	•	•			
Insecta	Diptera	Syrphidae	Platycheirus occultus		•	•				
Insecta	Diptera	Syrphidae	Platycheirus peltatus			•				
Insecta	Diptera	Syrphidae	Platycheirus rosarum							■
Insecta	Diptera	Syrphidae	Platycheirus scutatus		•	•	•		•	■
Insecta	Diptera	Syrphidae	Rhingia campestris (Common Snout-hoverfly)		•	•				
Insecta	Diptera	Syrphidae	Sphaerophoria interrupta		•	•	•	•	•	
Insecta	Diptera	Syrphidae	Sphaerophoria philanthus		•					
Insecta	Diptera	Syrphidae	Sphaerophoria rueppellii		•		•	•	•	
Insecta	Diptera	Syrphidae	Sphaerophoria scripta		•	•	•	•	•	■
Insecta	Diptera	Syrphidae	Syritta pipiens			•	•		•	■
Insecta	Diptera	Syrphidae	Syrphus ribesii		•	•	•	•	•	■
Insecta	Diptera	Syrphidae	Syrphus torvus				•			
Insecta	Diptera	Syrphidae	Syrphus vitripennis			•			•	
Insecta	Diptera	Syrphidae	Tropidia scita		•	•			•	■
Insecta	Diptera	Syrphidae	Volucella bombylans			•		•	•	
Insecta	Diptera	Syrphidae	Volucella inanis						•	
Insecta	Diptera	Syrphidae	Volucella pellucens			•				
Insecta	Diptera	Syrphidae	Xanthandrus comtus				•			
Insecta	Diptera	Syrphidae	Xylota segnis						•	
Insecta	Diptera	Tabanidae	Chrysops relictus (Twin-lobed Deerfly)			•			•	
Insecta	Diptera	Tabanidae	Haematopota crassicornis (Black-horned Cleg)			•				
Insecta	Diptera	Tabanidae	Haematopota pluvialis (Notch-horned Cleg)		•	•	•			■
Insecta	Diptera	Tachinidae	Carcelia lucorum		•				•	
Insecta	Diptera	Tachinidae	Catharosia pygmaea			•				
Insecta	Diptera	Tachinidae	Dinera griseascens		•			•		
Insecta	Diptera	Tachinidae	Epicampocera succincta			•				



Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Diptera	Tachinidae	Eriothrix rufomaculata		•	•	•	•	•	■
Insecta	Diptera	Tachinidae	Exorista larvarum		•	•				
Insecta	Diptera	Tachinidae	Gymnocheta viridis			•				
Insecta	Diptera	Tachinidae	Lydella grisescens		•	•	•	•	•	
Insecta	Diptera	Tachinidae	Lydella stabulans		•	•	•	•		
Insecta	Diptera	Tachinidae	Lydina aenea			•		•		
Insecta	Diptera	Tachinidae	Lypha dubia			•				
Insecta	Diptera	Tachinidae	Macquartia dispar			•				
Insecta	Diptera	Tachinidae	Medina luctuosa			•				
Insecta	Diptera	Tachinidae	Meigenia mutabilis		•				•	
Insecta	Diptera	Tachinidae	Ocytata pallipes		•	•	•	•	•	
Insecta	Diptera	Tachinidae	Pales pavidata			•				
Insecta	Diptera	Tachinidae	Pelatachina tibialis			•				
Insecta	Diptera	Tachinidae	Periscepsia spathulata			•				
Insecta	Diptera	Tachinidae	Phasia obesa			•				
Insecta	Diptera	Tachinidae	Phryxe heraclei			•	•	•		
Insecta	Diptera	Tachinidae	Phryxe nemea			•			•	
Insecta	Diptera	Tachinidae	Phryxe vulgaris		•	•	•	•	•	
Insecta	Diptera	Tachinidae	Platymya fimbriata			•			•	
Insecta	Diptera	Tachinidae	Siphona geniculata		•	•	•	•		■
Insecta	Diptera	Tachinidae	Solieria pacifica		•	•			•	
Insecta	Diptera	Tachinidae	Thelaira nigrina			•			•	
Insecta	Diptera	Tachinidae	Voria ruralis			•				
Insecta	Diptera	Tachinidae	Winthemia quadripustulata						•	
Insecta	Diptera	Tephritidae	Anomoia purmunda		•					
Insecta	Diptera	Tephritidae	Campiglossa malaris	[Red Data Book 1 (Endangered)]	•				•	
Insecta	Diptera	Tephritidae	Campiglossa plantaginis		•					■
Insecta	Diptera	Tephritidae	Chaetorellia jaceae						•	
Insecta	Diptera	Tephritidae	Chaetostomella cylindrica							■
Insecta	Diptera	Tephritidae	Dioxyna bidentis	[Nationally Notable]	•				•	
Insecta	Diptera	Tephritidae	Euleia heraclei						•	
Insecta	Diptera	Tephritidae	Noeeta pupillata			•			•	
Insecta	Diptera	Tephritidae	Orellia falcata	Nationally Notable	•	•			•	
Insecta	Diptera	Tephritidae	Sphenella marginata		•	•	•	•	•	
Insecta	Diptera	Tephritidae	Tephritis cometa		•	•	•		•	

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Diptera	Tephritidae	Tephritis conura							■
Insecta	Diptera	Tephritidae	Tephritis divisa		•					
Insecta	Diptera	Tephritidae	Tephritis formosa		•					
Insecta	Diptera	Tephritidae	Tephritis leontodontis							■
Insecta	Diptera	Tephritidae	Tephritis matricariae		•	•	•	•	•	
Insecta	Diptera	Tephritidae	Tephritis neesii				•	•		■
Insecta	Diptera	Tephritidae	Tephritis ruralis				•	•		■
Insecta	Diptera	Tephritidae	Tephritis vespertina		•	•	•	•	•	
Insecta	Diptera	Tephritidae	Terellia ruficauda		•	•	•		•	
Insecta	Diptera	Tephritidae	Terellia serratulae		•		•	•	•	
Insecta	Diptera	Tephritidae	Trupanea amoena	Red Data Book 2 (Vulnerable)						■
Insecta	Diptera	Tephritidae	Trypeta artemisiae							■
Insecta	Diptera	Tephritidae	Urophora jaceana		•	•	•		•	
Insecta	Diptera	Tephritidae	Urophora quadrifasciata		•		•		•	
Insecta	Diptera	Tephritidae	Urophora solstitialis	[Red Data Book 3 (Rare)]				•	•	
Insecta	Diptera	Tephritidae	Urophora stylata		•	•	•		•	■
Insecta	Diptera	Tephritidae	Xyphosia miliaria		•	•		•	•	
Insecta	Diptera	Therevidae	Acrosathe annulata (Coastal Silver-stiletto)				•			
Insecta	Diptera	Therevidae	Thereva nobilitata (Common Stiletto)			•	•	•	•	■
Insecta	Diptera	Tipulidae	Nephrotoma appendiculata (Spotted Crane-fly)		•	•		•		■
Insecta	Diptera	Tipulidae	Nephrotoma flavescens (Tiger Crane-fly)		•		•	•	•	■
Insecta	Diptera	Tipulidae	Nephrotoma flavipalpis							■
Insecta	Diptera	Tipulidae	Nigrotipula nigra			•				
Insecta	Diptera	Tipulidae	Prionocera turcica			•				
Insecta	Diptera	Tipulidae	Tipula fascipennis		•	•			•	
Insecta	Diptera	Tipulidae	Tipula lateralis							■
Insecta	Diptera	Tipulidae	Tipula lunata			•				
Insecta	Diptera	Tipulidae	Tipula oleracea			•				■
Insecta	Diptera	Tipulidae	Tipula paludosa		•	•				
Insecta	Diptera	Tipulidae	Tipula vernalis		•	•	•	•		■
Insecta	Diptera	Ulidiidae	Ceroxys urticae		•					
Insecta	Diptera	Ulidiidae	Herina lugubris		•			•	•	■
Insecta	Diptera	Ulidiidae	Melieria omissa		•	•	•	•		
Insecta	Hemiptera	Acanthosomatidae	Acanthosoma haemorrhoidale (Hawthorn Shieldbug)		•					
Insecta	Hemiptera	Acanthosomatidae	Elasmotethus interstinctus (Birch Shieldbug)			•				

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Hemiptera	Acanthosomatidae	Elasmucha grisea (Parent Bug)			•	•			
Insecta	Hemiptera	Anthocoridae	Anthocoris nemoralis		•	•	•		•	■
Insecta	Hemiptera	Anthocoridae	Anthocoris nemorum (Common Flower Bug)		•	•	•		•	■
Insecta	Hemiptera	Anthocoridae	Orius laevigatus						•	
Insecta	Hemiptera	Anthocoridae	Orius niger						•	
Insecta	Hemiptera	Aphrophoridae	Aphrophora alni (Alder Spittlebug)		•	•				
Insecta	Hemiptera	Aphrophoridae	Aphrophora salicina					•		
Insecta	Hemiptera	Aphrophoridae	Neophilaenus lineatus		•	•	•	•	•	■
Insecta	Hemiptera	Aphrophoridae	Philaenus spumarius		•	•	•	•	•	■
Insecta	Hemiptera	Berytidae	Berytinus minor						•	
Insecta	Hemiptera	Berytidae	Berytinus signoreti		•		•	•	•	
Insecta	Hemiptera	Berytidae	Gampsocoris punctipes						•	
Insecta	Hemiptera	Cercopidae	Cercopis vulnerata (Red-and-black Froghopper)		•	•	•	•		
Insecta	Hemiptera	Cicadellidae	Agallia brachyptera	Nationally Scarce (Nb)					•	
Insecta	Hemiptera	Cicadellidae	Anaceratagallia venosa		•	•	•	•	•	
Insecta	Hemiptera	Cicadellidae	Anoscopus flavostriatus			•				
Insecta	Hemiptera	Cicadellidae	Aphrodes bicincta						•	
Insecta	Hemiptera	Cicadellidae	Aphrodes makarovi						•	
Insecta	Hemiptera	Cicadellidae	Arthaldeus pascuellus		•					
Insecta	Hemiptera	Cicadellidae	Athysanus argentarius				•		•	
Insecta	Hemiptera	Cicadellidae	Conosanus obsoletus		•					
Insecta	Hemiptera	Cicadellidae	Doratura stylata						•	
Insecta	Hemiptera	Cicadellidae	Eupelix cuspidata		•	•	•		•	■
Insecta	Hemiptera	Cicadellidae	Eupteryx thoulessi						•	
Insecta	Hemiptera	Cicadellidae	Euscelis incisus			•		•	•	
Insecta	Hemiptera	Cicadellidae	Graphocraerus ventralis			•				
Insecta	Hemiptera	Cicadellidae	Idiocerus lituratus						•	
Insecta	Hemiptera	Cicadellidae	Macropsis cerea		•		•			
Insecta	Hemiptera	Cicadellidae	Macropsis scotti					•		
Insecta	Hemiptera	Cicadellidae	Macrosteles sordidipennis	Nationally Scarce (Nb)		•				
Insecta	Hemiptera	Cicadellidae	Macustus grisescens		•		•			
Insecta	Hemiptera	Cicadellidae	Megophthalmus scanicus		•	•	•	•	•	
Insecta	Hemiptera	Cicadellidae	Mocydia crocea		•	•			•	
Insecta	Hemiptera	Cicadellidae	Oncopsis flavicollis			•				
Insecta	Hemiptera	Cicadellidae	Oncopsis subangulata			•			•	

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Hemiptera	Cicadellidae	Paramesus obtusifrons		•					
Insecta	Hemiptera	Cicadellidae	Populicerus confusus			•	•	•	•	
Insecta	Hemiptera	Cicadellidae	Psammotettix confinis			•			•	
Insecta	Hemiptera	Cicadellidae	Psammotettix putoni			•				
Insecta	Hemiptera	Cicadellidae	Stroggylocephalus agrestis				•			
Insecta	Hemiptera	Cicadellidae	Zyginidia scutellaris		•				•	
Insecta	Hemiptera	Cixiidae	Cixius nervosus		•					
Insecta	Hemiptera	Cixiidae	Tachycixius pilosus			•	•			
Insecta	Hemiptera	Coreidae	Coriomeris denticulatus (Denticulate Leatherbug)		•	•	•	•	•	
Insecta	Hemiptera	Delphacidae	Chloriona smaragdula		•					
Insecta	Hemiptera	Delphacidae	Criomorphus albomarginatus		•	•		•		
Insecta	Hemiptera	Delphacidae	Euides basilinea				•			
Insecta	Hemiptera	Delphacidae	Eurybregma nigrolineata		•	•	•		•	
Insecta	Hemiptera	Delphacidae	Javesella dubia			•				
Insecta	Hemiptera	Delphacidae	Kelisia pallidula		•					
Insecta	Hemiptera	Delphacidae	Stenocranus major		•					
Insecta	Hemiptera	Delphacidae	Stenocranus minutus			•	•	•		
Insecta	Hemiptera	Lygaeidae	Cymus glandicolor		•					
Insecta	Hemiptera	Lygaeidae	Drymus brunneus			•				
Insecta	Hemiptera	Lygaeidae	Heterogaster urticae (Nettle Groundbug)			•			•	
Insecta	Hemiptera	Lygaeidae	Ischnodemus sabuleti (European Cinchbug)		•	•	•	•	•	■
Insecta	Hemiptera	Lygaeidae	Kleidocerys resedae (Birch Catkin Bug)			•	•		•	
Insecta	Hemiptera	Lygaeidae	Nysius thymi		•				•	
Insecta	Hemiptera	Lygaeidae	Peritrechus geniculatus		•			•	•	
Insecta	Hemiptera	Lygaeidae	Scolopostethus affinis				•			
Insecta	Hemiptera	Lygaeidae	Stygnocoris sabulosus		•					
Insecta	Hemiptera	Miridae	Adelphocoris lineolatus (Lucerne Bug)		•	•	•	•	•	■
Insecta	Hemiptera	Miridae	Calocoris roseomaculatus		•	•	•	•	•	■
Insecta	Hemiptera	Miridae	Capsus ater		•	•	•		•	
Insecta	Hemiptera	Miridae	Chlamydatus saltitans			•				
Insecta	Hemiptera	Miridae	Closterotomus norwegicus (Potato Capsid)		•	•	•	•	•	
Insecta	Hemiptera	Miridae	Conostethus brevis			•				
Insecta	Hemiptera	Miridae	Deraeocoris flavilinea					•	•	
Insecta	Hemiptera	Miridae	Deraeocoris lutescens		•		•			
Insecta	Hemiptera	Miridae	Deraeocoris ruber			•				■

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Hemiptera	Miridae	Dicyphus annulatus						•	■
Insecta	Hemiptera	Miridae	Dicyphus epilobii		•					
Insecta	Hemiptera	Miridae	Grypocoris stysi						•	■
Insecta	Hemiptera	Miridae	Hoplomachus thunbergii		•	•	•	•	•	
Insecta	Hemiptera	Miridae	Leptopterna dolabrata (Meadow Plant Bug)		•	•	•	•	•	■
Insecta	Hemiptera	Miridae	Leptopterna ferrugata						•	
Insecta	Hemiptera	Miridae	Liocoris tripustulatus						•	
Insecta	Hemiptera	Miridae	Lygus maritimus			•		•	•	
Insecta	Hemiptera	Miridae	Lygus pratensis	[Red Data Book 3 (Rare)]					•	
Insecta	Hemiptera	Miridae	Lygus rugulipennis (European Tarnished Plant Bug)					•	•	
Insecta	Hemiptera	Miridae	Macrotylus paykulli		•		•	•	•	
Insecta	Hemiptera	Miridae	Megaloceroea recticornis			•				
Insecta	Hemiptera	Miridae	Megalocoleus molliculus		•					
Insecta	Hemiptera	Miridae	Notostira elongata		•	•	•	•	•	■
Insecta	Hemiptera	Miridae	Orthops campestris			•				■
Insecta	Hemiptera	Miridae	Phytocoris varipes		•	•	•	•	•	
Insecta	Hemiptera	Miridae	Pithanus maerkelii		•	•	•		•	
Insecta	Hemiptera	Miridae	Plagiognathus arbustorum			•			•	
Insecta	Hemiptera	Miridae	Plagiognathus chrysanthemi			•		•	•	
Insecta	Hemiptera	Miridae	Stenodema calcarata		•	•	•	•		■
Insecta	Hemiptera	Miridae	Stenodema laevigata			•		•	•	■
Insecta	Hemiptera	Miridae	Stenodema trispinosa		•	•	•	•		
Insecta	Hemiptera	Miridae	Stenotus binotatus (Timothy Grassbug)			•	•	•	•	
Insecta	Hemiptera	Nabidae	Himacerus major (Grey Damsel Bug)		•		•		•	
Insecta	Hemiptera	Nabidae	Nabis ferus (Field Damselbug)		•	•			•	
Insecta	Hemiptera	Nabidae	Nabis flavomarginatus (Broad Damselbug)		•					
Insecta	Hemiptera	Nabidae	Nabis limbatus (Marsh Damselbug)		•	•	•			
Insecta	Hemiptera	Nabidae	Nabis rugosus (Common Damselbug)						•	
Insecta	Hemiptera	Pentatomidae	Aelia acuminata (Bishop's Mitre)					•	•	
Insecta	Hemiptera	Pentatomidae	Dolycoris baccarum (Hairy Shieldbug)		•	•	•	•	•	■
Insecta	Hemiptera	Pentatomidae	Palomena prasina (Green Shieldbug)			•			•	
Insecta	Hemiptera	Pentatomidae	Pentatoma rufipes (Red-legged Shieldbug)			•	•			
Insecta	Hemiptera	Pentatomidae	Piezodorus lituratus (Gorse Shieldbug)		•					
Insecta	Hemiptera	Pentatomidae	Zicrona caerulea (Blue Shieldbug)			•				
Insecta	Hemiptera	Piesmatidae	Parapiesma quadratum		•					

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Hemiptera	Rhopalidae	Corizus hyoscyami		•	•	•	•	•	
Insecta	Hemiptera	Rhopalidae	Myrmus miriformis		•	•	•	•	•	■
Insecta	Hemiptera	Saldidae	Salda littoralis	Nationally Scarce	•	•				
Insecta	Hemiptera	Saldidae	Saldula opacula	Nationally Scarce		•				
Insecta	Hemiptera	Saldidae	Saldula palustris	Nationally Scarce	•	•	•			
Insecta	Hemiptera	Saldidae	Saldula saltatoria (Common Shorebug)			•				
Insecta	Hemiptera	Tingidae	Acalypta parvula					•	•	
Insecta	Hemiptera	Tingidae	Physatocheila dumetorum		•			•		
Insecta	Hemiptera	Tingidae	Tingis ampliata (Creeping Thistle Lacebug)		•	•		•		
Insecta	Hemiptera	Trioziidae	Trioza centranthi						•	
Insecta	Hemiptera	Trioziidae	Trioza urticae						•	
Insecta	Hymenoptera	Andrenidae	Andrena bicolor (Gwynne's Mining Bee)		•	•		•	•	
Insecta	Hymenoptera	Andrenidae	Andrena denticulata (Grey-banded Mining Bee)			•				
Insecta	Hymenoptera	Andrenidae	Andrena fulva (Tawny Mining Bee)				•			
Insecta	Hymenoptera	Andrenidae	Andrena haemorrhhoa (Orange-tailed Mining Bee)			•	•			
Insecta	Hymenoptera	Andrenidae	Andrena minutula (Common Mini-miner)			•		•	•	
Insecta	Hymenoptera	Andrenidae	Andrena nigroaenea (Buffish Mining Bee)		•	•	•	•	•	
Insecta	Hymenoptera	Andrenidae	Andrena ruficrus (Northern Mining Bee)	Red Data Book 3 (Rare)		•				
Insecta	Hymenoptera	Andrenidae	Andrena scotica (Chocolate Mining Bee)		•					
Insecta	Hymenoptera	Andrenidae	Andrena semilaevis (Shiny-margined Mini-miner)			•	•		•	
Insecta	Hymenoptera	Andrenidae	Andrena similis (Red-backed Mining Bee)	Nationally Scarce (Nb)						■
Insecta	Hymenoptera	Andrenidae	Andrena wilkella (Wilke's Mining Bee)		•	•	•	•		
Insecta	Hymenoptera	Apidae	Apis mellifera (Honey Bee)		•	•		•	•	
Insecta	Hymenoptera	Apidae	Bombus cryptarum (Cryptic Bumblebee)			•				
Insecta	Hymenoptera	Apidae	Bombus hortorum (Small Garden Bumblebee)		•	•	•		•	
Insecta	Hymenoptera	Apidae	Bombus hypnorum (Tree Bumblebee)			•				
Insecta	Hymenoptera	Apidae	Bombus jonellus (Heath Bumblebee)		•	•	•	•	•	
Insecta	Hymenoptera	Apidae	Bombus lapidarius (Red-tailed Bumblebee)		•	•	•	•	•	■
Insecta	Hymenoptera	Apidae	Bombus lucorum (White-tailed Bumblebee)							■
Insecta	Hymenoptera	Apidae	Bombus pascuorum (Common Carder Bee)		•	•	•	•	•	■
Insecta	Hymenoptera	Apidae	Bombus pratorum (Early Bumblebee)			•		•	•	
Insecta	Hymenoptera	Apidae	Bombus terrestris (Buff-tailed Bumblebee)		•	•	•	•	•	■
Insecta	Hymenoptera	Apidae	Bombus vestalis (Vestal Cuckoo Bee)		•	•				
Insecta	Hymenoptera	Apidae	Nomada flava (Flavous Nomad Bee)			•				
Insecta	Hymenoptera	Apidae	Nomada flavoguttata (Little Nomad Bee)			•			•	

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Hymenoptera	Apidae	Nomada goodeniana (Gooden's Nomad Bee)					•		
Insecta	Hymenoptera	Apidae	Nomada striata (Blunt-jawed Nomad Bee)			•				
Insecta	Hymenoptera	Argidae	Arge cyanocrocea (Bramble Arge)		•					
Insecta	Hymenoptera	Argidae	Arge ochropus				•			
Insecta	Hymenoptera	Bethylidae	Bethylus fuscicornis		•	•				
Insecta	Hymenoptera	Cephididae	Calameuta filiformis (Reed Stem Borer)		•	•	•	•	•	
Insecta	Hymenoptera	Cephididae	Calameuta pallipes (Small Reed Borer)		•		•			
Insecta	Hymenoptera	Cephididae	Cephus spinipes (Timothy Stem Borer)			•	•		•	
Insecta	Hymenoptera	Chrysididae	Chrysis angustula							■
Insecta	Hymenoptera	Chrysididae	Chrysis viridula				•	•	•	
Insecta	Hymenoptera	Chrysididae	Hedychridium ardens						•	
Insecta	Hymenoptera	Chrysididae	Pseudomalus auratus				•			
Insecta	Hymenoptera	Colletidae	Colletes daviesanus (Davies' Colletes)						•	
Insecta	Hymenoptera	Colletidae	Colletes marginatus (Margined Colletes)	Nationally Scarce (Na)				•		
Insecta	Hymenoptera	Colletidae	Hylaeus brevicornis (Short-horned Yellow-face Bee)		•	•			•	
Insecta	Hymenoptera	Colletidae	Hylaeus communis (Common Yellow-face Bee)		•	•			•	
Insecta	Hymenoptera	Colletidae	Hylaeus hyalinatus (Hairy Yellow-face)		•	•	•	•	•	■
Insecta	Hymenoptera	Colletidae	Hylaeus signatus (Large Yellow-face Bee)	Nationally Scarce (Nb)				•	•	
Insecta	Hymenoptera	Crabronidae	Argogorytes fargeii	Nationally Scarce (Na)	•				•	■
Insecta	Hymenoptera	Crabronidae	Cerceris rybyensis (Ornate-tailed Digger Wasp)					•		
Insecta	Hymenoptera	Crabronidae	Crabro cribrarius (Slender-bodied Digger Wasp)		•	•	•	•	•	
Insecta	Hymenoptera	Crabronidae	Crossocerus elongatulus (Slender Digger Wasp)		•					
Insecta	Hymenoptera	Crabronidae	Crossocerus podagricus			•				
Insecta	Hymenoptera	Crabronidae	Crossocerus tarsatus			•	•			
Insecta	Hymenoptera	Crabronidae	Crossocerus varus			•				
Insecta	Hymenoptera	Crabronidae	Dryudella pinguis				•	•	•	
Insecta	Hymenoptera	Crabronidae	Ectemnius continuus		•	•		•		■
Insecta	Hymenoptera	Crabronidae	Ectemnius rubicola					•		
Insecta	Hymenoptera	Crabronidae	Ectemnius sexcinctus	Nationally Scarce (Nb)	•			•	•	
Insecta	Hymenoptera	Crabronidae	Gorytes quadrifasciatus (4-Banded Digger Wasp)		•	•	•	•	•	
Insecta	Hymenoptera	Crabronidae	Harpactus tumidus				•	•		
Insecta	Hymenoptera	Crabronidae	Mellinus arvensis						•	
Insecta	Hymenoptera	Crabronidae	Nysson trimaculatus	Nationally Scarce (Nb)	•	•		•		
Insecta	Hymenoptera	Crabronidae	Oxybelus uniglumis (Common Spiny Digger Wasp)					•	•	
Insecta	Hymenoptera	Crabronidae	Passaloecus gracilis			•				



Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Hymenoptera	Crabronidae	Pemphredon inornata (Shuckard's Wasp)			•		•	•	
Insecta	Hymenoptera	Crabronidae	Pemphredon lethifer (Little Black Wasp)		•	•			•	
Insecta	Hymenoptera	Crabronidae	Pemphredon lugubris (Mournful Wasp)			•				
Insecta	Hymenoptera	Crabronidae	Philanthus triangulum (Bee Wolf)	[Red Data Book 2 (Vulnerable)]					•	
Insecta	Hymenoptera	Crabronidae	Psenus concolor			•				
Insecta	Hymenoptera	Crabronidae	Rhopalum coarctatum			•				
Insecta	Hymenoptera	Crabronidae	Tachysphex pompiliformis				•		•	
Insecta	Hymenoptera	Crabronidae	Trypoxylon attenuatum (Slender Wood Borer Wasp)		•		•			■
Insecta	Hymenoptera	Crabronidae	Trypoxylon medium		•		•	•	•	
Insecta	Hymenoptera	Cynipidae	Diplolepis rosae (Bedeguar Gall)						•	
Insecta	Hymenoptera	Dryinidae	Gonatopus clavipes				•			
Insecta	Hymenoptera	Formicidae	Formica fusca (Dusky Ant)							■
Insecta	Hymenoptera	Formicidae	Formica lemani		•	•	•	•	•	
Insecta	Hymenoptera	Formicidae	Lasius flavus (Yellow Meadow Ant)			•		•		
Insecta	Hymenoptera	Formicidae	Lasius niger (Small Black Ant)		•	•		•		■
Insecta	Hymenoptera	Formicidae	Leptothorax acervorum (Slender Ant)		•	•	•	•		
Insecta	Hymenoptera	Formicidae	Myrmica lobicornis			•		•		
Insecta	Hymenoptera	Formicidae	Myrmica ruginodis			•	•	•	•	■
Insecta	Hymenoptera	Formicidae	Myrmica sabuleti		•	•	•		•	■
Insecta	Hymenoptera	Formicidae	Myrmica scabrinodis		•	•	•	•	•	■
Insecta	Hymenoptera	Halictidae	Halictus rubicundus (Yellow-legged Furrow Bee)			•	•	•	•	
Insecta	Hymenoptera	Halictidae	Halictus tumulorum (Bronze Furrow Bee)		•	•	•		•	
Insecta	Hymenoptera	Halictidae	Lasioglossum albipes (Bloomed Furrow Bee)		•	•	•	•	•	■
Insecta	Hymenoptera	Halictidae	Lasioglossum calceatum (Common Furrow Bee)						•	
Insecta	Hymenoptera	Halictidae	Lasioglossum cupromicans (Turquoise Furrow Bee)		•		•	•	•	■
Insecta	Hymenoptera	Halictidae	Lasioglossum fratellum (Smooth-faced Furrow Bee)		•		•			
Insecta	Hymenoptera	Halictidae	Lasioglossum leucopus (White-footed Furrow Bee)		•	•	•	•	•	
Insecta	Hymenoptera	Halictidae	Lasioglossum leucozonium (White-zoned Furrow Bee)		•	•	•	•	•	
Insecta	Hymenoptera	Halictidae	Lasioglossum nitidiusculum (Tufted Furrow Bee)		•	•				
Insecta	Hymenoptera	Halictidae	Lasioglossum smeathmanellum (Smeathman's Furrow Bee)		•				•	
Insecta	Hymenoptera	Halictidae	Lasioglossum villosulum (Shaggy Furrow Bee)		•	•		•	•	
Insecta	Hymenoptera	Halictidae	Sphecodes crassus (Swollen-thighed Blood Bee)	Nationally Scarce (Nb)					•	
Insecta	Hymenoptera	Halictidae	Sphecodes ephippius (Bare-saddled Blood Bee)		•	•	•		•	
Insecta	Hymenoptera	Halictidae	Sphecodes geoffrellus (Geoffroy's Blood Bee)		•	•	•	•	•	
Insecta	Hymenoptera	Halictidae	Sphecodes gibbus (Dark-winged Blood Bee)					•		

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Hymenoptera	Halictidae	Sphecodes hyalinatus (Furry-bellied Blood Bee)			•				
Insecta	Hymenoptera	Ichneumonidae	Diplazon laetatorius							■
Insecta	Hymenoptera	Megachilidae	Coelioxys elongata (Dull-vented Sharp-tail Bee)			•	•	•		
Insecta	Hymenoptera	Megachilidae	Coelioxys inermis (Shiny-vented Sharp-tail Bee)		•					
Insecta	Hymenoptera	Megachilidae	Megachile centuncularis (Patchwork Leafcutter Bee)						•	
Insecta	Hymenoptera	Megachilidae	Megachile circumcincta (Black-headed Leafcutter Bee)			•	•	•	•	
Insecta	Hymenoptera	Megachilidae	Megachile versicolor (Brown-footed Leafcutter Bee)		•	•	•	•		
Insecta	Hymenoptera	Megachilidae	Megachile willughbiella (Willughby's Leafcutter Bee)			•		•	•	
Insecta	Hymenoptera	Megachilidae	Osmia caerulescens (Blue Mason Bee)			•			•	
Insecta	Hymenoptera	Megachilidae	Osmia spinulosa (Spined Mason Bee)		•	•	•		•	
Insecta	Hymenoptera	Megaspilidae	Megaspilus dux			•				
Insecta	Hymenoptera	Pompilidae	Anoplius nigerrimus (Common Black Spider-wasp)			•				
Insecta	Hymenoptera	Pompilidae	Arachnospila anceps		•				•	
Insecta	Hymenoptera	Pompilidae	Arachnospila spissa			•				
Insecta	Hymenoptera	Pompilidae	Dipogon variegatus			•				
Insecta	Hymenoptera	Pompilidae	Episyron rufipes (Red Legged Spider Wasp)		•			•		
Insecta	Hymenoptera	Pompilidae	Evagetes crassicornis						•	
Insecta	Hymenoptera	Pompilidae	Pompilus cinereus (Leaden Spider Wasp)					•		
Insecta	Hymenoptera	Pompilidae	Priocnemis exaltata			•				
Insecta	Hymenoptera	Pompilidae	Priocnemis perturbator				•			
Insecta	Hymenoptera	Proctotrupidae	Proctotrupes gravidator						•	
Insecta	Hymenoptera	Sphecidae	Ammophila sabulosa (Red-banded Sand Wasp)						•	
Insecta	Hymenoptera	Tenthredinidae	Aglaostigma aucupariae			•				
Insecta	Hymenoptera	Tenthredinidae	Aglaostigma fulvipes			•				
Insecta	Hymenoptera	Tenthredinidae	Athalia circularis				•			
Insecta	Hymenoptera	Tenthredinidae	Athalia cordata		•	•	•	•		
Insecta	Hymenoptera	Tenthredinidae	Athalia rosae (Turnip Sawfly)		•	•	•	•	•	
Insecta	Hymenoptera	Tenthredinidae	Cladius brullei		•					
Insecta	Hymenoptera	Tenthredinidae	Cladius compressicornis			•				
Insecta	Hymenoptera	Tenthredinidae	Cladius pectinicornis		•		•			
Insecta	Hymenoptera	Tenthredinidae	Dineura testaceipes				•			
Insecta	Hymenoptera	Tenthredinidae	Dolerus aericeps			•				
Insecta	Hymenoptera	Tenthredinidae	Dolerus gonager					•		
Insecta	Hymenoptera	Tenthredinidae	Dolerus niger			•				
Insecta	Hymenoptera	Tenthredinidae	Dolerus nigratus		•	•				

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Hymenoptera	Tenthredinidae	Dolerus picipes		•	•	•	•	•	
Insecta	Hymenoptera	Tenthredinidae	Eutomostethus gagathinus		•					
Insecta	Hymenoptera	Tenthredinidae	Euura bridgmanii		•				•	
Insecta	Hymenoptera	Tenthredinidae	Euura calcicola			•				
Insecta	Hymenoptera	Tenthredinidae	Euura clitellata		•		•			
Insecta	Hymenoptera	Tenthredinidae	Euura mucronata			•				
Insecta	Hymenoptera	Tenthredinidae	Euura myosotidis			•	•	•		
Insecta	Hymenoptera	Tenthredinidae	Euura papillosa			•				
Insecta	Hymenoptera	Tenthredinidae	Euura proxima				•			
Insecta	Hymenoptera	Tenthredinidae	Fenusella nana			•				
Insecta	Hymenoptera	Tenthredinidae	Hoplocampa pectoralis				•			
Insecta	Hymenoptera	Tenthredinidae	Pristiphora luteipes						•	
Insecta	Hymenoptera	Tenthredinidae	Pristiphora melanocarpa			•				
Insecta	Hymenoptera	Tenthredinidae	Rhogogaster chambersi			•	•	•		
Insecta	Hymenoptera	Tenthredinidae	Scolioneura betuleti			•				
Insecta	Hymenoptera	Tenthredinidae	Selandria melanosterna			•				
Insecta	Hymenoptera	Tenthredinidae	Selandria serva			•				
Insecta	Hymenoptera	Tenthredinidae	Tenthredo arcuata			•	•	•		
Insecta	Hymenoptera	Tenthredinidae	Tenthredo brevicornis		•	•	•	•	•	
Insecta	Hymenoptera	Tenthredinidae	Tenthredo notha			•		•	•	
Insecta	Hymenoptera	Tenthredinidae	Tenthredopsis nassata		•	•				
Insecta	Hymenoptera	Tenthredinidae	Tenthredopsis ornata			•				
Insecta	Hymenoptera	Tenthredinidae	Tenthredopsis scutellaris			•	•	•		
Insecta	Hymenoptera	Vespidae	Ancistrocerus gazella			•	•		•	
Insecta	Hymenoptera	Vespidae	Ancistrocerus scoticus		•					
Insecta	Hymenoptera	Vespidae	Dolichovespula sylvestris (Tree Wasp)						•	
Insecta	Hymenoptera	Vespidae	Odynerus spinipes (Spiny Mason Wasp)		•	•		•		
Insecta	Hymenoptera	Vespidae	Vespula vulgaris (Common Wasp)		•	•			•	
Insecta	Lepidoptera	Blastobasidae	Blastobasis lacticolella (Wakely's Dowd)		•					
Insecta	Lepidoptera	Crambidae	Agriphila geniculea (Elbow-stripe Grass-veneer)						•	
Insecta	Lepidoptera	Crambidae	Agriphila inquinatella (Barred Grass-veneer)				•			
Insecta	Lepidoptera	Crambidae	Agriphila straminella (Straw Grass-veneer)						•	
Insecta	Lepidoptera	Crambidae	Agriphila tristella (Common Grass-veneer)		•				•	
Insecta	Lepidoptera	Crambidae	Chrysoteuchia culmella (Garden Grass-veneer)		•	•	•		•	
Insecta	Lepidoptera	Crambidae	Crambus perlella (Satin Grass-veneer)			•				

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Lepidoptera	Crambidae	Evergestis forficalis (Garden Pebble)					•		
Insecta	Lepidoptera	Crambidae	Udea lutealis (Pale Straw Pearl)						•	
Insecta	Lepidoptera	Crambidae	Udea olivalis (Olive Pearl)						•	
Insecta	Lepidoptera	Erebidae	Callistege mi (Mother Shipton)		•		•			
Insecta	Lepidoptera	Erebidae	Euproctis similis (Yellow-tail)		•	•		•		
Insecta	Lepidoptera	Erebidae	Tyria jacobaeae (Cinnabar)	SoPI (Research Only)	•	•	•	•	•	■
Insecta	Lepidoptera	Gelechiidae	Helcystogramma rufescens (Orange Crest)		•					
Insecta	Lepidoptera	Geometridae	Aethalura punctulata (Grey Birch)			•				
Insecta	Lepidoptera	Geometridae	Camptogramma bilineata (Yellow Shell)		•	•	•	•		
Insecta	Lepidoptera	Geometridae	Crocallis elinguaris (Scalloped Oak)					•		
Insecta	Lepidoptera	Geometridae	Epirrhoe alternata (Common Carpet)							■
Insecta	Lepidoptera	Geometridae	Scotopteryx chenopodiata (Shaded Broad-bar)	SoPI (Research Only)	•		•		•	
Insecta	Lepidoptera	Glyphipterigidae	Glyphipterix simplicella (Cocksfoot Moth)		•	•				
Insecta	Lepidoptera	Gracillariidae	Aspilapteryx tringipennella (Ribwort Slender)			•				
Insecta	Lepidoptera	Hepialidae	Korscheltellus fusconebulosa (Map-winged Swift)							■
Insecta	Lepidoptera	Hesperiidae	Erynnis tages (Dingy Skipper)	SoPI	•	•		•	•	■
Insecta	Lepidoptera	Hesperiidae	Ochlodes sylvanus (Large Skipper)		•	•	•	•	•	
Insecta	Lepidoptera	Hesperiidae	Thymelicus sylvestris (Small Skipper)		•	•	•	•	•	■
Insecta	Lepidoptera	Lycaenidae	Aricia agestis (Brown Argus)			•		•	•	■
Insecta	Lepidoptera	Lycaenidae	Lycaena phlaeas (Small Copper)			•				
Insecta	Lepidoptera	Lycaenidae	Polyommatus icarus (Common Blue)		•	•	•	•	•	■
Insecta	Lepidoptera	Momphidae	Mompha raschkiella (Little Cosmet)							■
Insecta	Lepidoptera	Noctuidae	Autographa gamma (Silver Y)		•	•		•	•	■
Insecta	Lepidoptera	Noctuidae	Diloba caeruleocephala (Figure of Eight)	SoPI (Research Only)	•		•			
Insecta	Lepidoptera	Noctuidae	Pyrrhia umbra (Bordered Sallow)							■
Insecta	Lepidoptera	Nymphalidae	Aglais io (Peacock)		•	•	•	•		
Insecta	Lepidoptera	Nymphalidae	Aglais urticae (Small Tortoiseshell)			•				
Insecta	Lepidoptera	Nymphalidae	Aphantopus hyperantus (Ringlet)		•	•	•	•	•	
Insecta	Lepidoptera	Nymphalidae	Coenonympha pamphilus (Small Heath)	Vulnerable; SoPI	•	•	•	•	•	■
Insecta	Lepidoptera	Nymphalidae	Hipparchia semele (Grayling)	Endangered; SoPI	•	•	•	•	•	■
Insecta	Lepidoptera	Nymphalidae	Lasiommata megera (Wall)	Endangered; SoPI		•			•	
Insecta	Lepidoptera	Nymphalidae	Maniola jurtina (Meadow Brown)		•	•	•	•	•	■
Insecta	Lepidoptera	Nymphalidae	Pararge aegeria (Speckled Wood)			•				
Insecta	Lepidoptera	Nymphalidae	Pyronia tithonus (Gatekeeper)						•	
Insecta	Lepidoptera	Nymphalidae	Vanessa atalanta (Red Admiral)			•	•		•	

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Lepidoptera	Nymphalidae	Vanessa cardui (Painted Lady)						•	
Insecta	Lepidoptera	Pieridae	Gonepteryx rhamni (Brimstone)				•			
Insecta	Lepidoptera	Pieridae	Pieris brassicae (Large White)			•				
Insecta	Lepidoptera	Pieridae	Pieris napi (Green-veined White)			•	•			■
Insecta	Lepidoptera	Pieridae	Pieris rapae (Small White)		•			•	•	
Insecta	Lepidoptera	Plutellidae	Plutella xylostella (Diamond-back Moth)				•			
Insecta	Lepidoptera	Pterophoridae	Adaina microdactyla (Hemp-agrimony Plume)						•	
Insecta	Lepidoptera	Pyralidae	Homoeosoma sinuella (Twin-barred Knot-horn)		•		•	•	•	
Insecta	Lepidoptera	Sphingidae	Macroglossum stellatarum (Humming-bird Hawk-moth)						•	
Insecta	Lepidoptera	Tischeriidae	Coptotriche marginea (Bordered Carl)		•			•	•	
Insecta	Lepidoptera	Tortricidae	Ancylis achatana (Triangle-marked Roller)				•			
Insecta	Lepidoptera	Tortricidae	Celypha lacunana (Common Marble)						•	
Insecta	Lepidoptera	Tortricidae	Epiphyas postvittana (Light Brown Apple Moth)						•	
Insecta	Lepidoptera	Tortricidae	Grapholita compositella (Triple-stripe Piercer)		•		•			
Insecta	Lepidoptera	Tortricidae	Grapholita lunulana (Northern Crescent Piercer)	pNationally Scarce				•		
Insecta	Lepidoptera	Tortricidae	Hedya nubiferana (Marbled Orchard Tortrix)					•		
Insecta	Lepidoptera	Tortricidae	Pandemis cerasana (Barred Fruit-tree Tortrix)		•					
Insecta	Lepidoptera	Ypsolophidae	Ochsenheimeria taurella (Feathered Stem-moth)	pNationally Scarce				•		
Insecta	Lepidoptera	Zygaenidae	Zygaena filipendulae (Six-spot Burnet)		•	•	•	•	•	■
Insecta	Lepidoptera	Zygaenidae	Zygaena lonicerae (Narrow-bordered Five-spot Burnet)		•	•	•	•	•	■
Insecta	Mecoptera	Panorpidae	Panorpa germanica		•	•				
Insecta	Neuroptera	Chrysopidae	Dichochrysa prasina						•	
Insecta	Odonata	Aeshnidae	Aeshna cyanea (Southern Hawker)			•			•	
Insecta	Odonata	Aeshnidae	Aeshna mixta (Migrant Hawker)			•				
Insecta	Odonata	Aeshnidae	Anax imperator (Emperor Dragonfly)			•			•	
Insecta	Odonata	Coenagrionidae	Enallagma cyathigerum (Common Blue Damselfly)		•	•				■
Insecta	Odonata	Coenagrionidae	Ischnura elegans (Blue-tailed Damselfly)		•	•		•	•	■
Insecta	Odonata	Coenagrionidae	Pyrrhosoma nymphula (Large Red Damselfly)		•	•				■
Insecta	Odonata	Libellulidae	Libellula depressa (Broad-bodied Chaser)		•					
Insecta	Odonata	Libellulidae	Libellula quadrimaculata (Four-spotted Chaser)		•					
Insecta	Odonata	Libellulidae	Orthetrum cancellatum (Black-tailed Skimmer)			•			•	
Insecta	Odonata	Libellulidae	Sympetrum sanguineum (Ruddy Darter)				•			
Insecta	Odonata	Libellulidae	Sympetrum striolatum (Common Darter)		•	•			•	
Insecta	Orthoptera	Acrididae	Chorthippus brunneus (Field Grasshopper)		•	•	•	•	•	■
Insecta	Orthoptera	Acrididae	Myrmeleotettix maculatus (Mottled Grasshopper)		•	•	•	•	•	■

Class	Order	Family	Taxon	Status	Sub-compartments (2023 Survey)					2018 Survey
					A	B	C	D	G	Sub-compartment G
Insecta	Orthoptera	Acrididae	Omocestus viridulus (Common Green Grasshopper)		•	•	•	•		
Insecta	Orthoptera	Tetrigidae	Tetrix subulata (Slender Ground-hopper)			•				
Insecta	Orthoptera	Tetrigidae	Tetrix undulata (Common Ground-hopper)		•	•				
Insecta	Psocoptera	Elipsocidae	Elipsocus pumilis		•					
Insecta	Psocoptera	Stenopsocidae	Graphopsocus cruciatus		•		•			
Insecta	Siphonaptera	Ceratophyllidae	Nosopsyllus fasciatus (Rat Flea)			•				
Insecta	Trichoptera	Limnephilidae	Limnephilus affinis		•					
Insecta	Trichoptera	Limnephilidae	Limnephilus politus	Nationally Scarce				•		
Malacostraca	Amphipoda	Talitridae	Orchestia gammarellus			•				
Malacostraca	Isopoda	Armadillidiidae	Armadillidium vulgare (Common Pill Woodlouse)		•	•	•	•	•	■
Malacostraca	Isopoda	Philosciidae	Philoscia muscorum (Common Striped Woodlouse)		•	•	•	•	•	■
Malacostraca	Isopoda	Porcellionidae	Porcellio scaber (Common Rough Woodlouse)		•	•		•	•	
Gastropoda	Pulmonata	Ellobiidae	Myosotella myosotis (Mouse-eared Snail)				•			
Gastropoda	Pulmonata	Helicidae	Arianta arbustorum (Copse Snail)		•				•	
Gastropoda	Pulmonata	Helicidae	Cepaea hortensis (White-lipped Snail)			•	•		•	
Gastropoda	Pulmonata	Helicidae	Cepaea nemoralis (Brown-lipped Snail)		•		•	•		■
Gastropoda	Pulmonata	Helicidae	Cornu aspersum (Common Garden Snail)			•	•	•		■
Gastropoda	Pulmonata	Hygromiidae	Ashfordia granulata (Silky Snail)			•				
Gastropoda	Pulmonata	Hygromiidae	Ceriuella virgata (Striped Snail)		•	•	•	•	•	■
Gastropoda	Pulmonata	Hygromiidae	Monacha cantiana (Kentish Snail)		•	•	•	•	•	
Gastropoda	Pulmonata	Hygromiidae	Trochulus hispidus (Hairy Snail)							■
Gastropoda	Pulmonata	Lauriidae	Lauria cylindracea (Common Chrysalis Snail)						•	
Gastropoda	Pulmonata	Oxychilidae	Aegopinella nitidula (Smooth Glass Snail)			•			•	
Gastropoda	Pulmonata	Patulidae	Discus rotundatus (Rounded Snail)						•	■
Gastropoda	Pulmonata	Pupillidae	Pupilla muscorum (Moss Chrysalis Snail)		•	•		•		
Gastropoda	Pulmonata	Vertiginidae	Vertigo pygmaea (Common Whorl Snail)		•					
Gastropoda	Stylommatophora	Geomitridae	Xeroplexa intersecta (Wrinkled Snail)		•	•	•	•	•	■

Table 12: Stenotopic species recorded within the study area, both in 2023 and from Richard Wilson Ecology (2018) combined.

Order	Family	Species	Broad biotope	Habitat	SAT	Habitat score
Araneae	Gnaphosidae	Drassodes lapidosus	open habitats	short sward & bare ground	F111	
Araneae	Linyphiidae	Erigone promiscua	open habitats		F003	
Araneae	Lycosidae	Pardosa nigriceps	open habitats	tall sward & scrub	F001	
Araneae	Lycosidae	Pardosa palustris	open habitats	short sward & bare ground	F111	
Araneae	Salticidae	Heliophanus flavipes	open habitats	tall sward & scrub	F001	calcareous grassland: Low
Araneae	Salticidae	Talavera aequipes	open habitats	short sward & bare ground	F111	calcareous grassland: Low
Coleoptera	Anthicidae	Cyclodinus constrictus	coastal	saltmarsh	M311	
Coleoptera	Cantharidae	Malthinus flaveolus	tree-associated	decaying wood	A212	
Coleoptera	Carabidae	Amara eurynota	open habitats	short sward & bare ground	F111	
Coleoptera	Carabidae	Amara spreta	open habitats	short sward & bare ground	F111	
Coleoptera	Carabidae	Bembidion clarkii	tree-associated; wetland	marshland; shaded woodland floor; wet woodland	W221	
Coleoptera	Carabidae	Calathus cinctus	open habitats	short sward & bare ground	F111	
Coleoptera	Carabidae	Cicindela campestris	open habitats	short sward & bare ground	F111	calcareous grassland: Low
Coleoptera	Carabidae	Curtonotus aulicus	open habitats	tall sward & scrub	F003	
Coleoptera	Carabidae	Harpalus rufipes	open habitats	tall sward & scrub	F003	
Coleoptera	Carabidae	Notiophilus aquaticus	open habitats		F003	
Coleoptera	Cerambycidae	Clytus arietis	tree-associated	decaying wood	A212	
Coleoptera	Cerambycidae	Grammoptera ruficornis	tree-associated	decaying wood	A212	
Coleoptera	Chrysomelidae	Cryptocephalus fulvus	open habitats	short sward & bare ground	F112	calcareous grassland: Moderate
Coleoptera	Curculionidae	Anthonomus rubi	open habitats	tall sward & scrub	F001	
Coleoptera	Curculionidae	Philopedon plagiatum	open habitats	short sward & bare ground	F111	
Coleoptera	Curculionidae	Phyllobius vespertinus	coastal	saltmarsh	M311	



Order	Family	Species	Broad biotope	Habitat	SAT	Habitat score
Coleoptera	Curculionidae	Pissodes pini	tree-associated	decaying wood	A212	
Coleoptera	Curculionidae	Rhinocyllus conicus	open habitats	short sward & bare ground	F111	calcareous grassland: Moderate
Coleoptera	Curculionidae	Romualdius angustisetulus	open habitats	short sward & bare ground	F111	calcareous grassland: Low
Coleoptera	Curculionidae	Tychius meliloti	open habitats	short sward & bare ground	F112	calcareous grassland: Low
Coleoptera	Dasytidae	Dasytes aeratus	tree-associated	decaying wood	A212	
Coleoptera	Elateridae	Ctenicera cuprea	open habitats		F003	
Coleoptera	Elateridae	Prosternon tessellatum	open habitats		F003	calcareous grassland: Low
Coleoptera	Helophoridae	Helophorus fulgidicollis	coastal	brackish pools & ditches; saltmarsh	M311	grazing marsh - salinity: 2, grazing marsh - status: 3
Coleoptera	Malachiidae	Malachius bipustulatus	tree-associated	decaying wood	A212	
Coleoptera	Melyridae	Anthocomus rufus	wetland	acid & sedge peats	W314	
Coleoptera	Scraptiidae	Anaspis maculata	tree-associated	decaying wood	A212	
Coleoptera	Scraptiidae	Anaspis regimbarti	tree-associated	decaying wood	A212	
Coleoptera	Staphylinidae	Quedius boops	open habitats		F003	
Coleoptera	Staphylinidae	Stenus ochropus	open habitats	short sward & bare ground	F112	calcareous grassland: High
Diptera	Asilidae	Dioctria atricapilla	open habitats	short sward & bare ground; tall sward & scrub	F112	
Diptera	Asilidae	Dioctria rufipes	open habitats	tall sward & scrub	F001	
Diptera	Asilidae	Dysmachus trigonus	open habitats	short sward & bare ground; tall sward & scrub	F111	
Diptera	Asilidae	Machimus cingulatus	open habitats	short sward & bare ground; tall sward & scrub	F111	
Diptera	Chamaemyiidae	Parochthiphila coronata	open habitats	short sward & bare ground	F111	
Diptera	Chloropidae	Eutropha fulvifrons	open habitats	short sward & bare ground	F111	
Diptera	Chloropidae	Lasiambia palposa	open habitats	short sward & bare ground	F111	

Order	Family	Species	Broad biotope	Habitat	SAT	Habitat score
Diptera	Chloropidae	Lipara rufitarsis	wetland	acid & sedge peats	W314	soft rock cliff: 3
Diptera	Dolichopodidae	Dolichopus sabinus	coastal	brackish pools & ditches; saltmarsh; sandy beach	M311	Wadensee Saltmarsh fidelity index: hal-1
Diptera	Dolichopodidae	Dolichopus strigipes	coastal	saltmarsh	M311	Wadensee Saltmarsh fidelity index: hal-2
Diptera	Dolichopodidae	Orthoceratium sabulosum	coastal	saltmarsh	M311	Wadensee Saltmarsh fidelity index: hal-1
Diptera	Empididae	Empis caudatula	open habitats	tall sward & scrub	F001	
Diptera	Empididae	Empis verralli	open habitats	tall sward & scrub; upland	F001	
Diptera	Empididae	Rhamphomyia barbata	open habitats	tall sward & scrub	F001	
Diptera	Empididae	Rhamphomyia laevipes	open habitats	tall sward & scrub	F001	
Diptera	Limoniidae	Dicranomyia chorea	open habitats; tree-associated; wetland	running water; shaded woodland floor; tall sward & scrub	W126	coarse woody debris: c
Diptera	Muscidae	Coenosia lacteipennis	coastal; open habitats	rocky shore; saltmarsh; sandy beach; short sward & bare ground	F111	
Diptera	Muscidae	Spilogona biseriata	coastal	brackish pools & ditches; saltmarsh	M311	
Diptera	Sarcophagidae	Sarcophaga melanura	open habitats	short sward & bare ground; tall sward & scrub	F111	
Diptera	Sarcophagidae	Senotainia conica	open habitats	short sward & bare ground	F111	
Diptera	Sciomyzidae	Tetanocera arrogans	wetland	acid & sedge peats	W314	
Diptera	Syrphidae	Cheilosia urbana	open habitats	tall sward & scrub	F001	
Diptera	Syrphidae	Sphaerophoria philanthus	open habitats		F003	
Diptera	Tephritidae	Campiglossa malaris	open habitats	short sward & bare ground; tall sward & scrub	F112	
Diptera	Therevidae	Acrosathe annulata	open habitats	short sward & bare ground	F111	
Hemiptera	Berytidae	Berytinus minor	open habitats	short sward & bare ground	F112	calcareous grassland: Low
Hemiptera	Berytidae	Berytinus signoreti	open habitats	short sward & bare ground	F112	calcareous grassland: Moderate

Order	Family	Species	Broad biotope	Habitat	SAT	Habitat score
Hemiptera	Berytidae	Gampsocoris punctipes	open habitats	short sward & bare ground	F112	calcareous grassland: Low
Hemiptera	Cicadellidae	Macrosteles sordidipennis	coastal	saltmarsh	M311	Wadensee Saltmarsh fidelity index: hal-2
Hemiptera	Lygaeidae	Nysius thymi	open habitats	short sward & bare ground	F111	
Hemiptera	Miridae	Calocoris roseomaculatus	open habitats	short sward & bare ground	F112	calcareous grassland: Low
Hemiptera	Miridae	Conostethus brevis	coastal	saltmarsh	M311	
Hemiptera	Miridae	Dicyphus annulatus	open habitats	short sward & bare ground	F112	calcareous grassland: Low
Hemiptera	Miridae	Hoplomachus thunbergii	open habitats	short sward & bare ground	F112	calcareous grassland: Moderate
Hemiptera	Miridae	Lygus pratensis	open habitats		F003	
Hemiptera	Miridae	Macrotylus paykulli	open habitats	short sward & bare ground	F112	calcareous grassland: Low
Hemiptera	Pentatomidae	Piezodorus lituratus	open habitats		F001, F003	
Hemiptera	Rhopalidae	Corizus hyoscyami	open habitats	short sward & bare ground	F111	
Hemiptera	Saldidae	Saldula opacula	coastal	brackish pools & ditches; saltmarsh	M311	
Hemiptera	Tingidae	Acalypta parvula	open habitats	short sward & bare ground	F112	calcareous grassland: Low
Hemiptera	Tingidae	Physatocheila dumetorum	tree-associated	arboreal; decaying wood	A215	
Hymenoptera	Andrenidae	Andrena bicolor	open habitats	short sward & bare ground	F002	
Hymenoptera	Andrenidae	Andrena denticulata	open habitats	short sward & bare ground	F002	
Hymenoptera	Andrenidae	Andrena fulva	open habitats	short sward & bare ground	F002	
Hymenoptera	Andrenidae	Andrena haemorrhoa	open habitats	short sward & bare ground	F002	
Hymenoptera	Andrenidae	Andrena minutula	open habitats	short sward & bare ground	F002	
Hymenoptera	Andrenidae	Andrena nigroaenea	open habitats	short sward & bare ground	F002	
Hymenoptera	Andrenidae	Andrena ruficrus	open habitats	short sward & bare ground	F001, F002	
Hymenoptera	Andrenidae	Andrena scotica	open habitats	short sward & bare ground; tall sward & scrub	F002	
Hymenoptera	Andrenidae	Andrena semilaevis	open habitats	short sward & bare ground	F002	

Order	Family	Species	Broad biotope	Habitat	SAT	Habitat score
Hymenoptera	Andrenidae	<i>Andrena similis</i>	open habitats	short sward & bare ground	F002	calcareous grassland: Low, soft rock cliff: 3
Hymenoptera	Andrenidae	<i>Andrena wilkella</i>	open habitats	short sward & bare ground	F002	
Hymenoptera	Apidae	<i>Apis mellifera</i>	open habitats		F002	
Hymenoptera	Apidae	<i>Bombus cryptarum</i>	open habitats	tall sward & scrub; upland	F002	
Hymenoptera	Apidae	<i>Bombus hortorum</i>	open habitats	tall sward & scrub	F002	
Hymenoptera	Apidae	<i>Bombus hypnorum</i>	open habitats; tree-associated	shaded woodland floor; tall sward & scrub	F002	
Hymenoptera	Apidae	<i>Bombus jonellus</i>	open habitats		F002, F003	
Hymenoptera	Apidae	<i>Bombus lapidarius</i>	open habitats	tall sward & scrub	F002	
Hymenoptera	Apidae	<i>Bombus lucorum</i>	open habitats	tall sward & scrub	F002	
Hymenoptera	Apidae	<i>Bombus pascuorum</i>	open habitats	tall sward & scrub	F002	
Hymenoptera	Apidae	<i>Bombus pratorum</i>	open habitats; tree-associated	shaded woodland floor; tall sward & scrub	F002	
Hymenoptera	Apidae	<i>Bombus terrestris</i>	open habitats	tall sward & scrub	F002	
Hymenoptera	Apidae	<i>Bombus vestalis</i>	open habitats	short sward & bare ground	F002	
Hymenoptera	Apidae	<i>Nomada flava</i>	open habitats	short sward & bare ground	F002	
Hymenoptera	Apidae	<i>Nomada flavoguttata</i>	open habitats	short sward & bare ground	F002	
Hymenoptera	Apidae	<i>Nomada goodeniana</i>	open habitats	short sward & bare ground	F002	
Hymenoptera	Apidae	<i>Nomada striata</i>	open habitats	short sward & bare ground	F002	
Hymenoptera	Chrysididae	<i>Hedychridium ardens</i>	open habitats	short sward & bare ground	F111	
Hymenoptera	Colletidae	<i>Colletes daviesanus</i>	open habitats	short sward & bare ground	F002	
Hymenoptera	Colletidae	<i>Colletes marginatus</i>	open habitats	short sward & bare ground	F002, F111	
Hymenoptera	Colletidae	<i>Hylaeus brevicornis</i>	open habitats	tall sward & scrub	F001, F002	
Hymenoptera	Colletidae	<i>Hylaeus communis</i>	open habitats	tall sward & scrub	F002	

Order	Family	Species	Broad biotope	Habitat	SAT	Habitat score
Hymenoptera	Colletidae	<i>Hylaeus hyalinatus</i>	open habitats; tree-associated	decaying wood	A212, F002	
Hymenoptera	Colletidae	<i>Hylaeus signatus</i>	open habitats	short sward & bare ground	F002	calcareous grassland: Low
Hymenoptera	Crabronidae	<i>Crabro cribrarius</i>	open habitats	short sward & bare ground	F111	
Hymenoptera	Crabronidae	<i>Crossocerus elongatulus</i>	open habitats	tall sward & scrub	F001	
Hymenoptera	Crabronidae	<i>Crossocerus podagricus</i>	open habitats; tree-associated	decaying wood	A212, F001	
Hymenoptera	Crabronidae	<i>Crossocerus tarsatus</i>	open habitats	short sward & bare ground	F111	
Hymenoptera	Crabronidae	<i>Dryudella pinguis</i>	open habitats	short sward & bare ground	F111	
Hymenoptera	Crabronidae	<i>Ectemnius continuus</i>	open habitats; tree-associated	decaying wood	A212, F001	
Hymenoptera	Crabronidae	<i>Ectemnius sexcinctus</i>	open habitats; tree-associated	decaying wood	A212, F001	
Hymenoptera	Crabronidae	<i>Mellinus arvensis</i>	open habitats	short sward & bare ground	F111	
Hymenoptera	Crabronidae	<i>Passaloecus gracilis</i>	open habitats; tree-associated	decaying wood	A212, F001	
Hymenoptera	Crabronidae	<i>Pemphredon inornata</i>	open habitats; tree-associated	decaying wood	A212, F001	
Hymenoptera	Crabronidae	<i>Pemphredon lethifer</i>	open habitats; tree-associated	decaying wood; tall sward & scrub	A212, F001	
Hymenoptera	Crabronidae	<i>Pemphredon lugubris</i>	tree-associated	decaying wood	A212	
Hymenoptera	Crabronidae	<i>Psenulus concolor</i>	tree-associated	decaying wood	A212	
Hymenoptera	Crabronidae	<i>Trypoxylon attenuatum</i>	open habitats; wetland	acid & sedge peats; tall sward & scrub	F001	
Hymenoptera	Crabronidae	<i>Trypoxylon medium</i>	open habitats	tall sward & scrub	F001	
Hymenoptera	Formicidae	<i>Formica lemani</i>	open habitats	tall sward & scrub	F001	
Hymenoptera	Formicidae	<i>Lasius flavus</i>	open habitats	short sward & bare ground	F112	
Hymenoptera	Formicidae	<i>Leptothorax acervorum</i>	open habitats	short sward & bare ground	F111	

Order	Family	Species	Broad biotope	Habitat	SAT	Habitat score
Hymenoptera	Halictidae	Halictus rubicundus	open habitats	short sward & bare ground	F002	
Hymenoptera	Halictidae	Halictus tumulorum	open habitats	short sward & bare ground	F002	
Hymenoptera	Halictidae	Lasioglossum albipes	open habitats	short sward & bare ground	F002	
Hymenoptera	Halictidae	Lasioglossum calceatum	open habitats	short sward & bare ground	F002	
Hymenoptera	Halictidae	Lasioglossum cupromicans	open habitats	short sward & bare ground	F002	
Hymenoptera	Halictidae	Lasioglossum fratellum	open habitats	short sward & bare ground	F002	
Hymenoptera	Halictidae	Lasioglossum leucopus	open habitats	short sward & bare ground	F002	
Hymenoptera	Halictidae	Lasioglossum leucozonium	open habitats	short sward & bare ground	F002	
Hymenoptera	Halictidae	Lasioglossum nitidiusculum	open habitats	short sward & bare ground	F002	
Hymenoptera	Halictidae	Lasioglossum smeathmanellum	open habitats	short sward & bare ground	F002	
Hymenoptera	Halictidae	Lasioglossum villosulum	open habitats	short sward & bare ground	F002	
Hymenoptera	Megachilidae	Coelioxys elongata	open habitats; tree-associated	decaying wood	A212, F002	
Hymenoptera	Megachilidae	Coelioxys inermis	open habitats; tree-associated	decaying wood	A212, F002	
Hymenoptera	Megachilidae	Megachile centuncularis	open habitats; tree-associated	decaying wood	A212, F002	
Hymenoptera	Megachilidae	Megachile circumcincta	open habitats	short sward & bare ground	F002, F111	
Hymenoptera	Megachilidae	Megachile versicolor	open habitats; tree-associated	decaying wood	A212, F002	
Hymenoptera	Megachilidae	Megachile willughbiella	open habitats; tree-associated	decaying wood	A212, F002	
Hymenoptera	Megachilidae	Osmia caerulescens	open habitats	tall sward & scrub	F002	
Hymenoptera	Megachilidae	Osmia spinulosa	open habitats	short sward & bare ground	F002, F111	
Hymenoptera	Pompilidae	Dipogon variegatus	tree-associated	decaying wood	A212	
Hymenoptera	Pompilidae	Episyron rufipes	open habitats	short sward & bare ground	F111	

Order	Family	Species	Broad biotope	Habitat	SAT	Habitat score
Hymenoptera	Pompilidae	Pompilus cinereus	open habitats	short sward & bare ground	F111	
Hymenoptera	Vespidae	Ancistrocerus gazella	open habitats; tree-associated	decaying wood	F001	
Hymenoptera	Vespidae	Ancistrocerus scoticus	coastal; open habitats	sea cliff; short sward & bare ground	F111, F113	
Hymenoptera	Vespidae	Dolichovespula sylvestris	open habitats; tree-associated	arboreal	F001	
Lepidoptera	Lycaenidae	Aricia agestis	open habitats	short sward & bare ground	F112	
Lepidoptera	Nymphalidae	Coenonympha pamphilus	open habitats	short sward & bare ground	F112	
Lepidoptera	Nymphalidae	Hipparchia semele	open habitats	short sward & bare ground	F111	
Lepidoptera	Nymphalidae	Lasiommata megera	open habitats	short sward & bare ground	F112	
Lepidoptera	Nymphalidae	Pararge aegeria	open habitats	tall sward & scrub	F001	
Lepidoptera	Nymphalidae	Pyronia tithonus	open habitats	tall sward & scrub	F001	
Pulmonata	Hygromiidae	Ceriuella virgata	open habitats	short sward & bare ground	F112	
Pulmonata	Pupillidae	Pupilla muscorum	open habitats	short sward & bare ground	F112	
Stylommatophora	Geomitridae	Xeroplexa intersecta	open habitats	short sward & bare ground	F112	

Specific Assemblage Type codes:

A212 (Bark & sapwood decay)

F003 (Scrub-heath & moorland)

M311 (Saltmarsh & transitional brackish marsh)

A215 (Epiphyte fauna)

F111 (Bare sand & chalk)

W126 (Seepage)

F001 (Scrub edge)

F112 (Open short sward)

W221 (Undisturbed fluctuating marsh)

F002 (Rich flower resource)

F113 (Exposed sea-cliff)

W314 (Reed-fen & pools)



## C. Annex 3: Sub-compartment F Survey Data

## C.1 Summary of Sub-compartment F's Survey

A single visit was completed in May 2023 within H2's western sector. The Sub-compartment had two distinct land parcels, separated by an active railway line (not accessed or surveyed). Sub-compartment F1 was Cowpen Bewley Country Park (west of the railway line); and Sub-compartment F2 was the saltmarsh to the railway line's east. The latter has more in common with Sub-compartments A and B in particular.

Overall, 266 species were recorded during this single visit, of which ten are Key Species and one is a Rare Key Species (based on Telfer, 2017). Split between the two sub-compartments, F1 recorded 200 species (four Key Species, none being Rare Key Species); and F2 recorded 111 species, six of them being Key Species (one Rare Key Species). There were 79 species noted within Sub-compartment F that were not recorded elsewhere in the survey (or in 2018), including eight of the Key Species. The Rare Key Species is the Red Data Book 3 (Rare) *Trixagus gracilis* (Coleoptera, Throscidae), a distinctive but tiny red beetle, but not otherwise known north of the Brecks.

The species list for Sub-compartment F is presented in Table 13 on the following pages. None of the data has been included within the analysis for H2 (Section 4.3 and Section 5).

Table 13: Species list for Sub-compartment F.

Class	Order	Family	Taxon	Status	F1 (Country Park)	F2 (Saltmarsh)	Unique to Sub-compartment F
Arachnida	Araneae	Clubionidae	Clubiona compta		•		
Arachnida	Araneae	Dictynidae	Dictyna arundinacea			•	
Arachnida	Araneae	Linyphiidae	Agyneta saxatilis		•		
Arachnida	Araneae	Linyphiidae	Bathyphantes gracilis		•		
Arachnida	Araneae	Linyphiidae	Gnathonarium dentatum			•	•
Arachnida	Araneae	Linyphiidae	Gongylidiellum vivum		•	•	
Arachnida	Araneae	Linyphiidae	Gongylidium rufipes		•		•
Arachnida	Araneae	Linyphiidae	Linyphia hortensis		•		•
Arachnida	Araneae	Linyphiidae	Microlinyphia pusilla		•		
Arachnida	Araneae	Linyphiidae	Neriere clathrata		•		
Arachnida	Araneae	Linyphiidae	Neriere peltata		•		•
Arachnida	Araneae	Linyphiidae	Silometopus elegans			•	•
Arachnida	Araneae	Linyphiidae	Tenuiphantes tenuis		•		
Arachnida	Araneae	Linyphiidae	Trichopternoides thorelli		•		
Arachnida	Araneae	Lycosidae	Pardosa amentata			•	
Arachnida	Araneae	Lycosidae	Pardosa nigriceps		•	•	
Arachnida	Araneae	Lycosidae	Pardosa pullata		•		
Arachnida	Araneae	Lycosidae	Pardosa purbeckensis			•	
Arachnida	Araneae	Lycosidae	Pirata piraticus			•	
Arachnida	Araneae	Pisauridae	Pisaura mirabilis (Nursery Web Spider)			•	
Arachnida	Araneae	Salticidae	Euophrys frontalis			•	
Arachnida	Araneae	Tetragnathidae	Metellina mengei		•		

Class	Order	Family	Taxon	Status	F1 (Country Park)	F2 (Saltmarsh)	Unique to Sub-compartment F
Arachnida	Araneae	Tetragnathidae	Tetragnatha montana		•		•
Arachnida	Araneae	Theridiidae	Anelosimus vittatus		•		
Arachnida	Araneae	Theridiidae	Paidiscura pallens		•		•
Arachnida	Araneae	Thomisidae	Ozyptila trux		•		
Arachnida	Araneae	Thomisidae	Xysticus cristatus		•		
Arachnida	Pseudoscorpiones	Neobisiidae	Neobisium carcinoides (Common Neobisid)			•	•
Diplopoda	Julida	Julidae	Cylindroiulus punctatus (Blunt-tailed Snake Millipede)		•		
Diplopoda	Julida	Julidae	Tachypodoiulus niger (White-legged Snake Millipede)		•		
Insecta	Coleoptera	Apionidae	Ceratapion gibbirostre		•	•	
Insecta	Coleoptera	Apionidae	Eutrichapion viciae		•		
Insecta	Coleoptera	Apionidae	Ischnopterapion loti		•		
Insecta	Coleoptera	Apionidae	Malvapion malvae		•		•
Insecta	Coleoptera	Apionidae	Oxystoma craccae		•		
Insecta	Coleoptera	Apionidae	Protapion apricans			•	
Insecta	Coleoptera	Apionidae	Protapion fulvipes		•	•	
Insecta	Coleoptera	Apionidae	Protapion nigrirtarse		•		
Insecta	Coleoptera	Apionidae	Protapion trifolii		•	•	•
Insecta	Coleoptera	Byturidae	Byturus ochraceus		•		•
Insecta	Coleoptera	Cantharidae	Cantharis decipiens		•		•
Insecta	Coleoptera	Cantharidae	Rhagonycha testacea		•	•	•
Insecta	Coleoptera	Carabidae	Amara similata		•		•
Insecta	Coleoptera	Carabidae	Bembidion iricolor	Nationally Scarce		•	•
Insecta	Coleoptera	Carabidae	Bembidion lampros		•		

Class	Order	Family	Taxon	Status	F1 (Country Park)	F2 (Saltmarsh)	Unique to Sub-compartment F
Insecta	Coleoptera	Carabidae	Bembidion minimum			•	
Insecta	Coleoptera	Carabidae	Bembidion obtusum		•		
Insecta	Coleoptera	Carabidae	Demetrias atricapillus (Hairy-templed Thatcher)		•	•	
Insecta	Coleoptera	Carabidae	Notiophilus palustris (Rough-necked Springtail-stalker)		•		
Insecta	Coleoptera	Carabidae	Paradromius linearis (Common Bladerunner)		•	•	
Insecta	Coleoptera	Carabidae	Philorhizus melanocephalus (Black-headed Stemrunner)		•	•	
Insecta	Coleoptera	Chrysomelidae	Bruchus rufimanus (Bean Seed Beetle)		•	•	
Insecta	Coleoptera	Chrysomelidae	Cassida vittata (Bordered Tortoise Beetle)			•	
Insecta	Coleoptera	Chrysomelidae	Chaetocnema concinna (Mangold Flea Beetle)			•	•
Insecta	Coleoptera	Chrysomelidae	Crepidodera aurata (Willow Flea Beetle)		•		
Insecta	Coleoptera	Chrysomelidae	Lochmaea crataegi (Hawthorn Leaf Beetle)		•		
Insecta	Coleoptera	Chrysomelidae	Phaedon tumidulus (Celery Leaf Beetle)		•		•
Insecta	Coleoptera	Chrysomelidae	Phyllotreta nemorum (Large Striped Flea Beetle)			•	•
Insecta	Coleoptera	Chrysomelidae	Psylliodes chrysocephala (Cabbage-stem Flea Beetle)			•	
Insecta	Coleoptera	Coccinellidae	Coccinella septempunctata (7-spot Ladybird)		•		
Insecta	Coleoptera	Coccinellidae	Exochomus quadripustulatus (Pine Ladybird)		•		•
Insecta	Coleoptera	Coccinellidae	Propylea quattuordecimpunctata (14-spot Ladybird)		•		
Insecta	Coleoptera	Coccinellidae	Psyllobora vigintiduopunctata (22-spot Ladybird)		•	•	
Insecta	Coleoptera	Coccinellidae	Rhizobius litura (Pointed-keeled Rhizobius)		•	•	
Insecta	Coleoptera	Curculionidae	Anthonomus pedicularius		•		
Insecta	Coleoptera	Curculionidae	Exomias pellucidus (Hairy Spider Weevil)		•	•	
Insecta	Coleoptera	Curculionidae	Furcicus rectirostris (Bird-Cherry Weevil)	Nationally Scarce (Nb)	•		•
Insecta	Coleoptera	Curculionidae	Hypera postica (Clover Leaf Weevil)		•		

Class	Order	Family	Taxon	Status	F1 (Country Park)	F2 (Saltmarsh)	Unique to Sub-compartment F
Insecta	Coleoptera	Curculionidae	Leiosoma deflexum		•		•
Insecta	Coleoptera	Curculionidae	Limobius borealis	Nationally Scarce (Na)	•		•
Insecta	Coleoptera	Curculionidae	Nedyus quadrimaculatus (Small Nettle Weevil)		•		
Insecta	Coleoptera	Curculionidae	Phyllobius pyri (Common Leaf Weevil)		•	•	
Insecta	Coleoptera	Curculionidae	Phyllobius roboretanus (Small Green Nettle Weevil)		•	•	
Insecta	Coleoptera	Curculionidae	Phyllobius vespertinus	Nationally Scarce (Nb)		•	
Insecta	Coleoptera	Curculionidae	Rhinoncus pericarpus			•	
Insecta	Coleoptera	Curculionidae	Sitona lineatus (Pea-leaf Weevil)		•	•	
Insecta	Coleoptera	Curculionidae	Sitona suturalis		•		
Insecta	Coleoptera	Elateridae	Agriotes obscurus		•		
Insecta	Coleoptera	Elateridae	Athous haemorrhoidalis		•		
Insecta	Coleoptera	Elateridae	Limonius poneli		•		
Insecta	Coleoptera	Latridiidae	Cartodere nodifer		•		
Insecta	Coleoptera	Pyrochroidae	Pyrochroa serraticornis (Red-headed Cardinal Beetle)		•		•
Insecta	Coleoptera	Salpingidae	Salpingus planirostris		•		•
Insecta	Coleoptera	Scarabaeidae	Agrilinus ater			•	•
Insecta	Coleoptera	Scraptiidae	Anaspis maculata		•		
Insecta	Coleoptera	Staphylinidae	Drusilla canaliculata		•		
Insecta	Coleoptera	Staphylinidae	Lesteva longoelytrata		•		•
Insecta	Coleoptera	Staphylinidae	Metopsia clypeata			•	
Insecta	Coleoptera	Staphylinidae	Quedius humeralis		•		•
Insecta	Coleoptera	Staphylinidae	Stenus aceris		•	•	
Insecta	Coleoptera	Staphylinidae	Stenus flavipes		•		

Class	Order	Family	Taxon	Status	F1 (Country Park)	F2 (Saltmarsh)	Unique to Sub-compartment F
Insecta	Coleoptera	Staphylinidae	Stenus fulvicornis		•	•	
Insecta	Coleoptera	Staphylinidae	Tachinus rufipes			•	
Insecta	Coleoptera	Staphylinidae	Tachyporus chrysomelinus			•	
Insecta	Coleoptera	Staphylinidae	Tachyporus dispar		•		
Insecta	Coleoptera	Staphylinidae	Tachyporus nitidulus			•	
Insecta	Coleoptera	Staphylinidae	Tachyporus obtusus		•		•
Insecta	Coleoptera	Staphylinidae	Xantholinus longiventris			•	•
Insecta	Coleoptera	Throscidae	Trixagus gracilis	Red Data Book 3 (Rare)		•	•
Insecta	Dermaptera	Forficulidae	Forficula auricularia (Common Earwig)		•		
Insecta	Diptera	Anisopodidae	Sylvicola punctatus		•		
Insecta	Diptera	Anthomyiidae	Anthomyia procellaris		•		
Insecta	Diptera	Anthomyiidae	Botanophila fugax		•		
Insecta	Diptera	Anthomyiidae	Delia florilega			•	
Insecta	Diptera	Anthomyiidae	Delia platura		•	•	
Insecta	Diptera	Anthomyiidae	Hylemya urbica		•		
Insecta	Diptera	Anthomyiidae	Hylemya vagans		•		•
Insecta	Diptera	Anthomyiidae	Hylemya variata			•	
Insecta	Diptera	Anthomyiidae	Hylemyza partita		•	•	
Insecta	Diptera	Anthomyiidae	Pegoplata infirma		•		
Insecta	Diptera	Anthomyiidae	Phorbia fumigata		•	•	
Insecta	Diptera	Bibionidae	Bibio lanigerus		•	•	•
Insecta	Diptera	Bibionidae	Bibio marci (St Marks Fly)		•	•	
Insecta	Diptera	Bibionidae	Dilophus febrilis (Fever Fly)			•	



Class	Order	Family	Taxon	Status	F1 (Country Park)	F2 (Saltmarsh)	Unique to Sub-compartment F
Insecta	Diptera	Calliphoridae	Calliphora vicina (Common Bluebottle)		•		
Insecta	Diptera	Chloropidae	Elachiptera cornuta		•	•	
Insecta	Diptera	Chloropidae	Elachiptera tuberculifera		•		•
Insecta	Diptera	Chloropidae	Oscinella nigerrima		•		•
Insecta	Diptera	Chloropidae	Pseudopachychaeta approximatonervis	pNationally Scarce		•	•
Insecta	Diptera	Chloropidae	Thaumatomyia notata		•		
Insecta	Diptera	Dolichopodidae	Argyra argyria		•		
Insecta	Diptera	Dolichopodidae	Argyra diaphana			•	•
Insecta	Diptera	Dolichopodidae	Argyra leucocephala		•		•
Insecta	Diptera	Dolichopodidae	Rhaphium consobrinum			•	
Insecta	Diptera	Dolichopodidae	Syntormon pallipes		•	•	
Insecta	Diptera	Empididae	Empis albohirta		•		•
Insecta	Diptera	Empididae	Empis nuntia		•		
Insecta	Diptera	Empididae	Empis tessellata		•		
Insecta	Diptera	Empididae	Empis trigramma		•		
Insecta	Diptera	Empididae	Hilara maura		•		
Insecta	Diptera	Empididae	Hilara quadrifasciata		•		•
Insecta	Diptera	Empididae	Rhamphomyia simplex			•	
Insecta	Diptera	Empididae	Rhamphomyia subcinerascens			•	
Insecta	Diptera	Empididae	Rhamphomyia sulcatella		•		
Insecta	Diptera	Ephydriidae	Hydrellia maura		•		
Insecta	Diptera	Ephydriidae	Pelina nitens			•	•
Insecta	Diptera	Ephydriidae	Psilopa nana			•	•

Class	Order	Family	Taxon	Status	F1 (Country Park)	F2 (Saltmarsh)	Unique to Sub-compartment F
Insecta	Diptera	Fanniidae	<i>Fannia canicularis</i>		•		
Insecta	Diptera	Fanniidae	<i>Fannia coracina</i>		•		•
Insecta	Diptera	Fanniidae	<i>Fannia lustrator</i>		•		•
Insecta	Diptera	Fanniidae	<i>Fannia serena</i>		•		
Insecta	Diptera	Hybotidae	<i>Platypalpus agilis</i>		•		
Insecta	Diptera	Lauxaniidae	<i>Tricholauxania praeusta</i>		•		
Insecta	Diptera	Limoniidae	<i>Dicranomyia mitis</i>		•		•
Insecta	Diptera	Limoniidae	<i>Epiphragma ocellare</i>		•		•
Insecta	Diptera	Limoniidae	<i>Limonia trivittata</i>	Nationally Notable	•		•
Insecta	Diptera	Limoniidae	<i>Symplecta stictica</i>		•	•	
Insecta	Diptera	Lonchopterae	<i>Lonchoptera lutea</i>		•		
Insecta	Diptera	Muscidae	<i>Azelia ciliipes</i>		•		•
Insecta	Diptera	Muscidae	<i>Eudasyphora cyanella</i>		•		•
Insecta	Diptera	Muscidae	<i>Hebecnema fumosa</i>	pNationally Scarce		•	
Insecta	Diptera	Muscidae	<i>Helina evecta</i>		•		
Insecta	Diptera	Muscidae	<i>Helina reversio</i>		•	•	
Insecta	Diptera	Muscidae	<i>Hydrotaea dentipes</i>		•		•
Insecta	Diptera	Muscidae	<i>Morellia simplex</i>		•	•	
Insecta	Diptera	Muscidae	<i>Myospila mediatubunda</i>		•	•	
Insecta	Diptera	Muscidae	<i>Neomyia viridescens</i>		•		•
Insecta	Diptera	Muscidae	<i>Phaonia errans</i>		•	•	
Insecta	Diptera	Opomyzidae	<i>Geomyza tripunctata</i>			•	
Insecta	Diptera	Pallopidae	<i>Pallopia trimaculata</i>		•		•

Class	Order	Family	Taxon	Status	F1 (Country Park)	F2 (Saltmarsh)	Unique to Sub- compartment F
Insecta	Diptera	Pediciidae	Tricyphona immaculata		•		
Insecta	Diptera	Pipunculidae	Pipunculus campestris		•		
Insecta	Diptera	Sarcophagidae	Sarcophaga nigriventris			•	
Insecta	Diptera	Scathophagidae	Nanna fasciata		•		
Insecta	Diptera	Scathophagidae	Scathophaga furcata		•	•	
Insecta	Diptera	Scathophagidae	Scathophaga litorea			•	
Insecta	Diptera	Scathophagidae	Scathophaga stercoraria (Yellow Dung Fly)		•		
Insecta	Diptera	Sciomyzidae	Tetanocera ferruginea			•	
Insecta	Diptera	Stratiomyidae	Beris chalybata (Murky-legged Black Legionnaire)		•	•	•
Insecta	Diptera	Syrphidae	Baccha elongata		•		
Insecta	Diptera	Syrphidae	Cheilosia albitarsis		•		•
Insecta	Diptera	Syrphidae	Cheilosia pagana		•	•	
Insecta	Diptera	Syrphidae	Episyrphus balteatus (Marmalade Hoverfly)		•		
Insecta	Diptera	Syrphidae	Eristalinus sepulchralis		•		
Insecta	Diptera	Syrphidae	Eristalis pertinax (Tapered Dronefly)		•		
Insecta	Diptera	Syrphidae	Helophilus pendulus		•	•	
Insecta	Diptera	Syrphidae	Leucozona lucorum		•		•
Insecta	Diptera	Syrphidae	Melanostoma mellinum		•	•	
Insecta	Diptera	Syrphidae	Melanostoma scalare		•		
Insecta	Diptera	Syrphidae	Neoascia interrupta	Nationally Scarce	•		•
Insecta	Diptera	Syrphidae	Neoascia meticulosa (Yellow-kneed Clubtail)		•		
Insecta	Diptera	Syrphidae	Neoascia obliqua		•		•
Insecta	Diptera	Syrphidae	Neoascia podagrica			•	•

Class	Order	Family	Taxon	Status	F1 (Country Park)	F2 (Saltmarsh)	Unique to Sub-compartment F
Insecta	Diptera	Syrphidae	Neoascia tenur		•		
Insecta	Diptera	Syrphidae	Paragus haemorrhous			•	
Insecta	Diptera	Syrphidae	Platycheirus albimanus		•		
Insecta	Diptera	Syrphidae	Platycheirus manicatus		•		
Insecta	Diptera	Syrphidae	Rhingia campestris (Common Snout-hoverfly)		•		
Insecta	Diptera	Syrphidae	Sphaerophoria interrupta		•		
Insecta	Diptera	Syrphidae	Sphaerophoria scripta		•		
Insecta	Diptera	Syrphidae	Syrphus ribesii		•		
Insecta	Diptera	Syrphidae	Syrphus vitripennis		•		
Insecta	Diptera	Tachinidae	Gymnocheeta viridis		•		
Insecta	Diptera	Tachinidae	Lypha dubia		•		
Insecta	Diptera	Tachinidae	Pelatachina tibialis		•		
Insecta	Diptera	Tephritidae	Euleia heraclei		•		
Insecta	Diptera	Tephritidae	Tephritis matricariae			•	
Insecta	Diptera	Tipulidae	Nephrotoma appendiculata (Spotted Crane-fly)		•	•	
Insecta	Diptera	Tipulidae	Tipula lunata		•		
Insecta	Diptera	Tipulidae	Tipula oleracea		•	•	
Insecta	Diptera	Tipulidae	Tipula varipennis			•	•
Insecta	Diptera	Tipulidae	Tipula vernalis		•		
Insecta	Hemiptera	Anthocoridae	Anthocoris nemoralis			•	
Insecta	Hemiptera	Anthocoridae	Anthocoris nemorum (Common Flower Bug)			•	
Insecta	Hemiptera	Cercopidae	Cercopis vulnerata (Red-and-black Froghopper)		•		
Insecta	Hemiptera	Cicadellidae	Macustus grisescens			•	

Class	Order	Family	Taxon	Status	F1 (Country Park)	F2 (Saltmarsh)	Unique to Sub- compartment F
Insecta	Hemiptera	Cicadellidae	Mocycdia crocea		•	•	
Insecta	Hemiptera	Cixiidae	Tachycixius pilosus		•	•	
Insecta	Hemiptera	Delphacidae	Criomorpus albomarginatus		•		
Insecta	Hemiptera	Delphacidae	Eurybregma nigrolineata			•	
Insecta	Hemiptera	Delphacidae	Javesella discolor			•	•
Insecta	Hemiptera	Delphacidae	Javesella pellucida			•	•
Insecta	Hemiptera	Delphacidae	Stenocranus minutus		•		
Insecta	Hemiptera	Lygaeidae	Cymus melanocephalus			•	•
Insecta	Hemiptera	Lygaeidae	Drymus brunneus		•		
Insecta	Hemiptera	Lygaeidae	Heterogaster urticae (Nettle Groundbug)			•	
Insecta	Hemiptera	Lygaeidae	Ischnodemus sabuleti (European Cinchbug)		•	•	
Insecta	Hemiptera	Miridae	Dicyphus stachydis		•		•
Insecta	Hemiptera	Miridae	Harpocera thoracica		•		•
Insecta	Hemiptera	Miridae	Notostira elongata			•	
Insecta	Hemiptera	Miridae	Pinalitus cervinus		•		•
Insecta	Hemiptera	Miridae	Stenodema calcarata		•		
Insecta	Hemiptera	Miridae	Stenodema laevigata			•	
Insecta	Hemiptera	Nabidae	Nabis ferus (Field Damselbug)			•	
Insecta	Hemiptera	Pentatomidae	Dolycoris baccarum (Hairy Shieldbug)		•		
Insecta	Hemiptera	Piesmatidae	Parapiesma quadratum			•	
Insecta	Hemiptera	Rhopalidae	Corizus hyoscyami		•		
Insecta	Hemiptera	Saldidae	Saldula pilosella	Nationally Scarce		•	•
Insecta	Hemiptera	Tingidae	Tingis ampliata (Creeping Thistle Lacebug)			•	

Class	Order	Family	Taxon	Status	F1 (Country Park)	F2 (Saltmarsh)	Unique to Sub- compartment F
Insecta	Hymenoptera	Andrenidae	<i>Andrena fulva</i> (Tawny Mining Bee)		•		
Insecta	Hymenoptera	Andrenidae	<i>Andrena scotica</i> (Chocolate Mining Bee)		•		
Insecta	Hymenoptera	Apidae	<i>Bombus lapidarius</i> (Red-tailed Bumblebee)		•		
Insecta	Hymenoptera	Apidae	<i>Bombus pascuorum</i> (Common Carder Bee)		•	•	
Insecta	Hymenoptera	Apidae	<i>Bombus pratorum</i> (Early Bumblebee)		•		
Insecta	Hymenoptera	Apidae	<i>Bombus terrestris</i> (Buff-tailed Bumblebee)		•	•	
Insecta	Hymenoptera	Apidae	<i>Nomada flava</i> (Flavous Nomad Bee)		•		
Insecta	Hymenoptera	Apidae	<i>Nomada marshamella</i> (Marsham's Nomad Bee)		•		•
Insecta	Hymenoptera	Apidae	<i>Nomada panzeri</i> (Panzer's Nomad Bee)		•		•
Insecta	Hymenoptera	Formicidae	<i>Myrmica rubra</i> (Red Ant)			•	•
Insecta	Hymenoptera	Formicidae	<i>Myrmica scabrinodis</i>			•	
Insecta	Hymenoptera	Tenthredinidae	<i>Aglaostigma fulvipes</i>		•		
Insecta	Hymenoptera	Tenthredinidae	<i>Athalia circularis</i>		•		
Insecta	Hymenoptera	Tenthredinidae	<i>Dolerus fumosus</i>		•		•
Insecta	Hymenoptera	Tenthredinidae	<i>Dolerus nigratus</i>		•		
Insecta	Hymenoptera	Tenthredinidae	<i>Empria sexpunctata</i>		•		•
Insecta	Hymenoptera	Tenthredinidae	<i>Euura mucronata</i>		•		
Insecta	Hymenoptera	Tenthredinidae	<i>Halidamia affinis</i>		•		•
Insecta	Hymenoptera	Tenthredinidae	<i>Hoplocampa crataegi</i>		•		•
Insecta	Hymenoptera	Tenthredinidae	<i>Hoplocampa pectoralis</i>		•		
Insecta	Hymenoptera	Tenthredinidae	<i>Nematus lucidus</i>		•		•
Insecta	Hymenoptera	Tenthredinidae	<i>Rhogogaster chambersi</i>		•		
Insecta	Hymenoptera	Tenthredinidae	<i>Rhogogaster genistae</i>		•		•

Class	Order	Family	Taxon	Status	F1 (Country Park)	F2 (Saltmarsh)	Unique to Sub- compartment F
Insecta	Lepidoptera	Noctuidae	Atethmia centrargo (Centre-barred Sallow)		•		•
Insecta	Lepidoptera	Nymphalidae	Aglais io (Peacock)		•	•	
Insecta	Lepidoptera	Nymphalidae	Pararge aegeria (Speckled Wood)		•		
Insecta	Lepidoptera	Pieridae	Anthocharis cardamines (Orange-tip)		•		•
Insecta	Lepidoptera	Pieridae	Pieris napi (Green-veined White)		•	•	
Insecta	Megaloptera	Sialidae	Sialis lutaria			•	•
Malacostraca	Decapoda	Portunidae	Carcinus maenas (Green Shore Crab)			•	•
Malacostraca	Isopoda	Philosciidae	Philoscia muscorum (Common Striped Woodlouse)		•	•	
Malacostraca	Isopoda	Porcellionidae	Porcellio scaber (Common Rough Woodlouse)			•	
Malacostraca	Isopoda	Sphaeromatidae	Lekanesphaera rugicauda			•	•
Gastropoda	Pulmonata	Helicidae	Arianta arbustorum (Copse Snail)		•		
Gastropoda	Pulmonata	Helicidae	Cepaea nemoralis (Brown-lipped Snail)		•		
Gastropoda	Pulmonata	Hygromiidae	Ceruella virgata (Striped Snail)			•	
Gastropoda	Pulmonata	Hygromiidae	Monacha cantiana (Kentish Snail)			•	