

INVERTEBRATE SURVEY OF TILBURY ASHFIELDS IN 2022



MARK G. TELFER

12TH JANUARY 2023, REVISED 26TH APRIL 2023

THIS REPORT WAS PRODUCED FOR BIOSCAN (UK) LTD.

Dr. Mark G. Telfer MA (CANTAB), MCIEEM



This report should be quoted as:

Telfer, M.G. (2023). *Invertebrate survey of Tilbury Ashfields in 2022*. Report to Bioscan (UK) Ltd.

Contents

1	SUMMARY	5
2	INTRODUCTION	7
2.1	THE SURVEY AREA	7
2.2	INVERTEBRATE MONITORING OF ASHFIELD A1	8
2.3	PREVIOUS INVERTEBRATE SURVEY AND ASSESSMENT WORK	8
2.3.1	<i>Scoping survey</i>	8
2.3.2	<i>Earlier surveys</i>	8
2.4	HABITATS OF THE SURVEY AREA	9
2.5	HABITATS OF THE SIX COMPARTMENTS	10
2.5.1	<i>Ashfield A1</i>	11
2.5.2	<i>Ashfield B</i>	14
2.5.3	<i>Land N & NW of Ashfield A3</i>	15
2.5.4	<i>Goshem's Farm</i>	17
2.5.5	<i>Foreshore</i>	21
2.5.6	<i>The Rest</i>	22
2.6	SPECIES OF PRINCIPAL IMPORTANCE	27
2.6.1	<i>Species accounts</i>	28
2.6.2	<i>Targeted survey in 2022</i>	31
2.7	DEVELOPMENT PROPOSALS	32
2.8	SURVEY AIMS	32
3	METHODS	32
3.1	FIELDWORK DATES	32
3.2	CONSTRAINTS	38
3.2.1	<i>Asbestos</i>	38
3.3	TRAPPING METHODS	38
3.3.1	<i>Pitfall trapping</i>	38
3.3.2	<i>Malaise trapping</i>	39
3.3.3	<i>Yellow pan trapping</i>	41
3.3.4	<i>Aquatic bottle trapping</i>	41
3.3.5	<i>Sorting trap samples</i>	42
3.4	ACTIVE SAMPLING METHODS	42
3.4.1	<i>Suction-sampling</i>	42
3.4.2	<i>Beating</i>	42
3.4.3	<i>Sweep-netting</i>	42
3.4.4	<i>Spot-netting</i>	42
3.4.5	<i>Aerial netting</i>	42
3.4.6	<i>Pond netting</i>	43
3.4.7	<i>Ground searching</i>	43
3.4.8	<i>Direct observation</i>	43
3.5	PERSONNEL	43
3.6	IDENTIFICATION	43
3.7	ANALYSIS	43
3.7.1	<i>Key Species</i>	43
3.7.2	<i>Pantheon</i>	44
4	RESULTS	45
4.1	SPECIES TOTALS AND TAXONOMIC COVERAGE	45
4.2	SECTION 41 SPECIES OF PRINCIPAL IMPORTANCE	45
4.2.1	<i>Species accounts</i>	48
4.3	SPECIES NEW TO BRITAIN	54
4.4	KEY SPECIES RESULTS	58
4.5	PANTHEON RESULTS	75

4.5.1	<i>The 'tree-associated' broad biotope</i>	75
4.5.2	<i>The 'coastal' broad biotope</i>	75
4.5.3	<i>The 'wetland' broad biotope</i>	75
4.5.4	<i>The 'open habitats' broad biotope</i>	76
5	SURVEY AREA ASSESSMENT	83
6	ASSESSMENTS OF THE SIX COMPARTMENTS	84
6.1	ASHFIELD A1	84
6.2	ASHFIELD B	84
6.3	LAND N & NW OF ASHFIELD A3	85
6.4	GOSHEM'S FARM	86
6.5	FORESHORE.....	87
6.6	THE REST.....	88
7	ACKNOWLEDGEMENTS	88
8	REFERENCES	89
	APPENDIX 1: BRITISH CONSERVATION STATUS CATEGORIES – DEFINITIONS.	91
	APPENDIX 2: LIST OF INVERTEBRATES RECORDED AT TILBURY ASHFIELDS IN 2022	95

About the author

Dr Mark G. Telfer: I am one of the foremost entomological consultants in Britain, freelancing since 2005 and working throughout Britain and Ireland. I cover all terrestrial, freshwater and coastal habitats, specialising in brownfield sites, coastal sites, woodlands, ancient parklands, orchards and heathlands. I am well-known for the breadth of my taxonomic coverage, as well as for my specialist knowledge of beetles and bugs.



1 Summary

- A general invertebrate survey was carried out of a site at Tilbury Ashfields, Essex.
- The Tilbury Ashfields survey area was divided into six compartments: (i) Ashfield A1, (ii) Ashfield B, (iii) Land N & NW of Ashfield A3, (iv) Goshem's Farm, (v) the Foreshore, and (vi) The Rest.
- Fieldwork was planned after a scoping survey on 29th March 2022, and a review of previous invertebrate survey and assessment work in and around the survey area.
- Twelve invertebrate Species of Principal Importance had been previously recorded and were targeted by survey work in 2022.
- This report incorporates the results of the final round of invertebrate monitoring of Ashfield A1, which was carried out in 2022 by the author.
- Fieldwork was carried out by the author over 19 visits between 26th April and 8th September 2022.
- 1,222 species were recorded by this survey, covering a very wide range of invertebrate groups.
- Nine of the targeted invertebrate Species of Principal Importance were recorded: Tall Fescue Planthopper *Ribautodelphax imitans*, Saltmarsh Shortspur beetle *Anisodactylus poeciloides*, Five-banded Weevil Fox wasp *Cerceris quinquefasciata*, Sea Aster Bee *Colletes halophilus*, Brown-banded Carder-bee *Bombus humilis*, Shrill Carder-bee *Bombus sylvarum*, Phoenix Fly *Dorycera graminum*, Wall butterfly *Lasiommata megera*, and Small Heath butterfly *Coenonympha pamphilus*.
- The rove-beetle *Tomoglossa heydemanni* was discovered new to Britain. It is regarded as a rare native species of conservation importance for which the Tilbury Ashfields is the only known British locality.
- The Wormwood Conch moth *Cochylimorpha woliniana* was discovered new to Britain. It is regarded as a rare, long-established species of conservation importance for which the Tilbury Ashfields is the only known British locality.
- 195 species (16.0% of the total species list of 1,222) are here regarded as "Key Species" (i.e., with rare, scarce, threatened or near threatened conservation status); an extremely high percentage.
- Within the 195 Key Species, there were 39 Rare Key Species (i.e., with rare or threatened conservation status) comprising 3.2% of the total species list; also an extremely high percentage.
- Pantheon analysis found that the survey area contained coastal invertebrate assemblages of very high importance, freshwater wetland invertebrate assemblages of high importance, and some open habitat invertebrate assemblages of very high importance.
- The Tilbury Ashfields survey area is assessed as a site of very high conservation importance for invertebrates in a national context. This is strongly and consistently

indicated by the Key Species analysis, by the numbers of Key Species and Species of Principal Importance, and by the Pantheon analysis.

- Separate assessments are made for each of the six compartments with regard to their importance for invertebrates:
 - Ashfield A1 should be regarded as a site of very high conservation importance for invertebrates in a national context. It should probably be regarded as the single most important compartment within the Tilbury Ashfields survey area.
 - Ashfield B should be regarded as a site of rather high conservation importance for invertebrates in a national context. However, within a survey area of very high importance, it is one of the least important compartments.
 - The land N & NW of Ashfield A3 compartment should be regarded as a site of rather high conservation importance for invertebrates in a national context. The triangle of surviving PFA substrates at the northern tip of Ashfield A3 is of very high conservation importance; the land NW of Ashfield A3 is of relatively low importance.
 - Goshem's Farm should be regarded as a site of very high conservation importance for invertebrates in a national context. It should probably be regarded as of almost equivalent importance to Ashfield A1.
 - The Foreshore compartment should be regarded as of very high conservation importance for invertebrates in a national context, and one of the more important compartments within the Tilbury Ashfields survey area.
 - The Rest compartment should be regarded as of very high conservation importance for invertebrates in a national context. It is certainly one of the more important compartments within the Tilbury Ashfields survey area, and in some respects could be regarded as the most important.

2 Introduction

This report describes an invertebrate survey of an area at the Tilbury Ashfields, on the north bank of the Thames, within the borough of Thurrock, Essex. On Ordnance Survey 1:50,000 mapping, the survey area overlaps the West Tilbury Marshes and the East Tilbury Marshes, falling within the grid squares TQ6675, TQ6676, TQ6775 and TQ6776.

2.1 THE SURVEY AREA

The survey area (Figure 1) includes Ashfields A1, A2 and A3 and Ashfield B, but does not extend north-eastwards to cover Ashfields C1, C2 and C3. The survey area extends beyond the ashfields to include the Goshem’s Farm compartment to the east, Motts Land to the south-east, a long section of Foreshore to the south, some former power station areas to the west, and an area N and NW of Ashfield A3. For brevity, the whole survey area will here be referred to as the ‘Tilbury Ashfields’.

For the purposes of the invertebrate survey, the Tilbury Ashfields survey area was divided into six compartments: (i) Ashfield A1, (ii) Ashfield B, (iii) Land N & NW of Ashfield A3, (iv) Goshem’s Farm, (v) the Foreshore, and (vi) The Rest (Figure 1).

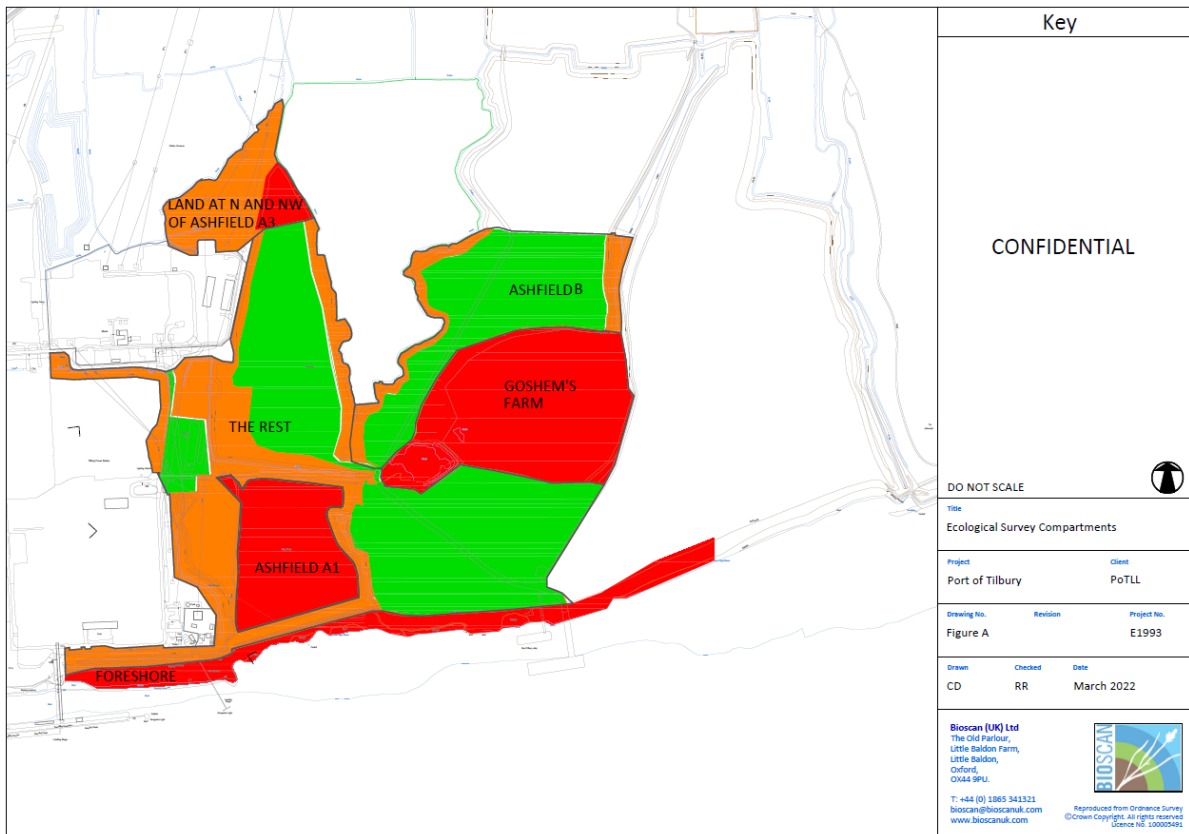


Figure 1: The invertebrate survey area and its compartments.

Waterbodies and watercourses within the survey area were named and numbered by Bioscan for their Great Crested Newt survey, and the same names and numbers have been

used in this report (Figure 2).

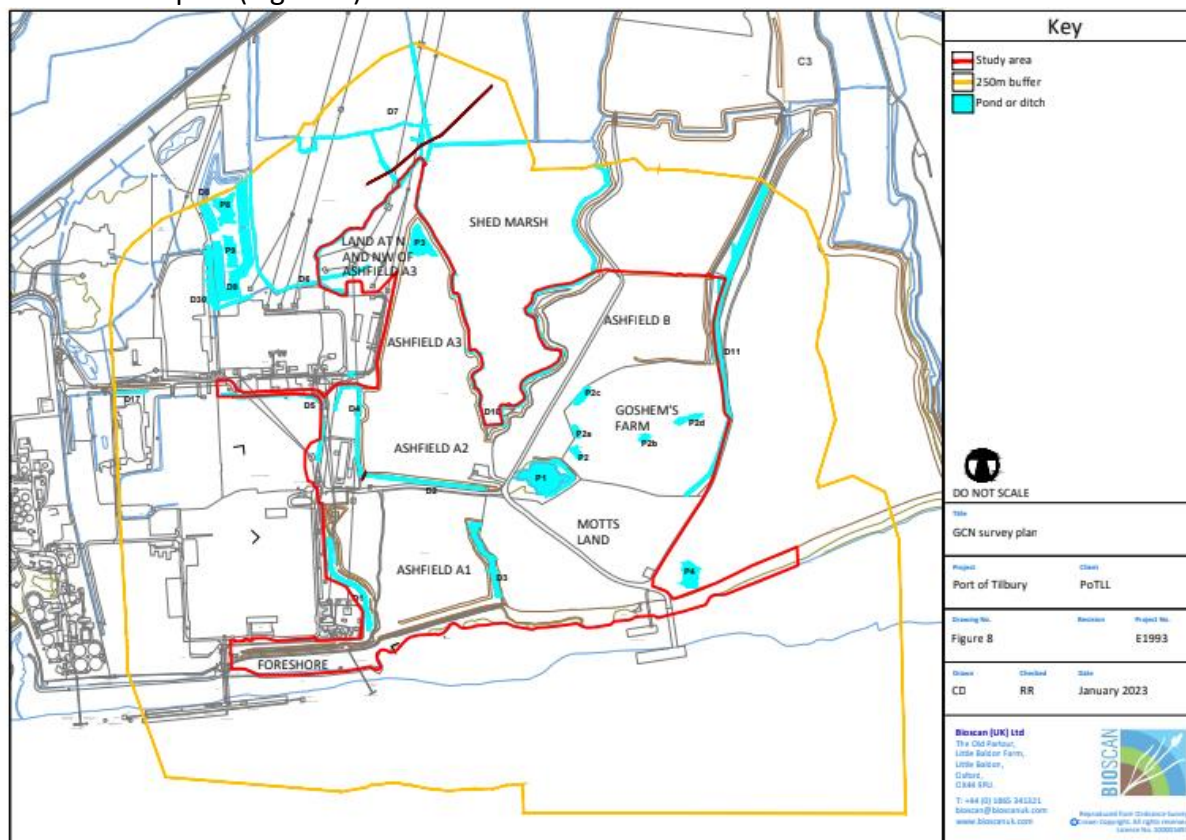


Figure 2: Pond and Ditch names and numbers used in this report.

2.2 INVERTEBRATE MONITORING OF ASHFIELD A1

Restoration works at Ashfield A1 were completed in 2011 and the site has been subject to a detailed invertebrate monitoring programme since then. The final round of invertebrate monitoring of Ashfield A1 was carried out in 2022 by the author (Telfer, 2022a). Invertebrates were sampled over the course of four fieldwork visits using one set of ten pitfall traps, a Malaise trap, suction sampling, and a range of other active sampling methods.

A separate monitoring report on Ashfield A1 has been prepared and submitted (Telfer, 2022a). The invertebrate records generated from the monitoring work have also been integrated into the current survey report to contribute towards the assessment of the Tilbury Ashfields survey area and its compartments.

2.3 PREVIOUS INVERTEBRATE SURVEY AND ASSESSMENT WORK

2.3.1 Scoping survey

An invertebrate scoping survey of the Tilbury Ashfields survey area was carried out by the author on 29th March 2022. The scoping report, submitted on 1st April (Telfer, 2022b), summarises the considerable amount of invertebrate survey work which has been carried out in and adjacent to the survey area in recent years.

2.3.2 Earlier surveys

Previous work includes the invertebrate monitoring of Ashfield A1 in year 7 (2018) which was carried out and reported on by Telfer (2019b). A total of 678 species of invertebrate was recorded, concluding that 'Ashfield A1 is unquestionably a site of national importance

for invertebrates' and 'an exceptional site with an extraordinary abundance and diversity of invertebrates'.

Another invertebrate survey in 2018 was conducted and reported on by Neil Harvey, with additional fieldwork by Peter Harvey, over five visits between 20th April and 13th August (Harvey, 2018). This survey overlapped with the current survey by covering Ashfields A2, A3 and B, but also extended to areas outside of the current survey area: Ashfields C1, C2 and C3. The survey also covered Pond P1, treating it as part of Ashfield B, rather than part of the Goshem's Farm compartment. They recorded 590 species of invertebrates and their survey results 'clearly demonstrated that the site is of considerable significance for its invertebrate populations, taking into account the number of species with high conservation status and the overall diversity of habitat associated assemblages', and suggest that the site 'should be considered to be of national significance for invertebrates'.

A very valuable point of reference for the current survey has been the author's invertebrate survey of the Tilbury 2 area in 2017 (Telfer, 2017), which overlaps only very slightly with the current survey area but which covered many comparable habitats and habitat features. In combination with surveys in the previous year by Colin Plant Associates (2016), survey work for Tilbury 2 recorded 1,397 species of invertebrate.

The Tilbury 2 surveys built on an earlier survey of a larger, overlapping survey area at Tilbury Power Station (Colin Plant Associates, 2007; Colin Plant Associates, 2008) in which 1,445 species of invertebrate were recorded.

An invertebrate survey was carried out by David Goddard of WYG Environment (Goddard, 2019) over ten dates between 25th July 2017 and 14th June 2018, covering a very large survey area for the 'Tilbury Energy Centre' (TEC). The TEC survey area largely overlaps with the current survey area but excluded most of Goshem's Farm, most of Motts Land, and most of the Foreshore. Only 187 species of invertebrate were recorded, seemingly with a focus on readily observable and field identifiable species. The report does not provide the necessary information to determine which species were recorded from within the current survey area and which only from elsewhere. An earlier report by the same author (Goddard, 2010) covered terrestrial and freshwater invertebrates from a similarly large and overlapping survey area for the Tilbury Power Station Gas Pipeline project, but with very limited results.

Invertebrate survey work for the proposed Lower Thames Crossing (Anon., 2022) overlapped with the current survey by covering Goshem's Farm in 2018 and surveying ditch D11 in June 2022 but results from this work were not available to the author until released on the National Infrastructure Planning website in November 2022.

Previous invertebrate survey and assessment of the current survey area and of nearby or overlapping areas strongly suggested that the survey area may support invertebrate species and assemblages of national importance.

2.4 HABITATS OF THE SURVEY AREA

Historically, much of the survey area was probably under agricultural management as coastal grazing marsh, with pasture fields divided up by a network of drainage ditches. Other, non-agricultural land-uses date back at least to the Victorian era, when parts of the site were used for waste disposal. Much of the Goshem's Farm compartment and the eastern Foreshore still show extensive evidence of this practice, including numerous antique bottles. In more recent times, much of the area has been used to deposit pulverised fly ash

(PFA) and furnace bottom ash (FBA), with the intention of raising the ground level to 9 m AOD (Woodfield and Moxon, 2017), though ultimately levels were raised only to 6 m AOD, creating the ashfields. In the latest cycle, most of the ashfields have been excavated and reprofiled, leaving only Ashfield A1 and a triangle of land at the northern tip of Ashfield A3 as the last remaining areas of original ashfield.

The scoping survey (Telfer, 2022b) regarded early successional open habitats as of high potential for invertebrates on the original ashfield areas (Ashfield A1 and the triangle of PFA at the northern tip of Ashfield A3). Early successional open habitats are characterised by an extensive cover of bare ground or sparsely-vegetated ground. What vegetation they support tends to be a varied cover of ruderal plants, well adapted as colonisers and producing abundant seeds. Early successional open habitats of at least moderate potential also occur within the Foreshore, within Goshem's Farm, widely within Ashfield B, and widely within 'The Rest'. Bare ground features may provide important nesting sites for bees and wasps, as well as for many other invertebrates.

More mature open habitat occurs very widely across the survey area. Here succession has proceeded beyond the early successional stage to a cover of grassland, with more perennial herbs, and a greater or lesser component of scrub being present. The densest, rank grassland habitat is likely to be of only low potential for invertebrates. However, rank grassland may be of elevated potential where it is underlain by PFA substrates, which may be the case on the outer banks of the ashfields and perhaps elsewhere; or where rank grassland grows on saline-influenced soils and may support coastal specialists; or where dry rank grassland includes Tall Fescue, host of the Tall Fescue Planthopper *Ribautodelphax imitans* (a Species of Principal Importance (SPI); see Section 2.6); or where dense, tussocky swards have potential to be used as nesting areas by any of the three bumblebee SPI known in the area (Red-shanked Carder-bee, Brown-banded Carder-bee, Shrill Carder-bee). Such grasslands occur within the Land NW of A3, Goshem's Farm, Ashfield B and widely within 'The Rest'.

Wetland habitats are rather varied and extensive within the survey area, including several ditches, a number of ponds, and a rather wide range of more-or-less ephemeral waterbodies or wet areas. There are apparently saline and brackish waterbodies, as well as extensive freshwater. Brackish ditches and waterbodies such as Pond P1 (in the south-western corner of Goshem's Farm) have a high potential to support Saltmarsh Shortspur beetle *Anisodactylus poeciloides* (SPI). The scoping survey (Telfer, 2022b) judged the potential importance for invertebrates of the wetland habitats to range quite widely from low through to high.

Sea shore habitats cover only a rather narrow strip within the Foreshore compartment. By extrapolation from the results of the Tilbury 2 survey (Telfer, 2017), these habitats were regarded by the scoping survey as potentially of national importance, with potential to provide important foraging habitat for Sea Aster Bee *Colletes halophilus* (SPI) as well as the other SPI bumblebees and wasps known from the area.

2.5 HABITATS OF THE SIX COMPARTMENTS

The scoping survey, bolstered by subsequent observations, yielded the following descriptions of the six compartments, their habitats and habitat features, and their potential to support invertebrate species or assemblages of conservation importance.

2.5.1 Ashfield A1

The main habitat is a level surface of sparsely-vegetated PFA. A number of artificial dunes and dune slacks (Figure 3, Figure 4), and other depressions, have been constructed on the PFA surface. Two linear windbreak bunds (Figure 5, Figure 6) have been constructed using subsoil. Subsoil is also the substrate from which the margins of Ashfield A1 are formed, consisting mostly of steep banks, though there are broader, flatter margins along the western perimeter and in the north-eastern corner.

Between 2018 and 2022, there have been some readily observable changes in the vegetation on Ashfield A1. Towards the more exposed, south-east corner, bare ground still predominates, a feature particularly noticeable in photographs from late April (Figures 3 – 6), but towards the opposite, north-western corner of the Ashfield, taller, denser vegetation has developed. A visual comparison of similar photographs taken at the same time of year in 2018 and 2022 (**Error! Reference source not found.** versus **Error! Reference source not found.**, and **Error! Reference source not found.** versus **Error! Reference source not found.**) shows that equivalent habitats could be found in both years but note that the 2018 photographs (Figures 3 and 5) were both taken nearer the north-western corner, and the 2022 photographs (Figures 4 and 6) were both taken nearer the south-eastern corner.



Figure 3: A curving artificial dune on 23rd April 2018.



Figure 4: A similar dune, at the more exposed southern end of A1, on 26th April 2022.



Figure 5: A linear windbreak bund, constructed using subsoil, on 23rd April 2018.



Figure 6: The same bund, at the more exposed southern end of A1, on 26th April 2022.

The PFA substrate has been remarkably slow to develop vegetation cover and much of it remains as bare ground with a thin crust of lichens and acrocarpous mosses. These areas are highly friable, making them highly suitable for burrowing invertebrates such as many bees, wasps and tiger-beetles (Figure 7) to construct their burrows. The artificial dunes and accompanying dune slacks add topographical diversity to the area, and have created more diverse vegetation; the dune slacks tending to support denser, grassier swards, while the crests of the dunes are barer and more droughted.



Figure 7: Larval burrow in PFA substrate of a Green Tiger-beetle *Cicindela campestris* at Ashfield A1.

The subsoil bunds have developed a cover of coarse grassland with scrub and bramble, similar to the subsoil banks which form the perimeter of the Ashfield. This is dense vegetation, with little bare ground.

The invertebrate monitoring of Ashfield A1 in year 7 (2018) was carried out and reported on by Telfer (2019b), who found, as noted above, that 'Ashfield A1 is unquestionably a site of national importance for invertebrates' and 'an exceptional site with an extraordinary abundance and diversity of invertebrates'. Despite some evidence of advancing succession since 2018, with taller and denser vegetation in parts of the ashfield, this was still treated as a compartment of with very high potential for invertebrates.

2.5.2 Ashfield B

This compartment is effectively divided into two by the Heavy Plant Haul Road which runs roughly north-south through the middle.

East of the haul road, the ashfield is very sparsely vegetated on its top, with more extensive ruderal vegetation on its banks, notably to the east where it slopes down towards Ditch D11. West of the haul road, the ashfield is more varied with a mosaic of areas of different substrates and of different stages of succession from bare ground to closed sward (Figure 8). Taken together, these were judged to be habitats of moderate potential for invertebrates.



Figure 8: Varied habitats in the western part of Ashfield B.

Ditch D11 is a broad ditch in a broad swathe of reedbed, rank grassland and scrub, running north-south on the eastern side of Ashfield B2 and continuing southwards (downstream) along the eastern side of the Goshem's Farm compartment where it appears to become increasingly brackish, with Sea Club-rush *Bolboschoenus maritimus* replacing reed at the margins. The substrate is deep, soft, organic and nutrient-rich.

The habitats in and adjacent to Ditch D11 provide substantial variety across a range of salinities and water depths, with gradual, shallow gradients from the ditch out into the surrounding dry grassland. There is rather high potential for invertebrates as a result of this small-scale habitat diversity, perhaps especially towards the brackish end of the spectrum.

2.5.3 Land N & NW of Ashfield A3

This survey compartment may be further divided into two distinct sub-compartments: (i) the triangle of surviving PFA substrates at the northern tip of Ashfield A3, and (ii) the land NW of Ashfield A3 which consists of a mixture of scrub, rank grassland and relict grazing marsh ditches.

By extrapolation from the known importance of Ashfield A1, the PFA triangle at the northern tip of A3 was judged to be very likely also to support a high quality invertebrate assemblage (Telfer, 2022b). Though much smaller in total area, there is greater microhabitat diversity here, including steep banks with eastern, south-western and northern aspects, areas of fissured ground (apparently heaved upwards by the filled ground to the south), disturbed ground associated with a Badger sett, and an ephemeral waterbody (Pond P3, found to be already without standing water by 29th March 2022) (Figure 9). Pond P3 supports a small area of reedbed and much bare ground on PFA substrate, of almost quicksand consistency when wet, cracking into blocks when dry.



Figure 9: Pond P3 in the PFA triangle at the northern tip of A3.

The land NW of Ashfield A3 appears to have been grazing marsh with ditches at some time in the distant past, and was probably taken out of agricultural use when the electricity pylons were installed. Scrub has gradually filled in much of the area. Some cutting of vegetation takes place to maintain access to the pylons, and thus there are areas of open, rank grassland, functioning as sunlit, sheltered glades within the scrub (Figure 10). Old ditches are traceable as lines of reed-dominated vegetation. Functioning ditches apparently remain on the outer boundary of this area.



Figure 10: Land NW of Ashfield A3.

2.5.4 Goshem's Farm

The Goshem's Farm compartment is a remnant of a formerly more extensive landfill and brownfield site which appears to date back to the Victorian era. In recent decades, this compartment seems to have been largely unmanaged and supports a lot of very rank grassland with a substantial cover of scrub (Figure 11). There is greater invertebrate potential where short grassland swards survive, presumably on a PFA substrate, maintained partly by the grazing and burrowing activities of rabbits.



Figure 11: View of Goshem's Farm compartment.

Wetland habitats within the Goshem's Farm compartment include the large Pond P1 at the south-western corner (Figure 12; see also cover photograph). P1 includes a shallow beach, some open bays, some sheltered reed-fringed sections and some PFA banks. The scoping survey (Telfer, 2022b) identified high invertebrate potential within this area, both for aquatic and wetland (water's edge) invertebrates. Saltmarsh Shortspur beetle *Anisodactylus poeciloides* (SPI) has been recorded from Pond P1 (Harvey 2018) and has the potential to be more widespread across the compartment, which shows widespread signs of brackish influence.



Figure 12: Pond P1.

Other wetland habitats of potentially high importance occur quite widely across the Goshem's Farm compartment, with quite extensive reed-bed in the north-western quadrant, intersected with more open Sea Club-rush *Bolboschoenus maritimus* vegetation (Figure 13) and patches of Divided Sedge *Carex divisa*. Sea Club-rush dominates in the wetland patches along the southern fringe of the compartment. The extremely varied topography of Goshem's Farm, pock-marked with hundreds of small pits, creates a very large variety of small ponds of varying depth, profile and vegetation (Figure 14).



Figure 13: Wetland in north-west quadrant of Goshem's Farm, with reed and Sea Club-rush.



Figure 14: Small pool at Goshem's Farm, with old bottles.

2.5.5 Foreshore

At its western end, the Foreshore compartment slightly overlaps with the 'Coastal Strip' survey compartment of the invertebrate survey of Tilbury 2 (Telfer, 2017). The Tilbury 2 survey found the Coastal Strip to be 'the most important subsite within a nationally important site'. It was important for the Sea Aster Bee *Colletes halophilus* (SPI) which specialises on Sea Aster, a flower which is also important forage for another SPI, the Brown-banded Carder-bee *Bombus humilis*.

From the western end of the Foreshore compartment eastwards to about level with Ditch D3, the upper saltmarsh habitats are very similar to those of the Tilbury 2 'Coastal Strip', including frequent Sea Aster (Figure 15). They were judged as having a high potential to support invertebrate species and assemblages of conservation importance, including Sea Aster Bee and Brown-banded Carder-bee.



Figure 15: The western Foreshore.

Heading further eastwards, south of Motts Land, the upper saltmarsh vegetation is much reduced and the foreshore changes to a raised strip of rank grassland on top of a low cliff, below which is a narrow beach of varied composition including sand as well as large quantities of antique brick, tile, ceramics and glass. This section appears to be a rather old (19th or early 20th century?) landfill, now being eroded by the Thames. The bare cliff face (Figure 16) was judged to have rather high potential for invertebrates, particularly for nesting bees and wasps. Beach habitats are worthy of investigation but may not be sufficiently extensive here to merit more than moderate potential. Heading further east still from the jetty, beach habitats become more extensive and may thus have greater potential.

The landward habitats in this section are predominantly dense scrub of rather low potential with surrounding rank grassland.



Figure 16: Cliff face on the Foreshore.

2.5.6 The Rest

This is a large and varied compartment, which may be usefully subdivided as follows.

Ashfields A2 and A3

This is an area of former ashfield, now excavated and largely refilled. There is no longer any apparent division between A2 and A3, though the southern part of the area (A2) is filled to a higher level than the northern (A3). In spring 2022, fill was still being deposited at the southern end of the area. The surface has a covering of compacted 'topsoil', with two broad age-classes of vegetation present: (i) more recent, very sparsely vegetated areas, and (ii) longer-established, more closed and taller swards (Figure 17). Both were judged to be of low to moderate potential for invertebrates in general, with greater potential to support bees and other flower-visiting insects.



Figure 17: A2/A3 cap showing the interface between sparsely vegetated areas (right), and taller swards (left).

Though the edges and outer banks of the ashfield are covered in rank grassland with scattered scrub, some of this rank grassland probably grows over remaining PFA substrate and was judged to be of moderate or greater potential for invertebrates.

Particularly on the lower-level, northern section of A2/3, there are a number of wetland areas, ranging from patches of soft, wet ground to apparently year-round waterbodies. They were judged as having moderate potential for invertebrates, perhaps especially for specialists of the bare, draw-down zones around waterbodies which contract during the warmer months.

Motts Land

The majority of Motts Land is covered with recently disturbed substrate, supporting only very sparse vegetation amidst extensive bare, compacted ground. As such, this was judged to be predominantly an area of low potential for invertebrates.

Within this matrix of low potential habitat, there are small patches of habitats with much higher potential, either where denser patches of diverse ruderal vegetation have become established, or where waterbodies have formed. Several of the waterbodies within Motts Land are notable for the very soft, mineral sediments at their margins, rather similar to quicksand, which is a microhabitat of high potential for wetland invertebrates (Figure 18).



Figure 18: Waterbodies with quicksand-like margins at Motts Land.

Shed Marsh edges: banks and ditches of Ashfields A2/3 and B which border Shed Marsh

Beyond the eastern bank of Ashfield A2/3, a wiggly, largely reed-choked ditch (Ditch D10) runs along the boundary with Shed Marsh, a large and rather wet arable field. Ditch D10 turns and runs northwards along the boundary between Shed Marsh and Ashfield B1.

Ditch D10 and its surrounding habitats, including a few small reed-choked pools, has a rather different appearance to other ditches within the scoping survey area, being narrower and more reed-choked (Figure 19), and was judged to be cleaner and fresher than other ditches. This was judged to be an area of moderate potential for invertebrates.



Figure 19: Ditch D10, visible as a narrow band of reed.

On the eastern edge of Ashfield A2/A3, an area of landslip or heave has engulfed the old reed-choked Ditch D10, and a new ditch has been dug (Figure 20). This section of ditch, over freshly exposed, bare substrate including a PFA component, was judged to be of high potential for invertebrates.



Figure 20: Newly dug section of Ditch D10.

Ditch D3 and surrounds

Ditch D3 is closest to the shore and is clearly brackish, judged by the fringe of Sea Club-rush, compared to the predominantly reed-fringed ditches elsewhere (Figure 21). It presumably receives some saline seepage, leaking through the coastal defences. This area has a high potential to support specialist invertebrates of brackish and coastal habitats, both aquatic and wetland species. Though the ditch margins are mostly rather densely vegetated, this area may support Saltmarsh Shortspur beetle (SPI).



Figure 21: Ditch D3 with a continuous fringe of Sea Club-rush.

The remainder: A1 wider periphery (excluding D3 surrounds), inner foreshore strip, D2 and surrounds (N of road), RWE car parks and road verges, D4 field, D5 and surrounds (within compound).

This final subdivision covers a sprawling remainder of areas which were judged to be probably of low or low-to-moderate potential, mostly comprising rank grassland. Where rank grassland may be of elevated potential is where it is underlain by exposed PFA substrates, which may be the case on the outer banks of Ashfield A1 and perhaps elsewhere; or where rank grassland grows on saline-influenced soils and may support coastal specialists; or where dry rank grassland includes Tall Fescue, host of the SPI Tall Fescue Planthopper *Ribautodelphax imitans*.

This area includes a number of ditches, of which the long-neglected, reed-choked remnant of Ditch D4 was judged to be of the greatest potential. The substantially disturbed Ditches D1 and D5 were judged to be of low potential, and the deep, reed-fringed Ditch D2 probably also of low potential.

The grassland of the road verges was judged to be of moderate potential, noted as a less rank, and potentially more flower-rich, sward than most within the scoping survey area.

2.6 SPECIES OF PRINCIPAL IMPORTANCE

The scoping survey report (Telfer, 2022b) details 11 Species of Principal Importance ('SPI': species regarded as 'of principal importance for the purpose of conserving biodiversity' with

respect to Section 41 of the Natural Environment and Rural Communities Act 2006) which have occurred in or adjacent to the survey area in recent times.

This figure of 11 excludes a number of 'research only' Species of Principal Importance. the 'research only' SPI are all moths or butterflies which were formerly added to the UK Biodiversity Action Plan for research action only, and retain an equivalent status following their transfer to the Section 41 list of SPI. They are all widespread and often common species which are undergoing decline in abundance or contraction in range. Conservation action for these 'research only' species is focused on further research rather than protection of individual sites.

Wall butterfly *Lasiommata megera* and Small Heath butterfly *Coenonympha pamphilus* were regarded as 'research only' SPI until recently. However, Natural England's Pantheon application (see Section 3.7.2 for further details) no longer treats these two butterflies as 'research only' species, presumably because they have now been assessed by Fox *et al.* (2022) as Endangered (EN) and Vulnerable (VU) respectively. Both species have been recorded in the survey area in recent times.

2.6.1 Species accounts

For each of these 13 SPI, a brief account is provided which covers (i) existing records, (ii) habitat preferences and other ecological requirements, and (iii) survey timing and methodology. The species accounts are presented in taxonomic order.

***Ribautodelphax imitans* (Hemiptera: Auchenorrhyncha: Delphacidae) Tall Fescue Planthopper**

Kirby (1992) was aware of records only from the south coasts of Devon (Axmouth - Lyme Regis) and Dorset (Southwell, Portland; Corfe). It was discovered at Rammey Marsh, Middlesex, in 2000 and was discovered at a brownfield site near Tilbury in 2006, then recorded from Tilbury Power Station in 2007 (<http://www.essexfieldclub.org.uk/portal/p/Species+Account/s/Ribautodelphax+imitans>; Colin Plant Associates, 2008), and from the Tilbury 2 Lytag site in 2016 (Telfer, 2017).

It is a specialist grass-feeding species, for which Tall Fescue *Festuca arundinacea* is the sole foodplant (Dittrich, 2016). It occurs in calcareous grassland but also inhabits other types of dry grassland, as at Tilbury.

Adults may be found between April and August, peaking in abundance during June and July. Suction sampling is the preferred survey method, though sweeping is also effective (Dittrich, 2016).

***Anisodactylus poeciloides* (Coleoptera: Carabidae) Saltmarsh Shortspur beetle**

Saltmarsh Shortspur has been recorded from the margins of Pond P1 within the Goshem's Farm compartment (Harvey, 2018). A short way to the east of the scoping survey area, in 2017 it was found in numbers around Bill Meroy Creek, a saline lagoon within grazing marsh north-east of the Tilbury Fort (Telfer, 2017).

It is a specialist of the margins of saline and brackish lagoons which are more remote from the tidal cycle, or receive seawater by seepage through sea defences.

Adults may be found between April and September, peaking between June and August. Survey is best achieved by an experienced surveyor using targeted ground-searching, though suction-sampling may also be effective.

***Colletes halophilus* (Hymenoptera: Aculeata: Colletidae) Sea Aster Bee**

Sea Aster Bees were recorded from on or near the foreshore during the Tilbury 2 surveys (Telfer, 2017).

Female Sea Aster Bees mainly collect pollen from Sea Aster *Aster tripolium*. Nest burrows are made in bare sandy soil, often in large aggregations, in south-facing, sunny situations. Some large populations are associated with silt lagoons and PFA substrates.

The species may be seen from late July to early October, with numbers peaking from mid-August to mid-September, coinciding with the flowering of Sea Aster. Survey may be carried out by direct observation in suitable warm and sunny conditions, stalking bees on Sea Aster inflorescences.

***Bombus ruderarius* (Hymenoptera: Aculeata: Apidae) Red-shanked Carder-bee**

Red-shanked Carder-bee was recorded from Ashfield A3 in 2007 (Colin Plant Associates, 2008) but does not appear to have been subsequently recorded in or near the scoping survey area.

It frequents extensive areas of unimproved grassland with an abundance of flowers, especially legumes Fabaceae and labiates Lamiaceae. It is closely associated with tall grasslands which are only cut or grazed intermittently. There also seems to be some connection with areas of tussocky grass and scrub; perhaps required as nesting habitat.

The species may be seen from late April to the end of August or beyond. Survey during the flight period is most effectively achieved by targeted direct observation and spot-netting while walking through suitable foraging habitat.

***Bombus humilis* (Hymenoptera: Aculeata: Apidae) Brown-banded Carder-bee**

This was one of the commonest bumblebees during the Tilbury 2 surveys (Telfer, 2017) and was also frequent on Ashfield A1 in 2018 (Telfer, 2019b) and was recorded widely across the survey area covered by Harvey (2018).

This ginger bumblebee is strongly associated with tall but open-structured (i.e., not rank) flower-rich grasslands. Brown-banded Carder-bees form small nests, often with fewer than 100 individuals, located on the ground surface, where they are exposed to the sun. Being a relatively long-tongued species, workers prefer to forage from tubular flowers such as those of legumes, labiates and also knapweeds *Centaurea* spp. This bee requires suitable foraging resources (nectar and pollen) throughout the entire season from May to September.

Survey during the flight period is most effectively achieved by targeted direct observation and spot-netting while walking through suitable foraging habitat.

***Bombus sylvarum* (Hymenoptera: Aculeata: Apidae) Shrill Carder-bee**

This species was recorded rather widely in the Tilbury 2 survey area (Telfer, 2017), and was recorded 'throughout' the survey area covered by Harvey (2018).

Shrill Carder-bee requires foraging habitat which is rich in legumes and labiates, etc., including Red Clover, Red Bartsia, knapweeds and woundworts. In the Tilbury area, foraging has been noted from Black Horehound, Creeping Thistle, Common Toadflax and Sea Aster (pers. obs.). Nests are constructed on the ground surface within tall, open grassland swards.

The flight period extends from late April until mid-October at the extremes but the best period for survey is from the end of July to mid-September when workers are at their most abundant. Survey during the flight period is most effectively achieved by targeted direct observation and spot-netting while walking through suitable foraging habitat.

***Odynerus melanocephalus* (Hymenoptera: Aculeata: Vespidae) Black-headed Mason-wasp**

This species was recorded from the ashfields in 2007 (Colin Plant Associates, 2008) but does not appear to have been subsequently recorded in or near the scoping survey area.

This mason-wasp hunts its prey (the weevil *Hypera postica*) in open, grassland areas which support the weevil's foodplant, Black Medick. The mason-wasp also has a requirement for areas of exposed, bare ground on light, often clayish soils, where they construct their nest burrows, with the protruding chimney characteristic of *Odynerus* species.

Survey is required in late May and June, after which adult numbers dwindle, with the latest records from August. Survey techniques include spot-netting, sweeping, direct observation and pan-trapping.

***Cerceris quadricincta* (Hymenoptera: Aculeata: Crabronidae) Four-banded Weevil-wasp**

A rare wasp of a few sites in Essex and Kent (Edwards, 1997). In Essex, there had been records from the Colchester area, and then the species was discovered at Tilbury ashfields by Colin Plant Associates (2008). There do not appear to have been any subsequent records in this area, and there seems to be some doubt attached to the Tilbury record.

This wasp excavates nest burrows in light, sandy soils and provisions the nest cells with weevils. A requirement for dry, well-insolated nest sites is apparent.

The survey season for adults is from early July to mid-August. Survey techniques include spot-netting, sweeping, direct observation and pan-trapping.

***Cerceris quinquefasciata* (Hymenoptera: Aculeata: Crabronidae) Five-banded Weevil-wasp**

Recorded from the Tilbury 2 survey area in 2016 (Colin Plant Associates, 2016) and from Ashfields B1, C1 and C3 by Harvey (2018).

This wasp nests gregariously in areas of well-insolated, often compacted, bare sand. Females provision their brood cells with weevils, using a range of smaller species including Apionidae and *Sitona* species. They appear to depend on unmanaged sites with diverse flower-rich swards from which to collect their prey.

The survey season for adults extends from mid-June to mid-September, peaking in July and August. Survey techniques include spot-netting, sweeping, direct observation and pan-trapping.

***Dorycera graminum* (Diptera: Ulidiidae) Phoenix Fly**

The Phoenix Fly is a large picture-winged fly with a southern British distribution concentrated in the Thames Estuary. It was recorded quite widely from the Tilbury 2 survey area (Telfer, 2017) and from Ashfield B by Harvey (2018).

Its ecological requirements are not well understood. It occurs on a wide range of grasslands, growing on a range of soil types, typically with some anthropogenic disturbance (Ismay, 2000).

Adults may be found from mid-May to the end of June, exceptionally into July. Survey is best achieved by sweeping, though beating and direct observation may also be effective.

***Asilus crabroniformis* (Diptera: Asilidae) Hornet Robberfly**

Hornet Robberflies had been recorded near to the Tilbury 2 survey area from suitable grazed pasture habitat but the species was not recorded within the survey areas of surveys in 2007, 2016 or 2017 (Colin Plant Associates, 2008; Colin Plant Associates, 2016; Telfer, 2017).

This is a predatory fly which inhabits grazed pasture, apparently preferring sites with a high abundance and diversity of dung-beetle prey associated with horse dung.

Survey for this species is best carried out by direct observation in late summer.

***Lasiommata megera* (Lepidoptera: Nymphalidae) Wall butterfly**

Wall was recorded widely across the Tilbury 2 survey area, though in small numbers (Telfer, 2017), and was recorded from Ashfields A2/A3 by Harvey (2018).

This butterfly breeds in short, open grassland where the turf is broken or stony. It is found in coastal grasslands as well as inland habitats such as disturbed or derelict land, disused quarries, cliff-slopes and banks. The caterpillars feed on a variety of grasses including Tor-grass *Brachypodium pinnatum*, False Brome *B. sylvaticum*, Cock's-foot *Dactylis glomerata* and Yorkshire-fog *Holcus lanatus* (Asher *et al.*, 2001).

Survey for this species is best carried out by direct observation, targeting adults during their flight period from late April to October.

***Coenonympha pamphilus* (Lepidoptera: Nymphalidae) Small Heath butterfly**

Small Heath was widespread across the Tilbury 2 survey area and frequently recorded, being present in all five subsites (Telfer, 2017). Similarly, Harvey (2018) recorded Small Heath from four of the seven subsites surveyed.

This butterfly inhabits grassland, favouring shorter swards of fine-leaved grasses on well-drained soils. The caterpillars feed on a variety of grasses including fescues *Festuca*, meadow-grasses *Poa* and bents *Agrostis* (Asher *et al.*, 2001).

Survey for this species is best carried out by direct observation, targeting adults during their flight period from late April to early October.

2.6.2 Targeted survey in 2022

Twelve of these 13 species were considered sufficiently likely to occur within the survey area that they should be targeted by survey work in 2022. However, the Hornet Robberfly

Asilus crabroniformis was considered very unlikely to occur within the survey area, in the absence of any suitable habitat grazed by livestock. Three of the aculeate Hymenoptera (bees and wasps) have apparently not been recorded since 2007 and although apparently suitable habitat still remains, they may have become locally extinct. Nevertheless, targeted survey work was carried out in 2022 to assess presence.

2.7 DEVELOPMENT PROPOSALS

It is understood that proposals to develop the area in whole or in part are being prepared by Port of Tilbury London Ltd., with a view to submitting a Development Consent Order in the near future.

2.8 SURVEY AIMS

In view of the potential of the survey area to support species and assemblages of conservation importance, a general invertebrate survey was commissioned, which aimed:

- to assess the importance of the whole survey area for invertebrates;
- to make separate assessments for each of the six compartments (Ashfield A1, Ashfield B, Land at N and NW of Ashfield A3, Goshem's Farm, the Foreshore, and The Rest) with regard to their importance for invertebrates; and
- to survey representative habitats and habitat features within each compartment, to enable the identification of areas of importance for invertebrates at even finer scales.

3 Methods

3.1 FIELDWORK DATES

Following the scoping survey carried out by the author on 29th March 2022 (Telfer, 2022b), fieldwork was carried out over 19 further visits, between 26th April and 8th September 2022.

Table 1 gives a brief account of the fieldwork undertaken on each visit, and includes notes on the weather conditions during the visit.

Table 1: Survey visits undertaken, with fieldwork notes, mention of any constraints, and weather notes.

Visit number	Date	Fieldwork notes, and constraints	Weather
1	26 April	Primarily surveying Ashfield A1: setting pitfalls, suction sampling, sweep-netting and spot-netting. Survey of flowering hawthorn in The Rest by beating.	9 – 13 °C, 8 – 11 mph NE wind. Clear at start, clouding over from midday. Dry.
2	28 April	Ground-search around Pond P1 (Goshem’s Farm). Pond-netting and ground-searching of waterbody margins on Motts Land. Pond-netting in Ditch D11 (Ashfield B) and Ditch D3 (The Rest).	9 – 13 °C, 8 – 12 mph NE wind. Sunny intervals. Dry.
3	4 May	Fieldwork suspended on Ashfields A2/A3 due to Asbestos contamination. Beating and sweeping in Goshem’s Farm until c. 12:50. Productive fieldwork continued during and after the rain, but necessitated a switch to pond-netting. Samples of stems of Wormwood <i>Artemisia absinthium</i> , Sea Aster <i>Aster tripolium</i> and Golden Samphire <i>Inula crithmoides</i> were collected from Goshem’s Farm and the Foreshore and sealed in large plastic bags for rearing.	12 – 16 °C, 8 – 9 mph SW wind. Rain from c. 12:50 to 14:10 and another shower later.
4	6 May	Fieldwork suspended on Ashfields A2/A3 due to Asbestos contamination. Ground-searching and sweeping on the Foreshore. Suction sampling in various parts of The Rest. Sweeping in shelter beside Ditch D3.	15 – 21 °C, 7 – 11 mph W wind. Sunny intervals. Dry.

Invertebrate survey of Tilbury Ashfields in 2022

Visit number	Date	Fieldwork notes, and constraints	Weather
5	10 May	Fieldwork suspended on Ashfields A2/A3 due to Asbestos contamination. Exclusively surveying Ashfield A1: servicing pitfalls, installing Malaise trap, sampling by suction and beating.	16 – 19 °C, 12 – 14 mph SW wind. Light cloud. Dry.
6	19 May	Fieldwork resumed on Ashfields A2/A3 with a revised Risk Assessment and Method Statement. Retrieved aquatic bottle trap samples from Ditches D2 and D3. Set pitfall traps and yellow pan traps on Ashfields A2/A3, and in the PFA triangle at the N tip of A3. Ground searching and sweeping in the PFA triangle. Direct observation and sweeping on the cap of Ashfields A2/A3.	16 – 21 °C, 9 mph W wind. Dull and wet initially, after a wet night, but clearing and brightening.
7	20 May	Full reconnaissance of the area NW of A3, followed by ground-searching and pond-netting in this area. Collected yellow pan trap samples from the PFA triangle at the N tip of A3 and from Ashfields A2/A3.	14 – 18 °C, 5 – 13 mph SW wind. Heavy, persistent rain all day.
8	25 May	Sweeping, beating and ground-searching in the inner foreshore strip, old car park, Ditch D4 field and near Ditch D3 (The Rest).	14 – 16 °C, 14 – 19 mph SW wind. Overcast and dull. Occasional spitting rain, turning heavy from 16:39.

Invertebrate survey of Tilbury Ashfields in 2022

Visit number	Date	Fieldwork notes, and constraints	Weather
9	1 June	<p>Sweeping and ground-searching of the western part of Ashfield B. Sweeping, suction sampling, direct observation and ground-searching in Goshem's Farm, covering a range of ponds and wetland patches.</p> <p>Serviced and retrieved pitfall traps from the PFA triangle at the N tip of A3 and from Ashfields A2/A3 (set 19th May).</p>	12 – 16 °C, 7 – 8 mph W wind. Sunny intervals. Wet conditions initially but drying out later.
10	14 June	<p>Primarily surveying Ashfield A1: servicing pitfalls and Malaise trap, sampling by suction and spot-netting. Operated 5 yellow pan traps at Pond P1, Goshem's Farm, as well as ground-searching here and spot-netting in The Rest.</p>	17 – 25 °C, 6 mph S wind. Cloudless and sunny. Dry.
11	16 June	<p>Spot-netting in Ashfields A2/A3. Ground-searching and spot-netting in the PFA triangle at the N tip of A3. Serviced and retrieved 5 yellow pan traps from Pond P1 margins, as well as ground-searching and spot-netting here. Spot-netting in Ashfield B. Set 5 pitfall traps in lakeshore sediments beside Pond P1.</p>	22 – 26 °C, 6 – 10 mph S wind. Clear, sunny and dry.
12	21 June	<p>Ground-searching and sweeping in the PFA triangle at the N tip of A3. Set 5 yellow pan traps while spot-netting in Ashfield B, retrieving these at the end of the day. Sweeping in Goshem's Farm and beside Pond P1. Sweeping in the area surrounding Ditch D3. Sweeping in Motts Land (The Rest). Serviced 5 pitfalls beside Pond P1.</p>	16 – 26 °C, variable 3 – 7 mph winds. Clear, sunny and dry.

Invertebrate survey of Tilbury Ashfields in 2022

Visit number	Date	Fieldwork notes, and constraints	Weather
13	30 June	Set 4 yellow pan traps on the Foreshore while sweeping, retrieving these at the end of the day. Sweeping and beating in the area NW of A3. Retrieved 5 pitfall traps from lakeshore sediments beside Pond P1. Ground-searching beside Pond P1. Sweeping and spot-netting on the south edge of Ashfield A2.	16 – 19 °C, 8 – 10 mph SW. Sunny intervals, dry.
14	5 July	Pond-netting, sweeping and ground-searching throughout Ditch D10 on the margins of Shed Marsh.	17 – 22 °C, 8 – 10 mph NW wind. Sunny intervals, dry.
15	19 July	Resuming fieldwork after a week's hiatus to recover from covid. Primarily surveying Ashfield A1: servicing Malaise trap, sampling by suction, spot-netting and sweep-netting. Set 5 pitfalls on the eastern margin of Ashfield A2/A3 in the new section of Ditch D10.	23 - 40 °C. A day on which the UK's first red weather warning for heat was issued. UK temperature records were smashed and wildfires hit the headlines. Fieldwork started at 05:30 to avoid some of the hottest parts of the day. A southerly wind of up to 14 mph helped make conditions on A1 tolerable. Cloudless and dry.
16	29 July	Retrieved 5 pitfalls from the new section of Ditch D10. Sweeping and spot-netting on Motts Land (The Rest). Spot-netting, suction sampling, sweeping and beach sampling on the Foreshore.	19 – 23 °C, 6 – 10 mph N wind, veering westerly. Sunny intervals, dry.
17	9 August	Set 4 yellow pan traps in Goshem's Farm and 1 in Ashfield B, retrieving these at the end of the day. Sweeping, aerial netting, spot-netting and ground-searching in Goshem's Farm.	19 – 24 °C, 7 – 13 mph E wind. Another sunny, dry day. After a record driest July, the drought continues into August.

Invertebrate survey of Tilbury Ashfields in 2022

Visit number	Date	Fieldwork notes, and constraints	Weather
18	7 September	Pond-netting in Ditch D5. Beating, sweeping and suction-sampling beside Ditch D5 and in other habitats within the former power station compound. Spot-netting on the Foreshore and in Ashfield B.	17 – 21 °C, 11 – 15 mph SW wind. Sunny intervals, dry.
19	8 September	Pond-netting in Ditches D1, D2 and D11. Ground-searching beside Ditch D11.	16 – 20 °C, 9 – 13 mph S wind. Initially very dull and damp, following overnight rain. Heavy rain from c. 12:00 to 14:00 and again from 17:00.

3.2 CONSTRAINTS

Invertebrate activity is significantly affected by the weather, which can seriously diminish the effectiveness of some sampling techniques. The weather conditions on each survey visit are indicated in Table 1.

By and large, the survey dates were chosen to coincide with good weather conditions, in which productive fieldwork could be carried out unhampered. However, two of the survey visits (20th May and 8th September) were rather substantially impacted by heavy rainfall which had not been forecast, with a few other visits impacted to a lesser extent. It was unfortunate that the four visits from 19th May to 1st June inclusive were all impacted to a greater or lesser extent by wet weather, this being a period of persistently dull and wet weather in 2022, combined with some inaccurate forecasting.

Thereafter, survey visits through June, July and August took place in consistently good to excellent conditions of warm temperatures, light winds and no rainfall. However, though conditions on the day were highly suitable for invertebrate survey, the extreme climatic conditions of June, July and August 2022 did impose constraints on the survey. It was the joint hottest summer on record, and an extremely dry summer with Tilbury falling within an area that received between 30 and 50% of normal summer rainfall¹. This appeared to have a detrimental effect on the abundance and diversity of invertebrates, progressively worsening as the drought continued.

3.2.1 Asbestos

The existence of suspected Asbestos Containing Materials (ACM) on the cap of Ashfields A2/A3 was first notified to the author on 29th April and fieldwork on this part of the site was suspended. The material was subsequently confirmed as containing Asbestos on 3rd May. By 12th May, a revised Risk Assessment and Method Statement had been prepared and fieldwork was able to resume on Ashfield A2/A3 from 19th May, having avoided the contaminated area during the previous three fieldwork visits.

Subsequent survey of Ashfields A2/A3 was primarily by pitfall trapping and yellow pan trapping, with active sampling restricted to direct observation and sweep-netting (without the use of a pooter). These adaptations to the methods required additional fieldwork time and additional desk time for the sorting and identification of samples, but aimed to ensure that the invertebrates of Ashfields A2/A3 were surveyed at least as thoroughly as they would have been in unrestricted survey work.

3.3 TRAPPING METHODS

3.3.1 Pitfall trapping

Pitfall trapping was carried out using 50 cl disposable plastic tumblers, with an internal diameter at the mouth of 86 mm. These cups can be inserted neatly into holes cored with a gardeners' bulb planter, meaning minimal disturbance to the surrounding ground (Figure 22). Cups were set with the mouth flush with the ground surface, or slightly recessed, and with gaps smoothed out such that even the smallest invertebrates could walk into the cup. Each cup was filled to between a third and a half full with dilute vehicle antifreeze as

¹ <https://www.metoffice.gov.uk/about-us/press-office/news/weather-and-climate/2022/joint-hottest-summer-on-record-for-england>

trapping fluid. Cups were covered with 12 mm square gauge galvanized wire mesh, pegged down at the edges, to inhibit access by vertebrates.



Figure 22: A pitfall trap *in situ*.

For the monitoring of Ashfield A1, a transect of 10 pitfalls was operated from 26th April to 14th June.

Five pitfalls were operated in the PFA triangle at the N tip of A3 from 19th May to 1st June. Over the same period, five pitfalls were also operated in selected spots across the cap of Ashfields A2/A3.

Five pitfalls were operated in selected spots around the margins of Pond P1, Goshem's Farm, from 16th to 30th June.

Finally, five pitfalls were operated at various points within the new section of Ditch D10, on the eastern margin of Ashfields A2/A3, from 19th to 29th July.

3.3.2 Malaise trapping

Flies, bees and other flying insects which accidentally fly in through the open door of a tent, conservatory, greenhouse or poly-tunnel tend to become trapped, flying around the roof apex, and seemingly unable to find their way back out. Malaise traps (named after their Swedish inventor, René Malaise) exploit this behaviour. The Malaise trap (Figure 23, Figure 24) looks a little like a ridge tent, with a sloping ridge and a specialised trapping bottle at the higher end of the ridge. The sides of the tent are open but an internal barrier stops insects flying straight through and guides them towards the apex.

Malaise traps are more effective when oriented towards the sun (south) but in view of the exposed trapping location at Ashfield A1 and the knowledge that the 2014 and 2016 monitoring rounds had both suffered collapsed Malaise traps, the trap was oriented



Figure 23: Malaise trap *in situ* at Ashfield A1 on 10th May 2022.



Figure 24: Malaise trap oriented towards the south-west, in 2022.

towards the south-west in 2018 and 2022, from which the strongest winds usually blow (Figure 24).

The Malaise trap was erected at grid reference TQ 66604 75753 and operated from 10th May to 19th July.

3.3.3 Yellow pan trapping

The colour of a yellow pan trap is an attractant to many flower-visiting insects which are foraging in search of yellow flowers. By filling a yellow bowl with water, some of those visitors may become trapped in the water and unable to climb the sides of the bowl. A drop of washing-up liquid was added in the field to reduce the surface tension. For the current survey, small washing-up bowls of a bright sunflower yellow were used (Figure 25).

Yellow pan traps were deployed on several visits in an opportunistic fashion, dependent on suitably sunny weather conditions. Traps were mostly set early in the day and collected at the end of the day's fieldwork, though there were some opportunities to leave traps for a few days. Over the course of the survey work, yellow pans were operated on the cap of Ashfields A2/A3 (two pans), and in the PFA triangle at the N tip of A3 (3 pans) from 19th to 20th May; around Pond P1 in Goshem's Farm (five pans) from 14th to 16th June; in Ashfield B (five pans) on 21st June; on the Foreshore (four pans) on 30th June; and in the Goshem's Farm compartment (four pans) and in Ashfield B (one pan) on 9th August.



Figure 25: Yellow pan-trap *in situ* on Ashfield A2/A3.

3.3.4 Aquatic bottle trapping

These traps are designed for live trapping newts but also catch a range of aquatic invertebrates and are a particularly effective method for live-trapping larger water beetles. The traps are constructed from a 2 litre pop bottle, with the upper quarter of the bottle cut

off and inverted into the base. Animals are funnelled into the bottle trap but then find it much more difficult to exit by the same route.

Five bottle traps were set in each of Ditches D2 and D3 overnight from 18th to 19th May and checked and removed at the start of fieldwork the following morning.

3.3.5 Sorting trap samples

Within a few days of collection, trap samples were sorted. This process entails separating out those invertebrates belonging to the target groups, and dividing them into separate containers to be processed by different identifiers. In the case of the pitfall trap samples, a large part of this work is separating invertebrates from soil and other debris. The sorted samples were labelled and preserved in 70% ethanol or 5% acetic acid as appropriate.

3.4 ACTIVE SAMPLING METHODS

A range of active sampling methods was deployed, as detailed below.

3.4.1 Suction-sampling

An Einhell GE-CL 36 Li E battery-operated cordless leaf blower/vacuum, with a stated suction capacity of 700 m³/h, was used to collect suction samples. A net-bag of very fine mesh was placed in the suction pipe. With the motor running at full speed, the end of the suction pipe was lowered onto the sward until hard against the ground and held for a few seconds, this process was repeated 20 times in total taking one or two steps between dabs. The net bag was then emptied into a pair of nested sieves, dividing the sample into three fractions, each of which was then sorted over a tray until all target organisms had been either identified and noted down, or captured for later identification.

3.4.2 Beating

Beating was used to sample invertebrates on trees, shrubs and large perennials, by placing a Watkins and Doncaster beating tray beneath the branches and striking them sharply, twice, with a stout stick. Invertebrates dislodged onto the beating tray were then either identified in the field and noted down, or captured for later identification.

3.4.3 Sweep-netting

Sweep-netting was carried out using the robust, calico sweep-net supplied by Watkins and Doncaster, as favoured by coleopterists and hemipterists. The net was swept vigorously to and fro through the vegetation, pausing as necessary to identify and note down invertebrates, or to collect them for later identification.

3.4.4 Spot-netting

A standard four-fold, 40 cm diameter white-bag sweep-net was used for a period of unrestricted searching. During spot-netting, the observer walked over the site, targeting flowers, patches of bare ground and other basking sites, nesting areas and interesting features of topography or vegetation. Invertebrates were either identified in the field and noted down, or collected for later identification.

3.4.5 Aerial netting

A standard four-fold, 40 cm diameter white-bag sweep-net was used. The net was swept regularly to and fro above the vegetation canopy, or catching the tips of the vegetation,

pausing as necessary to identify and note down invertebrates, or to collect them for later identification.

3.4.6 Pond netting

Sampling for aquatic organisms was carried out using the standard Freshwater Biological Association design pond net (supplied by EFE & GB Nets) with 0.3 m bag of 1 mm mesh. The net was swept vigorously through the water column, through aquatic macrophytes, and up to and through marginal and overhanging vegetation. Emergent vegetation was trodden into the water before sweeping through the overlaying water. Net samples were sorted on the bank over a permeable waterproof sheet. Invertebrates were either identified in the field and noted down, or collected for later identification.

3.4.7 Ground searching

A rather wide range of manual techniques was used to sample invertebrates at ground level. The principal approach was to turn over stones, reptile felts, debris, etc., but also fingertip searching through vegetation, getting under rosettes and into tussocks. In swards with plant litter, sieving was used, examining the sievings on a light-coloured tray. On bare and sparsely-vegetated surfaces, ground-searching could be carried out by direct observation, aided by some scraping, treading or splashing. Invertebrates were either identified in the field and noted down, or collected for later identification.

3.4.8 Direct observation

Throughout the time in the field, direct observation was used to generate records from otherwise redundant time while walking between sampling points, etc.

3.5 PERSONNEL

All fieldwork was carried out by the author.

Expert identification assistance was received from Peter R. Hall, a leading expert on moths (Lepidoptera), and from Peter R. Harvey, an expert on the spiders (Araneae) and aculeate bees and wasps (Hymenoptera: Aculeata) of Essex. The remainder of the identification work was carried out by the author.

3.6 IDENTIFICATION

During manual sampling, invertebrates were identified in the field where practical, but wherever the slightest doubt existed, one or more specimens were collected, or photographs taken, for more detailed scrutiny.

To achieve rigorously accurate identifications, specimens were identified using the identifiers' own libraries and entomological collections. Selected specimens have been retained in the identifiers' personal collections as vouchers.

3.7 ANALYSIS

3.7.1 Key Species

To assess the importance of a site for invertebrate conservation, the number and percentage of rare or scarce species found may be calculated. Sites of greater importance support higher percentages of rare or scarce species, and this percentage is a useful starting point for assessing the overall importance of a site, in comparison to other sites surveyed using similar techniques.

A standard definition of 'rare or scarce' is essential to allow a fair comparison to be made between sites. For the analyses in this report, species were only included which have been assigned an official rare or scarce conservation status as defined in the box below, and all such species are here called 'Key Species'.

Conservation status categories of invertebrates

A system of conservation statuses has been in use since the British Red Data Book for insects (Shirt, 1987), amended and supplemented by a series of JNCC Nature Conservation reviews. By this system, the rarest and most threatened British species are given one of the Red Data Book (RDB) statuses. Species which do not qualify as RDB but are nonetheless uncommon are given one of the Nationally Scarce statuses. The status categories and criteria of this first version are defined in Appendix 1.1.

A second version of British conservation statuses published in the Species Status series from Natural England and Natural Resources Wales is now gradually replacing the first version. For butterflies, dragonflies, water beetles and several other groups, the most up-to-date British conservation statuses are based on the International Union for Conservation of Nature (IUCN) Red List categories and criteria (IUCN, 2001). This system places less emphasis on rarity and more on factors which suggest a risk of extinction (such as severe declines in range or population). The status categories and criteria of this second version are defined in Appendix 1.2.

A third version of British conservation statuses operates in parallel with the second and is a very simplified version of the first, having just two categories: Nationally Rare or Nationally Scarce. This version is defined in Appendix 1.3.

Key Species are here defined as Red Data Book and Nationally Scarce species from version 1, Threatened, Near Threatened and Data Deficient species from version 2, and Nationally Rare or Nationally Scarce species from version 3.

Rare Key Species are here defined as Red Data Book species from version 1, Threatened and Data Deficient species from version 2, and Nationally Rare species from version 3.

3.7.2 Pantheon

Pantheon is an analytical tool developed by Natural England and the Centre for Ecology & Hydrology to assist invertebrate nature conservation in England. Users import lists of invertebrates into Pantheon, which can then be used to analyse the species, attaching associated habitats and resources, conservation statuses and other data against them. Pantheon has been available online since April 2018 at: <http://www.brc.ac.uk/pantheon/>.

Some of the most informative outputs of Pantheon are the calculations of Species Quality Index (SQI). To calculate the SQI for a list of species, all species are first allocated one of five Species Quality Scores (1, 4, 8, 16 or 32), with the common and widespread species scoring 1 and the most endangered species scoring 32 (<https://pantheon.brc.ac.uk/content/scoring-systems>). SQI is then calculated by summing the Species Quality Scores, dividing the total by the number of species, and multiplying by 100. For example, if a survey recorded 46 species, and the sum of their 46 Species Quality Scores was 106, the average Species Quality Score would be 2.30 (= 106/46) and the SQI would be 230, derived by multiplying that average by 100.

SQI values based on small species lists may be strongly biased if the list contains species with high Species Quality Scores. For this reason, Pantheon advises against using any SQI value based on a list of fewer than 15 species. In this report, where 15 or more species of an assemblage have been recorded, the assemblage is said to be 'well represented', and the SQI value is presented.

4 Results

4.1 SPECIES TOTALS AND TAXONOMIC COVERAGE

1,222 species were recorded by this survey from the Tilbury Ashfields survey area. The full species list is included as Appendix 2.

The survey covered a wide range of invertebrate groups, and the resulting species list includes at least one member of each of the following groups: waterlice, woodlice, amphipods, shrimps, spiders, pseudoscorpions, harvestmen, mites, centipedes, millipedes, springtails, dragonflies, earwigs, bush-crickets, groundhoppers, grasshoppers, barkflies, psyllids, aphids, hoppers, bugs, beetles, sawflies, bees, wasps, ants, lacewings, scorpion-flies, flies, fleas, moths, butterflies, slugs and snails. A comprehensive approach was taken to the coverage of beetles (Coleoptera), bugs (Heteroptera), hoppers (Auchenorrhyncha) and several smaller groups.

4.2 SECTION 41 SPECIES OF PRINCIPAL IMPORTANCE

The survey recorded 14 Section 41 Species of Principal Importance (SPI) in total (Table 2).

All five of the SPI moths recorded by this survey are 'research only' SPI (according to the current version of Pantheon) and thus conservation action for these species is focused on research at the national level, rather than site protection and habitat management at the local level. However, one of these five, the Latticed Heath moth *Chiasmia clathrata* (Figure 26), has been assessed as Near Threatened by Fox *et al.* (2019) and may thus merit more than just research action.



Figure 26: Latticed Heath at Tilbury Ashfields.

Excluding the five 'research only' species, nine SPI were recorded by this survey, with between three and seven species recorded from each compartment (Table 2).

Table 2: The 14 Section 41 Species of Principal Importance recorded by this survey, and their recorded occurrence in the six compartments of the survey area (1 = present).

Order	Family	Species (scientific name)	Species (English name)	Conservation Status	Ashfield A1	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Hemiptera: Auchenorrhyncha	Delphacidae	<i>Ribautodelphax imitans</i>	Tall Fescue Planthopper	RDBK, S41						1
Coleoptera	Carabidae	<i>Anisodactylus poeciloides</i>	Saltmarsh Shortspur	LC, NS, S41				1	1	1
Hymenoptera: Aculeata	Crabronidae	<i>Cerceris quinquefasciata</i>	Five-banded Weevil Fox	RDB3, S41	1					
Hymenoptera: Aculeata	Colletidae	<i>Colletes halophilus</i>	Sea Aster Bee	Nationally Scarce (Na), S41			1			
Hymenoptera: Aculeata	Apidae	<i>Bombus humilis</i>	Brown-banded Carder-bee	S41	1	1	1	1	1	1
Hymenoptera: Aculeata	Apidae	<i>Bombus sylvarum</i>	Shrill Carder-bee	Nationally Scarce (Nb), S41			1	1	1	1
Diptera	Ulidiidae	<i>Dorycera graminum</i>	Phoenix Fly	pNT, S41	1					1
Lepidoptera	Nymphalidae	<i>Lasiommata megera</i>	Wall	EN, S41	1	1	1	1		1
Lepidoptera	Nymphalidae	<i>Coenonympha pamphilus</i>	Small Heath	VU, S41	1	1		1	1	1

Invertebrate survey of Tilbury Ashfields in 2022

Order	Family	Species (scientific name)	Species (English name)	Conservation Status	Ashfield A1	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Lepidoptera	Geometridae	<i>Timandra comae</i>	Blood-vein	LC, S41 (research only)					1	
Lepidoptera	Geometridae	<i>Scotopteryx chenopodiata</i>	Shaded Broad-bar	LC, S41 (research only)						1
Lepidoptera	Geometridae	<i>Chiasmia clathrata</i>	Latticed Heath	NT, S41 (research only)	1					1
Lepidoptera	Noctuidae	<i>Caradrina morpheus</i>	Mottled Rustic	LC, S41 (research only)	1					
Lepidoptera	Noctuidae	<i>Apamea remissa</i>	Dusky Brocade	LC, S41 (research only)	1					
Total number of Section 41 Species of Principal Importance					8	3	4	5	5	9
Total number of Section 41 Species of Principal Importance (excluding 'research only' species)					5	3	4	5	4	7

4.2.1 Species accounts

For each of the 13 SPI discussed in Section 2.6.1, a further brief account is provided here which details any records made during the current survey, and discusses the likely occurrence of each species within the survey area. The species accounts are presented in taxonomic order, as in Section 2.6.1.

***Ribautodelphax imitans* (Hemiptera: Auchenorrhyncha: Delphacidae) Tall Fescue Planthopper**

A single adult male was recorded on 6th May from The Rest, specifically from the verge of the entrance road (c. TQ66287594) (Figure 27). This individual was collected by suction sampling, targeting tussocks of Tall Fescue; the survey method recommended by Dittrich (2016) for Tall Fescue Planthopper.



Figure 27: Entrance road verge with Tall Fescue tussocks in the foreground.

Apparently suitable habitat for Tall Fescue Planthopper was rather widespread within the survey area, particularly in The Rest, Goshem's Farm, and N & NW of A3 (Figure 28), and to a lesser extent in Ashfield B. Targeted survey by suction sampling and/or sweeping Tall Fescue in other parts of the survey area did not yield any further specimens. However, this is clearly a rather elusive species and thus there is a significant likelihood that the species does occur more widely within the survey area.



Figure 28: Tall Fescue in the PFA triangle N of Ashfield A3.

Additional dedicated survey work for this planthopper may be merited to establish more precisely its population size and extent of occurrence.

***Anisodactylus poeciloides* (Coleoptera: Carabidae) Saltmarsh Shortspur beetle**

Saltmarsh Shortspur was already known from the Goshem's Farm compartment, from the margins of Pond P1 (Harvey, 2018) and was recorded there again by the current survey (Figure 29). 15 individuals were recorded, indicative of a substantial population.



Figure 29: Saltmarsh Shortspur at Pond P1.

In addition, Saltmarsh Shortspurs were recorded in numbers from N & NW of A3, where three were recorded from pitfall traps in the PFA triangle N of A3, and from The Rest, where five were recorded from the bare section of Ditch D10 on the border between Ashfields A2/A3 and Shed Marsh.

The three places where Saltmarsh Shortspur was recorded are all wetlands which combine brackish water with bare or sparsely-vegetated margins. Although there are numerous other areas of wetland with brackish influence, they are probably all too densely vegetated to support Saltmarsh Shortspur.

***Colletes halophilus* (Hymenoptera: Aculeata: Colletidae) Sea Aster Bee**

Sea Aster Bees were recorded visiting Sea Aster *Aster tripolium* flowers on the western section of Foreshore (TQ6675) in September 2022, an area contiguous with that from which they were recorded during the Tilbury 2 surveys (Telfer, 2017).

There is very little Sea Aster in the eastern section of Foreshore (TQ6775). The Rest supports stands of Sea Aster along some of the ditches, notably ditches D1 and D3, and it is likely that foraging Sea Aster Bees could be recorded here also.

The nesting sites of Sea Aster Bees at the Tilbury Ashfields have not been found but the species is known to construct nest burrows in bare mineral substrates including PFA. Thus, Ashfield A1 and other PFA substrates within the survey area may support nesting Sea Aster Bees.

***Bombus ruderarius* (Hymenoptera: Aculeata: Apidae) Red-shanked Carder-bee**

Red-shanked Carder-bee was not recorded during the current survey.

However, this species was recorded from Goshem's Farm in 2018 by survey for the proposed Lower Thames Crossing (Anon., 2022). This appears to be the first record for the Tilbury area since the record from Ashfield A3 in 2007 (Colin Plant Associates, 2008).

Red-shanked Carder-bee probably persists within the Tilbury Ashfields landscape, but in low numbers which meant that it escaped detection in the current survey.

***Bombus humilis* (Hymenoptera: Aculeata: Apidae) Brown-banded Carder-bee**

As with the Tilbury 2 surveys (Telfer, 2017), Brown-banded Carder-bee was one of the commonest bumblebees during the current survey, observed in all six compartments and on several dates.

The current survey area provides large areas of suitable foraging habitat for Brown-banded Carder-bee. They were noted foraging on Narrow-leaved Bird's-foot-trefoil *Lotus glaber* and Purple Toadflax *Linaria purpurea* during the survey.

***Bombus sylvarum* (Hymenoptera: Aculeata: Apidae) Shrill Carder-bee**

Shrill Carder-bee was widely recorded from the current survey area, though less widespread and less numerous than Brown-banded Carder-bee. Records came from the Foreshore, Goshem's Farm (on Hound's-tongue *Cynoglossum officinale*, Bittersweet *Solanum dulcamara* and Creeping Thistle *Cirsium arvense*), N & NW of A3, and The Rest (on Tufted Vetch *Vicia cracca*).

The current survey area provides large areas of suitable foraging habitat for Shrill Carder-bee, especially in Goshem's Farm and on the Foreshore.

***Odynerus melanocephalus* (Hymenoptera: Aculeata: Vespidae) Black-headed Mason-wasp**

This species was not recorded by the current survey and has apparently not been recorded in the Tilbury area since 2007.

Black-headed Mason-wasp may have become locally extinct, or may persist at such low density that it escaped detection in the current survey.

***Cerceris quadricincta* (Hymenoptera: Aculeata: Crabronidae) Four-banded Weevil-wasp**

This species was not recorded by the current survey.

The sole record for the Tilbury area, by Colin Plant Associates (2008), may require confirmation.

***Cerceris quinquefasciata* (Hymenoptera: Aculeata: Crabronidae) Five-banded Weevil-wasp**

This species was recorded on Ashfield A1, by sweeping a stand of Dittander *Lepidium latifolium* on the hottest day of the year (Figure 30).



Figure 30: Dittander patch on A1, yielding Five-banded Weevil-wasp.

Five-banded Weevil-wasp would appear to have declined at Ashfield A1, where Malaise sampling in both 2014 and 2016 yielded >50 individuals, followed by none in the Malaise samples from 2018 and 2022.

The most important parts of the current survey area for Five-banded Weevil-wasp are probably the areas of nesting habitat provided by bare PFA, especially within Ashfield A1. Suitable foraging habitat is more widespread across the survey area's grassland and ruderal swards.

***Dorycera graminum* (Diptera: Ulidiidae) Phoenix Fly**

All six compartments were considered to provide highly suitable habitat for Phoenix Fly. The current survey only recorded Phoenix Fly from Ashfield A1 (in the Malaise sample) and from two sampling areas within The Rest on 25th May (Figure 31).



Figure 31: Phoenix Fly at Tilbury Ashfields.

It is likely that Phoenix Fly would have been recorded more extensively if the four survey visits during its main flight season (19th May to 1st June) had not been adversely affected by wet and dull weather conditions.

***Asilus crabroniformis* (Diptera: Asilidae) Hornet Robberfly**

Hornet Robberfly was not targeted by this survey, having been considered unlikely to occur within the current survey area. None were recorded.

***Lasiommata megera* (Lepidoptera: Nymphalidae) Wall butterfly**

Wall butterflies were a frequent sight during the current survey (Figure 32), with records from all compartments except for N & NW of A3. At times, they were too numerous to record accurate counts and were simply recorded as 'common'.



Figure 32: Wall butterfly at Tilbury Ashfields

The current survey area provides large areas of suitable habitat for Wall butterflies.

***Coenonympha pamphilus* (Lepidoptera: Nymphalidae) Small Heath butterfly**

Small Heath butterflies were widespread across the survey area, and often present in numbers. The Foreshore was the only compartment from which none were recorded.

The current survey area provides large areas of suitable habitat for Small Heath butterflies.

4.3 SPECIES NEW TO BRITAIN

Two species of insect were recorded by this survey that had never previously been recorded in Britain: a rove beetle and a tortricid moth. Detailed accounts of both species are provided here.

The Thames Gateway area has provided entomologists with a number of discoveries of species new to Britain. The majority are clearly species which have been imported by human activities from abroad and have been able to establish. Recent examples of such non-native species include the snail *Monacha ocellata* from Tilbury 2 (Anderson *et al.*, 2018) and the pot-beetle *Cryptocephalus rufipes* from Mucking Landfill (Telfer, 2019a). However, both the species detailed below appear to be overlooked native or long-established species rather than newly-established non-natives. Both should be regarded as species with conservation importance.

***Tomoglossa heydemanni* Lohse, 1977 (Coleoptera: Staphylinidae) a rove-beetle**

This is a very small and slender rove beetle of the Aleocharinae subfamily. The size and structure of the body is indicative of an interstitial lifestyle, burrowing through fine, damp, mineral sediments (Figure 33).



Figure 33: *Tomoglossa heydemanni* from Tilbury Ashfields.

Three specimens were pitfall trapped from bare, wet PFA in the triangle north of A3 (N & NW of A3 compartment) between 19th May and 1st June. A further specimen was pitfall trapped from similar wet PFA sediments beside Pond P1 in Goshem's Farm, between 21st and 30th June. All four specimens were females. Targeted searching in both these sites, using various specialised manual search techniques (treading, splashing, scraping and flotation) failed to yield any further specimens.

There are three species of *Tomoglossa* in north-west Europe, of which one, *Tomoglossa brakmani*, is already known from Britain, having been added to the British list by Telfer *et al.* (2017). The paper by Pedersen & Vagtholm-Jensen (2005) includes an identification key to the three species and has been particularly useful in reaching a confident conclusion that the Tilbury specimens are *Tomoglossa heydemanni*. However, a second opinion on the identification will be sought before submitting a paper to formally add *Tomoglossa heydemanni* to the British list.

Tomoglossa heydemanni appears to be a rather rare species with a narrow range on the coasts of Germany (three localities), Denmark, and from an inland saline wetland near the Elbe in Lower Saxony, Germany, (Pedersen & Vagtholm-Jensen, 2005). There is reportedly also a specimen from Mallorca. Pedersen & Vagtholm-Jensen (2005) note that it occurs especially in places which support three other rove-beetles: *Carpelimus schneideri*, *Carpelimus halophilus* and *Bledius praetermissus*, all species which burrow in fine, damp, sandy or silty substrates.

Tomoglossa heydemanni appears to be a difficult species to find, a difficult species to identify, and a species with requirements for a rather specialised, uncommon and ephemeral habitat. Like *Tomoglossa brakmani*, it has probably been overlooked in Britain until this discovery and should be regarded as a native species. Once British coleopterists are alerted to its presence, it may lead to further studies and an elucidation of its British distribution and ecology.

For the purposes of the current survey, *Tomoglossa heydemanni* has been regarded as a species of conservation importance, equivalent to a Rare Key Species, for which the survey area is the only known British locality.

***Cochylimorpha woliniana* (Schleich, 1868) (Lepidoptera: Tortricidae) Wormwood Conch**

‘Wormwood Conch’ will be proposed for adoption as the standard English name for this species when it is formally added to the British list (Telfer and Hall, in prep.).

On 4th May 2022, a sample of Wormwood *Artemisia absinthium* stems was collected and sealed in a large plastic bag in order to observe any adult insects emerging from the sample. The selected stems were all of dead flowering stems which would have borne flowers and seeds in the 2021 flowering season (Figure 34). They were collected from a stand of Wormwood in the south-west corner of the Goshem’s Farm compartment (TQ66827589).



Figure 34: Dead flowering stems of Wormwood, above a cluster of glaucous basal leaves.

On 20th June, the rearing bag was found to contain one live adult moth and three which had already died (three males and a female). No further specimens emerged after that date. The author was unable to match the specimens to any known British species and sought expert help from Peter Hall, who was able to identify them as *Cochylimorpha woliniana* (Schleich, 1868) (Figure 35). This is the first record of this species from Britain.

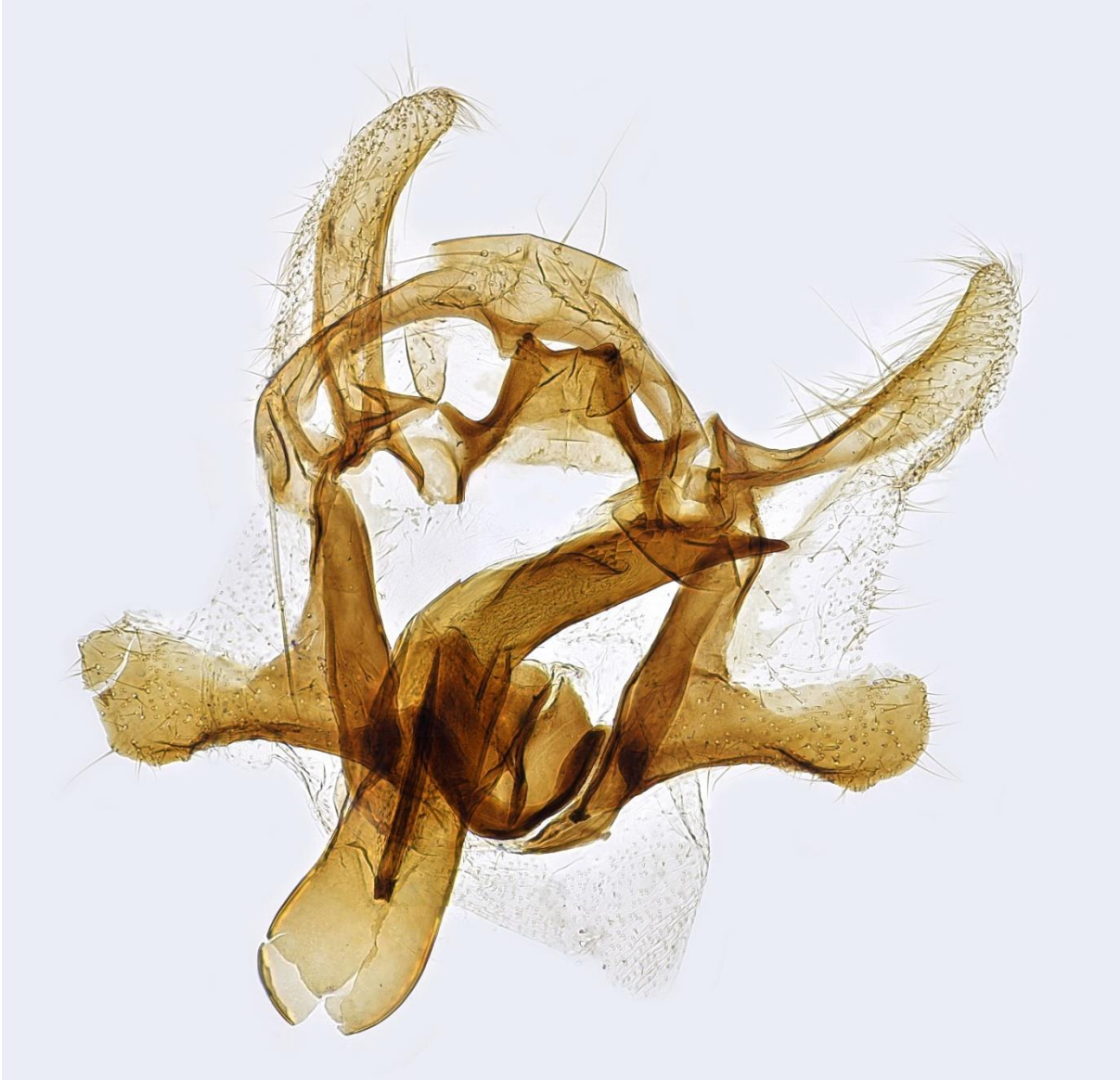


Figure 35: Male genitalia of *Cochylimorpha woliniana* prepared by Peter Hall.

Elsewhere in the world, *Cochylimorpha woliniana* has an extensive world range in the temperate zone of the Palaearctic region, extending westwards to France, Germany and Denmark, northwards to Sweden, southwards to Italy and Bulgaria, and eastwards to Mongolia. It is exclusively known from Wormwood, with larvae feeding internally within the stems. Tilbury specimens had pupated within the stem, and their pupal exuvia remained lodged in the exit hole from the stem.

Wormwood is an archaeophyte in Britain where it has become widely naturalised in the southern half of the island. It is considered likely that *Cochylimorpha woliniana* is also a long-established species in Britain, overlooked until this discovery. It is predicted to be a rare species, but one that will be recorded more frequently once lepidopterists are alerted to its discovery and attempt to collect Wormwood stems and rear further examples.

For the purposes of the current survey, *Cochylimorpha woliniana* has been regarded as a species of conservation importance, equivalent to a Rare Key Species, for which the survey area is the only known British locality.

4.4 KEY SPECIES RESULTS

Amongst the 1,222 species recorded by the survey, 195 species are here regarded as Key Species (using the criteria defined in Section 3.7.1, and including the two New to Britain species discussed in Section 4.3 above). These 195 species comprise 16.0% of the total species list of 1,222, and are listed in Table 3.

Within the 195 Key Species, there were 39 Rare Key Species. These 39 species comprise 3.2% of the total species list of 1,222 (Table 4).

Table 3: The ‘Key Species’ of invertebrate recorded by this survey. Rare Key Species are listed ahead of Scarce Key Species, and then the species are listed in taxonomic order within each category. The presence of each species in the six compartments is indicated (1 = present).

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	of A3 N & NW	The Rest
Arachnida	Araneae	Dysderidae	<i>Harpactea rubicunda</i>	a spider	VU, NR	1					
Arachnida	Araneae	Lycosidae	<i>Trochosa robusta</i>	a spider	VU, NR						1
Arachnida	Araneae	Clubionidae	<i>Clubiona juvenis</i>	a spider	NT, NR		1				
Chilopoda	Lithobiomorpha	Lithobiidae	<i>Lithobius lapidicola</i>	a centipede	NT, NR	1					
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	<i>Ribautodelphax imitans</i>	Tall Fescue Planthopper	RDBK, S41						1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Lygus pratensis</i>	a mirid bug	RDB3		1	1	1	1	1
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Nysius graminicola</i>	a ground-bug	RDB3	1			1		1
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Ortholomus punctipennis</i>	a ground-bug	RDB3						1
Insecta	Coleoptera	Carabidae	<i>Amara strenua</i>	a ground beetle	NT, NR						1
Insecta	Coleoptera	Carabidae	<i>Scybalicus oblongiusculus</i>	a ground beetle	VU, NR						1
Insecta	Coleoptera	Carabidae	<i>Acupalpus maculatus</i>	a ground beetle	NT, NR				1	1	1
Insecta	Coleoptera	Ptiliidae	<i>Acrotrichis pumila</i>	a featherwing beetle	RDBK				1		
Insecta	Coleoptera	Staphylinidae	<i>Tomoglossa heydemanni</i>	a rove-beetle	New to Britain				1	1	

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Insecta	Coleoptera	Staphylinidae	<i>Aleochara lygaea</i>	a rove-beetle	RDBi	1					
Insecta	Coleoptera	Staphylinidae	<i>Ochtheophilum collare</i>	a rove-beetle	DD				1		
Insecta	Coleoptera	Throscidae	<i>Trixagus gracilis</i>	a beetle	RDB3	1					1
Insecta	Coleoptera	Melyridae	<i>Dasytes virens</i>	a beetle	NT, NR						1
Insecta	Coleoptera	Melyridae	<i>Clanoptilus strangulatus</i>	a malachite beetle	LC, NR			1			
Insecta	Coleoptera	Melyridae	<i>Cerapheles terminatus</i>	a malachite beetle	LC, NR		1		1		
Insecta	Coleoptera	Cryptophagidae	<i>Cryptophagus schmidtii</i>	a beetle	RDBK	1					
Insecta	Coleoptera	Cryptophagidae	<i>Atomaria scutellaris</i>	a beetle	RDBK						1
Insecta	Coleoptera	Coccinellidae	<i>Nephus quadrimaculatus</i>	a ladybird	RDB2						1
Insecta	Coleoptera	Corylophidae	<i>Orthoperus brunnipes</i>	a beetle	RDB3						1
Insecta	Coleoptera	Chrysomelidae	<i>Longitarsus quadriguttatus</i>	a flea-beetle	LC, NR				1		
Insecta	Coleoptera	Curculionidae	<i>Coelositona cinerascens</i>	a weevil	RDBK		1				
Insecta	Coleoptera	Curculionidae	<i>Lixus scabricollis</i>	a weevil	RDBK	1		1			1
Insecta	Coleoptera	Curculionidae	<i>Cosmobaris scolopacea</i>	a weevil	RDB3			1		1	

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Insecta	Hymenoptera: Aculeata	Formicidae	<i>Myrmica specioides</i>	an ant	RDB3	1				1	1
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Cerceris quinquefasciata</i>	Five-banded Weevil Fox	RDB3, S41	1					
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Diodontus insidiosus</i>	a digger-wasp	RDB3	1					
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Philanthus triangulum</i>	Bee Wolf	RDB2	1		1			
Insecta	Hymenoptera: Aculeata	Halictidae	<i>Lasioglossum pauperatum</i>	Squat Furrow-bee	RDB3	1		1			1
Insecta	Hymenoptera: Aculeata	Andrenidae	<i>Andrena niveata</i>	Long-fringed Mini-miner Bee	RDB2	1					
Insecta	Hymenoptera: Aculeata	Apidae	<i>Nomada fulvicornis sens. str.</i>	Orange-horned Nomad Bee	RDB3	1					1
Insecta	Hymenoptera: Aculeata	Apidae	<i>Ceratina cyanea</i>	Blue Carpenter-bee	RDB3			1			
Insecta	Diptera	Syrphidae	<i>Paragus albifrons</i>	a hoverfly	CR	1					
Insecta	Lepidoptera	Tortricidae	<i>Cochylimorpha woliniana</i>	Wormwood Conch	New to Britain				1		
Insecta	Lepidoptera	Nymphalidae	<i>Lasiommata megera</i>	Wall	EN, S41	1	1	1	1		1
Insecta	Lepidoptera	Nymphalidae	<i>Coenonympha pamphilus</i>	Small Heath	VU, S41	1	1		1	1	1
Arachnida	Araneae	Mimetidae	<i>Ero aphana</i>	a spider	LC, NS						1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Arachnida	Araneae	Theridiidae	<i>Kochiura aulica</i>	a spider	LC, NS						1
Arachnida	Araneae	Linyphiidae	<i>Hypomma fulvum</i>	a spider	LC, NS		1		1		
Arachnida	Araneae	Linyphiidae	<i>Panamomops sulcifrons</i>	a spider	LC, NS	1					
Arachnida	Araneae	Linyphiidae	<i>Agyneta simplicitarsis</i>	a spider	LC, NS	1					
Arachnida	Araneae	Araneidae	<i>Larinioides patagiatus</i>	a spider	LC, NS	1					
Arachnida	Araneae	Lycosidae	<i>Pardosa agrestis</i>	a spider	LC, NS	1				1	1
Arachnida	Araneae	Dictynidae	<i>Nigma puella</i>	a spider	LC, NS						1
Arachnida	Araneae	Dictynidae	<i>Argenna subnigra</i>	a spider	LC, NS	1					
Arachnida	Araneae	Clubionidae	<i>Cheiracanthium virescens</i>	a spider	LC, NS	1					
Arachnida	Araneae	Zodariidae	<i>Zodarion italicum</i>	a spider	LC, NS	1				1	
Arachnida	Araneae	Gnaphosidae	<i>Drassodes pubescens</i>	a spider	LC, NS	1					
Arachnida	Araneae	Philodromidae	<i>Thanatus striatus</i>	a spider	LC, NS	1					
Arachnida	Araneae	Salticidae	<i>Sibianor aurocinctus</i>	a jumping spider	LC, NS	1				1	
Arachnida	Araneae	Salticidae	<i>Ballus chalybeius</i>	a jumping spider	LC, NS	1					
Arachnida	Araneae	Salticidae	<i>Synageles venator</i>	a jumping spider	LC, NS	1					1
Insecta	Odonata	Lestidae	<i>Lestes dryas</i>	Scarce Emerald Damselfly	NT				1		

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Insecta	Dermaptera	Forficulidae	<i>Forficula lesnei</i>	Lesne's Earwig	LC, NS	1			1		1
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Anoscopus limicola</i>	a leafhopper	Nationally Scarce (Nb)	1					
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Ophiola decumana</i>	a leafhopper	Nationally Scarce (Nb)	1					1
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Macrosteles quadripunctulatus</i>	a leafhopper	Nationally Scarce (Na)		1				1
Insecta	Hemiptera: Auchenorrhyncha	Cixiidae	<i>Pentastiridius leporinus</i>	a lacehopper	Nationally Scarce (Nb)	1		1			1
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	<i>Asiraca clavicornis</i>	a planthopper	Nationally Scarce (Nb)	1		1	1		1
Insecta	Hemiptera: Heteroptera	Corixidae	<i>Sigara selecta</i>	an aquatic bug	LC, NS		1				1
Insecta	Hemiptera: Heteroptera	Veliidae	<i>Microvelia pygmaea</i>	a minute water- cricket	LC, NS		1			1	1
Insecta	Hemiptera: Heteroptera	Saldidae	<i>Saldula opacula</i>	a shore-bug	LC, NS		1				1
Insecta	Hemiptera: Heteroptera	Saldidae	<i>Saldula pallipes</i>	a shore-bug	LC, NS				1	1	1
Insecta	Hemiptera: Heteroptera	Saldidae	<i>Saldula palustris</i>	a shore-bug	LC, NS				1		1
Insecta	Hemiptera: Heteroptera	Saldidae	<i>Saldula pilosella</i>	a shore-bug	LC, NS						1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Agnocoris reclairi</i>	a mirid bug	Nationally Scarce (Nb)						1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Insecta	Hemiptera: Heteroptera	Nabidae	<i>Nabis pseudoferus</i>	a damsel-bug	Nationally Scarce (Nb)	1					
Insecta	Hemiptera: Heteroptera	Berytidae	<i>Berytinus hirticornis</i>	a stiltbug	Nationally Scarce (Nb)	1					1
Insecta	Hemiptera: Heteroptera	Coreidae	<i>Bathysolen nubilus</i>	Cryptic Leatherbug	LC, NS	1					
Insecta	Hemiptera: Heteroptera	Rhopalidae	<i>Liorhyssus hyalinus</i>	a rhopalid bug	LC, NS						1
Insecta	Hemiptera: Heteroptera	Pentatomidae	<i>Sciocoris cursitans</i>	Sand-runner Shieldbug	LC, NS	1					
Insecta	Coleoptera	Haliplidae	<i>Haliplus apicalis</i>	a crawling water beetle	Nationally Scarce		1				
Insecta	Coleoptera	Haliplidae	<i>Peltodytes caesus</i>	a crawling water beetle	Nationally Scarce						1
Insecta	Coleoptera	Dytiscidae	<i>Hygrotus parallelogrammus</i>	a diving beetle	Nationally Scarce						1
Insecta	Coleoptera	Dytiscidae	<i>Graptodytes bilineatus</i>	a diving beetle	Nationally Scarce				1		
Insecta	Coleoptera	Dytiscidae	<i>Rhantus frontalis</i>	a diving beetle	Nationally Scarce		1				
Insecta	Coleoptera	Carabidae	<i>Notiophilus quadripunctatus</i>	a ground beetle	LC, NS					1	1
Insecta	Coleoptera	Carabidae	<i>Dyschirius chalceus</i>	a ground beetle	LC, NS					1	
Insecta	Coleoptera	Carabidae	<i>Dyschirius salinus</i>	a ground beetle	LC, NS				1		
Insecta	Coleoptera	Carabidae	<i>Bembidion iricolor</i>	a ground beetle	LC, NS				1		

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Insecta	Coleoptera	Carabidae	<i>Bembidion fumigatum</i>	a ground beetle	LC, NS		1		1	1	1
Insecta	Coleoptera	Carabidae	<i>Bembidion normannum</i>	a ground beetle	LC, NS			1			1
Insecta	Coleoptera	Carabidae	<i>Tachyura parvula</i>	a ground beetle	LC, NS						1
Insecta	Coleoptera	Carabidae	<i>Pedius longicollis</i>	a ground beetle	LC, NS					1	1
Insecta	Coleoptera	Carabidae	<i>Pterostichus gracilis</i>	a ground beetle	LC, NS				1		
Insecta	Coleoptera	Carabidae	<i>Calathus ambiguus</i>	a ground beetle	LC, NS	1					
Insecta	Coleoptera	Carabidae	<i>Amara montivaga</i>	a ground beetle	LC, NS	1					
Insecta	Coleoptera	Carabidae	<i>Harpalus attenuatus</i>	a ground beetle	LC, NS	1					
Insecta	Coleoptera	Carabidae	<i>Ophonus azureus</i>	a ground beetle	LC, NS	1					
Insecta	Coleoptera	Carabidae	<i>Anisodactylus poeciloides</i>	Saltmarsh Shortspur	LC, NS, S41				1	1	1
Insecta	Coleoptera	Carabidae	<i>Stenolophus teutonius</i>	a ground beetle	LC, NS				1	1	1
Insecta	Coleoptera	Carabidae	<i>Acupalpus exiguus</i>	a ground beetle	LC, NS					1	
Insecta	Coleoptera	Carabidae	<i>Panagaeus bipustulatus</i>	a ground beetle	LC, NS	1					
Insecta	Coleoptera	Carabidae	<i>Odacantha melanura</i>	a ground beetle	LC, NS				1		
Insecta	Coleoptera	Carabidae	<i>Syntomus truncatellus</i>	a ground beetle	LC, NS	1					1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Insecta	Coleoptera	Carabidae	<i>Polistichus connexus</i>	a ground beetle	NT, NS			1			1
Insecta	Coleoptera	Carabidae	<i>Brachinus crepitans</i>	Bombardier Beetle	LC, NS	1		1	1	1	1
Insecta	Coleoptera	Helophoridae	<i>Helophorus alternans</i>	an aquatic beetle	Nationally Scarce		1		1		1
Insecta	Coleoptera	Hydrochidae	<i>Hydrochus ignicollis</i>	an aquatic beetle	NT						1
Insecta	Coleoptera	Hydrophilidae	<i>Limnoxenus niger</i>	an aquatic beetle	NT						1
Insecta	Coleoptera	Hydrophilidae	<i>Enochrus bicolor</i>	an aquatic beetle	Nationally Scarce		1		1		1
Insecta	Coleoptera	Hydrophilidae	<i>Enochrus halophilus</i>	an aquatic beetle	Nationally Scarce				1		1
Insecta	Coleoptera	Hydrophilidae	<i>Cercyon bifenestratus</i>	an aquatic beetle	Nationally Scarce						1
Insecta	Coleoptera	Histeridae	<i>Saprinus aeneus</i>	a beetle	LC, NS	1					
Insecta	Coleoptera	Hydraenidae	<i>Aulacochthebius exaratus</i>	an aquatic beetle	NT				1		1
Insecta	Coleoptera	Hydraenidae	<i>Ochthebius viridis</i>	an aquatic beetle	Nationally Scarce		1		1		1
Insecta	Coleoptera	Silphidae	<i>Nicrophorus vestigator</i>	a sexton beetle	Nationally Scarce (Na)	1					
Insecta	Coleoptera	Staphylinidae	<i>Oxyptoda lurida</i>	a rove-beetle	Nationally Scarce	1					1
Insecta	Coleoptera	Staphylinidae	<i>Dacryla fallax</i>	a rove-beetle	Nationally Scarce				1	1	

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Insecta	Coleoptera	Staphylinidae	<i>Pycnota paradoxa</i>	a rove-beetle	Nationally Scarce	1					
Insecta	Coleoptera	Staphylinidae	<i>Liogluta pagana</i>	a rove-beetle	Nationally Scarce	1					
Insecta	Coleoptera	Staphylinidae	<i>Planeustomus palpalis</i>	a rove-beetle	LC, NS				1		
Insecta	Coleoptera	Staphylinidae	<i>Carpelimus foveolatus</i>	a rove-beetle	LC, NS				1		1
Insecta	Coleoptera	Staphylinidae	<i>Carpelimus halophilus</i>	a rove-beetle	LC, NS					1	
Insecta	Coleoptera	Staphylinidae	<i>Stenus pusillus</i>	a rove-beetle	Nationally Scarce (Nb)				1		
Insecta	Coleoptera	Staphylinidae	<i>Astenus immaculatus</i>	a rove-beetle	LC, NS				1	1	
Insecta	Coleoptera	Staphylinidae	<i>Scopaeus laevigatus</i>	a rove-beetle	LC, NS						1
Insecta	Coleoptera	Staphylinidae	<i>Quedius simplicifrons</i>	a rove-beetle	LC, NS		1	1	1	1	
Insecta	Coleoptera	Scarabaeidae	<i>Liothorax plagiatus</i>	a dung beetle	LC, NS				1		
Insecta	Coleoptera	Byrrhidae	<i>Curimopsis maritima</i>	a pill-beetle	LC, NS	1					
Insecta	Coleoptera	Elateridae	<i>Athous campyloides</i>	a click-beetle	Nationally Scarce (Nb)	1					
Insecta	Coleoptera	Nitidulidae	<i>Meligethes fulvipes</i>	a pollen beetle	Nationally Scarce					1	

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Insecta	Coleoptera	Nitidulidae	<i>Meligethes rotundicollis</i>	a pollen beetle	Nationally Scarce		1			1	1
Insecta	Coleoptera	Cryptophagidae	<i>Atomaria atra</i>	a beetle	Nationally Scarce				1		1
Insecta	Coleoptera	Bothrideridae	<i>Anommatus duodecimstriatus</i>	a beetle	Nationally Scarce (Na)						1
Insecta	Coleoptera	Coccinellidae	<i>Platynaspis luteorubra</i>	a ladybird	Nationally Scarce (Na)	1					
Insecta	Coleoptera	Coccinellidae	<i>Hippodamia variegata</i>	Adonis' Ladybird	Nationally Scarce (Nb)	1	1	1		1	1
Insecta	Coleoptera	Anthicidae	<i>Cyclodinus constrictus</i>	an ant-like flower beetle	LC, NS				1		
Insecta	Coleoptera	Anthicidae	<i>Cordicollis instabilis</i>	an ant-like flower beetle	LC, NS	1					1
Insecta	Coleoptera	Chrysomelidae	<i>Cassida nobilis</i>	a tortoise beetle	LC, NS					1	
Insecta	Coleoptera	Chrysomelidae	<i>Phyllotreta consobrina</i>	a flea-beetle	LC, NS		1		1	1	
Insecta	Coleoptera	Chrysomelidae	<i>Phyllotreta cruciferae</i>	a flea-beetle	LC, NS		1	1		1	
Insecta	Coleoptera	Chrysomelidae	<i>Phyllotreta punctulata</i>	a flea-beetle	LC, NS						1
Insecta	Coleoptera	Chrysomelidae	<i>Aphthona nigriceps (incl. pallida)</i>	a flea-beetle	LC, NS/ DD	1					
Insecta	Coleoptera	Chrysomelidae	<i>Longitarsus ballotae</i>	a flea-beetle	LC, NS	1					1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Insecta	Coleoptera	Chrysomelidae	<i>Longitarsus strigicollis</i>	a flea-beetle	LC, NS	1					
Insecta	Coleoptera	Chrysomelidae	<i>Longitarsus ganglbaueri</i>	a flea-beetle	LC, NS						1
Insecta	Coleoptera	Chrysomelidae	<i>Longitarsus ochroleucus</i>	a flea-beetle	LC, NS						1
Insecta	Coleoptera	Chrysomelidae	<i>Podagrica fuscipes</i>	a flea-beetle	LC, NS	1		1			1
Insecta	Coleoptera	Apionidae	<i>Kalcapion semivittatum</i>	a weevil	Nationally Scarce (Na)						1
Insecta	Coleoptera	Apionidae	<i>Protapion filirostre</i>	a weevil	Nationally Scarce (Nb)	1					
Insecta	Coleoptera	Curculionidae	<i>Otiorhynchus raucus</i>	a weevil	Nationally Scarce (Nb)	1					1
Insecta	Coleoptera	Curculionidae	<i>Phyllobius vespertinus</i>	a weevil	Nationally Scarce (Nb)	1					1
Insecta	Coleoptera	Curculionidae	<i>Sitona waterhousei</i>	a weevil	Nationally Scarce (Nb)	1					
Insecta	Coleoptera	Curculionidae	<i>Larinus carlinae</i>	a weevil	Nationally Scarce (Nb)				1	1	
Insecta	Coleoptera	Curculionidae	<i>Rhinocyllus conicus</i>	a weevil	Nationally Scarce (Na)						1
Insecta	Coleoptera	Curculionidae	<i>Hypera melancholica</i>	a weevil	Nationally Scarce (Nb)	1				1	1
Insecta	Coleoptera	Curculionidae	<i>Pselactus spadix</i>	a weevil	Nationally Scarce (Nb)			1			

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Insecta	Coleoptera	Curculionidae	<i>Pseudostyphlus pillumus</i>	a weevil	Nationally Scarce (Na)	1					
Insecta	Coleoptera	Curculionidae	<i>Orthochaetes setiger</i>	a weevil	Nationally Scarce (Nb)	1					
Insecta	Coleoptera	Curculionidae	<i>Zacladus exiguus</i>	a crane's-bill weevil	Nationally Scarce (Nb)	1			1		1
Insecta	Coleoptera	Curculionidae	<i>Calosirus terminatus</i>	a weevil	Nationally Scarce (Nb)	1					
Insecta	Coleoptera	Curculionidae	<i>Trichosirocalus horridus</i>	a weevil	Nationally Scarce (Na)						1
Insecta	Coleoptera	Curculionidae	<i>Tychius pusillus</i>	a weevil	Nationally Scarce (Nb)						1
Insecta	Coleoptera	Curculionidae	<i>Tychius squamulatus</i>	a weevil	Nationally Scarce (Nb)						1
Insecta	Coleoptera	Curculionidae	<i>Mecinus janthinus</i>	a weevil	Nationally Scarce (Na)	1					
Insecta	Coleoptera	Curculionidae	<i>Gymnetron villosulum</i>	a weevil	Nationally Scarce (Nb)					1	
Insecta	Hymenoptera: Aculeata	Formicidae	<i>Lasius brunneus</i>	Brown Tree Ant	Nationally Scarce (Na)	1					
Insecta	Hymenoptera: Aculeata	Formicidae	<i>Myrmica schencki</i>	an ant	Nationally Scarce (Nb)	1					
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Mimumesa unicolor</i>	a digger-wasp	Nationally Scarce (Na)						1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Insecta	Hymenoptera: Aculeata	Halictidae	<i>Lasioglossum pauillum</i>	Lobe-spurred Furrow-bee	Nationally Scarce (Na)			1			1
Insecta	Hymenoptera: Aculeata	Halictidae	<i>Sphecodes crassus</i>	Swollen-thighed Blood Bee	Nationally Scarce (Nb)	1					
Insecta	Hymenoptera: Aculeata	Halictidae	<i>Sphecodes rubicundus</i>	Red-tailed Blood Bee	Nationally Scarce (Na)	1					1
Insecta	Hymenoptera: Aculeata	Colletidae	<i>Colletes halophilus</i>	Sea Aster Bee	Nationally Scarce (Na), S41			1			
Insecta	Hymenoptera: Aculeata	Melittidae	<i>Dasypoda hirtipes</i>	Pantaloon Bee	Nationally Scarce (Nb)	1	1	1	1	1	1
Insecta	Hymenoptera: Aculeata	Megachilidae	<i>Megachile leachella</i>	Silvery Leaf- cutter Bee	Nationally Scarce (Nb)	1					
Insecta	Hymenoptera: Aculeata	Andrenidae	<i>Andrena bimaculata</i>	Large Gorse Mining-bee	Nationally Scarce (Nb)	1				1	
Insecta	Hymenoptera: Aculeata	Andrenidae	<i>Andrena pilipes sens. str.</i>	Black Mining- bee	Nationally Scarce (Nb)	1		1	1		
Insecta	Hymenoptera: Aculeata	Apidae	<i>Nomada fucata</i>	Painted Nomad Bee	Nationally Scarce (Na)				1		
Insecta	Hymenoptera: Aculeata	Apidae	<i>Bombus sylvarum</i>	Shrill Carder- bee	Nationally Scarce (Nb), S41			1	1	1	1
Insecta	Diptera	Tabanidae	<i>Haematopota grandis</i>	Long-horned Cleg	LC, NS						1
Insecta	Diptera	Stratiomyidae	<i>Stratiomys longicornis</i>	Long-horned General	LC, NS					1	
Insecta	Diptera	Hybotidae	<i>Stilpon lunatus</i>	a hybotid fly	Nationally Scarce		1		1		1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Insecta	Diptera	Ulidiidae	<i>Dorycera graminum</i>	Phoenix Fly	pNT, S41	1					1
Insecta	Diptera	Ulidiidae	<i>Meliera picta</i>	a picture-winged fly	pNationally Scarce (Falk, Ismay & Chandler, 2016)			1		1	1
Insecta	Diptera	Opomyzidae	<i>Geomyza apicalis</i>	an opomyzid fly	pNationally Scarce (Falk, Ismay & Chandler, 2016)	1					1
Insecta	Diptera	Opomyzidae	<i>Geomyza subnigra</i>	an opomyzid fly	pNationally Scarce (Falk, Ismay & Chandler, 2016)					1	
Insecta	Diptera	Tachinidae	<i>Gymnosoma nitens</i>	a parasitic fly	pNS				1		
Insecta	Lepidoptera	Psychidae	<i>Epichnopterix plumella</i>	Round-winged Sweep	Nationally Scarce A	1			1		
Insecta	Lepidoptera	Bucculatricidae	<i>Bucculatrix maritima</i>	Saltern Bent-wing	Nationally Scarce B			1			
Insecta	Lepidoptera	Gracillariidae	<i>Phyllocnistis xenia</i>	Kent Bent-wing	Nationally Scarce B						1
Insecta	Lepidoptera	Ypsolophidae	<i>Ypsolopha horridella</i>	Dark Smudge	Nationally Scarce B	1					
Insecta	Lepidoptera	Ypsolophidae	<i>Ochsenheimeria urella</i>	Variable Stem-moth	Nationally Scarce (Nb)	1					
Insecta	Lepidoptera	Depressariidae	<i>Depressaria douglasella</i>	Carrot Flat-body	Nationally Scarce B	1					

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	of A3 N & NW	The Rest
Insecta	Lepidoptera	Gelechiidae	<i>Pexicopia malvella</i>	Hollyhock Seed Moth	Nationally Scarce B	1					
Insecta	Lepidoptera	Gelechiidae	<i>Chionodes fumatella</i>	Downland Groundling	Nationally Scarce (Nb)	1					
Insecta	Lepidoptera	Coleophoridae	<i>Coleophora salinella</i>	Sea-purslane Case-bearer	Nationally Scarce A			1			
Insecta	Lepidoptera	Elachistidae	<i>Elachistes consortella</i>	Field Dwarf	Nationally Scarce (Nb)	1					
Insecta	Lepidoptera	Tortricidae	<i>Aethes williana</i>	Silver Carrot Conch	Nationally Scarce B	1					
Insecta	Lepidoptera	Pyralidae	<i>Ancylosis oblitella</i>	Saltmarsh Knot- horn	Nationally Scarce (Nb)		1				1
Insecta	Lepidoptera	Geometridae	<i>Chiasmia clathrata</i>	Latticed Heath	NT, S41 (research only)	1					1
Gastropoda	Neotaenioglossa	Hydrobiidae	<i>Ventrosia ventrosa</i>	Spire-snail	LC, NS				1		

Species totals for the six compartments ranged from 197 from the Foreshore to 640 from The Rest. The percentage of Key Species within these totals ranged from 10.2% for N & NW of A3 to 14.5% for The Rest (Table 4). Percentages of Rare Key Species are closely correlated with percentages of Key Species (Figure 36) except for the Foreshore which supports a very high percentage (4.06%) of Rare Key Species.

Table 4: Key Species results for the whole survey area and for each of the six compartments.

	Whole survey area	Ashfield A1	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Total species	1222	621	229	197	380	373	640
All Key Species	195	88	25	26	51	38	93
Rare Key Species	39	17	6	8	11	6	19
% Key Species	15.96%	14.17%	10.92%	13.20%	13.42%	10.19%	14.53%
% Rare Key Species	3.19%	2.74%	2.62%	4.06%	2.89%	1.61%	2.97%

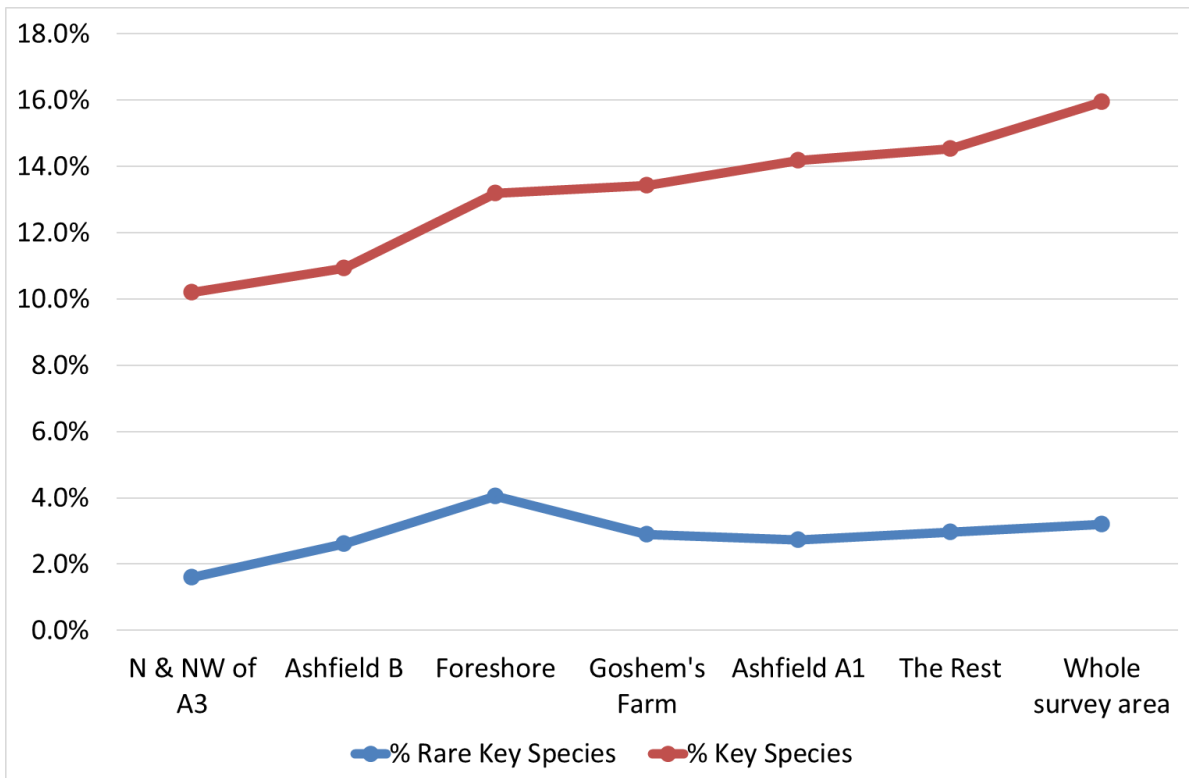


Figure 36: Percentages of Key Species and of Rare Key Species for the whole survey area and for the six compartments, plotted in ascending order of the percentage of Key Species.

4.5 PANTHEON RESULTS

Pantheon matched 1,215 of the 1,222 species recorded by this survey. The unmatched species were the two species discovered new to Britain (Section 4.3), three other species recently added to the British list (*Tuponia hippophaes*, *Philodromus rufus* and *Rhinusa neta*) and two taxa not included by Pantheon (*Mocyta fungi* agg. and *Myosotella myosotis* (including *denticulata*)).

Pantheon's analyses excluded a further 80 species, so the analyses are based on a subset of 1,135 species.

4.5.1 The 'tree-associated' broad biotope

Trees form a very small component of the habitats within the survey area, and only 93 of the species analysed by Pantheon were assigned to the 'tree-associated' broad biotope. Although this included 9 species with conservation status, the SQI score for the whole survey area was low at 132. For the six compartments, there were either too few 'tree-associated' species to calculate a reliable SQI, or the SQI scores were also low, the highest coming from The Rest (143) (Table 5).

Within the survey area, trees support an invertebrate assemblage of low conservation importance.

4.5.2 The 'coastal' broad biotope

Fewer species were assigned to the 'coastal' broad biotope (56) than to the 'tree-associated' broad biotope (93). However, these 56 represent 12% of the total Pantheon assemblage, compared to only 3% representation of 'tree-associated' species (Table 5).

Pantheon treats most of these species as having conservation status: 32 of the 56 species. Consequently, the SQI for the 'coastal' broad biotope is extremely high at 318 for the whole survey area.

Species of the 'coastal' broad biotope were well represented in the Foreshore, as would be expected, but also in Goshem's Farm and The Rest. The highest SQI of 327 was attained by the Foreshore, with Goshem's Farm and The Rest scoring 243 and 280 respectively.

The 'coastal' broad biotope includes a subset of 'saltmarsh' species, well represented on the Foreshore but also in Goshem's Farm and The Rest, and a subset of 'brackish pools & ditches' species which was very poorly represented on the Foreshore. This latter subset includes a number of species which inhabit brackish habitats away from direct tidal influence. Both subsets yielded extremely high SQI scores wherever they were well represented. The 'brackish pools & ditches' subset was well represented in The Rest, with a SQI score of 280.

The coastal habitats within the Foreshore support an invertebrate assemblage of very high conservation importance. Other parts of the survey area also support coastal invertebrate assemblages of very high conservation importance, notably Goshem's Farm and The Rest, and including an assemblage of coastal species which are poorly represented on the Foreshore.

4.5.3 The 'wetland' broad biotope

A round 200 species were assigned to the 'wetland' broad biotope by Pantheon, including 28 species with conservation status, yielding a moderately high SQI of 159 (Table 5).

The 'wetland' broad biotope was well represented in four of the six compartments: Ashfield B, N & NW of A3, The Rest and Goshem's Farm, yielding SQI scores of 141, 143, 155 and 165 respectively.

Pantheon analysis found that three subsets of the 'wetland' broad biotope were well represented in the survey area as a whole: 'marshland', 'acid & sedge peats' and 'running water'. The 'marshland' subset is the largest, with 108 species, yielding a moderate SQI of 141. The 'acid & sedge peats' subset has 67 species assigned to it and yields a high SQI of 188. This subset includes the 'reed-fen & pools' SAT, from which 11 species were found, indicating a habitat in Favourable condition. The 'running water' subset is the smallest, with 20 species assigned to it, all of which occur at Tilbury Ashfields in wetlands with still or slow-flowing water and are not running water specialists.

The four compartments with 'wetland' assemblages (Ashfield B, N & NW of A3, The Rest and Goshem's Farm) all yielded high SQI scores for either the 'marshland' subset or the 'acid & sedge peats' subset, or both. The high quality of freshwater wetland assemblages appears to be rather uniform across the survey compartments.

The 'marshland' subset includes the 'open water on disturbed mineral sediments' SAT, from which 8 species were recorded indicating habitat in Favourable condition, particularly in The Rest. The 'marshland' subset also includes the 'undisturbed fluctuating marsh' SAT, from which 6 species were recorded indicating habitat in Favourable condition, particularly in Goshem's Farm.

4.5.4 The 'open habitats' broad biotope

Pantheon assigned 706 species to the 'open habitats' broad biotope making this the largest invertebrate assemblage present by a considerable margin. It includes 122 species with conservation status and yielded a moderately high SQI of 160 (Table 5).

Pantheon found that two subsets of the 'open habitats' biotope were well represented in the survey area as a whole: 'tall sward & scrub' with 457 species and a low SQI of 136, and 'short sward & bare ground' with 233 species and a very high SQI of 200.

The 'tall sward & scrub' subset was well represented across all six compartments, but all with rather low SQI scores, ranging from 108 to 142, the latter from Ashfield A1.

The 'short sward & bare ground' subset was also well represented across all six compartments, but with SQI covering a wide range, from a low value of 119 for Ashfield B, through moderate values of 151 and 152 for N & NW of A3 and the Foreshore respectively, to the high values of 179, 199 and 203 for Goshem's Farm, Ashfield A1 and The Rest respectively.

From the survey area as a whole, five SATs were well represented within the 'short sward & bare ground' subset, and all were sufficiently represented to indicate Favourable habitat condition.

Of these five SATs, there was a very high SQI of 272 for the 'rich flower resource' assemblage, which also yielded very high SQIs from Ashfield A1 and The Rest and an extremely high SQI of 380 from the Foreshore.

The 'bare sand & chalk' SAT also yielded a very high SQI of 254, with even higher SQIs of 279 and 288 for this SAT from Ashfield A1 and The Rest respectively.

A smaller, but still very high, SQI of 224 was yielded for the 'open short sward' from the whole site, with SQIs of 188 and 176 from Ashfield A1 and The Rest respectively.

The 'scrub edge' and 'scrub heath & moorland' SATs were sufficiently well represented with 22 and 16 species respectively to indicate Favourable habitat condition, but their SQI scores of 100 and 140 respectively do not indicate high quality assemblages.

Table 5: Pantheon results for the whole survey area and for the six compartments. Results are not presented for assemblages represented by fewer than 15 species, except for any SATs which were still sufficiently well represented to indicate Favourable condition; in these cases, the SQI value is deemed unreliable and flagged with an “!”.

Broad biotope (level 1)	Level 2	SAT	Pantheon output	Whole survey area	Ashfield A1	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest	
open habitats			Number of species	706	458	115	131	179	224	363	
			% representation	16	11	3	3	4	5	8	
			Species Quality Index	160	161	110	141	128	123	149	
			No. of species with conservation status	122	85	10	15	17	22	50	
	tall sward & scrub			Number of species	457	296	80	83	131	154	242
				% representation	17	11	3	3	5	6	9
				Species Quality Index	136	142	108	119	108	111	123
				No. of species with conservation status	57	42	5	6	5	8	19
	short sward & bare ground			Number of species	233	156	32	45	41	67	117
				% representation	18	12	2	3	3	5	9
				Species Quality Index	200	199	119	152	179	151	203
				No. of species with conservation status	61	42	4	7	10	13	30
	bare sand & chalk			Number of species	57	40					25
				% representation	13	9					6
				Species Quality Index	254	279					288
				No. of species with conservation status	24	21					11
Favourable condition?				Favourable	Favourable					Favourable	

Invertebrate survey of Tilbury Ashfields in 2022

Broad biotope (level 1)	Level 2	SAT	Pantheon output	Whole survey area	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
open habitats (continued)	short sward & bare ground (continued)	rich flower resource	Number of species	39	17		15			15
			% representation	16	7		6			6
			Species Quality Index	272	288		380			260
			No. of species with conservation status	11	6		7			5
			Favourable condition?	Favourable	Favourable		Favourable			Favourable
		open short sward	Number of species	38	24					21
			% representation	19	12					10
			Species Quality Index	224	188					176
			No. of species with conservation status	14	9					5
			Favourable condition?	Favourable	Favourable					Favourable
		scrub edge	Number of species	22	13					
			% representation	10	6					
			Species Quality Index	100	!100					
			No. of species with conservation status	1	1					
			Favourable condition?	Favourable	Favourable					
		scrub-heath & moorland	Number of species	15	11					
			% representation	4	3					
			Species Quality Index	140	!100					
			No. of species with conservation status	4	1					
			Favourable condition?	Favourable	Favourable					

Invertebrate survey of Tilbury Ashfields in 2022

Broad biotope (level 1)	Level 2	SAT	Pantheon output	Whole survey area	Ashfield A1	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of A3	The Rest			
wetland			Number of species	200		65		104	74	107			
			% representation	7		2		4	3	4			
			Species Quality Index	159		141		165	143	155			
			No. of species with conservation status	28		6		14	9	14			
	marshland			Number of species	108		44		57	36	66		
				% representation	13		5		7	4	8		
				Species Quality Index	141		107		161	161	145		
				No. of species with conservation status	11		1		8	6	7		
	open water on disturbed mineral sediments			Number of species	8						6		
				% representation	20							15	
				Species Quality Index	!138							!150	
				No. of species with conservation status	1							1	
	Favourable condition?			Favourable condition?	Favourable						Favourable		
				undisturbed fluctuating marsh			Number of species	6			4		
							% representation	16			11		
							Species Quality Index	!200			!175		
	No. of species with conservation status	2						1					
	Favourable condition?			Favourable condition?	Favourable				Favourable				
				acid & sedge peats			Number of species	67		20	40	26	25
							% representation	6		2	4	2	2
Species Quality Index							188		221	182	125	170	
No. of species with conservation status	12		5				6	2	3				

Invertebrate survey of Tilbury Ashfields in 2022

Broad biotope (level 1)	Level 2	SAT	Pantheon output	Whole survey area	A1	Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3	N & NW of	The Rest
wetland (continued)	acid & sedge peats (continued)	reed-fen & pools	Number of species	11								
			% representation	10								
			Species Quality Index	!290								
			No. of species with conservation status	5								
			Favourable condition?	Favourable								
	running water		Number of species	20								
			% representation	2								
			Species Quality Index	205								
			No. of species with conservation status	5								
	tree-associated		Number of species	93	40					20	22	46
			% representation	3	1					<1	<1	1
			Species Quality Index	132	127					100	100	143
No. of species with conservation status			9	5					1	0	5	
coastal		Number of species	56					21	23		30	
		% representation	12					4	5		6	
		Species Quality Index	318					327	243		280	
		No. of species with conservation status	32					9	11		18	
	saltmarsh		Number of species	47					17	20		27
			% representation	16					6	7		9
			Species Quality Index	328					344	250		278
			No. of species with conservation status	27					7	10		16

Invertebrate survey of Tilbury Ashfields in 2022

Broad biotope (level 1)	Level 2	SAT	Pantheon output	Whole survey area	Ashfield A1	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest	
coastal (continued)	saltmarsh (continued)	saltmarsh & transitional brackish marsh	Number of species	18						11	
			% representation	17						10	
			Species Quality Index	356						1318	
			No. of species with conservation status	14						8	
			Favourable condition?	Favourable						Favourable	
	brackish pools & ditches			Number of species	23						15
				% representation	19						13
				Species Quality Index	309						280
				No. of species with conservation status	12						9

5 Survey area assessment

A total of 1,222 species of invertebrate was identified from the survey area from a very wide range of taxonomic groups. This forms an excellent basis on which to make a robust and accurate assessment of the importance of the survey area for invertebrate conservation.

195 Key Species were found, comprising 16.0% of the 1,222 species found by this survey in total. Compared to other sites proposed for development which the author has surveyed, the figure of 16.0% is extremely high, much higher than the mean of 5.57% (standard deviation = 3.59, sample size = 81). This extremely high percentage of Key Species is a strong indication of a site of very high conservation importance for invertebrates in a national context.

39 Rare Key Species were found, comprising 3.2% of the 1,222 species found by this survey in total. This figure is also extremely high compared to other sites proposed for development which the author has surveyed, much higher than the mean of 0.80% (standard deviation = 0.97, sample size = 81). This extremely high percentage of Rare Key Species is consistent with the percentage of Key Species and supports the assessment as a site of very high conservation importance for invertebrates in a national context.

Pantheon analysis found that the survey area contained coastal invertebrate assemblages of very high importance, freshwater wetland invertebrate assemblages of high importance, and some open habitat invertebrate assemblages of very high importance.

The numbers of Key Species and Rare Key Species recorded from the survey area are very noteworthy. There are probably rather few British sites where more than 195 Key Species and 39 of Britain's rarest and most threatened species, the Rare Key Species, have been recorded. Tilbury Ashfields is important as the only known British site for two apparently native or long-established invertebrates, the rove-beetle *Tomoglossa heydemanni* and the Wormwood Conch moth *Cochylimorpha woliniana*, discovered during this survey.

It is very noteworthy that nine Section 41 Species of Principal Importance were recorded from the survey area (excluding 'research only' moth species), and at least one more (Red-shanked Carder-bee) probably still persists within the Tilbury Ashfields at low density.

The adjacent Tilbury2 survey area was assessed by Telfer (2017) as "a site of high conservation importance for invertebrates in a national context". In comparison, the Tilbury Ashfields survey area supported more Key Species and Rare Key Species (195 and 39, versus 159 and 31), higher percentages of Key Species and Rare Key Species (16.0% and 3.2%, versus 11.4% and 2.2%), more Species of Principal Importance (9, versus 6), and higher quality Pantheon assemblages (SQIs of 160, 159 and 318 for 'open habitats', 'wetland' and 'coastal' broad biotopes respectively, versus 147, 138 and 294). The Tilbury Ashfields survey area is clearly of greater conservation importance for invertebrates than the Tilbury2 survey area.

The Tilbury Ashfields survey area is a site of very high conservation importance for invertebrates in a national context. This is strongly and consistently indicated by the Key Species analysis, by the numbers of Key Species and Species of Principal Importance, and by the Pantheon analysis.

6 Assessments of the six compartments

One of the aims of this survey was to make separate assessments for each of the six compartments with regard to their importance for invertebrates. This section presents those assessments for each compartment in turn, making comparative observations between the different compartments.

6.1 ASHFIELD A1

The separate invertebrate monitoring report on Ashfield A1 (Telfer, 2022a) concluded that “Ashfield A1 should be regarded as a site of very high conservation importance for invertebrates in a national context”.

A large number of species, 621, were recorded from Ashfield A1, second only to the species list of 640 from The Rest.

88 Key Species were found, comprising 14.2% of the 621 species found in this compartment, indicative of a site of very high conservation importance for invertebrates in a national context. Only The Rest yielded a higher percentage, with 14.5% Key Species.

17 Rare Key Species were found, comprising 2.7% of the 621 species found in this compartment. This is a very high percentage, indicative of a site of very high conservation importance for invertebrates in a national context.

Ashfield A1 was the only compartment where the Five-banded Weevil Fox wasp *Cerceris quinquefasciata* was recorded. The bare and sparsely-vegetated areas of PFA on Ashfield A1 are probably an important nesting area for this species. Four other Species of Principal Importance were recorded from Ashfield A1.

Pantheon analysis indicated that Ashfield A1 was probably the most important compartment for invertebrates of open habitats, especially for its extremely high quality assemblages of species requiring short swards and bare ground.

The value of Ashfield A1 as habitat for invertebrates has been enhanced by the works that were completed in 2011, monitoring having shown an increase in the quality of invertebrate assemblages over time.

Over time, the importance of Ashfield A1 has increased, as all the other ashfields, with the exception of the small triangle at the northern tip of A3, have been excavated and substantially modified.

The assessment of this report is the same as that of the earlier monitoring report, that Ashfield A1 should be regarded as a site of very high conservation importance for invertebrates in a national context. It should probably be regarded as the single most important compartment within the Tilbury Ashfields survey area.

6.2 ASHFIELD B

This survey recorded 229 species from Ashfield B, a relatively short list compared to the other compartments, probably reflecting a more limited diversity of habitats within this compartment.

25 Key Species were found, comprising 10.9% of the 229 species found in this compartment. the second lowest of the six compartments, but still indicative of a site of conservation importance for invertebrates in a national context.

6 Rare Key Species were found, comprising 2.6% of the 229 species found in this compartment. This is a very high percentage, though again the second lowest of the six compartments, and indicative of a site of very high conservation importance for invertebrates in a national context.

Three Species of Principal Importance were recorded, these being Brown-banded Carder-*Bombus humilis*, Wall butterfly *Lasiommata megera* and Small Heath butterfly *Coenonympha pamphilus*, the three most frequently recorded SPI from this survey.

Pantheon indicated that Ashfield B supported low quality invertebrate assemblages of open habitats, the lowest quality of the six compartments.

To some extent, the low quality of open habitats at Ashfield B may be attributed to the intense and rather frequent disturbance by bulldozers and other machinery which was continuing during the survey period.

Pantheon also indicated that a very high quality wetland assemblage was included within Ashfield B. This result relates to the invertebrates from Ditch D11 on the eastern edge of the compartment, which was also subject to survey for the Lower Thames Crossing Project under the name "ditch 'JN1' (TQ672758 to TQ674766)".

In summary, Ashfield B should be regarded as a site of rather high conservation importance for invertebrates in a national context. However, within a survey area of very high importance, it is one of the least important compartments.

The most important part of the Ashfield B compartment for invertebrates is the wetland and aquatic habitats associated with Ditch D11 on the eastern boundary. Ditch D11 and its associated habitats also extends southwards beside the Goshem's Farm compartment, as well as northwards beyond the current survey area. Ditch D11 (or 'JN1') and adjacent habitats, were surveyed in June 2022 to inform the Environmental Impact Assessment of the Lower Thames Crossing Project (see Annex D of Anon. (2022)), apparently making an assessment of a site of national significance.

6.3 LAND N & NW OF ASHFIELD A3

This survey recorded 373 species from the land N & NW of Ashfield A3, indicating a compartment with substantial diversity of habitats.

38 Key Species were found, comprising 10.2% of the 373 species found in this compartment. This was the lowest percentage of Key Species amongst the six compartments, but still indicates a site of conservation importance for invertebrates in a national context.

6 Rare Key Species were found, comprising 1.6% of the 373 species found in this compartment. This was the lowest percentage of Rare Key Species amongst the six compartments by some margin, but still indicates a site of conservation importance for invertebrates in a national context.

The four Species of Principal Importance recorded from the compartment included Saltmarsh Shortspur beetle *Anisodactylus poeciloides* from the PFA triangle at the N tip of Ashfield A3. Also recorded were Brown-banded Carder-*Bombus humilis*, Shrill Carder-*Bombus sylvarum* and Small Heath butterfly *Coenonympha pamphilus*.

The rove-beetle *Tomoglossa heydemanni* was discovered inhabiting the bare wet PFA in the triangle at the N tip of Ashfield A3. It should be regarded as a rare native species of conservation importance, for which the Tilbury Ashfields is the only known British locality.

Pantheon analysis indicated that this compartment supported a moderate quality assemblage of species inhabiting open, short swards and bare ground, with a higher quality marshland assemblage.

The land N & NW of Ashfield A3 compartment should be regarded as a site of rather high conservation importance for invertebrates in a national context.

However, there are two distinct sub-compartments to this compartment which differ substantially in their conservation importance for invertebrates.

Firstly, the triangle of surviving PFA substrates at the northern tip of Ashfield A3 is by far the more important of the two sub-compartments, sharing with Ashfield A1 the distinction of being one of the surviving areas of original ashfield. The wetland habitats in the central basin of the triangle are of very high importance. This sub-compartment should be regarded as of very high conservation importance for invertebrates in a national context.

Secondly, the land NW of Ashfield A3, which consists of a mixture of scrub, rank grassland and relict grazing marsh ditches, should be regarded as of relatively low importance for invertebrates within the Tilbury Ashfields survey area.

6.4 GOSHEM'S FARM

This survey recorded 380 species from Goshem's Farm, reflecting the wide diversity of habitats within this compartment.

51 Key Species were found, comprising 13.4% of the 380 species found in this compartment, the third highest of the six compartments, and indicative of a site of high conservation importance for invertebrates in a national context.

11 Rare Key Species were found, comprising 2.9% of the 380 species found in this compartment. This is a very high percentage, also the third highest of the six compartments, and indicative of a site of very high conservation importance for invertebrates in a national context.

The five Species of Principal Importance recorded from the compartment included Saltmarsh Shortspur beetle *Anisodactylus poeciloides* from the margins of Pond P1. Also recorded were Brown-banded Carder-bee *Bombus humilis*, Shril Carder-bee *Bombus sylvarum*, Wall butterfly *Lasiommata megera* and Small Heath butterfly *Coenonympha pamphilus*.

Following the discovery of the rove-beetle *Tomoglossa heydemanni*, new to Britain, from the bare wet PFA in the triangle at the N tip of Ashfield A3 (Land N & NW of Ashfield A3 compartment), it was also recorded from similar habitat beside Pond P1 in the Goshem's Farm compartment. This rove-beetle should be regarded as a rare native species of conservation importance, for which the Tilbury Ashfields is the only known British locality.

A population of the Wormwood Conch moth *Cochylimorpha woliniana* was discovered breeding in Wormwood *Artemisia absinthium* in the south-west corner of the compartment, another species new to Britain. This moth should be regarded as a rare long-established

species of conservation importance, for which the Tilbury Ashfields is the only known British locality.

Pantheon indicated that Goshem's Farm supports a very high quality assemblage of species of open short sward and bare ground habitats, some very high quality wetland assemblages, and extremely high quality coastal and saltmarsh assemblages. It is noteworthy that the Goshem's Farm compartment supports very high quality invertebrates spanning across three broad biotopes: open habitats, wetland and coastal.

Goshem's Farm should be regarded as a site of very high conservation importance for invertebrates in a national context. It should probably be regarded as of almost equivalent importance to Ashfield A1.

6.5 FORESHORE

This survey recorded 197 species from the Foreshore, fewer than for any of the other compartments. Saltmarsh supports a relatively small invertebrate fauna, and the low species total reflects this, rather than a paucity of recording effort.

26 Key Species were found, comprising 13.2% of the 197 species found in this compartment, indicative of a site of conservation importance for invertebrates in a national context.

8 Rare Key Species were found, comprising 4.1% of the 197 species found in this compartment. This is an extremely high percentage, the highest among the six compartments, and indicative of a site of very high conservation importance for invertebrates in a national context.

The Foreshore is very important for Sea Aster Bee *Colletes halophilus* (SPI) which forages on Sea Aster and only recorded from the Foreshore. Two SPI bumblebees, Brown-banded Carder-bee *Bombus humilis* and Shril Carder-bee *Bombus sylvarum*, were found widely across the survey area, but were more readily recorded from the Foreshore, which provides important foraging habitat.

Pantheon indicated that the Foreshore supports extremely high quality coastal and saltmarsh invertebrate assemblages, as well as an extremely high quality invertebrate assemblage visiting a rich resource of flowering plants.

For Sea Aster Bee, Brown-banded Carder-bee and Shril Carder-bee, as well as other flower-visiting insects, the Foreshore section within the Tilbury Ashfields survey area not only provides important foraging habitat, but probably also an important connecting corridor between other areas of foraging habitat along the coast to east and west.

The most important habitat within the Foreshore is in the western part, extending eastwards to the two piers at the south-east corner of Motts Land (TQ670755). Eastward from these piers, there is no more Sea Aster or saltmarsh, though the area still supports a rich resource of flowering plants.

The Foreshore compartment should be regarded as of very high conservation importance for invertebrates in a national context, and one of the more important compartments within the Tilbury Ashfields survey area.

6.6 THE REST

The Rest is the largest and most varied of the six compartments, and yielded the largest species list of 640 species

93 Key Species were found, comprising 14.5% of the 640 species found in this compartment. This was the highest percentage amongst the six compartments, and is indicative of a site of very high conservation importance for invertebrates in a national context.

19 Rare Key Species were found, comprising 3.0% of the 640 species found in this compartment. This is a very high percentage, the second highest amongst the six compartments, and is indicative of a site of very high conservation importance for invertebrates in a national context.

Seven Species of Principal Importance were recorded from The Rest, more than from any other compartment. The Rest was the only compartment from which the Tall Fescue Planthopper *Ribautodelphax imitans* was recorded, though there is a significant likelihood that the species does occur more widely within the survey area. The Rest was one of three compartments to support the Saltmarsh Shortspur beetle *Anisodactylus poeciloides*. The only Species of Principal Importance not recorded from The Rest were Sea Aster Bee *Colletes halophilus*, recorded only from the Foreshore, and Five-banded Weevil Fox wasp *Cerceris quinquefasciata*, recorded only from Ashfield A1.

Pantheon indicated that The Rest supports a number of extremely high quality assemblages of open habitat species, some wetland assemblages of high or very high quality, and some coastal assemblages of extremely high quality. By Pantheon analysis alone, The Rest would probably be regarded as the most important compartment of the six, by virtue of the number and breadth of very high quality invertebrate assemblages across the three broad biotopes: open habitats, wetland and coastal.

The Rest compartment should be regarded as of very high conservation importance for invertebrates in a national context. It is certainly one of the more important compartments within the Tilbury Ashfields survey area, and in some respects could be regarded as the most important.

Within The Rest, there is substantial variation in habitat quality for invertebrates, with numerous areas of especially high quality habitat, as well as much habitat of lower quality. To some extent, the results of the current survey could be used to make finer-scale assessments for this compartment, as required.

7 Acknowledgements

I would like to thank the following: Rebecca Read and Dominic Woodfield for arranging this survey; Noel Sweeney for extensive help and advice; Peter Hall for assistance with moth identifications; Peter Harvey for assistance with spider and aculeate identifications; Natalie Harmer, Jade Cogger and colleagues at Ingrebourne Valley Ltd for assistance with access; and Tracey Ashdown, Jessica Swan and colleagues at Port of Tilbury London Ltd for access permits.

8 References

- Anderson, R., Giusti, F., Telfer, M.G., Manganelli, G., Pieńkowska, J.R. and Lesicki, A. (2018). *Monacha ocellata* (Roth, 1839) (Gastropoda: Hygromiidae) established in Essex, an addition to the fauna of Britain and Ireland. *Journal of conchology*, **43**, 201 - 211.
- Anon. (2022). *Lower Thames Crossing. 6.3 Environment Statement. Appendix 8.3 – Terrestrial Invertebrates*. <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010032/TR010032-001528-6.3%20Environmental%20Statement%20Appendix%208.3%20-%20Terrestrial%20Invertebrates.pdf>
- Asher, J., Warren, M., Fox, R., Harding, P., Jeffcoate, G. and Jeffcoate, S. (2001). *The millennium atlas of butterflies in Britain and Ireland*. Oxford: Oxford University Press.
- Colin Plant Associates (2007). *Preliminary Results of the Invertebrate Survey, Ashfield Area*. Report to Bioscan (UK) Ltd.
- Colin Plant Associates (2008). *Tilbury Power Station, Essex. Invertebrate survey. Final report (incorporating analysis of aquatic assemblage)*. Report number BS/2235/07rev2. Report to Bioscan (UK) Ltd.
- Colin Plant Associates (2016). *Land adjacent to Tilbury Power Station, Essex. Invertebrate survey report*. Report number BS/29911/16. Report to Bioscan (UK) Ltd.
- Dittrich, A. (2016). *The ecology of Ribautodelphax imitans (Ribaut.): a seldom recorded planthopper in the UK*. A thesis in partial fulfilment of the requirements of Anglia Ruskin University for the degree of Doctor of Philosophy.
- [REDACTED]
- Falk, S. and Chandler, P. (2005). *A review of the scarce and threatened flies of Great Britain, part 2: Nematocera and Aschiza not dealt with by Falk (1991)*. Species Status number 2. Peterborough: Joint Nature Conservation Committee.
- Falk, S.J., Ismay, J.W. and Chandler, P.J. (2016). *A provisional assessment of the status of Acalyptratae flies in the UK*. Natural England Commissioned Reports number 217. Natural England.
- Falk, S.J., Pont, A.C. and Chandler, P.J. (2005). *A review of the scarce and threatened flies of Great Britain. Part 5: Calypttratae*. Species Status number 5. Peterborough: Joint Nature Conservation Committee.
- Fox, R., Dennis, E.B., Brown, A.F. and Curson, J. (2022). A revised Red List of British butterflies. *Insect conservation and diversity*, **15**, 485 - 495.
- Fox, R., Parsons, M.S. and Harrower, C.A. (2019). *A review of the status of the macro-moths of Great Britain. Butterfly Conservation report to Natural England, 2019*. Butterfly Conservation Report Number S19-17.
- Goddard, D. (2010). *Tilbury Power Station Gas Pipeline. Terrestrial and Aquatic Invertebrate Survey. September 2010*. Report from WYG Environment to RWE npower.
- Goddard, D. (2019). *Tilbury Energy Centre. Terrestrial & freshwater aquatic invertebrate survey report*. Report from WYG to RWE Generation UK PLC.

- Harvey, N. (2018). *Tilbury Ashfields, invertebrate survey*. Report from Place Services to Resource and Environmental Consultants Ltd.
- Hyman, P.S. (revised by Parsons, M.S.) (1992). *A review of the scarce and threatened Coleoptera of Great Britain. Part 1*. UK Nature Conservation, number 3. Peterborough: Joint Nature Conservation Committee.
- Ismay, J.W. (2000). *The status, distribution and biology of Dorycera graminum (Fabricius) (Diptera, Ulidiidae)*. English Nature Research Reports number 395. Peterborough: English Nature.
- IUCN (2001). *IUCN Red List Categories and Criteria: version 3.1. Prepared by the IUCN Species Survival Commission*. Gland, Switzerland: International Union for Conservation of Nature.
- Kirby, P. (1992). *A review of the scarce and threatened Hemiptera of Great Britain*. UK Nature Conservation number 2. Peterborough: Joint Nature Conservation Committee.
- Pedersen, J. and Vagtholm-Jensen, O. (2005). Fund af biller i Danmark, 2004 (Coleoptera). *Entomologiske Meddelelser*, **73**, 87 - 113.
- Shirt, D.B. (ed.) (1987). *British Red Data Books: 2. Insects*. Peterborough: Nature Conservancy Council.
- Telfer, M.G. (2017). *Invertebrate survey of Tilbury2*. Report to Bioscan (UK) Ltd.
- Telfer, M.G. (2019a). *Cryptocephalus rufipes* (Goeze, 1777) (Chrysomelidae) new to Britain. *The Coleopterist*, **28**, 149 - 154.
- Telfer, M.G. (2019b). *Invertebrate monitoring at Tilbury Ashfield A1: year 7 (2018)*. Report to Bioscan (UK) Ltd.
- Telfer, M.G. (2022a). *Invertebrate monitoring at Tilbury Ashfield A1 in year 11 (2022): final report*. Report to Bioscan (UK) Ltd.
- Telfer, M.G. (2022b). *Invertebrate scoping survey of Tilbury Ashfields*. Report to Bioscan (UK) Ltd.
- Telfer, M.G. and Hall, P.R. (in prep.). *Cochylimorpha woliniana* (Schleich, 1868) (Lepidoptera: Tortricidae) new to Britain.
- Telfer, M.G., Vorst, O. and Booth, R.G. (2017). *Tomoglossa brakmani* Scheerpeltz, 1963 (Staphylinidae: Aleocharinae) new to Britain. *The Coleopterist*, **26**, 65 - 68.
- Woodfield, D. and Moxon, G. (2017). *Tilbury Ash Disposal Site Area A1 Year 5 (2016) Invertebrate Monitoring*. Report from Bioscan (UK) Ltd to RWE Generation UK plc.

Appendix 1: British Conservation Status Categories – Definitions.

1.1 Status Categories and Criteria Version 1 (Shirt, 1987)

These status categories and criteria were introduced for British insects by Shirt (1987) and received some modifications by later authors (e.g. Hyman and Parsons (1992)).

Red Data Book category EXTINCT

Definition Species which were formerly native to Britain but have not been recorded since 1900.

Red Data Book category 1, Endangered

Definition Species in danger of extinction and whose survival is unlikely if causal factors continue to operate. Endangered species either (a) occur as only a single population within one 10-km square, or (b) only occur in especially vulnerable habitats, or (c) have been declining rapidly or continuously for twenty years or more to the point where they occur in five or fewer 10-km squares, or (d) may already have become extinct.

Red Data Book category 2, Vulnerable

Definition Species which are likely to move into the Endangered category in the near future if causal factors continue to operate. Vulnerable species are declining throughout their range or occupy vulnerable habitats.

Red Data Book category 3, Rare

Definition Species which occur in small populations and although not currently either Endangered or Vulnerable are at risk. Rare species exist in 15 or fewer 10-km squares, or are more widespread than this but dependent on small areas of especially vulnerable habitat.

Red Data Book category I, Indeterminate

Note: Best written as 'RDBi' rather than 'RDBI' as the latter is easily confused with 'RDB1' (Endangered).

Definition Species considered to be either Endangered, Vulnerable or Rare but with insufficient information to say which.

Red Data Book category K, Insufficiently Known

Definition Species suspected to merit either Endangered, Vulnerable, Rare or Indeterminate status but lacking sufficient information. Species included in this category may have only recently been discovered in Britain, or may be very poorly recorded for a variety of reasons.

Nationally Scarce Category A, Na.

Definition Species which do not fall within Red Data Book categories but which are nonetheless uncommon in Great Britain and thought to occur in 30 or fewer (typically between 16 and 30) hectads (i.e., 10 × 10 km squares of the National Grid), or for less well-recorded groups, in seven or fewer vice-counties.

Nationally Scarce Category B, Nb.

Definition Species which do not fall within Red Data Book categories but which are nonetheless uncommon in Great Britain and thought to occur in between 31 and 100 hectads, or for less well-recorded groups, between eight and twenty vice-counties.

Nationally Scarce, N.

Definition Species which do not fall within Red Data Book categories but which are nonetheless uncommon in Great Britain. This status category has been used where information has not been sufficient to allocate a species to either Na or Nb. These species are thought to occur in between 16 and 100 hectads.

1.2 Status Categories and Criteria Version 2 (IUCN, 2001)

These later status categories and criteria are based on IUCN Red List Categories and Criteria version 3.1 (IUCN, 2001) and have been applied to British butterflies, macro-moths, dragonflies, many beetle and bug families, and several other invertebrate groups.

Critically Endangered (CR)

A taxon is Critically Endangered when the best available evidence indicates that it is 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 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 facing a **high** risk of extinction in the wild.

N.B.: Species belonging to the above three categories may be collectively referred to as **Threatened**.

Data Deficient (DD)

A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking. Data Deficient is therefore not a category of threat. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate.

The DD category effectively replaces the Indeterminate (RDBi) and Insufficiently Known (RDBK) categories of the earlier version.

Near Threatened (NT)

A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.

Least Concern (LC)

A taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in this category.

Not Applicable (NA)

A taxon is Not Applicable when it is regarded as a non-native in Britain, or occurs solely as a natural vagrant.

1.3 Status Categories and Criteria Version 3 (GB Rarity Status)

These status categories and criteria operate in parallel with version 2 and are defined specifically for use in Britain where they provide some continuity with version 1, allowing the continued use of “rare and scarce” species for site assessment purposes.

Nationally Rare (NR)

Native species which have not been recorded from more than 15 British hectads in recent decades and where there is reasonable confidence that exhaustive recording would not find them in more than 15 hectads. This category includes species which are probably extinct.

Nationally Scarce (NS)

Native species which are not regarded as Nationally Rare AND which have not been recorded from more than 100 British hectads in recent decades and where there is reasonable confidence that exhaustive recording would not find them in more than 100 hectads.

Appendix 2: List of invertebrates recorded at Tilbury Ashfields in 2022

Key Species, species new to Britain, and Section 41 species are listed in **red text**. The table is in taxonomic sequence. Presence in the six compartments is indicated by a '1' in the appropriate column.

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Malacostraca	Isopoda	Asellidae	<i>Asellus aquaticus</i>	a waterlouse	LC					1	1
Malacostraca	Isopoda	Ligiidae	<i>Ligia oceanica</i>	a woodlouse	LC			1			
Malacostraca	Isopoda	Trichoniscidae	<i>Haplophthalmus danicus</i>	a woodlouse	LC		1	1			
Malacostraca	Isopoda	Trichoniscidae	<i>Haplophthalmus mengii</i>	a woodlouse	LC						1
Malacostraca	Isopoda	Trichoniscidae	<i>Trichoniscus pusillus</i>	a common pygmy woodlouse	None		1		1	1	
Malacostraca	Isopoda	Philosciidae	<i>Philoscia muscorum sens. str.</i>	a common striped woodlouse	LC	1	1	1	1	1	1
Malacostraca	Isopoda	Platyarthridae	<i>Platyarthrus hoffmannseggii</i>	Ant Woodlouse	LC			1			
Malacostraca	Isopoda	Armadillidiidae	<i>Armadillidium nasatum</i>	a pill-woodlouse	LC	1	1	1	1	1	1
Malacostraca	Isopoda	Armadillidiidae	<i>Armadillidium vulgare</i>	Common Pill-woodlouse	LC	1	1	1	1	1	1
Malacostraca	Isopoda	Armadillidiidae	<i>Eluma caelatum</i>	a woodlouse	NA	1					
Malacostraca	Isopoda	Porcellionidae	<i>Porcellio scaber</i>	Common Rough Woodlouse	LC				1		1
Malacostraca	Isopoda	Trachelipidae	<i>Trachelipus rathkii</i>	a woodlouse	LC					1	
Malacostraca	Amphipoda	Talitridae	<i>Orchestia cavimana</i>	an amphipod	None				1		
Malacostraca	Decapoda	Palaemonidae	<i>Palaemonetes varians</i>	Common Ditch Shrimp	None						1
Arachnida	Araneae	Dysderidae	<i>Dysdera crocata</i>	a spider	LC	1		1			
Arachnida	Araneae	Dysderidae	<i>Harpactea hombergi</i>	a spider	LC						1
Arachnida	Araneae	Dysderidae	<i>Harpactea rubicunda</i>	a spider	VU, NR	1					

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Arachnida	Araneae	Mimetidae	<i>Ero furcata</i>	a spider	LC	1					
Arachnida	Araneae	Mimetidae	<i>Ero aphana</i>	a spider	LC, NS						1
Arachnida	Araneae	Theridiidae	<i>Anelosimus vittatus</i>	a spider	LC				1		
Arachnida	Araneae	Theridiidae	<i>Kochiura aulica</i>	a spider	LC, NS						1
Arachnida	Araneae	Theridiidae	<i>Theridion varians</i>	a spider	LC		1				1
Arachnida	Araneae	Theridiidae	<i>Simitidion simile</i>	a spider	LC	1		1			
Arachnida	Araneae	Theridiidae	<i>Neottiura bimaculata</i>	a spider	LC		1		1	1	1
Arachnida	Araneae	Theridiidae	<i>Paidiscura pallens</i>	a spider	LC	1					
Arachnida	Araneae	Theridiidae	<i>Enoplognatha ovata sens. str.</i>	a spider	LC						1
Arachnida	Araneae	Theridiidae	<i>Enoplognatha latimana</i>	a spider	LC	1	1				
Arachnida	Araneae	Theridiidae	<i>Enoplognatha thoracica</i>	a spider	LC	1					1
Arachnida	Araneae	Linyphiidae	<i>Walckenaeria antica</i>	a spider	LC	1					
Arachnida	Araneae	Linyphiidae	<i>Walckenaeria nudipalpis</i>	a spider	LC					1	1
Arachnida	Araneae	Linyphiidae	<i>Walckenaeria vigilax</i>	a spider	LC						1
Arachnida	Araneae	Linyphiidae	<i>Gnathonarium dentatum</i>	a spider	LC		1		1	1	1
Arachnida	Araneae	Linyphiidae	<i>Dismodicus bifrons</i>	a spider	LC	1					1
Arachnida	Araneae	Linyphiidae	<i>Hypomma fulvum</i>	a spider	LC, NS		1		1		
Arachnida	Araneae	Linyphiidae	<i>Pocadicnemis juncea</i>	a spider	LC	1				1	1
Arachnida	Araneae	Linyphiidae	<i>Oedothorax fuscus</i>	a spider	LC					1	1
Arachnida	Araneae	Linyphiidae	<i>Oedothorax retusus</i>	a spider	LC					1	1
Arachnida	Araneae	Linyphiidae	<i>Oedothorax apicatus</i>	a spider	LC					1	1
Arachnida	Araneae	Linyphiidae	<i>Pelecopsis parallela</i>	a spider	LC	1					
Arachnida	Araneae	Linyphiidae	<i>Cnephalocotes obscurus</i>	a spider	LC	1					
Arachnida	Araneae	Linyphiidae	<i>Troxochrus scabriculus</i>	a spider	LC	1					
Arachnida	Araneae	Linyphiidae	<i>Tapinocyba praecox</i>	a spider	LC	1					

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Arachnida	Araneae	Linyphiidae	<i>Erigonella hiemalis</i>	a spider	LC	1					
Arachnida	Araneae	Linyphiidae	<i>Panamomops sulcifrons</i>	a spider	LC, NS	1					
Arachnida	Araneae	Linyphiidae	<i>Erigone dentipalpis</i>	a spider	LC	1		1	1	1	1
Arachnida	Araneae	Linyphiidae	<i>Erigone atra</i>	a spider	LC	1	1		1	1	1
Arachnida	Araneae	Linyphiidae	<i>Prinerigone vagans</i>	a spider	LC				1		
Arachnida	Araneae	Linyphiidae	<i>Porrhomma pygmaeum</i>	a spider	LC				1		
Arachnida	Araneae	Linyphiidae	<i>Porrhomma microphthalmum</i>	a spider	LC					1	
Arachnida	Araneae	Linyphiidae	<i>Agyneta rurestris</i>	a spider	LC	1					
Arachnida	Araneae	Linyphiidae	<i>Agyneta simplicatarsis</i>	a spider	LC, NS	1					
Arachnida	Araneae	Linyphiidae	<i>Agyneta affinis</i>	a spider	LC	1					
Arachnida	Araneae	Linyphiidae	<i>Bathyphantes gracilis</i>	a spider	LC	1			1		1
Arachnida	Araneae	Linyphiidae	<i>Diplostyla concolor</i>	a spider	LC	1					
Arachnida	Araneae	Linyphiidae	<i>Stemonyphantes lineatus</i>	a spider	LC	1					1
Arachnida	Araneae	Linyphiidae	<i>Tenuiphantes tenuis</i>	a spider	LC	1	1		1	1	1
Arachnida	Araneae	Linyphiidae	<i>Microlinyphia pusilla</i>	a spider	LC	1		1			
Arachnida	Araneae	Linyphiidae	<i>Microlinyphia impigra</i>	a spider	LC						1
Arachnida	Araneae	Tetragnathidae	<i>Tetragnatha extensa</i>	a spider	LC				1		
Arachnida	Araneae	Tetragnathidae	<i>Tetragnatha montana</i>	a spider	LC						1
Arachnida	Araneae	Tetragnathidae	<i>Tetragnatha striata</i>	a spider	LC						1
Arachnida	Araneae	Tetragnathidae	<i>Pachygnatha degeeri</i>	a spider	LC	1				1	1
Arachnida	Araneae	Araneidae	<i>Larinioides cornutus</i>	a spider	LC			1			
Arachnida	Araneae	Araneidae	<i>Larinioides patagiatus</i>	a spider	LC, NS	1					
Arachnida	Araneae	Araneidae	<i>Agalenatea redii</i>	a spider	LC	1			1		
Arachnida	Araneae	Araneidae	<i>Neoscona adianta</i>	a spider	LC			1		1	1
Arachnida	Araneae	Araneidae	<i>Araniella opisthographa</i>	a spider	LC	1					1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Arachnida	Araneae	Araneidae	<i>Hypsosinga pygmaea</i>	a spider	LC				1		1
Arachnida	Araneae	Araneidae	<i>Mangora acalypha</i>	a spider	LC	1	1	1	1	1	1
Arachnida	Araneae	Araneidae	<i>Argiope bruennichi</i>	Wasp Spider	LC	1	1	1			
Arachnida	Araneae	Lycosidae	<i>Pardosa agrestis</i>	a spider	LC, NS	1				1	1
Arachnida	Araneae	Lycosidae	<i>Pardosa palustris</i>	a spider	LC	1				1	1
Arachnida	Araneae	Lycosidae	<i>Pardosa pullata</i>	a spider	LC	1				1	1
Arachnida	Araneae	Lycosidae	<i>Pardosa prativaga</i>	a spider	LC	1				1	1
Arachnida	Araneae	Lycosidae	<i>Pardosa nigriceps</i>	a spider	LC	1				1	
Arachnida	Araneae	Lycosidae	<i>Alopecosa pulverulenta</i>	a spider	LC	1					
Arachnida	Araneae	Lycosidae	<i>Trochosa ruricola</i>	a spider	LC	1		1		1	1
Arachnida	Araneae	Lycosidae	<i>Trochosa robusta</i>	a spider	VU, NR						1
Arachnida	Araneae	Lycosidae	<i>Trochosa terricola</i>	a spider	LC						1
Arachnida	Araneae	Lycosidae	<i>Arctosa perita</i>	a spider	LC	1					
Arachnida	Araneae	Lycosidae	<i>Arctosa leopardus</i>	a spider	LC					1	
Arachnida	Araneae	Lycosidae	<i>Piratula latitans</i>	a spider	LC					1	1
Arachnida	Araneae	Pisauridae	<i>Pisaura mirabilis</i>	a spider	LC	1			1	1	
Arachnida	Araneae	Agelenidae	<i>Agelena labyrinthica</i>	a spider	LC	1	1	1			1
Arachnida	Araneae	Cybaeidae	<i>Argyroneta aquatica</i>	a spider	LC		1				
Arachnida	Araneae	Hahniidae	<i>Hahnia nava</i>	a spider	LC	1				1	1
Arachnida	Araneae	Dictynidae	<i>Dictyna arundinacea</i>	a spider	LC	1		1	1		1
Arachnida	Araneae	Dictynidae	<i>Dictyna uncinata</i>	a spider	LC		1				1
Arachnida	Araneae	Dictynidae	<i>Brigittea latens</i>	a spider	LC	1	1			1	
Arachnida	Araneae	Dictynidae	<i>Nigma puella</i>	a spider	LC, NS						1
Arachnida	Araneae	Dictynidae	<i>Nigma walckenaeri</i>	a spider	LC						1
Arachnida	Araneae	Dictynidae	<i>Argenna subnigra</i>	a spider	LC, NS	1					

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Arachnida	Araneae	Anyphaenidae	<i>Anyphaena accentuata</i>	a spider	LC						1
Arachnida	Araneae	Corinnidae	<i>Phruralithus festivus</i>	a spider	LC	1				1	1
Arachnida	Araneae	Clubionidae	<i>Clubiona reclusa</i>	a spider	LC				1		
Arachnida	Araneae	Clubionidae	<i>Clubiona neglecta sens. str.</i>	a spider	LC						1
Arachnida	Araneae	Clubionidae	<i>Clubiona juvenis</i>	a spider	NT, NR		1				
Arachnida	Araneae	Clubionidae	<i>Clubiona subtilis</i>	a spider	LC	1	1		1		1
Arachnida	Araneae	Clubionidae	<i>Cheiracanthium erraticum</i>	a spider	LC				1		1
Arachnida	Araneae	Clubionidae	<i>Cheiracanthium virescens</i>	a spider	LC, NS	1					
Arachnida	Araneae	Zodariidae	<i>Zodarion italicum</i>	a spider	LC, NS	1				1	
Arachnida	Araneae	Gnaphosidae	<i>Drassodes cupreus</i>	a spider	LC						1
Arachnida	Araneae	Gnaphosidae	<i>Drassodes pubescens</i>	a spider	LC, NS	1					
Arachnida	Araneae	Gnaphosidae	<i>Haplodrassus signifer</i>	a spider	LC	1		1			1
Arachnida	Araneae	Gnaphosidae	<i>Zelotes latreillei</i>	a spider	LC	1				1	
Arachnida	Araneae	Gnaphosidae	<i>Zelotes apricorum</i>	a spider	LC					1	
Arachnida	Araneae	Gnaphosidae	<i>Trachyzelotes pedestris</i>	a spider	LC					1	
Arachnida	Araneae	Gnaphosidae	<i>Drassyllus pusillus</i>	a spider	LC	1				1	1
Arachnida	Araneae	Gnaphosidae	<i>Micaria micans</i>	a spider	None	1				1	1
Arachnida	Araneae	Zoridae	<i>Zora spinimana</i>	a spider	LC						1
Arachnida	Araneae	Philodromidae	<i>Philodromus cespitum</i>	a spider	LC	1					1
Arachnida	Araneae	Philodromidae	<i>Philodromus rufus sens. str.</i>	a spider	None						1
Arachnida	Araneae	Philodromidae	<i>Thanatus striatus</i>	a spider	LC, NS	1					
Arachnida	Araneae	Philodromidae	<i>Tibellus oblongus</i>	a spider	LC	1					
Arachnida	Araneae	Thomisidae	<i>Misumena vatia</i>	a spider	LC					1	1
Arachnida	Araneae	Thomisidae	<i>Xysticus cristatus</i>	a spider	LC	1		1		1	1
Arachnida	Araneae	Thomisidae	<i>Xysticus kochi</i>	a spider	LC	1				1	1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Arachnida	Araneae	Thomisidae	<i>Ozyptila sanctuaria</i>	a spider	LC	1					
Arachnida	Araneae	Thomisidae	<i>Ozyptila simplex</i>	a spider	LC	1				1	1
Arachnida	Araneae	Thomisidae	<i>Ozyptila brevipes</i>	a spider	LC				1	1	
Arachnida	Araneae	Salticidae	<i>Salticus scenicus</i>	a jumping spider	LC	1		1			
Arachnida	Araneae	Salticidae	<i>Heliophanus cupreus</i>	a jumping spider	LC				1	1	
Arachnida	Araneae	Salticidae	<i>Heliophanus flavipes</i>	a jumping spider	LC	1					
Arachnida	Araneae	Salticidae	<i>Sibianor aurocinctus</i>	a jumping spider	LC, NS	1				1	
Arachnida	Araneae	Salticidae	<i>Ballus chalybeius</i>	a jumping spider	LC, NS	1					
Arachnida	Araneae	Salticidae	<i>Euophrys frontalis</i>	a jumping spider	LC	1				1	
Arachnida	Araneae	Salticidae	<i>Talavera aequipes</i>	a jumping spider	LC	1					
Arachnida	Araneae	Salticidae	<i>Synageles venator</i>	a jumping spider	LC, NS	1					1
Arachnida	Pseudoscorpiones	Chthoniidae	<i>Chthonius ischnocheles</i>	Common Chthoniid	None						1
Arachnida	Opiliones	Phalangidae	<i>Phalangium opilio</i>	a harvestman	None	1			1		
Arachnida	Trombidiformes	Tarsonemidae	<i>Steneotarsonemus phragmitidis</i>	a mite	None		1		1		
Chilopoda	Lithobiomorpha	Lithobiidae	<i>Lithobius forficatus</i>	a centipede	LC	1					1
Chilopoda	Lithobiomorpha	Lithobiidae	<i>Lithobius lapidicola</i>	a centipede	NT, NR	1					
Chilopoda	Lithobiomorpha	Lithobiidae	<i>Lithobius microps</i>	a centipede	LC	1					
Diplopoda	Julida	Julidae	<i>Cylindroiulus caeruleocinctus</i>	a millipede	LC	1					
Diplopoda	Julida	Julidae	<i>Ophiulus pilosus</i>	a millipede	LC					1	
Diplopoda	Julida	Julidae	<i>Brachyiulus pusillus</i>	a millipede	LC	1	1			1	
Diplopoda	Polydesmida	Polydesmidae	<i>Polydesmus inconstans</i>	a flat-backed millipede	LC	1					1
Diplopoda	Polydesmida	Polydesmidae	<i>Polydesmus coriaceus</i>	a flat-backed millipede	LC					1	

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Diplopoda	Polydesmida	Polydesmidae	<i>Brachydesmus superus</i>	a flat-backed millipede	LC	1					
Collembola	Entomobryomorpha	Entomobryidae	<i>Orchesella cincta</i>	a springtail	None	1					1
Insecta	Odonata	Lestidae	<i>Lestes dryas</i>	Scarce Emerald Damselfly	NT				1		
Insecta	Odonata	Coenagriidae	<i>Ischnura elegans</i>	Blue-tailed Damselfly	LC	1	1		1	1	1
Insecta	Odonata	Coenagriidae	<i>Enallagma cyathigerum</i>	Common Blue Damselfly	LC			1	1		1
Insecta	Odonata	Coenagriidae	<i>Coenagrion puella</i>	Azure Damselfly	LC						1
Insecta	Odonata	Aeshnidae	<i>Anax imperator</i>	Emperor Dragonfly	LC	1	1				1
Insecta	Odonata	Libellulidae	<i>Libellula depressa</i>	Broad-bodied Chaser	LC		1		1		1
Insecta	Odonata	Libellulidae	<i>Libellula quadrimaculata</i>	Four-spotted Chaser	LC	1	1				1
Insecta	Odonata	Libellulidae	<i>Orthetrum cancellatum</i>	Black-tailed Skimmer	LC		1		1		
Insecta	Odonata	Libellulidae	<i>Sympetrum sanguineum</i>	Ruddy Darter	LC		1				1
Insecta	Dermaptera	Forficulidae	<i>Forficula auricularia</i>	Common Earwig	LC	1	1	1	1		1
Insecta	Dermaptera	Forficulidae	<i>Forficula lesnei</i>	Lesne's Earwig	LC, NS	1			1		1
Insecta	Orthoptera	Meconematidae	<i>Meconema meridionale</i>	Southern Oak Bush-cricket	NA						1
Insecta	Orthoptera	Tettigoniidae	<i>Metrioptera roeselii</i>	Roesel's Bush-cricket	LC	1	1	1	1	1	1
Insecta	Orthoptera	Conocephalidae	<i>Conocephalus fuscus</i>	Long-winged Conehead	LC			1		1	
Insecta	Orthoptera	Conocephalidae	<i>Conocephalus dorsalis</i>	Short-winged Conehead	LC				1		

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Orthoptera	Tetrigidae	<i>Tetrix subulata</i>	Slender Groundhopper	LC				1	1	
Insecta	Orthoptera	Acrididae	<i>Chorthippus albomarginatus</i>	Lesser Marsh Grasshopper	LC		1	1	1	1	1
Insecta	Orthoptera	Acrididae	<i>Chorthippus brunneus</i>	Field Grasshopper	LC	1	1	1	1		1
Insecta	Orthoptera	Acrididae	<i>Chorthippus parallelus</i>	Meadow Grasshopper	LC	1	1		1		1
Insecta	Psocoptera	Amphipsocidae	<i>Kolbia quisquiliarum</i>	a barkfly	None				1		
Insecta	Psocoptera	Ectopsocidae	<i>Ectopsocus briggsi</i>	a barkfly	None					1	1
Insecta	Psocoptera	Ectopsocidae	<i>Ectopsocus petersi</i>	a barkfly	None	1		1			1
Insecta	Psocoptera	Elipsocidae	<i>Elipsocus hyalinus</i>	a barkfly	None						1
Insecta	Psocoptera	Elipsocidae	<i>Protopsocus pulchripennis</i>	a barkfly	None	1			1		
Insecta	Psocoptera	Philotarsidae	<i>Philotarsus parviceps</i>	a barkfly	None					1	
Insecta	Psocoptera	Stenopsocidae	<i>Graphopsocus cruciatus</i>	a barkfly	None	1			1	1	1
Insecta	Psocoptera	Stenopsocidae	<i>Stenopsocus immaculatus</i>	a barkfly	None	1					
Insecta	Psocoptera	Trichopsocidae	<i>Trichopsocus brincki</i>	a barkfly	None	1					
Insecta	Hemiptera: Sternorrhyncha	Psyllidae	<i>Arytainilla spartiophila</i>	a Broom psyllid	None	1					
Insecta	Hemiptera: Sternorrhyncha	Psyllidae	<i>Cacopsylla crataegi</i>	a psyllid	None	1					
Insecta	Hemiptera: Sternorrhyncha	Psyllidae	<i>Cacopsylla fulguralis</i>	Eleagnus Sucker	None	1					
Insecta	Hemiptera: Sternorrhyncha	Triozidae	<i>Trioza chenopodii</i>	a psyllid	None		1	1	1	1	
Insecta	Hemiptera: Sternorrhyncha	Triozidae	<i>Trioza urticae</i>	Nettle Psyllid	None	1	1		1	1	1
Insecta	Hemiptera: Sternorrhyncha	Aphididae	<i>Dysaphis crataegi-group</i>	a hawthorn-umbellifer aphid	None				1		

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Hemiptera: Auchenorrhyncha	Aphrophoridae	<i>Philaenus spumarius</i>	a froghopper	None			1		1	1
Insecta	Hemiptera: Auchenorrhyncha	Aphrophoridae	<i>Neophilaenus campestris</i>	a froghopper	None	1	1				1
Insecta	Hemiptera: Auchenorrhyncha	Aphrophoridae	<i>Neophilaenus lineatus</i>	a froghopper	None				1	1	1
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Megophthalmus scanicus</i>	a leafhopper	None	1					
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Agallia consobrina</i>	a leafhopper	None	1	1				1
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Anaceratagallia ribauti</i>	a leafhopper	None	1					1
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Aphrodes makarovi</i>	a leafhopper	None	1					
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Anoscopus albifrons</i>	a leafhopper	None						1
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Anoscopus limicola</i>	a leafhopper	Nationally Scarce (Nb)	1					
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Recilia coronifera</i>	a leafhopper	None	1					
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Paramesus obtusifrons</i>	a leafhopper	None		1		1		
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Errastunus ocellaris</i>	a leafhopper	None					1	
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Arthaldeus pascuellus</i>	a leafhopper	None	1			1		
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Psammotettix cephalotes</i>	a leafhopper	None	1					
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Psammotettix confinis</i>	a leafhopper	None	1	1			1	1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Psammotettix sabulicola</i>	a leafhopper	None						1
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Ophiola decumana</i>	a leafhopper	Nationally Scarce (Nb)	1					1
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Conosanus obsoletus</i>	a leafhopper	None			1			
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Streptanus aemulans</i>	a leafhopper	None	1		1			
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Macustus grisescens</i>	a leafhopper	None	1					1
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Mocystia crocea</i>	a leafhopper	None	1	1		1	1	1
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Mocystiopsis attenuata</i>	a leafhopper	None	1					
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Cicadula quadrinotata</i>	a leafhopper	None						1
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Opsius stactogalus</i>	a leafhopper	None						1
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Macrosteles quadripunctulatus</i>	a leafhopper	Nationally Scarce (Na)		1				1
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Macrosteles sardus</i>	a leafhopper	None					1	
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Macrosteles viridigriseus</i>	a leafhopper	None					1	
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Empoasca decipiens</i>	a leafhopper	None			1			
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Empoasca pteridis</i>	a leafhopper	None	1		1			1
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Empoasca vitis</i>	a leafhopper	None	1					

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Eupteryx aurata</i>	a leafhopper	None	1			1		
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Eupteryx decemnotata</i>	a leafhopper	None	1					
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Eupteryx florida</i>	a leafhopper	None	1					
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Eupteryx melissae</i>	a leafhopper	None	1	1			1	1
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Eupteryx tenella</i>	a leafhopper	None	1					
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Eupteryx urticae</i>	a leafhopper	None	1			1	1	
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Ribautiana debilis</i>	a leafhopper	None	1					
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Ribautiana tenerrima</i>	a leafhopper	None	1					
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Linnavuoriana sexmaculata</i>	a leafhopper	None					1	1
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Fagocyba cruenta</i>	a leafhopper	None	1					
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Edwardsiana frustrator</i>	a leafhopper	None	1					
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Zyginidia scutellaris</i>	a leafhopper	None	1	1	1	1	1	1
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Zygina schneideri</i>	a leafhopper	None	1					
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	<i>Zygina nivea</i>	a leafhopper	None	1					
Insecta	Hemiptera: Auchenorrhyncha	Cixiidae	<i>Pentastiridius leporinus</i>	a lacehopper	Nationally Scarce (Nb)	1		1			1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Hemiptera: Auchenorrhyncha	Cixiidae	<i>Tachycixius pilosus</i>	a lacehopper	None	1				1	1
Insecta	Hemiptera: Auchenorrhyncha	Cixiidae	<i>Cixius nervosus</i>	a lacehopper	None	1					
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	<i>Asiraca clavicornis</i>	a planthopper	Nationally Scarce (Nb)	1		1	1		1
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	<i>Prokelisia marginata</i>	a planthopper	None			1			
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	<i>Stenocranus minutus</i>	a planthopper	None	1					1
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	<i>Chloriona glaucescens</i>	a planthopper	None			1		1	1
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	<i>Chloriona unicolor</i>	a planthopper	None					1	1
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	<i>Euides basilinea</i>	a planthopper	None	1					
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	<i>Euryrsa lineata</i>	a planthopper	None	1			1	1	1
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	<i>Eurybregma nigrolineata</i>	a planthopper	None			1	1		1
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	<i>Criomorpus albomarginatus</i>	a planthopper	None	1					
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	<i>Dicranotropis hamata</i>	a planthopper	None	1			1		1
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	<i>Megamelodes quadrimaculatus</i>	a planthopper	None				1		
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	<i>Hyledelphax elegantula</i>	a planthopper	None				1		
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	<i>Javesella dubia</i>	a planthopper	None		1	1	1		1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	<i>Javesella pellucida</i>	a planthopper	None	1			1	1	1
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	<i>Ribautodelphax imitans</i>	Tall Fescue Planthopper	RDBK, S41						1
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	<i>Xanthodelphax straminea</i>	a planthopper	None					1	
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	<i>Muirodelphax aubei</i>	a planthopper	None			1			
Insecta	Hemiptera: Heteroptera	Nepidae	<i>Nepa cinerea</i>	Water Scorpion	LC		1				1
Insecta	Hemiptera: Heteroptera	Corixidae	<i>Callicorixa praeusta</i>	an aquatic bug	LC		1				
Insecta	Hemiptera: Heteroptera	Corixidae	<i>Corixa punctata</i>	an aquatic bug	LC		1				
Insecta	Hemiptera: Heteroptera	Corixidae	<i>Hesperocorixa sahlbergi</i>	an aquatic bug	LC		1				
Insecta	Hemiptera: Heteroptera	Corixidae	<i>Sigara selecta</i>	an aquatic bug	LC, NS		1				1
Insecta	Hemiptera: Heteroptera	Corixidae	<i>Sigara stagnalis</i>	an aquatic bug	LC						1
Insecta	Hemiptera: Heteroptera	Corixidae	<i>Sigara fossarum</i>	an aquatic bug	LC		1				
Insecta	Hemiptera: Heteroptera	Corixidae	<i>Sigara lateralis</i>	an aquatic bug	LC		1				1
Insecta	Hemiptera: Heteroptera	Notonectidae	<i>Notonecta glauca</i>	Common Backswimmer	LC		1		1		1
Insecta	Hemiptera: Heteroptera	Notonectidae	<i>Notonecta viridis</i>	a backswimmer	LC						1
Insecta	Hemiptera: Heteroptera	Pleidae	<i>Plea minutissima</i>	a backswimmer	LC						1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Hemiptera: Heteroptera	Hydrometridae	<i>Hydrometra stagnorum</i>	Water Measurer	LC		1		1		1
Insecta	Hemiptera: Heteroptera	Veliidae	<i>Microvelia pygmaea</i>	a minute water-cricket	LC, NS		1			1	1
Insecta	Hemiptera: Heteroptera	Veliidae	<i>Microvelia reticulata</i>	a minute water-cricket	LC						1
Insecta	Hemiptera: Heteroptera	Gerridae	<i>Gerris odontogaster</i>	a pond-skater	LC						1
Insecta	Hemiptera: Heteroptera	Gerridae	<i>Gerris thoracicus</i>	a pond-skater	LC		1				1
Insecta	Hemiptera: Heteroptera	Gerridae	<i>Gerris lateralis</i>	a pond-skater	LC		1				
Insecta	Hemiptera: Heteroptera	Saldidae	<i>Chartoscirta cincta</i>	a shore-bug	LC		1		1	1	1
Insecta	Hemiptera: Heteroptera	Saldidae	<i>Saldula opacula</i>	a shore-bug	LC, NS		1				1
Insecta	Hemiptera: Heteroptera	Saldidae	<i>Saldula pallipes</i>	a shore-bug	LC, NS				1	1	1
Insecta	Hemiptera: Heteroptera	Saldidae	<i>Saldula palustris</i>	a shore-bug	LC, NS				1		1
Insecta	Hemiptera: Heteroptera	Saldidae	<i>Saldula pilosella</i>	a shore-bug	LC, NS						1
Insecta	Hemiptera: Heteroptera	Saldidae	<i>Saldula saltatoria</i>	a shore-bug	LC					1	
Insecta	Hemiptera: Heteroptera	Tingidae	<i>Acalypta parvula</i>	a lacebug	None	1					1
Insecta	Hemiptera: Heteroptera	Tingidae	<i>Kalama tricornis</i>	a lacebug	None	1					1
Insecta	Hemiptera: Heteroptera	Tingidae	<i>Physatocheila confinis</i>	a lacebug	None				1		

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Hemiptera: Heteroptera	Tingidae	<i>Tingis ampliata</i>	a lacebug	None				1	1	1
Insecta	Hemiptera: Heteroptera	Tingidae	<i>Tingis cardui</i>	a lacebug	None	1			1		
Insecta	Hemiptera: Heteroptera	Miridae	<i>Dicyphus epilobii</i>	a mirid bug	None					1	
Insecta	Hemiptera: Heteroptera	Miridae	<i>Deraeocoris ruber</i>	a mirid bug	None				1		
Insecta	Hemiptera: Heteroptera	Miridae	<i>Adelphocoris lineolatus</i>	a mirid bug	None	1		1			1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Agnocoris reclairei</i>	a mirid bug	Nationally Scarce (Nb)						1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Closterotomus norwegicus</i>	a mirid bug	None	1		1	1	1	1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Capsus ater</i>	a mirid bug	None	1			1		1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Liocoris tripustulatus</i>	a mirid bug	None	1			1		
Insecta	Hemiptera: Heteroptera	Miridae	<i>Apolygus lucorum</i>	a mirid bug	None					1	
Insecta	Hemiptera: Heteroptera	Miridae	<i>Apolygus spinolae</i>	a mirid bug	None						1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Lygus maritimus</i>	a mirid bug	None		1	1		1	1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Lygus pratensis</i>	a mirid bug	RDB3		1	1	1	1	1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Lygus rugulipennis</i>	a mirid bug	None		1	1		1	1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Orthops campestris</i>	a mirid bug	None			1			

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Hemiptera: Heteroptera	Miridae	<i>Phytocoris varipes</i>	a mirid bug	None	1	1	1			
Insecta	Hemiptera: Heteroptera	Miridae	<i>Pinalitus cervinus</i>	a mirid bug	None						1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Stenotus binotatus</i>	a mirid bug	None						1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Leptopterna dolabrata</i>	a mirid bug	None					1	1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Notostira elongata</i>	a mirid bug	None	1	1	1	1	1	1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Pithanus maerkelii</i>	a mirid bug	None				1		
Insecta	Hemiptera: Heteroptera	Miridae	<i>Stenodema calcarata</i>	a mirid bug	None	1	1		1	1	1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Stenodema laevigata</i>	a mirid bug	None	1				1	1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Teratocoris antennatus</i>	a mirid bug	None				1		
Insecta	Hemiptera: Heteroptera	Miridae	<i>Trigonotylus caelestialium</i>	a mirid bug	None					1	
Insecta	Hemiptera: Heteroptera	Miridae	<i>Trigonotylus ruficornis</i>	a mirid bug	None					1	
Insecta	Hemiptera: Heteroptera	Miridae	<i>Heterocordylus tibialis</i>	a mirid bug	None	1					
Insecta	Hemiptera: Heteroptera	Miridae	<i>Heterotoma planicornis</i>	a mirid bug	None					1	
Insecta	Hemiptera: Heteroptera	Miridae	<i>Orthotylus flavosparsus</i>	a mirid bug	None		1	1	1	1	
Insecta	Hemiptera: Heteroptera	Miridae	<i>Orthotylus moncreaffi</i>	a mirid bug	None			1			

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Hemiptera: Heteroptera	Miridae	<i>Amblytylus nasutus</i>	a mirid bug	None	1					
Insecta	Hemiptera: Heteroptera	Miridae	<i>Atractotomus mali</i>	a mirid bug	None					1	
Insecta	Hemiptera: Heteroptera	Miridae	<i>Chlamydatus pullus</i>	a mirid bug	None	1					1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Europiella artemisiae</i>	a mirid bug	None					1	1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Orthonotus rufifrons</i>	a mirid bug	None	1					
Insecta	Hemiptera: Heteroptera	Miridae	<i>Plagiognathus arbustorum</i>	a mirid bug	None				1	1	
Insecta	Hemiptera: Heteroptera	Miridae	<i>Plagiognathus chrysanthemi</i>	a mirid bug	None	1				1	1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Psallus varians</i>	a mirid bug	None						1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Tuponia hippophaes</i>	a mirid bug	None						1
Insecta	Hemiptera: Heteroptera	Miridae	<i>Tytthus pygmaeus</i>	a mirid bug	None					1	
Insecta	Hemiptera: Heteroptera	Nabidae	<i>Himacerus major</i>	Grey Damsel-bug	None	1		1			1
Insecta	Hemiptera: Heteroptera	Nabidae	<i>Himacerus mirmicoides</i>	Ant Damsel-bug	None	1					1
Insecta	Hemiptera: Heteroptera	Nabidae	<i>Nabis limbatus</i>	Marsh Damsel-bug	None				1	1	
Insecta	Hemiptera: Heteroptera	Nabidae	<i>Nabis ferus</i>	Field Damsel-bug	None			1		1	1
Insecta	Hemiptera: Heteroptera	Nabidae	<i>Nabis pseudoferus</i>	a damsel-bug	Nationally Scarce (Nb)	1					

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Hemiptera: Heteroptera	Anthocoridae	<i>Anthocoris nemoralis</i>	a flower bug	None	1				1	1
Insecta	Hemiptera: Heteroptera	Anthocoridae	<i>Anthocoris nemorum</i>	a flower bug	None						1
Insecta	Hemiptera: Heteroptera	Anthocoridae	<i>Anthocoris sarothamni</i>	a flower bug	None	1					
Insecta	Hemiptera: Heteroptera	Anthocoridae	<i>Orius laticollis</i>	a flower bug	None						1
Insecta	Hemiptera: Heteroptera	Anthocoridae	<i>Orius vicinus</i>	a flower bug	None			1	1	1	1
Insecta	Hemiptera: Heteroptera	Anthocoridae	<i>Orius laevigatus</i>	a flower bug	None	1			1		1
Insecta	Hemiptera: Heteroptera	Anthocoridae	<i>Orius niger</i>	a flower bug	None	1	1	1		1	1
Insecta	Hemiptera: Heteroptera	Anthocoridae	<i>Cardiastethus fasciventris</i>	a flower bug	None	1					
Insecta	Hemiptera: Heteroptera	Piesmatidae	<i>Piesma maculatum</i>	a beetbug	None					1	1
Insecta	Hemiptera: Heteroptera	Piesmatidae	<i>Parapiesma quadratum</i>	a bug	None	1	1	1		1	1
Insecta	Hemiptera: Heteroptera	Berytidae	<i>Berytinus hirticornis</i>	a stiltbug	Nationally Scarce (Nb)	1					1
Insecta	Hemiptera: Heteroptera	Berytidae	<i>Berytinus minor</i>	a stiltbug	None	1					1
Insecta	Hemiptera: Heteroptera	Berytidae	<i>Berytinus montivagus</i>	a stiltbug	None	1					
Insecta	Hemiptera: Heteroptera	Berytidae	<i>Berytinus signoreti</i>	a stiltbug	None						1
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Nysius graminicola</i>	a ground-bug	RDB3	1			1		1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Nysius huttoni</i>	a ground-bug	None				1	1	1
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Nysius senecionis</i>	a ground-bug	None			1			1
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Ortholomus punctipennis</i>	a ground-bug	RDB3						1
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Kleidocerys resedae</i>	a ground-bug	None	1			1		1
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Cymus clavicolus</i>	a ground-bug	None				1		
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Cymus glandicolor</i>	a ground-bug	None						1
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Cymus melanocephalus</i>	a ground-bug	None					1	
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Ischnodemus sabuleti</i>	European Chinch-bug	None	1		1	1	1	1
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Heterogaster urticae</i>	a ground-bug	None			1			1
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Metopoplax ditomoides</i>	a ground-bug	None						1
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Stygnocoris fuligineus</i>	a ground-bug	None						1
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Drymus ryeii</i>	a ground-bug	None						1
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Scolopostethus affinis</i>	a ground-bug	None					1	1
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Scolopostethus grandis</i>	a ground-bug	None						1
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Scolopostethus thomsoni</i>	a ground-bug	None						1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Megalonotus chiragra</i>	a ground-bug	None						1
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Megalonotus emarginatus</i>	a ground-bug	None						1
Insecta	Hemiptera: Heteroptera	Lygaeidae	<i>Peritrechus nubilus</i>	a ground-bug	None		1				1
Insecta	Hemiptera: Heteroptera	Coreidae	<i>Coreus marginatus</i>	Dock Bug	LC				1	1	1
Insecta	Hemiptera: Heteroptera	Coreidae	<i>Syromastus rhombeus</i>	Rhombic Leatherbug	LC						1
Insecta	Hemiptera: Heteroptera	Coreidae	<i>Bathysolen nubilus</i>	Cryptic Leatherbug	LC, NS	1					
Insecta	Hemiptera: Heteroptera	Coreidae	<i>Coriomeris denticulatus</i>	Denticulate Leatherbug	LC	1					
Insecta	Hemiptera: Heteroptera	Rhopalidae	<i>Corizus hyoscyami</i>	a rhopalid bug	LC						1
Insecta	Hemiptera: Heteroptera	Rhopalidae	<i>Liorhyssus hyalinus</i>	a rhopalid bug	LC, NS						1
Insecta	Hemiptera: Heteroptera	Rhopalidae	<i>Rhopalus subrufus</i>	a rhopalid bug	LC						1
Insecta	Hemiptera: Heteroptera	Rhopalidae	<i>Myrmus miriformis</i>	a rhopalid bug	LC	1					1
Insecta	Hemiptera: Heteroptera	Rhopalidae	<i>Stictopleurus punctatonervosus</i>	a rhopalid bug	NA			1			
Insecta	Hemiptera: Heteroptera	Rhopalidae	<i>Stictopleurus abutilon</i>	a rhopalid bug	NA			1			1
Insecta	Hemiptera: Heteroptera	Cydnidae	<i>Legnotus limbosus</i>	Bordered Shieldbug	LC				1	1	1
Insecta	Hemiptera: Heteroptera	Cydnidae	<i>Tritomegas bicolor</i>	Pied Shieldbug	LC	1					

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Hemiptera: Heteroptera	Cydnidae	<i>Tritomegas sexmaculatus</i>	Rambur's Shieldbug	None	1				1	
Insecta	Hemiptera: Heteroptera	Pentatomidae	<i>Podops inunctus</i>	Knobbed Shieldbug	LC		1		1	1	1
Insecta	Hemiptera: Heteroptera	Pentatomidae	<i>Sciocoris cursitans</i>	Sand-runner Shieldbug	LC, NS	1					
Insecta	Hemiptera: Heteroptera	Pentatomidae	<i>Aelia acuminata</i>	Bishop's Mitre Shieldbug	LC	1					1
Insecta	Hemiptera: Heteroptera	Pentatomidae	<i>Palomena prasina</i>	Common Green Shieldbug	LC						1
Insecta	Hemiptera: Heteroptera	Pentatomidae	<i>Piezodorus lituratus</i>	Gorse Shieldbug	LC	1					
Insecta	Hemiptera: Heteroptera	Pentatomidae	<i>Eurydema oleracea</i>	Crucifer Shieldbug	LC		1	1		1	1
Insecta	Hemiptera: Heteroptera	Pentatomidae	<i>Rhaphigaster nebulosa</i>	Mottled Shieldbug	NA						1
Insecta	Coleoptera	Gyrinidae	<i>Gyrinus caspius</i>	a whirligig beetle	LC		1				
Insecta	Coleoptera	Halplidae	<i>Halplus lineatocollis</i>	a crawling water beetle	LC		1				1
Insecta	Coleoptera	Halplidae	<i>Halplus apicalis</i>	a crawling water beetle	Nationally Scarce		1				
Insecta	Coleoptera	Halplidae	<i>Halplus immaculatus</i>	a crawling water beetle	LC		1				
Insecta	Coleoptera	Halplidae	<i>Halplus ruficollis</i>	a crawling water beetle	LC		1		1		
Insecta	Coleoptera	Halplidae	<i>Peltodytes caesus</i>	a crawling water beetle	Nationally Scarce						1
Insecta	Coleoptera	Noteridae	<i>Noterus clavicornis</i>	The Larger Noterus	LC		1		1		1
Insecta	Coleoptera	Dytiscidae	<i>Liopterus haemorrhoidalis</i>	The Piles Beetle	LC					1	

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Dytiscidae	<i>Laccophilus minutus</i>	a diving beetle	LC						1
Insecta	Coleoptera	Dytiscidae	<i>Hyphidrus ovatus</i>	The Cherrystone Beetle	LC						1
Insecta	Coleoptera	Dytiscidae	<i>Hydroglyphus geminus</i>	a diving beetle	LC						1
Insecta	Coleoptera	Dytiscidae	<i>Hygrotus inaequalis</i>	a diving beetle	LC				1		1
Insecta	Coleoptera	Dytiscidae	<i>Hygrotus confluens</i>	a diving beetle	LC		1				1
Insecta	Coleoptera	Dytiscidae	<i>Hygrotus impressopunctatus</i>	a diving beetle	LC				1		1
Insecta	Coleoptera	Dytiscidae	<i>Hygrotus parallelogrammus</i>	a diving beetle	Nationally Scarce						1
Insecta	Coleoptera	Dytiscidae	<i>Hydroporus angustatus</i>	a diving beetle	LC					1	1
Insecta	Coleoptera	Dytiscidae	<i>Hydroporus memnonius</i>	a diving beetle	LC		1				1
Insecta	Coleoptera	Dytiscidae	<i>Hydroporus palustris</i>	a diving beetle	LC					1	
Insecta	Coleoptera	Dytiscidae	<i>Hydroporus planus</i>	a diving beetle	LC		1		1		1
Insecta	Coleoptera	Dytiscidae	<i>Graptodytes bilineatus</i>	a diving beetle	Nationally Scarce				1		
Insecta	Coleoptera	Dytiscidae	<i>Agabus bipustulatus</i>	a diving beetle	LC				1		
Insecta	Coleoptera	Dytiscidae	<i>Agabus nebulosus</i>	a diving beetle	LC		1		1		1
Insecta	Coleoptera	Dytiscidae	<i>Agabus sturmii</i>	a diving beetle	LC		1				
Insecta	Coleoptera	Dytiscidae	<i>Ilybius fuliginosus</i>	a diving beetle	LC		1				
Insecta	Coleoptera	Dytiscidae	<i>Ilybius quadriguttatus</i>	a diving beetle	LC				1	1	1
Insecta	Coleoptera	Dytiscidae	<i>Rhantus frontalis</i>	a diving beetle	Nationally Scarce		1				
Insecta	Coleoptera	Dytiscidae	<i>Rhantus suturalis</i>	The Supertramp	LC				1		
Insecta	Coleoptera	Dytiscidae	<i>Colymbetes fuscus</i>	a diving beetle	LC		1		1		
Insecta	Coleoptera	Dytiscidae	<i>Dytiscus circumflexus</i>	a diving beetle	LC						1
Insecta	Coleoptera	Carabidae	<i>Leistus ferrugineus</i>	a ground beetle	LC	1					

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Carabidae	<i>Nebria brevicollis</i>	a ground beetle	LC	1			1	1	1
Insecta	Coleoptera	Carabidae	<i>Nebria salina</i>	a ground beetle	LC	1				1	1
Insecta	Coleoptera	Carabidae	<i>Notiophilus biguttatus</i>	a ground beetle	LC	1					
Insecta	Coleoptera	Carabidae	<i>Notiophilus palustris</i>	a ground beetle	LC						1
Insecta	Coleoptera	Carabidae	<i>Notiophilus quadripunctatus</i>	a ground beetle	LC, NS					1	1
Insecta	Coleoptera	Carabidae	<i>Notiophilus substriatus</i>	a ground beetle	LC	1				1	
Insecta	Coleoptera	Carabidae	<i>Cicindela campestris</i>	Green Tiger-beetle	LC	1	1			1	1
Insecta	Coleoptera	Carabidae	<i>Loricera pilicornis</i>	a ground beetle	LC						1
Insecta	Coleoptera	Carabidae	<i>Elaphrus riparius</i>	a ground beetle	LC				1		1
Insecta	Coleoptera	Carabidae	<i>Dyschirius aeneus</i>	a ground beetle	LC		1			1	1
Insecta	Coleoptera	Carabidae	<i>Dyschirius tristis</i>	a ground beetle	LC				1		
Insecta	Coleoptera	Carabidae	<i>Dyschirius chaldeus</i>	a ground beetle	LC, NS					1	
Insecta	Coleoptera	Carabidae	<i>Dyschirius salinus</i>	a ground beetle	LC, NS				1		
Insecta	Coleoptera	Carabidae	<i>Trechus quadristriatus</i>	a ground beetle	LC	1	1		1	1	1
Insecta	Coleoptera	Carabidae	<i>Asaphidion stierlini</i>	a ground beetle	LC					1	1
Insecta	Coleoptera	Carabidae	<i>Bembidion iricolor</i>	a ground beetle	LC, NS				1		
Insecta	Coleoptera	Carabidae	<i>Bembidion lunulatum</i>	a ground beetle	LC		1		1	1	1
Insecta	Coleoptera	Carabidae	<i>Bembidion lampros</i>	a ground beetle	LC					1	
Insecta	Coleoptera	Carabidae	<i>Bembidion properans</i>	a ground beetle	LC	1				1	1
Insecta	Coleoptera	Carabidae	<i>Bembidion varium</i>	a ground beetle	LC				1		1
Insecta	Coleoptera	Carabidae	<i>Bembidion femoratum</i>	a ground beetle	LC					1	
Insecta	Coleoptera	Carabidae	<i>Bembidion tetracolum</i>	a ground beetle	LC					1	
Insecta	Coleoptera	Carabidae	<i>Bembidion genei</i>	a ground beetle	LC				1	1	1
Insecta	Coleoptera	Carabidae	<i>Bembidion assimile</i>	a ground beetle	LC				1	1	1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Carabidae	<i>Bembidion fumigatum</i>	a ground beetle	LC, NS		1		1	1	1
Insecta	Coleoptera	Carabidae	<i>Bembidion minimum</i>	a ground beetle	LC			1	1	1	1
Insecta	Coleoptera	Carabidae	<i>Bembidion normannum</i>	a ground beetle	LC, NS			1			1
Insecta	Coleoptera	Carabidae	<i>Bembidion quadrimaculatum</i>	a ground beetle	LC	1				1	1
Insecta	Coleoptera	Carabidae	<i>Bembidion articulatum</i>	a ground beetle	LC				1		1
Insecta	Coleoptera	Carabidae	<i>Bembidion obtusum</i>	a ground beetle	LC		1			1	
Insecta	Coleoptera	Carabidae	<i>Ocys harpaloides/ tachysoides</i>	a ground beetle	LC			1			
Insecta	Coleoptera	Carabidae	<i>Tachyura parvula</i>	a ground beetle	LC, NS						1
Insecta	Coleoptera	Carabidae	<i>Pogonus chalceus</i>	a ground beetle	LC			1			
Insecta	Coleoptera	Carabidae	<i>Stomis pumicatus</i>	a ground beetle	LC						1
Insecta	Coleoptera	Carabidae	<i>Poecilus cupreus</i>	a ground beetle	LC					1	1
Insecta	Coleoptera	Carabidae	<i>Pterostichus madidus</i>	a ground beetle	LC	1		1			
Insecta	Coleoptera	Carabidae	<i>Pedius longicollis</i>	a ground beetle	LC, NS					1	1
Insecta	Coleoptera	Carabidae	<i>Pterostichus melanarius</i>	a ground beetle	LC				1		1
Insecta	Coleoptera	Carabidae	<i>Pterostichus gracilis</i>	a ground beetle	LC, NS				1		
Insecta	Coleoptera	Carabidae	<i>Pterostichus nigrata</i>	a ground beetle	LC				1	1	
Insecta	Coleoptera	Carabidae	<i>Calathus ambiguus</i>	a ground beetle	LC, NS	1					
Insecta	Coleoptera	Carabidae	<i>Calathus cinctus</i>	a ground beetle	LC	1					
Insecta	Coleoptera	Carabidae	<i>Calathus fuscipes</i>	a ground beetle	LC	1					
Insecta	Coleoptera	Carabidae	<i>Laemostenus terricola</i>	a ground beetle	LC	1					
Insecta	Coleoptera	Carabidae	<i>Platyderus depressus</i>	a ground beetle	LC	1		1			
Insecta	Coleoptera	Carabidae	<i>Anchomenus dorsalis</i>	a ground beetle	LC	1				1	1
Insecta	Coleoptera	Carabidae	<i>Agonum fuliginosum</i>	a ground beetle	LC					1	
Insecta	Coleoptera	Carabidae	<i>Agonum thoreyi</i>	a ground beetle	LC		1		1	1	
Insecta	Coleoptera	Carabidae	<i>Agonum marginatum</i>	a ground beetle	LC				1		1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Carabidae	<i>Amara plebeja</i>	a ground beetle	LC	1			1		1
Insecta	Coleoptera	Carabidae	<i>Amara strenua</i>	a ground beetle	NT, NR						1
Insecta	Coleoptera	Carabidae	<i>Amara aenea</i>	a ground beetle	LC	1				1	1
Insecta	Coleoptera	Carabidae	<i>Amara convexior</i>	a ground beetle	LC	1					1
Insecta	Coleoptera	Carabidae	<i>Amara eurynota</i>	a ground beetle	LC						1
Insecta	Coleoptera	Carabidae	<i>Amara familiaris</i>	a ground beetle	LC	1					
Insecta	Coleoptera	Carabidae	<i>Amara lunicollis</i>	a ground beetle	LC	1					1
Insecta	Coleoptera	Carabidae	<i>Amara montivaga</i>	a ground beetle	LC, NS	1					
Insecta	Coleoptera	Carabidae	<i>Amara ovata</i>	a ground beetle	LC	1		1		1	1
Insecta	Coleoptera	Carabidae	<i>Amara similata</i>	a ground beetle	LC	1			1		1
Insecta	Coleoptera	Carabidae	<i>Amara tibialis</i>	a ground beetle	LC	1		1	1		1
Insecta	Coleoptera	Carabidae	<i>Curtonotus aulicus</i>	a ground beetle	LC	1					1
Insecta	Coleoptera	Carabidae	<i>Curtonotus convexiusculus</i>	a ground beetle	LC		1		1	1	
Insecta	Coleoptera	Carabidae	<i>Harpalus affinis</i>	a ground beetle	LC	1	1		1	1	1
Insecta	Coleoptera	Carabidae	<i>Harpalus attenuatus</i>	a ground beetle	LC, NS	1					
Insecta	Coleoptera	Carabidae	<i>Harpalus rubripes</i>	a ground beetle	LC	1			1		
Insecta	Coleoptera	Carabidae	<i>Harpalus tardus</i>	a ground beetle	LC	1		1			1
Insecta	Coleoptera	Carabidae	<i>Harpalus rufipes</i>	a ground beetle	LC	1	1	1	1	1	1
Insecta	Coleoptera	Carabidae	<i>Ophonus ardosiacus</i>	a ground beetle	LC	1		1			1
Insecta	Coleoptera	Carabidae	<i>Ophonus azureus</i>	a ground beetle	LC, NS	1					
Insecta	Coleoptera	Carabidae	<i>Ophonus rufibarbis</i>	a ground beetle	LC				1	1	1
Insecta	Coleoptera	Carabidae	<i>Anisodactylus binotatus</i>	a ground beetle	LC				1	1	1
Insecta	Coleoptera	Carabidae	<i>Anisodactylus poeciloides</i>	Saltmarsh Shortspur	LC, NS, S41				1	1	1
Insecta	Coleoptera	Carabidae	<i>Scybalicus oblongiusculus</i>	a ground beetle	VU, NR						1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Carabidae	<i>Stenolophus mixtus</i>	a ground beetle	LC				1	1	1
Insecta	Coleoptera	Carabidae	<i>Stenolophus teutonius</i>	a ground beetle	LC, NS				1	1	1
Insecta	Coleoptera	Carabidae	<i>Bradycellus harpalinus</i>	a ground beetle	LC	1					
Insecta	Coleoptera	Carabidae	<i>Acupalpus dubius</i>	a ground beetle	LC				1	1	1
Insecta	Coleoptera	Carabidae	<i>Acupalpus exiguus</i>	a ground beetle	LC, NS					1	
Insecta	Coleoptera	Carabidae	<i>Acupalpus meridianus</i>	a ground beetle	LC						1
Insecta	Coleoptera	Carabidae	<i>Acupalpus maculatus</i>	a ground beetle	NT, NR				1	1	1
Insecta	Coleoptera	Carabidae	<i>Panagaeus bipustulatus</i>	a ground beetle	LC, NS	1					
Insecta	Coleoptera	Carabidae	<i>Chlaenius vestitus</i>	a ground beetle	LC						1
Insecta	Coleoptera	Carabidae	<i>Odacantha melanura</i>	a ground beetle	LC, NS				1		
Insecta	Coleoptera	Carabidae	<i>Demetrias imperialis</i>	a ground beetle	LC				1	1	1
Insecta	Coleoptera	Carabidae	<i>Demetrias atricapillus</i>	a ground beetle	LC	1	1	1	1	1	1
Insecta	Coleoptera	Carabidae	<i>Paradromius linearis</i>	a ground beetle	LC	1	1	1	1	1	1
Insecta	Coleoptera	Carabidae	<i>Philorhizus melanocephalus</i>	a ground beetle	LC	1	1	1		1	1
Insecta	Coleoptera	Carabidae	<i>Philorhizus notatus</i>	a ground beetle	LC	1		1			
Insecta	Coleoptera	Carabidae	<i>Syntomus foveatus</i>	a ground beetle	LC	1		1			1
Insecta	Coleoptera	Carabidae	<i>Syntomus obscuroguttatus</i>	a ground beetle	LC					1	1
Insecta	Coleoptera	Carabidae	<i>Syntomus truncatellus</i>	a ground beetle	LC, NS	1					1
Insecta	Coleoptera	Carabidae	<i>Microlestes maurus</i>	a ground beetle	LC	1	1	1		1	1
Insecta	Coleoptera	Carabidae	<i>Microlestes minutulus</i>	a ground beetle	LC	1				1	1
Insecta	Coleoptera	Carabidae	<i>Polistichus connexus</i>	a ground beetle	NT, NS			1			1
Insecta	Coleoptera	Carabidae	<i>Brachinus crepitans</i>	Bombardier Beetle	LC, NS	1		1	1	1	1
Insecta	Coleoptera	Helophoridae	<i>Helophorus alternans</i>	an aquatic beetle	Nationally Scarce		1		1		1
Insecta	Coleoptera	Helophoridae	<i>Helophorus aequalis</i>	an aquatic beetle	LC		1		1		

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Helophoridae	<i>Helophorus brevipalpis</i>	an aquatic beetle	LC		1	1	1		1
Insecta	Coleoptera	Helophoridae	<i>Helophorus griseus</i>	an aquatic beetle	LC				1		1
Insecta	Coleoptera	Helophoridae	<i>Helophorus minutus</i>	an aquatic beetle	LC		1		1	1	1
Insecta	Coleoptera	Helophoridae	<i>Helophorus obscurus</i>	an aquatic beetle	LC				1		
Insecta	Coleoptera	Hydrochidae	<i>Hydrochus ignicollis</i>	an aquatic beetle	NT						1
Insecta	Coleoptera	Hydrophilidae	<i>Berosus affinis</i>	an aquatic beetle	LC		1				1
Insecta	Coleoptera	Hydrophilidae	<i>Berosus signaticollis</i>	an aquatic beetle	LC				1		
Insecta	Coleoptera	Hydrophilidae	<i>Hydrobius fuscipes sens. str.</i>	an aquatic beetle	None		1		1		1
Insecta	Coleoptera	Hydrophilidae	<i>Limnoxenus niger</i>	an aquatic beetle	NT						1
Insecta	Coleoptera	Hydrophilidae	<i>Anacaena globulus</i>	an aquatic beetle	LC					1	
Insecta	Coleoptera	Hydrophilidae	<i>Anacaena limbata</i>	an aquatic beetle	LC		1		1	1	1
Insecta	Coleoptera	Hydrophilidae	<i>Laccobius bipunctatus</i>	an aquatic beetle	LC		1				1
Insecta	Coleoptera	Hydrophilidae	<i>Helochares lividus</i>	an aquatic beetle	LC						1
Insecta	Coleoptera	Hydrophilidae	<i>Enochrus bicolor</i>	an aquatic beetle	Nationally Scarce		1		1		1
Insecta	Coleoptera	Hydrophilidae	<i>Enochrus halophilus</i>	an aquatic beetle	Nationally Scarce				1		1
Insecta	Coleoptera	Hydrophilidae	<i>Cymbiodyta marginella</i>	an aquatic beetle	LC		1		1	1	1
Insecta	Coleoptera	Hydrophilidae	<i>Cercyon bifenestratus</i>	an aquatic beetle	Nationally Scarce						1
Insecta	Coleoptera	Hydrophilidae	<i>Cercyon marinus</i>	an aquatic beetle	None		1				
Insecta	Coleoptera	Hydrophilidae	<i>Cercyon sternalis</i>	an aquatic beetle	LC		1		1	1	1
Insecta	Coleoptera	Hydrophilidae	<i>Cercyon tristis</i>	an aquatic beetle	LC		1		1		
Insecta	Coleoptera	Hydrophilidae	<i>Megasternum concinnum</i>	a beetle	None				1		
Insecta	Coleoptera	Histeridae	<i>Saprinus aeneus</i>	a beetle	LC, NS	1					
Insecta	Coleoptera	Histeridae	<i>Saprinus semistriatus</i>	a beetle	LC	1					

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Histeridae	<i>Kissister minimus</i>	a beetle	LC	1					1
Insecta	Coleoptera	Histeridae	<i>Margarinotus purpurascens</i>	a beetle	LC	1					
Insecta	Coleoptera	Histeridae	<i>Hister unicolor</i>	a beetle	LC	1					
Insecta	Coleoptera	Hydraenidae	<i>Ochthebius minimus</i>	an aquatic beetle	LC		1		1		1
Insecta	Coleoptera	Hydraenidae	<i>Aulacochthebius exaratus</i>	an aquatic beetle	NT				1		1
Insecta	Coleoptera	Hydraenidae	<i>Ochthebius marinus</i>	an aquatic beetle	LC		1				1
Insecta	Coleoptera	Hydraenidae	<i>Ochthebius viridis</i>	an aquatic beetle	Nationally Scarce		1		1		1
Insecta	Coleoptera	Ptiliidae	<i>Ptenidium myrmicophilum</i>	a featherwing beetle	None				1		1
Insecta	Coleoptera	Ptiliidae	<i>Ptenidium fuscicorne</i>	a featherwing beetle	None		1		1		
Insecta	Coleoptera	Ptiliidae	<i>Ptenidium pusillum</i>	a featherwing beetle	None				1		1
Insecta	Coleoptera	Ptiliidae	<i>Acrotrichis pumila</i>	a featherwing beetle	RDBK				1		
Insecta	Coleoptera	Leiodidae	<i>Leiodes rufipennis</i>	a beetle	None	1					
Insecta	Coleoptera	Leiodidae	<i>Nargus velox</i>	a beetle	None	1					
Insecta	Coleoptera	Leiodidae	<i>Catops nigricans</i>	a beetle	None	1		1			
Insecta	Coleoptera	Silphidae	<i>Phosphuga atrata</i>	a beetle	None	1				1	1
Insecta	Coleoptera	Silphidae	<i>Ablattaria laevigata</i>	a beetle	None	1					1
Insecta	Coleoptera	Silphidae	<i>Silpha tristis</i>	a beetle	None	1		1	1	1	1
Insecta	Coleoptera	Silphidae	<i>Nicrophorus vestigator</i>	a sexton beetle	Nationally Scarce (Na)	1					
Insecta	Coleoptera	Staphylinidae	<i>Stenichnus scutellaris</i>	a scydmaenine rove-beetle	None					1	1
Insecta	Coleoptera	Staphylinidae	<i>Lesteva longoelytrata</i>	a rove-beetle	LC						1
Insecta	Coleoptera	Staphylinidae	<i>Lesteva sicula</i>	a rove-beetle	LC					1	1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Staphylinidae	<i>Metopsia clypeata</i>	a rove-beetle	LC	1					1
Insecta	Coleoptera	Staphylinidae	<i>Micropeplus staphylinoides</i>	a rove-beetle	LC					1	
Insecta	Coleoptera	Staphylinidae	<i>Rybaxis longicornis</i>	a pselaphine rove-beetle	None				1	1	
Insecta	Coleoptera	Staphylinidae	<i>Brachygluta fossulata</i>	a pselaphine rove-beetle	None					1	
Insecta	Coleoptera	Staphylinidae	<i>Brachygluta helferi</i>	a pselaphine rove-beetle	None	1	1		1		1
Insecta	Coleoptera	Staphylinidae	<i>Sepedophilus marshami</i>	a rove-beetle	LC	1		1		1	1
Insecta	Coleoptera	Staphylinidae	<i>Sepedophilus nigripennis</i>	a rove-beetle	LC	1			1	1	1
Insecta	Coleoptera	Staphylinidae	<i>Tachyporus dispar</i>	a rove-beetle	LC						1
Insecta	Coleoptera	Staphylinidae	<i>Tachyporus hypnorum</i>	a rove-beetle	LC	1	1		1	1	1
Insecta	Coleoptera	Staphylinidae	<i>Tachyporus nitidulus</i>	a rove-beetle	LC	1	1		1	1	1
Insecta	Coleoptera	Staphylinidae	<i>Tachyporus pusillus</i>	a rove-beetle	LC	1					
Insecta	Coleoptera	Staphylinidae	<i>Tachyporus solutus</i>	a rove-beetle	LC	1					1
Insecta	Coleoptera	Staphylinidae	<i>Ischnosoma splendidum</i>	a rove-beetle	LC						1
Insecta	Coleoptera	Staphylinidae	<i>Bolitobius castaneus</i>	a rove-beetle	LC	1					
Insecta	Coleoptera	Staphylinidae	<i>Bolitobius cingulatus</i>	a rove-beetle	LC						1
Insecta	Coleoptera	Staphylinidae	<i>Myllaena infuscata</i>	a rove-beetle	None				1		
Insecta	Coleoptera	Staphylinidae	<i>Oxypoda elongatula</i>	a rove-beetle	None				1		
Insecta	Coleoptera	Staphylinidae	<i>Oxypoda lurida</i>	a rove-beetle	Nationally Scarce	1					1
Insecta	Coleoptera	Staphylinidae	<i>Tetralaucopora longitarsis</i>	a rove-beetle	None		1		1		
Insecta	Coleoptera	Staphylinidae	<i>Thinonoma atra</i>	a rove-beetle	None					1	
Insecta	Coleoptera	Staphylinidae	<i>Dacrila fallax</i>	a rove-beetle	Nationally Scarce				1	1	
Insecta	Coleoptera	Staphylinidae	<i>Aloconota gregaria</i>	a rove-beetle	None	1			1	1	1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Staphylinidae	<i>Tomoglossa heydemanni</i>	a rove-beetle	New to Britain				1	1	
Insecta	Coleoptera	Staphylinidae	<i>Pycnota paradoxa</i>	a rove-beetle	Nationally Scarce	1					
Insecta	Coleoptera	Staphylinidae	<i>Amischa analis</i>	a rove-beetle	None	1			1	1	1
Insecta	Coleoptera	Staphylinidae	<i>Amischa decipiens</i>	a rove-beetle	None	1	1		1	1	1
Insecta	Coleoptera	Staphylinidae	<i>Amischa forcipata</i>	a rove-beetle	None					1	1
Insecta	Coleoptera	Staphylinidae	<i>Amischa nigrofusca</i>	a rove-beetle	None	1	1		1		1
Insecta	Coleoptera	Staphylinidae	<i>Dinaraea angustula</i>	a rove-beetle	None					1	
Insecta	Coleoptera	Staphylinidae	<i>Plataraea brunnea</i>	a rove-beetle	None	1					
Insecta	Coleoptera	Staphylinidae	<i>Liogluta pagana</i>	a rove-beetle	Nationally Scarce	1					
Insecta	Coleoptera	Staphylinidae	<i>Dilacra vilis</i>	a rove-beetle	None				1	1	
Insecta	Coleoptera	Staphylinidae	<i>Mocyta fungi</i> agg.	a rove-beetle	None	1	1	1	1	1	1
Insecta	Coleoptera	Staphylinidae	<i>Atheta aquatica</i>	a rove-beetle	None		1		1		
Insecta	Coleoptera	Staphylinidae	<i>Atheta oblita</i>	a rove-beetle	None	1					
Insecta	Coleoptera	Staphylinidae	<i>Dimetrotina laticollis</i>	a rove-beetle	None				1		
Insecta	Coleoptera	Staphylinidae	<i>Thinobaena vestita</i>	a rove-beetle	None			1			
Insecta	Coleoptera	Staphylinidae	<i>Alianta incana</i>	a rove-beetle	None					1	
Insecta	Coleoptera	Staphylinidae	<i>Pachnida nigella</i>	a rove-beetle	None					1	
Insecta	Coleoptera	Staphylinidae	<i>Aleochara bipustulata</i>	a rove-beetle	None	1					1
Insecta	Coleoptera	Staphylinidae	<i>Aleochara curtula</i>	a rove-beetle	None	1	1				
Insecta	Coleoptera	Staphylinidae	<i>Aleochara lygaea</i>	a rove-beetle	RDBi	1					
Insecta	Coleoptera	Staphylinidae	<i>Drusilla canaliculata</i>	a rove-beetle	None	1	1	1	1	1	1
Insecta	Coleoptera	Staphylinidae	<i>Pella limbata</i>	a rove-beetle	None	1					
Insecta	Coleoptera	Staphylinidae	<i>Autalia rivularis</i>	a rove-beetle	None	1					

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Insecta	Coleoptera	Staphylinidae	<i>Cypha longicornis</i>	a rove-beetle	None	1			1	1	1
Insecta	Coleoptera	Staphylinidae	<i>Oligota pumilio</i>	a rove-beetle	None	1					1
Insecta	Coleoptera	Staphylinidae	<i>Planeustomus palpalis</i>	a rove-beetle	LC, NS				1		
Insecta	Coleoptera	Staphylinidae	<i>Bledius spectabilis</i>	a rove-beetle	LC				1	1	1
Insecta	Coleoptera	Staphylinidae	<i>Bledius opacus</i>	a rove-beetle	LC					1	
Insecta	Coleoptera	Staphylinidae	<i>Carpelimus corticinus</i>	a rove-beetle	LC		1		1	1	1
Insecta	Coleoptera	Staphylinidae	<i>Carpelimus elongatulus</i>	a rove-beetle	LC					1	
Insecta	Coleoptera	Staphylinidae	<i>Carpelimus erichsoni</i>	a rove-beetle	LC					1	1
Insecta	Coleoptera	Staphylinidae	<i>Carpelimus foveolatus</i>	a rove-beetle	LC, NS				1		1
Insecta	Coleoptera	Staphylinidae	<i>Carpelimus halophilus</i>	a rove-beetle	LC, NS					1	
Insecta	Coleoptera	Staphylinidae	<i>Carpelimus incongruus</i>	a rove-beetle	NA				1	1	
Insecta	Coleoptera	Staphylinidae	<i>Platystethus alutaceus</i>	a rove-beetle	LC		1		1	1	
Insecta	Coleoptera	Staphylinidae	<i>Platystethus nitens</i>	a rove-beetle	LC				1		1
Insecta	Coleoptera	Staphylinidae	<i>Anotylus inustus</i>	a rove-beetle	LC	1					
Insecta	Coleoptera	Staphylinidae	<i>Anotylus nitidulus</i>	a rove-beetle	LC	1					1
Insecta	Coleoptera	Staphylinidae	<i>Anotylus rugosus</i>	a rove-beetle	LC	1	1				1
Insecta	Coleoptera	Staphylinidae	<i>Anotylus sculpturatus</i>	a rove-beetle	LC	1					1
Insecta	Coleoptera	Staphylinidae	<i>Anotylus tetracarinatus</i>	a rove-beetle	LC	1	1				
Insecta	Coleoptera	Staphylinidae	<i>Stenus clavicornis</i>	a rove-beetle	None	1				1	1
Insecta	Coleoptera	Staphylinidae	<i>Stenus comma</i>	a rove-beetle	None						1
Insecta	Coleoptera	Staphylinidae	<i>Stenus juno</i>	a rove-beetle	None		1		1	1	1
Insecta	Coleoptera	Staphylinidae	<i>Stenus canaliculatus</i>	a rove-beetle	None					1	
Insecta	Coleoptera	Staphylinidae	<i>Stenus nitens</i>	a rove-beetle	None					1	
Insecta	Coleoptera	Staphylinidae	<i>Stenus pusillus</i>	a rove-beetle	Nationally Scarce (Nb)				1		

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Staphylinidae	<i>Stenus brunnipes</i>	a rove-beetle	None						1
Insecta	Coleoptera	Staphylinidae	<i>Stenus cicindeloides</i>	a rove-beetle	None				1		1
Insecta	Coleoptera	Staphylinidae	<i>Stenus fulvicornis</i>	a rove-beetle	None				1		
Insecta	Coleoptera	Staphylinidae	<i>Stenus latifrons</i>	a rove-beetle	None		1		1	1	1
Insecta	Coleoptera	Staphylinidae	<i>Stenus picipennis</i>	a rove-beetle	None		1				
Insecta	Coleoptera	Staphylinidae	<i>Stenus aceris</i>	a rove-beetle	None	1			1		1
Insecta	Coleoptera	Staphylinidae	<i>Stenus ossium</i>	a rove-beetle	None						1
Insecta	Coleoptera	Staphylinidae	<i>Stenus pallipes</i>	a rove-beetle	None					1	
Insecta	Coleoptera	Staphylinidae	<i>Euaesthetus ruficapillus</i>	a rove-beetle	LC				1	1	
Insecta	Coleoptera	Staphylinidae	<i>Paederus fuscipes</i>	a rove-beetle	LC				1		
Insecta	Coleoptera	Staphylinidae	<i>Paederus littoralis</i>	a rove-beetle	LC	1			1	1	1
Insecta	Coleoptera	Staphylinidae	<i>Paederus riparius</i>	a rove-beetle	LC				1		
Insecta	Coleoptera	Staphylinidae	<i>Astenus immaculatus</i>	a rove-beetle	LC, NS				1	1	
Insecta	Coleoptera	Staphylinidae	<i>Astenus lyonessius</i>	a rove-beetle	LC	1					1
Insecta	Coleoptera	Staphylinidae	<i>Rugilus orbiculatus</i>	a rove-beetle	LC				1	1	
Insecta	Coleoptera	Staphylinidae	<i>Sunius melanocephalus</i>	a rove-beetle	LC		1				
Insecta	Coleoptera	Staphylinidae	<i>Sunius propinquus</i>	a rove-beetle	LC	1	1				1
Insecta	Coleoptera	Staphylinidae	<i>Scopaeus laevigatus</i>	a rove-beetle	LC, NS						1
Insecta	Coleoptera	Staphylinidae	<i>Lathrobium geminum</i>	a rove-beetle	LC					1	
Insecta	Coleoptera	Staphylinidae	<i>Achenium depressum</i>	a rove-beetle	LC		1				1
Insecta	Coleoptera	Staphylinidae	<i>Ochtheophilum collare</i>	a rove-beetle	DD				1		
Insecta	Coleoptera	Staphylinidae	<i>Philonthus cognatus</i>	a rove-beetle	LC						1
Insecta	Coleoptera	Staphylinidae	<i>Philonthus concinnus</i>	a rove-beetle	LC	1					
Insecta	Coleoptera	Staphylinidae	<i>Philonthus quisquiliarius</i>	a rove-beetle	LC				1		1
Insecta	Coleoptera	Staphylinidae	<i>Philonthus succicola</i>	a rove-beetle	LC	1					

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Staphylinidae	<i>Ocypus olens</i>	Devil's Coach-horse	LC	1		1	1		1
Insecta	Coleoptera	Staphylinidae	<i>Quedius levicollis</i>	a rove-beetle	LC	1					
Insecta	Coleoptera	Staphylinidae	<i>Quedius simplicifrons</i>	a rove-beetle	LC, NS		1	1	1	1	
Insecta	Coleoptera	Staphylinidae	<i>Quedius boopoides</i>	a rove-beetle	LC						1
Insecta	Coleoptera	Staphylinidae	<i>Quedius picipes</i>	a rove-beetle	LC						1
Insecta	Coleoptera	Staphylinidae	<i>Quedius schatzmayri</i>	a rove-beetle	LC					1	
Insecta	Coleoptera	Staphylinidae	<i>Quedius semiaeneus</i>	a rove-beetle	LC	1				1	
Insecta	Coleoptera	Staphylinidae	<i>Quedius semiobscurus</i>	a rove-beetle	LC	1				1	1
Insecta	Coleoptera	Staphylinidae	<i>Othius laeviusculus</i>	a rove-beetle	LC	1					1
Insecta	Coleoptera	Staphylinidae	<i>Xantholinus elegans</i>	a rove-beetle	LC	1					1
Insecta	Coleoptera	Staphylinidae	<i>Xantholinus linearis</i>	a rove-beetle	LC	1	1				
Insecta	Coleoptera	Staphylinidae	<i>Xantholinus longiventris</i>	a rove-beetle	LC				1	1	1
Insecta	Coleoptera	Scarabaeidae	<i>Onthophagus joannae</i>	a dung beetle	LC	1					
Insecta	Coleoptera	Scarabaeidae	<i>Aphodius fimetarius</i>	a dung beetle	LC				1		
Insecta	Coleoptera	Scarabaeidae	<i>Liothorax plagiatus</i>	a dung beetle	LC, NS				1		
Insecta	Coleoptera	Scarabaeidae	<i>Hoplia philanthus</i>	Welsh Chafer	LC						1
Insecta	Coleoptera	Scirtidae	<i>Contacyphon coarctatus</i>	a beetle	LC	1			1	1	1
Insecta	Coleoptera	Scirtidae	<i>Contacyphon laevipennis</i>	a beetle	LC	1	1		1	1	1
Insecta	Coleoptera	Byrrhidae	<i>Simplocaria semistriata</i>	a pill-beetle	LC	1				1	
Insecta	Coleoptera	Byrrhidae	<i>Cytilus sericeus</i>	a pill-beetle	LC	1				1	
Insecta	Coleoptera	Byrrhidae	<i>Chaetophora spinosa</i>	a pill-beetle	LC	1				1	1
Insecta	Coleoptera	Byrrhidae	<i>Curimopsis maritima</i>	a pill-beetle	LC, NS	1					
Insecta	Coleoptera	Heteroceridae	<i>Heterocerus fenestratus</i>	a variegated mud-loving beetle	LC						1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Throscidae	<i>Trixagus carinifrons/leseigneuri/meybohmi</i>	a beetle	None						1
Insecta	Coleoptera	Throscidae	<i>Trixagus gracilis</i>	a beetle	RDB3	1					1
Insecta	Coleoptera	Throscidae	<i>Trixagus obtusus</i>	a beetle	None	1					1
Insecta	Coleoptera	Elateridae	<i>Agrypnus murinus</i>	a click-beetle	None	1		1	1		1
Insecta	Coleoptera	Elateridae	<i>Limonius poneli</i>	a click-beetle	None						1
Insecta	Coleoptera	Elateridae	<i>Athous campyloides</i>	a click-beetle	Nationally Scarce (Nb)	1					
Insecta	Coleoptera	Elateridae	<i>Athous haemorrhoidalis</i>	a click-beetle	None						1
Insecta	Coleoptera	Elateridae	<i>Agriotes acuminatus</i>	a click-beetle	None						1
Insecta	Coleoptera	Elateridae	<i>Agriotes lineatus</i>	a click-beetle	None	1			1	1	1
Insecta	Coleoptera	Elateridae	<i>Agriotes sputator</i>	a click-beetle	None	1		1		1	1
Insecta	Coleoptera	Cantharidae	<i>Cantharis cryptica</i>	a soldier-beetle	LC				1		1
Insecta	Coleoptera	Cantharidae	<i>Cantharis lateralis</i>	a soldier-beetle	LC	1	1			1	1
Insecta	Coleoptera	Cantharidae	<i>Cantharis pallida</i>	a soldier-beetle	LC				1		
Insecta	Coleoptera	Cantharidae	<i>Cantharis rufa</i>	a soldier-beetle	LC	1					
Insecta	Coleoptera	Cantharidae	<i>Cantharis rustica</i>	a soldier-beetle	LC	1				1	1
Insecta	Coleoptera	Cantharidae	<i>Rhagonycha nigriventris</i>	a soldier-beetle	LC					1	
Insecta	Coleoptera	Cantharidae	<i>Rhagonycha fulva</i>	a soldier-beetle	LC	1	1	1	1	1	1
Insecta	Coleoptera	Cantharidae	<i>Silis ruficollis</i>	a soldier-beetle	LC						1
Insecta	Coleoptera	Cantharidae	<i>Malthinus flaveolus</i>	a soldier-beetle	LC					1	
Insecta	Coleoptera	Dermestidae	<i>Anthrenus verbasci</i>	Varied Carpet Beetle	NA			1			
Insecta	Coleoptera	Melyridae	<i>Dasytes virens</i>	a beetle	NT, NR						1
Insecta	Coleoptera	Melyridae	<i>Cordylepherus viridis</i>	a malachite beetle	LC		1	1	1	1	1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Melyridae	<i>Clanoptilus strangulatus</i>	a malachite beetle	LC, NR			1			
Insecta	Coleoptera	Melyridae	<i>Anthocomus rufus</i>	a malachite beetle	LC				1		
Insecta	Coleoptera	Melyridae	<i>Cerapheles terminatus</i>	a malachite beetle	LC, NR		1		1		
Insecta	Coleoptera	Kateretidae	<i>Brachypterolus pulicarius</i>	a pollen beetle	None						1
Insecta	Coleoptera	Kateretidae	<i>Brachypterus glaber</i>	a nettle pollen beetle	None	1		1	1	1	1
Insecta	Coleoptera	Kateretidae	<i>Brachypterus urticae</i>	a nettle pollen beetle	None				1		
Insecta	Coleoptera	Nitidulidae	<i>Eपुरaea aestiva</i>	a beetle	None	1			1		1
Insecta	Coleoptera	Nitidulidae	<i>Pria dulcamarae</i>	a beetle	None				1	1	1
Insecta	Coleoptera	Nitidulidae	<i>Meligethes aeneus</i>	Common Pollen Beetle	None	1	1	1	1	1	1
Insecta	Coleoptera	Nitidulidae	<i>Meligethes carinulatus</i>	a pollen beetle	None	1	1		1	1	1
Insecta	Coleoptera	Nitidulidae	<i>Meligethes flavimanus</i>	a pollen beetle	None				1		
Insecta	Coleoptera	Nitidulidae	<i>Meligethes fulvipes</i>	a pollen beetle	Nationally Scarce					1	
Insecta	Coleoptera	Nitidulidae	<i>Meligethes morosus</i>	a pollen beetle	None	1					
Insecta	Coleoptera	Nitidulidae	<i>Meligethes nigrescens</i>	a pollen beetle	None	1			1	1	1
Insecta	Coleoptera	Nitidulidae	<i>Meligethes planiusculus</i>	a pollen beetle	None	1					
Insecta	Coleoptera	Nitidulidae	<i>Meligethes rotundicollis</i>	a pollen beetle	Nationally Scarce		1			1	1
Insecta	Coleoptera	Nitidulidae	<i>Meligethes ruficornis</i>	a pollen beetle	None	1	1		1	1	1
Insecta	Coleoptera	Phalacridae	<i>Phalacrus championi</i>	a beetle	LC			1			
Insecta	Coleoptera	Phalacridae	<i>Phalacrus corruscus</i>	a beetle	LC	1					1
Insecta	Coleoptera	Phalacridae	<i>Phalacrus fimetarius</i>	a beetle	LC					1	1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Phalacridae	<i>Olibrus aeneus</i>	a beetle	LC	1	1	1	1		1
Insecta	Coleoptera	Phalacridae	<i>Olibrus affinis</i>	a beetle	LC	1			1		1
Insecta	Coleoptera	Phalacridae	<i>Olibrus corticalis</i>	a beetle	LC	1					
Insecta	Coleoptera	Phalacridae	<i>Olibrus flavicornis</i>	a beetle	LC	1	1	1	1	1	1
Insecta	Coleoptera	Phalacridae	<i>Olibrus liquidus</i>	a beetle	LC	1	1		1		
Insecta	Coleoptera	Phalacridae	<i>Stilbus oblongus</i>	a beetle	LC		1			1	1
Insecta	Coleoptera	Phalacridae	<i>Stilbus testaceus</i>	a beetle	LC	1		1		1	
Insecta	Coleoptera	Cryptophagidae	<i>Telmatophilus typhae sens. str.</i>	a beetle	None	1				1	
Insecta	Coleoptera	Cryptophagidae	<i>Cryptophagus schmidtii</i>	a beetle	RDBK	1					
Insecta	Coleoptera	Cryptophagidae	<i>Micrambe woodroffeii</i>	a beetle	None	1					
Insecta	Coleoptera	Cryptophagidae	<i>Atomaria linearis</i>	a beetle	None	1					
Insecta	Coleoptera	Cryptophagidae	<i>Atomaria atra</i>	a beetle	Nationally Scarce				1		1
Insecta	Coleoptera	Cryptophagidae	<i>Atomaria atricapilla</i>	a beetle	None	1			1		1
Insecta	Coleoptera	Cryptophagidae	<i>Atomaria fuscata</i>	a beetle	None	1					1
Insecta	Coleoptera	Cryptophagidae	<i>Atomaria mesomela</i>	a beetle	None				1	1	1
Insecta	Coleoptera	Cryptophagidae	<i>Atomaria nitidula</i>	a beetle	None						1
Insecta	Coleoptera	Cryptophagidae	<i>Atomaria scutellaris</i>	a beetle	RDBK						1
Insecta	Coleoptera	Cryptophagidae	<i>Atomaria testacea</i>	a beetle	None						1
Insecta	Coleoptera	Cryptophagidae	<i>Ephistemus reitteri</i>	a beetle	None	1			1		1
Insecta	Coleoptera	Bothrideridae	<i>Anommatus duodecimstriatus</i>	a beetle	Nationally Scarce (Na)						1
Insecta	Coleoptera	Coccinellidae	<i>Rhyzobius chrysomeloides</i>	a ladybird	None	1			1		1
Insecta	Coleoptera	Coccinellidae	<i>Rhyzobius litura</i>	a ladybird	None	1		1	1	1	1
Insecta	Coleoptera	Coccinellidae	<i>Coccidula rufa</i>	a ladybird	None				1	1	
Insecta	Coleoptera	Coccinellidae	<i>Nephus quadrimaculatus</i>	a ladybird	RDB2						1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Coccinellidae	<i>Nephus redtenbacheri</i>	a ladybird	None					1	
Insecta	Coleoptera	Coccinellidae	<i>Scymnus frontalis</i>	a ladybird	None	1					
Insecta	Coleoptera	Coccinellidae	<i>Scymnus interruptus</i>	a ladybird	None						1
Insecta	Coleoptera	Coccinellidae	<i>Stethorus pusillus</i>	a ladybird	None	1					
Insecta	Coleoptera	Coccinellidae	<i>Platynaspis luteorubra</i>	a ladybird	Nationally Scarce (Na)	1					
Insecta	Coleoptera	Coccinellidae	<i>Psyllobora vigintiduopunctata</i>	22-spot Ladybird	None	1	1	1	1	1	1
Insecta	Coleoptera	Coccinellidae	<i>Propylea quattuordecimpunctata</i>	14-spot Ladybird	None	1		1			
Insecta	Coleoptera	Coccinellidae	<i>Harmonia quadripunctata</i>	Cream-streaked Ladybird	None	1					
Insecta	Coleoptera	Coccinellidae	<i>Harmonia axyridis</i>	Harlequin Ladybird	None	1			1	1	1
Insecta	Coleoptera	Coccinellidae	<i>Adalia bipunctata</i>	2-spot Ladybird	None						1
Insecta	Coleoptera	Coccinellidae	<i>Coccinella septempunctata</i>	7-spot Ladybird	None	1	1	1	1	1	1
Insecta	Coleoptera	Coccinellidae	<i>Coccinella undecimpunctata</i>	11-spot Ladybird	None				1		
Insecta	Coleoptera	Coccinellidae	<i>Hippodamia variegata</i>	Adonis' Ladybird	Nationally Scarce (Nb)	1	1	1		1	1
Insecta	Coleoptera	Coccinellidae	<i>Anisosticta novemdecimpunctata</i>	Water Ladybird	None		1		1		1
Insecta	Coleoptera	Coccinellidae	<i>Tytthaspis sedecimpunctata</i>	16-spot Ladybird	None	1		1	1		1
Insecta	Coleoptera	Coccinellidae	<i>Subcoccinella vigintiquatuorruptata</i>	24-spot Ladybird	None	1		1	1	1	1
Insecta	Coleoptera	Corylophidae	<i>Corylophus cassidoides</i>	a beetle	None		1		1		
Insecta	Coleoptera	Corylophidae	<i>Corylophus sublaevipennis</i>	a beetle	None	1			1		1
Insecta	Coleoptera	Corylophidae	<i>Orthoperus brunnipes</i>	a beetle	RDB3						1
Insecta	Coleoptera	Corylophidae	<i>Sericoderus brevicornis</i>	a beetle	None	1			1		1
Insecta	Coleoptera	Latridiidae	<i>Enicmus transversus</i>	a beetle	None	1		1		1	1
Insecta	Coleoptera	Latridiidae	<i>Cartodere bifasciata</i>	a beetle	None	1			1	1	1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Latridiidae	<i>Cartodere nodifer</i>	a beetle	None						1
Insecta	Coleoptera	Latridiidae	<i>Corticaria impressa</i>	a beetle	None	1			1		1
Insecta	Coleoptera	Latridiidae	<i>Melanophthalma suturalis</i>	a beetle	None	1		1	1	1	1
Insecta	Coleoptera	Latridiidae	<i>Corticarina minuta</i>	a beetle	None	1			1		1
Insecta	Coleoptera	Latridiidae	<i>Corticaria gibbosa</i>	a beetle	None	1	1	1	1	1	1
Insecta	Coleoptera	Mordellidae	<i>Mordellistena pumila</i>	a tumbling flower-beetle	LC			1	1		
Insecta	Coleoptera	Mordellidae	<i>Mordellistena acuticollis</i>	a tumbling flower-beetle	NA	1					1
Insecta	Coleoptera	Tenebrionidae	<i>Lagria hirta</i>	a darkling beetle	LC					1	1
Insecta	Coleoptera	Tenebrionidae	<i>Melanimon tibialis</i>	a darkling beetle	LC	1					1
Insecta	Coleoptera	Tenebrionidae	<i>Isomira murina</i>	a darkling beetle	LC	1		1	1		1
Insecta	Coleoptera	Oedemeridae	<i>Oedemera nobilis</i>	Swollen-thighed Beetle	LC	1	1		1		1
Insecta	Coleoptera	Oedemeridae	<i>Oedemera lurida</i>	a beetle	LC	1			1		1
Insecta	Coleoptera	Pyrochroidae	<i>Pyrochroa serraticornis</i>	Common Cardinal Beetle	LC				1		
Insecta	Coleoptera	Anthicidae	<i>Notoxus monoceros</i>	Monoceros Beetle	LC	1					1
Insecta	Coleoptera	Anthicidae	<i>Anthicus antherinus</i>	an ant-like flower beetle	LC	1		1	1		1
Insecta	Coleoptera	Anthicidae	<i>Cyclodinus constrictus</i>	an ant-like flower beetle	LC, NS				1		
Insecta	Coleoptera	Anthicidae	<i>Cordicollis instabilis</i>	an ant-like flower beetle	LC, NS	1					1
Insecta	Coleoptera	Anthicidae	<i>Omonadus floralis</i>	an ant-like flower beetle	LC	1					1
Insecta	Coleoptera	Scraptiidae	<i>Anaspis maculata</i>	a beetle	LC	1	1		1	1	1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Scraptiidae	<i>Anaspis pulicaria</i>	a beetle	LC	1				1	1
Insecta	Coleoptera	Cerambycidae	<i>Grammoptera ruficornis</i>	Common Grammoptera	LC						1
Insecta	Coleoptera	Cerambycidae	<i>Clytus arietis</i>	Wasp Beetle	LC						1
Insecta	Coleoptera	Cerambycidae	<i>Agapanthia villosoviridescens</i>	Golden-bloomed Grey Longhorn	LC				1		1
Insecta	Coleoptera	Chrysomelidae	<i>Bruchidius imbricornis</i>	a seed-beetle	NA	1	1		1	1	1
Insecta	Coleoptera	Chrysomelidae	<i>Bruchidius villosus</i>	a seed-beetle	LC	1					
Insecta	Coleoptera	Chrysomelidae	<i>Bruchus brachialis</i>	a seed-beetle	NA	1		1	1	1	1
Insecta	Coleoptera	Chrysomelidae	<i>Bruchus loti</i>	a seed-beetle	LC		1		1		1
Insecta	Coleoptera	Chrysomelidae	<i>Bruchus rufimanus</i>	a seed-beetle	LC						1
Insecta	Coleoptera	Chrysomelidae	<i>Bruchus rufipes</i>	a seed-beetle	LC	1			1		1
Insecta	Coleoptera	Chrysomelidae	<i>Lema cyanella</i>	a leaf-beetle	LC					1	
Insecta	Coleoptera	Chrysomelidae	<i>Cassida nobilis</i>	a tortoise beetle	LC, NS					1	
Insecta	Coleoptera	Chrysomelidae	<i>Cassida rubiginosa</i>	Thistle Tortoise Beetle	LC				1	1	1
Insecta	Coleoptera	Chrysomelidae	<i>Cassida vibex</i>	a tortoise beetle	LC	1				1	
Insecta	Coleoptera	Chrysomelidae	<i>Chrysolina oricalcia</i>	a leaf-beetle	LC						1
Insecta	Coleoptera	Chrysomelidae	<i>Chrysolina staphylaea</i>	a leaf-beetle	LC	1					
Insecta	Coleoptera	Chrysomelidae	<i>Gastrophysa polygoni</i>	a leaf-beetle	LC			1			
Insecta	Coleoptera	Chrysomelidae	<i>Phyllotreta atra</i>	a flea-beetle	LC	1	1	1	1		
Insecta	Coleoptera	Chrysomelidae	<i>Phyllotreta consobrina</i>	a flea-beetle	LC, NS		1		1	1	
Insecta	Coleoptera	Chrysomelidae	<i>Phyllotreta cruciferae</i>	a flea-beetle	LC, NS		1	1		1	
Insecta	Coleoptera	Chrysomelidae	<i>Phyllotreta astrachanica</i>	a flea-beetle	LC	1	1		1		1
Insecta	Coleoptera	Chrysomelidae	<i>Phyllotreta nigripes</i>	a flea-beetle	LC	1	1	1	1		1
Insecta	Coleoptera	Chrysomelidae	<i>Phyllotreta nodicornis</i>	a flea-beetle	LC		1				1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Chrysomelidae	<i>Phyllotreta punctulata</i>	a flea-beetle	LC, NS						1
Insecta	Coleoptera	Chrysomelidae	<i>Phyllotreta undulata</i>	a flea-beetle	LC	1			1		1
Insecta	Coleoptera	Chrysomelidae	<i>Phyllotreta vittula</i>	a flea-beetle	LC	1	1	1	1		1
Insecta	Coleoptera	Chrysomelidae	<i>Aphthona atrocaerulea</i>	a flea-beetle	LC	1					
Insecta	Coleoptera	Chrysomelidae	<i>Aphthona euphorbiae</i>	a flea-beetle	LC	1	1	1			1
Insecta	Coleoptera	Chrysomelidae	<i>Aphthona nigriceps (incl. pallida)</i>	a flea-beetle	LC, NS/ DD	1					
Insecta	Coleoptera	Chrysomelidae	<i>Longitarsus ballotae</i>	a flea-beetle	LC, NS	1					1
Insecta	Coleoptera	Chrysomelidae	<i>Longitarsus dorsalis</i>	a flea-beetle	LC	1					
Insecta	Coleoptera	Chrysomelidae	<i>Longitarsus flavicornis</i>	a flea-beetle	LC			1			1
Insecta	Coleoptera	Chrysomelidae	<i>Longitarsus strigicollis</i>	a flea-beetle	LC, NS	1					
Insecta	Coleoptera	Chrysomelidae	<i>Longitarsus ganglbaueri</i>	a flea-beetle	LC, NS						1
Insecta	Coleoptera	Chrysomelidae	<i>Longitarsus ochroleucus</i>	a flea-beetle	LC, NS						1
Insecta	Coleoptera	Chrysomelidae	<i>Longitarsus parvulus</i>	a flea-beetle	LC	1		1	1	1	1
Insecta	Coleoptera	Chrysomelidae	<i>Longitarsus pratensis</i>	a flea-beetle	LC			1			1
Insecta	Coleoptera	Chrysomelidae	<i>Longitarsus quadriguttatus</i>	a flea-beetle	LC, NR				1		
Insecta	Coleoptera	Chrysomelidae	<i>Longitarsus succineus</i>	a flea-beetle	LC	1					
Insecta	Coleoptera	Chrysomelidae	<i>Longitarsus suturellus</i>	a flea-beetle	LC	1					1
Insecta	Coleoptera	Chrysomelidae	<i>Altica lythri</i>	a flea-beetle	LC				1	1	
Insecta	Coleoptera	Chrysomelidae	<i>Altica palustris</i>	a flea-beetle	LC	1					1
Insecta	Coleoptera	Chrysomelidae	<i>Batophila aerata</i>	a flea-beetle	LC					1	1
Insecta	Coleoptera	Chrysomelidae	<i>Crepidodera aurata</i>	a flea-beetle	LC					1	
Insecta	Coleoptera	Chrysomelidae	<i>Crepidodera plutus</i>	a flea-beetle	LC						1
Insecta	Coleoptera	Chrysomelidae	<i>Epitrix pubescens</i>	a flea-beetle	LC				1	1	
Insecta	Coleoptera	Chrysomelidae	<i>Podagrica fuscipes</i>	a flea-beetle	LC, NS	1		1			1
Insecta	Coleoptera	Chrysomelidae	<i>Chaetocnema concinna</i>	a flea-beetle	LC			1		1	1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Chrysomelidae	<i>Chaetocnema hortensis</i>	a flea-beetle	LC	1				1	1
Insecta	Coleoptera	Chrysomelidae	<i>Sphaeroderma testaceum</i>	a flea-beetle	LC	1		1		1	
Insecta	Coleoptera	Chrysomelidae	<i>Psylliodes affinis</i>	a flea-beetle	LC	1			1	1	
Insecta	Coleoptera	Chrysomelidae	<i>Psylliodes chrysocephala</i>	a flea-beetle	LC	1		1		1	1
Insecta	Coleoptera	Chrysomelidae	<i>Psylliodes dulcamarae</i>	a flea-beetle	LC				1		
Insecta	Coleoptera	Chrysomelidae	<i>Cryptocephalus fulvus</i>	a leaf-beetle	LC						1
Insecta	Coleoptera	Chrysomelidae	<i>Cryptocephalus rufipes</i>	a pot beetle	None						1
Insecta	Coleoptera	Rhynchitidae	<i>Tatianaerhynchites aequatus</i>	a weevil	None				1		1
Insecta	Coleoptera	Rhynchitidae	<i>Neocoenorrhinus germanicus</i>	a weevil	None	1					
Insecta	Coleoptera	Apionidae	<i>Omphalapion hookerorum</i>	a weevil	None	1	1				1
Insecta	Coleoptera	Apionidae	<i>Ceratapion onopordi</i>	a weevil	None				1	1	1
Insecta	Coleoptera	Apionidae	<i>Ceratapion carduorum</i>	a weevil	None					1	
Insecta	Coleoptera	Apionidae	<i>Ceratapion gibbirostre</i>	a weevil	None	1				1	1
Insecta	Coleoptera	Apionidae	<i>Diplapion confluens</i>	a weevil	None		1				
Insecta	Coleoptera	Apionidae	<i>Aspidapion radiolus</i>	a weevil	None	1		1			1
Insecta	Coleoptera	Apionidae	<i>Aspidapion aeneum</i>	a weevil	None						1
Insecta	Coleoptera	Apionidae	<i>Kalcapion semivittatum</i>	a weevil	Nationally Scarce (Na)						1
Insecta	Coleoptera	Apionidae	<i>Taeniapion urticarium</i>	a weevil	None				1		
Insecta	Coleoptera	Apionidae	<i>Pseudapion rufirostre</i>	a weevil	None	1			1		1
Insecta	Coleoptera	Apionidae	<i>Malvapion malvae</i>	a weevil	None	1	1	1	1		1
Insecta	Coleoptera	Apionidae	<i>Exapion ulicis</i>	a weevil	None	1					
Insecta	Coleoptera	Apionidae	<i>Protapion apricans</i>	a weevil	None	1					1
Insecta	Coleoptera	Apionidae	<i>Protapion assimile</i>	a weevil	None	1					1
Insecta	Coleoptera	Apionidae	<i>Protapion filirostre</i>	a weevil	Nationally Scarce (Nb)	1					

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Apionidae	<i>Protapion fulvipes</i>	White Clover Seed Weevil	None	1		1			
Insecta	Coleoptera	Apionidae	<i>Protapion nigrirtarse</i>	a weevil	None	1				1	1
Insecta	Coleoptera	Apionidae	<i>Protapion trifolii</i>	a weevil	None	1		1			1
Insecta	Coleoptera	Apionidae	<i>Perapion hydrolapathi</i>	a weevil	None				1	1	
Insecta	Coleoptera	Apionidae	<i>Apion frumentarium</i>	a weevil	None					1	
Insecta	Coleoptera	Apionidae	<i>Stenopteration meliloti</i>	a weevil	None	1		1			
Insecta	Coleoptera	Apionidae	<i>Stenopteration tenue</i>	a weevil	None	1					
Insecta	Coleoptera	Apionidae	<i>Ischnopteration loti</i>	a weevil	None	1	1			1	1
Insecta	Coleoptera	Apionidae	<i>Ischnopteration virens</i>	a weevil	None	1					
Insecta	Coleoptera	Apionidae	<i>Holotrichapion pisi</i>	a weevil	None	1	1				1
Insecta	Coleoptera	Apionidae	<i>Holotrichapion aethiops</i>	a weevil	None	1				1	
Insecta	Coleoptera	Apionidae	<i>Oxystoma pomonae</i>	a weevil	None	1					1
Insecta	Coleoptera	Apionidae	<i>Eutrichapion ervi</i>	a weevil	None						1
Insecta	Coleoptera	Apionidae	<i>Eutrichapion viciae</i>	a weevil	None						1
Insecta	Coleoptera	Erihniidae	<i>Stenopelmus rufinatus</i>	a weevil	None						1
Insecta	Coleoptera	Curculionidae	<i>Otiorhynchus raucus</i>	a weevil	Nationally Scarce (Nb)	1					1
Insecta	Coleoptera	Curculionidae	<i>Otiorhynchus rugosostriatus</i>	a weevil	None	1					1
Insecta	Coleoptera	Curculionidae	<i>Otiorhynchus ovatus</i>	a weevil	None	1		1			1
Insecta	Coleoptera	Curculionidae	<i>Romualdius angustisetulus</i>	a weevil	None	1					1
Insecta	Coleoptera	Curculionidae	<i>Phyllobius roboretanus</i>	Small Green Nettle Weevil	None	1			1		1
Insecta	Coleoptera	Curculionidae	<i>Phyllobius pyri</i>	Common Leaf Weevil	None						1
Insecta	Coleoptera	Curculionidae	<i>Phyllobius vespertinus</i>	a weevil	Nationally Scarce (Nb)	1					1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Curculionidae	<i>Phyllobius virideaeris</i>	Green Nettle Weevil	None	1					1
Insecta	Coleoptera	Curculionidae	<i>Exomias pellucidus</i>	a weevil	None	1				1	1
Insecta	Coleoptera	Curculionidae	<i>Coelositona cinerascens</i>	a weevil	RDBK		1				
Insecta	Coleoptera	Curculionidae	<i>Sitona cylindricollis</i>	a weevil	None	1	1		1	1	
Insecta	Coleoptera	Curculionidae	<i>Sitona hispidulus</i>	a weevil	None	1				1	1
Insecta	Coleoptera	Curculionidae	<i>Sitona humeralis</i>	a weevil	None	1	1				1
Insecta	Coleoptera	Curculionidae	<i>Sitona obsoletus</i>	a weevil	None					1	1
Insecta	Coleoptera	Curculionidae	<i>Sitona lineatus</i>	a weevil	None	1	1	1	1	1	1
Insecta	Coleoptera	Curculionidae	<i>Sitona waterhousei</i>	a weevil	Nationally Scarce (Nb)	1					
Insecta	Coleoptera	Curculionidae	<i>Lixus scabricollis</i>	a weevil	RDBK	1		1			1
Insecta	Coleoptera	Curculionidae	<i>Larinus carlinae</i>	a weevil	Nationally Scarce (Nb)				1	1	
Insecta	Coleoptera	Curculionidae	<i>Rhinocyllus conicus</i>	a weevil	Nationally Scarce (Na)						1
Insecta	Coleoptera	Curculionidae	<i>Hypera melancholica</i>	a weevil	Nationally Scarce (Nb)	1				1	1
Insecta	Coleoptera	Curculionidae	<i>Hypera plantaginis</i>	a weevil	None	1					1
Insecta	Coleoptera	Curculionidae	<i>Hypera postica</i>	a weevil	None	1	1				1
Insecta	Coleoptera	Curculionidae	<i>Hypera rumicis</i>	a weevil	None						1
Insecta	Coleoptera	Curculionidae	<i>Hypera venusta</i>	a weevil	None	1					
Insecta	Coleoptera	Curculionidae	<i>Pselactus spadix</i>	a weevil	Nationally Scarce (Nb)			1			
Insecta	Coleoptera	Curculionidae	<i>Conarthrus littoralis</i>	a weevil	None			1			
Insecta	Coleoptera	Curculionidae	<i>Pseudostyphlus pillumus</i>	a weevil	Nationally Scarce (Na)	1					

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Curculionidae	<i>Orthochaetes setiger</i>	a weevil	Nationally Scarce (Nb)	1					
Insecta	Coleoptera	Curculionidae	<i>Rhinoncus pericarpus</i>	a weevil	None	1			1	1	1
Insecta	Coleoptera	Curculionidae	<i>Zacladus exiguus</i>	a crane's-bill weevil	Nationally Scarce (Nb)	1			1		1
Insecta	Coleoptera	Curculionidae	<i>Parethelcus pollinarius</i>	a weevil	None					1	
Insecta	Coleoptera	Curculionidae	<i>Microplontus melanostigma</i>	a weevil	None		1				1
Insecta	Coleoptera	Curculionidae	<i>Hadroplontus litura</i>	a weevil	None	1				1	1
Insecta	Coleoptera	Curculionidae	<i>Glocianus distinctus</i>	a weevil	None	1					1
Insecta	Coleoptera	Curculionidae	<i>Ceutorhynchus contractus</i>	Cabbage Leaf Weevil	None	1	1		1	1	1
Insecta	Coleoptera	Curculionidae	<i>Ceutorhynchus typhae</i>	a weevil	None	1			1		1
Insecta	Coleoptera	Curculionidae	<i>Ceutorhynchus obstrictus</i>	a weevil	None	1	1		1	1	1
Insecta	Coleoptera	Curculionidae	<i>Ceutorhynchus pallidactylus</i>	Cabbage Stem Weevil	None	1	1		1	1	
Insecta	Coleoptera	Curculionidae	<i>Ceutorhynchus picitarsis</i>	a weevil	None						1
Insecta	Coleoptera	Curculionidae	<i>Ceutorhynchus turbatus</i>	a weevil	None	1	1		1	1	1
Insecta	Coleoptera	Curculionidae	<i>Sirocalodes depressicollis</i>	a weevil	None		1				
Insecta	Coleoptera	Curculionidae	<i>Calosirus terminatus</i>	a weevil	Nationally Scarce (Nb)	1					
Insecta	Coleoptera	Curculionidae	<i>Trichosirocalus horridus</i>	a weevil	Nationally Scarce (Na)						1
Insecta	Coleoptera	Curculionidae	<i>Trichosirocalus troglodytes</i>	a weevil	None	1					1
Insecta	Coleoptera	Curculionidae	<i>Nedyus quadrimaculatus</i>	Small Nettle Weevil	None				1	1	
Insecta	Coleoptera	Curculionidae	<i>Cosmobaris scolopacea</i>	a weevil	RDB3			1		1	
Insecta	Coleoptera	Curculionidae	<i>Anthonomus pedicularius</i>	a weevil	None					1	
Insecta	Coleoptera	Curculionidae	<i>Anthonomus rubi</i>	a weevil	None				1		1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Coleoptera	Curculionidae	<i>Archarius salicivorus</i>	Willow Gall Weevil	None						1
Insecta	Coleoptera	Curculionidae	<i>Tychius brevisculus</i>	a weevil	None			1	1		
Insecta	Coleoptera	Curculionidae	<i>Tychius junceus</i>	a weevil	None	1	1			1	1
Insecta	Coleoptera	Curculionidae	<i>Tychius picirostris</i>	a weevil	None	1		1		1	1
Insecta	Coleoptera	Curculionidae	<i>Tychius pusillus</i>	a weevil	Nationally Scarce (Nb)						1
Insecta	Coleoptera	Curculionidae	<i>Tychius squamulatus</i>	a weevil	Nationally Scarce (Nb)						1
Insecta	Coleoptera	Curculionidae	<i>Mecinus janthinus</i>	a weevil	Nationally Scarce (Na)	1					
Insecta	Coleoptera	Curculionidae	<i>Mecinus labilis</i>	a weevil	None						1
Insecta	Coleoptera	Curculionidae	<i>Mecinus pascuorum</i>	a weevil	None	1	1	1			1
Insecta	Coleoptera	Curculionidae	<i>Gymnetron villosulum</i>	a weevil	Nationally Scarce (Nb)					1	
Insecta	Coleoptera	Curculionidae	<i>Rhinusa neta</i>	a weevil	None						1
Insecta	Coleoptera	Curculionidae	<i>Rhamphus oxyacanthae</i>	a weevil	None						1
Insecta	Coleoptera	Curculionidae	<i>Rhamphus pulicarius</i>	a weevil	None					1	1
Insecta	Hymenoptera: Symphyta	Cephidae	<i>Calameuta filiformis</i>	Reed Stem-borer Sawfly	None				1		1
Insecta	Hymenoptera: Parasitica	Cynipidae	<i>Diplolepis rosae</i>	Rose Bedeguar Gall causer	None			1			
Insecta	Hymenoptera: Aculeata	Bethylidae	<i>Epyris niger</i>	a solitary wasp	None		1				
Insecta	Hymenoptera: Aculeata	Bethylidae	<i>Goniozus claripennis</i>	a solitary wasp	None						1
Insecta	Hymenoptera: Aculeata	Chrysididae	<i>Hedychridium ardens</i>	a cuckoo wasp	None	1					

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Hymenoptera: Aculeata	Formicidae	<i>Formica cunicularia</i>	an ant	None	1		1	1	1	1
Insecta	Hymenoptera: Aculeata	Formicidae	<i>Formica fusca</i>	an ant	None	1			1		
Insecta	Hymenoptera: Aculeata	Formicidae	<i>Lasius brunneus</i>	Brown Tree Ant	Nationally Scarce (Na)	1					
Insecta	Hymenoptera: Aculeata	Formicidae	<i>Lasius flavus</i>	an ant	None		1	1			
Insecta	Hymenoptera: Aculeata	Formicidae	<i>Lasius fuliginosus</i>	an ant	None						1
Insecta	Hymenoptera: Aculeata	Formicidae	<i>Lasius niger sens. str.</i>	an ant	None	1	1	1	1	1	1
Insecta	Hymenoptera: Aculeata	Formicidae	<i>Lasius platythorax</i>	an ant	None	1					
Insecta	Hymenoptera: Aculeata	Formicidae	<i>Leptothorax acervorum</i>	an ant	None			1			
Insecta	Hymenoptera: Aculeata	Formicidae	<i>Myrmica rubra</i>	an ant	None						1
Insecta	Hymenoptera: Aculeata	Formicidae	<i>Myrmica ruginodis</i>	an ant	None	1			1	1	
Insecta	Hymenoptera: Aculeata	Formicidae	<i>Myrmica sabuleti</i>	an ant	None	1		1		1	
Insecta	Hymenoptera: Aculeata	Formicidae	<i>Myrmica scabrinodis</i>	an ant	None	1	1	1	1		1
Insecta	Hymenoptera: Aculeata	Formicidae	<i>Myrmica schencki</i>	an ant	Nationally Scarce (Nb)	1					
Insecta	Hymenoptera: Aculeata	Formicidae	<i>Myrmica specioides</i>	an ant	RDB3	1				1	1
Insecta	Hymenoptera: Aculeata	Pompilidae	<i>Arachnospila trivialis</i>	a spider-hunting wasp	None	1					

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Hymenoptera: Aculeata	Pompilidae	<i>Episyron rufipes</i>	Red-legged Spider-hunting Wasp	None			1			
Insecta	Hymenoptera: Aculeata	Pompilidae	<i>Evagetes crassicornis</i>	a spider-hunting wasp	None	1					
Insecta	Hymenoptera: Aculeata	Pompilidae	<i>Priocnemis parvula</i>	a spider-hunting wasp	None	1					
Insecta	Hymenoptera: Aculeata	Pompilidae	<i>Priocnemis pusilla</i>	a spider-hunting wasp	None	1					
Insecta	Hymenoptera: Aculeata	Vespidae	<i>Ancistrocerus parietinus</i>	Wall Mason Wasp	None			1			
Insecta	Hymenoptera: Aculeata	Vespidae	<i>Ancistrocerus parietum</i>	Notched Mason Wasp	None			1			
Insecta	Hymenoptera: Aculeata	Sphecidae	<i>Ammophila sabulosa</i>	Red-banded Sand Wasp	None	1		1		1	
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Astata boops</i>	a digger-wasp	None	1					
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Cerceris arenaria</i>	Weevil Wolf	None	1					
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Cerceris quinquefasciata</i>	Five-banded Weevil Fox	RDB3, S41	1					
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Cerceris rybyensis</i>	Ornate Bee Fox	None	1		1		1	1
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Crabro cribrarius</i>	Slender-bodied Digger-wasp	None				1		1
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Crossocerus quadrimaculatus</i>	Spine-headed Fly Fox	None	1				1	
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Diodontus insidiosus</i>	a digger-wasp	RDB3	1					
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Diodontus luperus</i>	a digger-wasp	None	1					

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Diodontus minutus</i>	Minute Black Wasp	None	1				1	
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Ectemnius continuus</i>	a digger-wasp	None			1			
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Mimesa lutaria</i>	a digger wasp	None						1
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Mimumesa unicolor</i>	a digger-wasp	Nationally Scarce (Na)						1
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Oxybelus uniglumis</i>	Common Spiny Digger-wasp	None	1				1	1
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Pemphredon lethifer sens. str.</i>	a digger wasp	None	1					
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Philanthus triangulum</i>	Bee Wolf	RDB2	1		1			
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Tachysphex pompiliformis</i>	a digger-wasp	None	1					
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Trypoxylon attenuatum</i>	Slender Wood-borer Wasp	None				1	1	
Insecta	Hymenoptera: Aculeata	Crabronidae	<i>Trypoxylon medium</i>	a digger-wasp	None				1		
Insecta	Hymenoptera: Aculeata	Halictidae	<i>Lasioglossum leucopus</i>	White-footed Furrow-bee	None				1		
Insecta	Hymenoptera: Aculeata	Halictidae	<i>Lasioglossum minutissimum</i>	Least Furrow-bee	None	1					
Insecta	Hymenoptera: Aculeata	Halictidae	<i>Lasioglossum morio</i>	Green Furrow-bee	None			1		1	
Insecta	Hymenoptera: Aculeata	Halictidae	<i>Lasioglossum pauperatum</i>	Squat Furrow-bee	RDB3	1		1			1
Insecta	Hymenoptera: Aculeata	Halictidae	<i>Lasioglossum pauxillum</i>	Lobe-spurred Furrow-bee	Nationally Scarce (Na)			1			1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Hymenoptera: Aculeata	Halictidae	<i>Lasioglossum smeathmanellum</i>	Smeathman's Furrow-bee	None			1			
Insecta	Hymenoptera: Aculeata	Halictidae	<i>Lasioglossum villosulum</i>	Shaggy Mining-bee	None						1
Insecta	Hymenoptera: Aculeata	Halictidae	<i>Sphecodes crassus</i>	Swollen-thighed Blood Bee	Nationally Scarce (Nb)	1					
Insecta	Hymenoptera: Aculeata	Halictidae	<i>Sphecodes puncticeps</i>	Sickle-jawed Blood Bee	None			1			
Insecta	Hymenoptera: Aculeata	Halictidae	<i>Sphecodes rubicundus</i>	Red-tailed Blood Bee	Nationally Scarce (Na)	1					1
Insecta	Hymenoptera: Aculeata	Colletidae	<i>Hylaeus pectoralis</i>	Reed Yellow-face Bee	None				1		
Insecta	Hymenoptera: Aculeata	Colletidae	<i>Colletes halophilus</i>	Sea Aster Bee	Nationally Scarce (Na), S41			1			
Insecta	Hymenoptera: Aculeata	Colletidae	<i>Colletes hederæ</i>	Ivy Bee	None						1
Insecta	Hymenoptera: Aculeata	Melittidae	<i>Dasygaster hirtipes</i>	Pantaloony Bee	Nationally Scarce (Nb)	1	1	1	1	1	1
Insecta	Hymenoptera: Aculeata	Megachilidae	<i>Megachile leachella</i>	Silvery Leaf-cutter Bee	Nationally Scarce (Nb)	1					
Insecta	Hymenoptera: Aculeata	Megachilidae	<i>Megachile maritima</i>	Coastal Leaf-cutter Bee	None		1				
Insecta	Hymenoptera: Aculeata	Megachilidae	<i>Megachile willughbiella</i>	Willughby's Leaf-cutter Bee	None					1	
Insecta	Hymenoptera: Aculeata	Megachilidae	<i>Coelioxys elongata</i>	Dull-vented Sharp-tail Bee	None					1	
Insecta	Hymenoptera: Aculeata	Megachilidae	<i>Anthidium manicatum</i>	Wool-carder Bee	None						1
Insecta	Hymenoptera: Aculeata	Andrenidae	<i>Andrena barbilabris</i>	Sandpit Mining-bee	None	1					

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Hymenoptera: Aculeata	Andrenidae	<i>Andrena bimaculata</i>	Large Gorse Mining-bee	Nationally Scarce (Nb)	1				1	
Insecta	Hymenoptera: Aculeata	Andrenidae	<i>Andrena haemorrhoa</i>	Early Mining-bee	None						1
Insecta	Hymenoptera: Aculeata	Andrenidae	<i>Andrena nigroaenea</i>	Buffish Mining-bee	None			1	1		
Insecta	Hymenoptera: Aculeata	Andrenidae	<i>Andrena niveata</i>	Long-fringed Mini-miner Bee	RDB2	1					
Insecta	Hymenoptera: Aculeata	Andrenidae	<i>Andrena pilipes sens. str.</i>	Black Mining-bee	Nationally Scarce (Nb)	1		1	1		
Insecta	Hymenoptera: Aculeata	Andrenidae	<i>Andrena wilkella</i>	Wilke's Mining-bee	None					1	
Insecta	Hymenoptera: Aculeata	Andrenidae	<i>Panurgus banksianus</i>	Large Shaggy Bee	None			1			1
Insecta	Hymenoptera: Aculeata	Apidae	<i>Nomada flava</i>	Flavous Nomad Bee	None				1		1
Insecta	Hymenoptera: Aculeata	Apidae	<i>Nomada fucata</i>	Painted Nomad Bee	Nationally Scarce (Na)				1		
Insecta	Hymenoptera: Aculeata	Apidae	<i>Nomada fulvicornis sens. str.</i>	Orange-horned Nomad Bee	RDB3	1					1
Insecta	Hymenoptera: Aculeata	Apidae	<i>Nomada sheppardana</i>	Dark Nomad Bee	None					1	
Insecta	Hymenoptera: Aculeata	Apidae	<i>Bombus hortorum</i>	Small Garden Bumblebee	None		1				
Insecta	Hymenoptera: Aculeata	Apidae	<i>Bombus humilis</i>	Brown-banded Carder-bee	S41	1	1	1	1	1	1
Insecta	Hymenoptera: Aculeata	Apidae	<i>Bombus lapidarius</i>	Large Red-tailed Bumblebee	None	1		1	1	1	1
Insecta	Hymenoptera: Aculeata	Apidae	<i>Bombus lucorum sens. lat.</i>	White-tailed Bumblebee	None	1	1		1		1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Hymenoptera: Aculeata	Apidae	<i>Bombus pascuorum</i>	Common Carder-bee	None	1	1	1	1	1	1
Insecta	Hymenoptera: Aculeata	Apidae	<i>Bombus pratorum</i>	Early Bumblebee	None	1					
Insecta	Hymenoptera: Aculeata	Apidae	<i>Bombus sylvarum</i>	Shrill Carder-bee	Nationally Scarce (Nb), S41			1	1	1	1
Insecta	Hymenoptera: Aculeata	Apidae	<i>Bombus terrestris</i>	Buff-tailed Bumblebee	None	1		1			1
Insecta	Hymenoptera: Aculeata	Apidae	<i>Bombus vestalis</i>	Vestal Cuckoo-bee	None	1					
Insecta	Hymenoptera: Aculeata	Apidae	<i>Apis mellifera</i>	Honey Bee	None	1	1		1		
Insecta	Hymenoptera: Aculeata	Apidae	<i>Anthophora bimaculata</i>	Green-eyed Flower-bee	None	1	1				
Insecta	Hymenoptera: Aculeata	Apidae	<i>Ceratina cyanea</i>	Blue Carpenter-bee	RDB3			1			
Insecta	Neuroptera	Hemerobiidae	<i>Micromus variegatus</i>	a brown lacewing	None	1		1			
Insecta	Neuroptera	Hemerobiidae	<i>Micromus angulatus</i>	a brown lacewing	None				1		
Insecta	Neuroptera	Chrysopidae	<i>Chrysoperla carnea</i> agg.	a green lacewing	None		1			1	1
Insecta	Mecoptera	Panorpidae	<i>Panorpa germanica</i>	a scorpion-fly	None	1					
Insecta	Mecoptera	Panorpidae	<i>Panorpa communis</i>	a scorpion-fly	None	1					
Insecta	Diptera	Bibionidae	<i>Bibio anglicus</i>	a bibionid fly	None				1		
Insecta	Diptera	Bibionidae	<i>Bibio marci</i>	St Mark's Fly	None	1			1		1
Insecta	Diptera	Bibionidae	<i>Dilophus febrilis</i>	a bibionid fly	None	1			1		
Insecta	Diptera	Bibionidae	<i>Dilophus femoratus</i>	a bibionid fly	None					1	1
Insecta	Diptera	Cecidomyiidae	<i>Kiefferia pericarpicola</i>	a gall midge	None						1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Diptera	Ptychopteridae	<i>Ptychoptera contaminata</i>	a phantom crane-fly	None (Falk and Chandler, 2005)	1					
Insecta	Diptera	Tabanidae	<i>Chrysops relictus</i>	Twin-lobed Deerfly	LC		1				
Insecta	Diptera	Tabanidae	<i>Haematopota grandis</i>	Long-horned Cleg	LC, NS						1
Insecta	Diptera	Stratiomyidae	<i>Beris vallata</i>	Common Orange Legionnaire	LC				1		
Insecta	Diptera	Stratiomyidae	<i>Chorisops nagatomii</i>	Bright Four-spined Legionnaire	LC						1
Insecta	Diptera	Stratiomyidae	<i>Nemotelus notatus</i>	Flecked Snout	LC				1		
Insecta	Diptera	Stratiomyidae	<i>Nemotelus pantherinus</i>	Fen Snout	LC				1		
Insecta	Diptera	Stratiomyidae	<i>Nemotelus uliginosus</i>	Barred Snout	LC				1	1	1
Insecta	Diptera	Stratiomyidae	<i>Pachygaster atra</i>	Dark-winged Black	LC	1					
Insecta	Diptera	Stratiomyidae	<i>Chloromyia formosa</i>	Broad Centurion	LC				1		
Insecta	Diptera	Stratiomyidae	<i>Odontomyia tigrina</i>	Black Colonel	LC				1		1
Insecta	Diptera	Stratiomyidae	<i>Stratiomys longicornis</i>	Long-horned General	LC, NS					1	
Insecta	Diptera	Stratiomyidae	<i>Stratiomys singularior</i>	Flecked General	LC				1		
Insecta	Diptera	Therevidae	<i>Thereva plebeja</i>	Crochet-hooked Stiletto	LC	1					
Insecta	Diptera	Asilidae	<i>Machimus cingulatus</i>	Brown Heath Robberfly	LC	1		1	1		
Insecta	Diptera	Asilidae	<i>Leptogaster cylindrica</i>	Striped Slender Robberfly	LC	1				1	1
Insecta	Diptera	Asilidae	<i>Dioctria baumhaueri</i>	Stripe-legged Robberfly	LC	1					

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Diptera	Asilidae	<i>Dioctria rufipes</i>	Common Red-legged Robberfly	LC	1	1				
Insecta	Diptera	Hybotidae	<i>Stilpon lunatus</i>	a hybotid fly	Nationally Scarce		1		1		1
Insecta	Diptera	Hybotidae	<i>Tachydromia aemula</i>	a hybotid fly	LC	1					
Insecta	Diptera	Dolichopodidae	<i>Poecilobothrus chrysozygos</i>	a long-headed fly	None				1		
Insecta	Diptera	Lonchopterae	<i>Lonchoptera lutea</i>	a lonchopterid fly	LC					1	
Insecta	Diptera	Syrphidae	<i>Melanostoma mellinum</i>	a hoverfly	LC	1					
Insecta	Diptera	Syrphidae	<i>Platycheirus albimanus</i>	a hoverfly	LC	1					
Insecta	Diptera	Syrphidae	<i>Platycheirus angustatus</i>	a hoverfly	LC	1			1		
Insecta	Diptera	Syrphidae	<i>Paragus haemorrhous</i>	a hoverfly	LC	1			1		
Insecta	Diptera	Syrphidae	<i>Paragus albifrons</i>	a hoverfly	CR	1					
Insecta	Diptera	Syrphidae	<i>Chrysotoxum bicinctum</i>	a hoverfly	LC	1	1				
Insecta	Diptera	Syrphidae	<i>Chrysotoxum festivum</i>	a hoverfly	LC	1					
Insecta	Diptera	Syrphidae	<i>Sphaerophoria rueppellii</i>	a hoverfly	LC	1					
Insecta	Diptera	Syrphidae	<i>Sphaerophoria scripta</i>	a hoverfly	LC	1					
Insecta	Diptera	Syrphidae	<i>Xanthogramma pedissequum</i>	a hoverfly	LC	1					
Insecta	Diptera	Syrphidae	<i>Eristalinus sepulchralis</i>	a hoverfly	LC				1		
Insecta	Diptera	Syrphidae	<i>Eristalinus aeneus</i>	a hoverfly	LC			1	1		
Insecta	Diptera	Syrphidae	<i>Eristalis intricaria</i>	a hoverfly	LC				1		
Insecta	Diptera	Syrphidae	<i>Eristalis tenax</i>	a hoverfly	LC			1			
Insecta	Diptera	Syrphidae	<i>Helophilus pendulus</i>	a hoverfly	LC				1		
Insecta	Diptera	Syrphidae	<i>Eumerus strigatus</i>	a hoverfly	LC		1				1
Insecta	Diptera	Syrphidae	<i>Pipizella viduata</i>	a hoverfly	LC	1					
Insecta	Diptera	Syrphidae	<i>Syritta pipiens</i>	a hoverfly	LC	1		1	1		

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	N & NW of A3	The Rest
Insecta	Diptera	Micropezidae	<i>Micropeza corrigiolata</i>	a stilt-fly	None (Falk, Ismay & Chandler, 2016)	1	1			1	
Insecta	Diptera	Conopidae	<i>Thecophora atra</i>	a thick-headed fly	None				1		
Insecta	Diptera	Conopidae	<i>Sicus ferrugineus</i>	a thick-headed fly	None	1					
Insecta	Diptera	Ulidiidae	<i>Ceroxys urticae</i>	a picture-winged fly	LC			1			1
Insecta	Diptera	Ulidiidae	<i>Dorycera graminum</i>	Phoenix Fly	pNT, S41	1					1
Insecta	Diptera	Ulidiidae	<i>Herina lugubris</i>	a picture-winged fly	None (Falk, Ismay & Chandler, 2016)	1					
Insecta	Diptera	Ulidiidae	<i>Melieria crassipennis</i>	a picture-winged fly	None (Falk, Ismay & Chandler, 2016)			1			
Insecta	Diptera	Ulidiidae	<i>Melieria omissa</i>	a picture-winged fly	None (Falk, Ismay & Chandler, 2016)				1	1	1
Insecta	Diptera	Ulidiidae	<i>Melieria picta</i>	a picture-winged fly	pNationally Scarce (Falk, Ismay & Chandler, 2016)			1		1	1
Insecta	Diptera	Platystomatidae	<i>Rivellia syngenesiae</i>	a fly	None (Falk, Ismay & Chandler, 2016)					1	1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Diptera	Tephritidae	<i>Urophora cardui</i>	a picture-winged fly	None					1	
Insecta	Diptera	Tephritidae	<i>Campiglossa misella</i>	a picture-winged fly	None	1			1		1
Insecta	Diptera	Tephritidae	<i>Sphenella marginata</i>	a picture-winged fly	None				1		
Insecta	Diptera	Tephritidae	<i>Tephritis neesii</i>	a picture-winged fly	None			1		1	1
Insecta	Diptera	Tephritidae	<i>Chaetorellia jaceae</i>	a picture-winged fly	None	1					
Insecta	Diptera	Sciomyzidae	<i>Pherbellia cinerella</i>	a snail-killing fly	None				1		
Insecta	Diptera	Sciomyzidae	<i>Coremacera marginata</i>	a snail-killing fly	None	1				1	1
Insecta	Diptera	Sciomyzidae	<i>Pherbina coryleti</i>	a snail-killing fly	None			1			
Insecta	Diptera	Sciomyzidae	<i>Trypetoptera punctulata</i>	a snail-killing fly	None	1					
Insecta	Diptera	Agromyzidae	<i>Agromyza myosotidis</i>	a leaf-miner fly	None (Falk, Ismay & Chandler, 2016)				1		
Insecta	Diptera	Agromyzidae	<i>Chromatomyia horticola</i>	a leaf-mining fly	None (Falk, Ismay & Chandler, 2016)						1
Insecta	Diptera	Opomyzidae	<i>Geomyza apicalis</i>	an opomyzid fly	pNationally Scarce (Falk, Ismay & Chandler, 2016)	1					1
Insecta	Diptera	Opomyzidae	<i>Geomyza nartshukae</i>	an opomyzid fly	None						1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Diptera	Opomyzidae	<i>Geomyza subnigra</i>	an opomyzid fly	pNationally Scarce (Falk, Ismay & Chandler, 2016)					1	
Insecta	Diptera	Opomyzidae	<i>Geomyza tripunctata</i>	an opomyzid fly	None (Falk, Ismay & Chandler, 2016)	1				1	1
Insecta	Diptera	Opomyzidae	<i>Opomyza florum</i>	an opomyzid fly	None (Falk, Ismay & Chandler, 2016)				1		
Insecta	Diptera	Anthomyzidae	<i>Stiphrosoma sabulosum</i>	an anthomyzid fly	None (Falk, Ismay & Chandler, 2016)	1			1		1
Insecta	Diptera	Chloropidae	<i>Camarota curvipennis</i>	a frit fly	LC	1	1		1		1
Insecta	Diptera	Chloropidae	<i>Elachiptera brevipennis</i>	a frit fly	None (Falk, Ismay & Chandler, 2016)	1	1	1	1	1	1
Insecta	Diptera	Chloropidae	<i>Lipara lucens</i>	a frit fly	None (Falk, Ismay & Chandler, 2016)		1			1	1
Insecta	Diptera	Tachinidae	<i>Eriothrix rufomaculata</i>	a parasitic fly	None (Falk, Pont & Chandler, 2005)				1		
Insecta	Diptera	Tachinidae	<i>Gymnosoma nitens</i>	a parasitic fly	pNS				1		

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Diptera	Tachinidae	<i>Phasia obesa</i>	a parasitic fly	None				1		
Insecta	Siphonaptera	Histrichopsyllidae	<i>Hystrichopsylla talpae talpae</i>	Mole Flea	None						1
Insecta	Lepidoptera	Nepticulidae	<i>Stigmella betulicola</i>	Common Birch Pigmy	None	1					
Insecta	Lepidoptera	Nepticulidae	<i>Ectoedemia albifasciella</i>	White-banded Pigmy	None	1					
Insecta	Lepidoptera	Nepticulidae	<i>Ectoedemia subbimaculella</i>	Spotted Black Pigmy	None	1					
Insecta	Lepidoptera	Tischeriidae	<i>Coptotriche marginea</i>	Bordered Carl	None	1					
Insecta	Lepidoptera	Psychidae	<i>Luffia lapidella</i>	Grey Bagworm	None				1		1
Insecta	Lepidoptera	Psychidae	<i>Psyche casta</i>	Common Sweep	None	1			1	1	
Insecta	Lepidoptera	Psychidae	<i>Epichnopteryx plumella</i>	Round-winged Sweep	Nationally Scarce A	1			1		
Insecta	Lepidoptera	Bucculatricidae	<i>Bucculatrix nigricomella</i>	Daisy Bent-wing	None	1					
Insecta	Lepidoptera	Bucculatricidae	<i>Bucculatrix maritima</i>	Saltern Bent-wing	Nationally Scarce B			1			
Insecta	Lepidoptera	Gracillariidae	<i>Phyllonorycter oxyacanthae</i>	Common Thorn Midget	None	1					
Insecta	Lepidoptera	Gracillariidae	<i>Cameraria ohridella</i>	Horse Chestnut Leaf-miner	None	1					
Insecta	Lepidoptera	Gracillariidae	<i>Phyllocnistis xenia</i>	Kent Bent-wing	Nationally Scarce B						1
Insecta	Lepidoptera	Ypsolophidae	<i>Ypsolopha horridella</i>	Dark Smudge	Nationally Scarce B	1					
Insecta	Lepidoptera	Ypsolophidae	<i>Ochsenheimeria urella</i>	Variable Stem-moth	Nationally Scarce (Nb)	1					
Insecta	Lepidoptera	Plutellidae	<i>Plutella xylostella</i>	Diamond-back Moth	None	1					
Insecta	Lepidoptera	Glyphipterigidae	<i>Glyphipterix simpliciella</i>	Cocksfoot Moth	None	1			1	1	1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Lepidoptera	Argyresthiidae	<i>Argyresthia glaucinella</i>	Oak-bark Argent	None	1					
Insecta	Lepidoptera	Autostichidae	<i>Oegoconia quadripuncta</i>	Four-spotted Obscure	None	1					
Insecta	Lepidoptera	Depressariidae	<i>Agonopterix purpurea</i>	Small Purple Flat-body	None	1					
Insecta	Lepidoptera	Depressariidae	<i>Agonopterix heracliana</i>	Common Flat-body	None	1					
Insecta	Lepidoptera	Depressariidae	<i>Agonopterix alstromeriana</i>	Brown-spot Flat-body	None	1		1			
Insecta	Lepidoptera	Depressariidae	<i>Depressaria pulcherrimella</i>	Pignut Flat-body	None	1					
Insecta	Lepidoptera	Depressariidae	<i>Depressaria douglasella</i>	Carrot Flat-body	Nationally Scarce B	1					
Insecta	Lepidoptera	Gelechiidae	<i>Aproaerema anthyllidella</i>	Vetch Sober	None	1					
Insecta	Lepidoptera	Gelechiidae	<i>Brachmia blandella</i>	Gorse Crest	None	1					
Insecta	Lepidoptera	Gelechiidae	<i>Helcystogramma rufescens</i>	Orange Crest	None	1					
Insecta	Lepidoptera	Gelechiidae	<i>Pexicopia malvella</i>	Hollyhock Seed Moth	Nationally Scarce B	1					
Insecta	Lepidoptera	Gelechiidae	<i>Chrysoesthia sexguttella</i>	Six-spot Neb	None					1	
Insecta	Lepidoptera	Gelechiidae	<i>Bryotropha terrella</i>	Cinereous Neb	None	1					
Insecta	Lepidoptera	Gelechiidae	<i>Bryotropha senectella</i>	Dull Red Neb	None	1					
Insecta	Lepidoptera	Gelechiidae	<i>Bryotropha affinis</i>	Dark Neb	None	1					
Insecta	Lepidoptera	Gelechiidae	<i>Apodia bifractella</i>	Dark Fleabane Neb	None	1					
Insecta	Lepidoptera	Gelechiidae	<i>Chionodes fumatella</i>	Downland Groundling	Nationally Scarce (Nb)	1					
Insecta	Lepidoptera	Gelechiidae	<i>Recurvaria leucatella</i>	White-barred Groundling	None					1	
Insecta	Lepidoptera	Coleophoridae	<i>Coleophora hemerobiella</i>	Black-stigma Case-bearer	None				1		

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Lepidoptera	Coleophoridae	<i>Coleophora salinella</i>	Sea-purslane Case-bearer	Nationally Scarce A			1			
Insecta	Lepidoptera	Elachistidae	<i>Elachista atricomella</i>	Black-headed Dwarf	None	1					
Insecta	Lepidoptera	Elachistidae	<i>Elachista canapennella</i>	Little Dwarf	None	1					
Insecta	Lepidoptera	Elachistidae	<i>Elachistes freyerella</i>	Broken-barred Dwarf	None						1
Insecta	Lepidoptera	Elachistidae	<i>Elachistes consortella</i>	Field Dwarf	Nationally Scarce (Nb)	1					
Insecta	Lepidoptera	Momphidae	<i>Mompha subbistrigella</i>	Garden Mompha	None	1					
Insecta	Lepidoptera	Momphidae	<i>Mompha epilobiella</i>	Common Mompha	None					1	
Insecta	Lepidoptera	Blastobasidae	<i>Blastobasis lacticolella</i>	London Dowd	None	1					1
Insecta	Lepidoptera	Pterophoridae	<i>Emmelina monodactyla</i>	Common Plume	None	1					
Insecta	Lepidoptera	Choreutidae	<i>Anthophila fabriciana</i>	Nettle-tap	None	1			1		
Insecta	Lepidoptera	Tortricidae	<i>Cacoecimorpha pronubana</i>	Carnation Tortrix	None	1		1			1
Insecta	Lepidoptera	Tortricidae	<i>Cnephasia stephensiana</i>	Grey Tortrix	None	1					
Insecta	Lepidoptera	Tortricidae	<i>Cochylimorpha woliniana</i>	Wormwood Conch	New to Britain				1		
Insecta	Lepidoptera	Tortricidae	<i>Aethes williana</i>	Silver Carrot Conch	Nationally Scarce B	1					
Insecta	Lepidoptera	Tortricidae	<i>Aethes tesserana</i>	Downland Conch	None	1					
Insecta	Lepidoptera	Tortricidae	<i>Neocochylis hybridella</i>	White-bodied Conch	None	1					
Insecta	Lepidoptera	Tortricidae	<i>Dichrorampha simpliciana</i>	Round-winged Drill	None	1					
Insecta	Lepidoptera	Tortricidae	<i>Cydia nigricana</i>	Pea Moth	None	1					
Insecta	Lepidoptera	Tortricidae	<i>Grapholita compositella</i>	Triple-stripe Piercer	None	1			1		

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Lepidoptera	Sesiidae	<i>Bembecia ichneumoniformis</i>	Six-belted Clearwing	LC					1	
Insecta	Lepidoptera	Zygaenidae	<i>Zygaena filipendulae</i>	Six-spot Burnet	LC	1					
Insecta	Lepidoptera	Hesperiidae	<i>Thymelicus lineola</i>	Essex Skipper	LC	1					
Insecta	Lepidoptera	Hesperiidae	<i>Thymelicus sylvestris</i>	Small Skipper	LC	1	1	1		1	
Insecta	Lepidoptera	Hesperiidae	<i>Ochlodes sylvanus</i>	Large Skipper	LC	1	1			1	
Insecta	Lepidoptera	Pieridae	<i>Anthocharis cardamines</i>	Orange-tip	LC	1			1		1
Insecta	Lepidoptera	Pieridae	<i>Pieris brassicae</i>	Large White	LC	1			1	1	1
Insecta	Lepidoptera	Pieridae	<i>Pieris rapae</i>	Small White	LC	1			1		1
Insecta	Lepidoptera	Pieridae	<i>Pieris napi</i>	Green-veined White	LC	1	1	1	1		1
Insecta	Lepidoptera	Pieridae	<i>Colias croceus</i>	Clouded Yellow	LC	1					1
Insecta	Lepidoptera	Pieridae	<i>Gonepteryx rhamni</i>	Brimstone	LC						1
Insecta	Lepidoptera	Nymphalidae	<i>Lasioommata megera</i>	Wall	EN, S41 (research only)	1	1	1	1		1
Insecta	Lepidoptera	Nymphalidae	<i>Coenonympha pamphilus</i>	Small Heath	VU, S41 (research only)	1	1		1	1	1
Insecta	Lepidoptera	Nymphalidae	<i>Aphantopus hyperantus</i>	Ringlet	LC		1			1	1
Insecta	Lepidoptera	Nymphalidae	<i>Maniola jurtina</i>	Meadow Brown	LC	1	1				1
Insecta	Lepidoptera	Nymphalidae	<i>Pyronia tithonus</i>	Gatekeeper	LC	1		1			1
Insecta	Lepidoptera	Nymphalidae	<i>Melanargia galathea</i>	Marbled White	LC						1
Insecta	Lepidoptera	Nymphalidae	<i>Vanessa atalanta</i>	Red Admiral	LC	1			1		1
Insecta	Lepidoptera	Nymphalidae	<i>Vanessa cardui</i>	Painted Lady	LC		1				1
Insecta	Lepidoptera	Nymphalidae	<i>Aglais io</i>	Peacock	LC	1	1		1	1	1

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Lepidoptera	Nymphalidae	<i>Aglais urticae</i>	Small Tortoiseshell	LC	1	1	1	1		1
Insecta	Lepidoptera	Nymphalidae	<i>Polygonia c-album</i>	Comma	LC						1
Insecta	Lepidoptera	Lycaenidae	<i>Lycaena phlaeas</i>	Small Copper	LC						1
Insecta	Lepidoptera	Lycaenidae	<i>Callophrys rubi</i>	Green Hairstreak	LC	1					1
Insecta	Lepidoptera	Lycaenidae	<i>Celastrina argiolus</i>	Holly Blue	LC	1					1
Insecta	Lepidoptera	Lycaenidae	<i>Aricia agestis</i>	Brown Argus	LC	1					1
Insecta	Lepidoptera	Lycaenidae	<i>Polyommatus icarus</i>	Common Blue	LC	1	1	1		1	1
Insecta	Lepidoptera	Pyralidae	<i>Achroia grisella</i>	Lesser Wax Moth	None	1					
Insecta	Lepidoptera	Pyralidae	<i>Ancylosis oblitella</i>	Saltmarsh Knot-horn	Nationally Scarce (Nb)		1				1
Insecta	Lepidoptera	Pyralidae	<i>Synaphe punctalis</i>	Long-legged Tabby	None	1					
Insecta	Lepidoptera	Pyralidae	<i>Endotricha flammealis</i>	Rosy Tabby	None	1					
Insecta	Lepidoptera	Crambidae	<i>Nomophila noctuella</i>	Rush Veneer	None		1				
Insecta	Lepidoptera	Crambidae	<i>Cydalima perspectalis</i>	Box-tree Moth	None						1
Insecta	Lepidoptera	Crambidae	<i>Eudonia pallida</i>	Marsh Grey	None	1					
Insecta	Lepidoptera	Crambidae	<i>Catoptria pinella</i>	Pearl Grass-veneer	None	1					
Insecta	Lepidoptera	Sphingidae	<i>Macroglossum stellatarum</i>	Humming-bird Hawk-moth	LC		1				
Insecta	Lepidoptera	Geometridae	<i>Idaea rusticata</i>	Least Carpet	LC	1					
Insecta	Lepidoptera	Geometridae	<i>Idaea fuscovenosa</i>	Dwarf Cream Wave	LC	1					
Insecta	Lepidoptera	Geometridae	<i>Idaea subsericeata</i>	Satin Wave	LC	1					
Insecta	Lepidoptera	Geometridae	<i>Timandra comae</i>	Blood-vein	LC, S41 (research only)					1	

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Lepidoptera	Geometridae	<i>Scotopteryx chenopodiata</i>	Shaded Broad-bar	LC, S41 (research only)						1
Insecta	Lepidoptera	Geometridae	<i>Camptogramma bilineata</i>	Yellow Shell	LC	1					1
Insecta	Lepidoptera	Geometridae	<i>Eupithecia nanata</i>	Narrow-winged Pug	LC	1					
Insecta	Lepidoptera	Geometridae	<i>Chiasmia clathrata</i>	Latticed Heath	NT, S41 (research only)	1					1
Insecta	Lepidoptera	Geometridae	<i>Peribatodes rhomboidaria</i>	Willow Beauty	LC	1					
Insecta	Lepidoptera	Notodontidae	<i>Cerura vinula</i>	Puss Moth	LC						1
Insecta	Lepidoptera	Erebidae	<i>Hypena proboscidalis</i>	Snout	LC				1		
Insecta	Lepidoptera	Erebidae	<i>Arctia villica</i>	Cream-spot Tiger	LC				1		
Insecta	Lepidoptera	Erebidae	<i>Euplagia quadripunctaria</i>	Jersey Tiger	LC					1	
Insecta	Lepidoptera	Erebidae	<i>Eilema complana</i>	Scarce Footman	LC						1
Insecta	Lepidoptera	Noctuidae	<i>Euclidia glyphica</i>	Burnet Companion	LC	1				1	
Insecta	Lepidoptera	Noctuidae	<i>Abrostola tripartita</i>	Spectacle	LC	1					
Insecta	Lepidoptera	Noctuidae	<i>Autographa gamma</i>	Silver Y	None	1					1
Insecta	Lepidoptera	Noctuidae	<i>Cucullia umbratica</i>	Shark	LC	1					
Insecta	Lepidoptera	Noctuidae	<i>Caradrina morpheus</i>	Mottled Rustic	LC, S41 (research only)	1					
Insecta	Lepidoptera	Noctuidae	<i>Hoplodrina octogenaria</i>	Uncertain	LC	1					
Insecta	Lepidoptera	Noctuidae	<i>Hoplodrina ambigua</i>	Vine's Rustic	LC	1					
Insecta	Lepidoptera	Noctuidae	<i>Arenostola phragmitidis</i>	Fen Wainscot	LC			1			

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Insecta	Lepidoptera	Noctuidae	<i>Apamea remissa</i>	Dusky Brocade	LC, S41 (research only)	1					
Insecta	Lepidoptera	Noctuidae	<i>Apamea lithoxylaea</i>	Light Arches	LC	1					
Insecta	Lepidoptera	Noctuidae	<i>Oligia strigilis</i>	Marbled Minor	LC	1					
Insecta	Lepidoptera	Noctuidae	<i>Oligia latruncula</i>	Tawny Marbled Minor	LC	1					1
Insecta	Lepidoptera	Noctuidae	<i>Lacanobia w-latinum</i>	Light Brocade	LC	1					
Insecta	Lepidoptera	Noctuidae	<i>Lacanobia oleracea</i>	Bright-line Brown-eye	LC	1					
Insecta	Lepidoptera	Noctuidae	<i>Mamestra brassicae</i>	Cabbage Moth	LC	1					
Insecta	Lepidoptera	Noctuidae	<i>Hadena bicruris</i>	Lychnis	LC	1					
Insecta	Lepidoptera	Noctuidae	<i>Mythimna impura</i>	Smoky Wainscot	LC	1	1				
Insecta	Lepidoptera	Noctuidae	<i>Mythimna albipuncta</i>	White-point	LC	1					
Insecta	Lepidoptera	Noctuidae	<i>Mythimna l-album</i>	L-album Wainscot	LC	1					
Insecta	Lepidoptera	Noctuidae	<i>Agrotis segetum</i>	Turnip Moth	LC						1
Insecta	Lepidoptera	Noctuidae	<i>Axylia putris</i>	Flame	LC	1					
Insecta	Lepidoptera	Noctuidae	<i>Noctua pronuba</i>	Large Yellow Underwing	LC	1					
Gastropoda	Neotaenioglossa	Hydrobiidae	<i>Potamopyrgus antipodarum</i>	Jenkins' Spire-snail	NA					1	1
Gastropoda	Neotaenioglossa	Hydrobiidae	<i>Ventrosia ventrosa</i>	Spire-snail	LC, NS				1		
Gastropoda	Pulmonata	Agriolimacidae	<i>Deroceras laeve</i>	Marsh Slug	LC				1	1	
Gastropoda	Pulmonata	Agriolimacidae	<i>Deroceras reticulatum</i>	Netted Field Slug	LC		1			1	1
Gastropoda	Pulmonata	Agriolimacidae	<i>Deroceras invadens</i>	Tramp Slug	LC					1	
Gastropoda	Pulmonata	Arionidae	<i>Arion (Kobeltia) intermedius</i>	Hedgehog Slug	LC					1	

Invertebrate survey of Tilbury Ashfields in 2022

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	A1 Ashfield	Ashfield B	Foreshore	Goshem's Farm	A3 N & NW of	The Rest
Gastropoda	Pulmonata	Ellobiidae	<i>Myosotella denticulata/ myosotis</i>	a mouse-eared snail	None			1			
Gastropoda	Pulmonata	Helicidae	<i>Cepaea nemoralis</i>	Brown-lipped Snail	LC	1	1		1		1
Gastropoda	Pulmonata	Helicidae	<i>Cepaea hortensis</i>	White-lipped Snail	LC					1	1
Gastropoda	Pulmonata	Helicidae	<i>Cornu aspersum</i>	Garden Snail	LC	1	1	1			1
Gastropoda	Pulmonata	Hygromiidae	<i>Candidula intersecta</i>	Wrinkled Snail	LC	1	1				1
Gastropoda	Pulmonata	Hygromiidae	<i>Monacha cantiana</i>	Kentish Snail	LC	1	1		1	1	1
Gastropoda	Pulmonata	Lymnaeidae	<i>Radix balthica</i>	Wandering Pond-snail	LC						1
Gastropoda	Pulmonata	Oxychilidae	<i>Aegopinella pura</i>	Clear Glass-snail	LC		1				
Gastropoda	Pulmonata	Oxychilidae	<i>Oxychilus cellarius</i>	Cellar Snail	LC	1					
Gastropoda	Pulmonata	Physidae	<i>Physella acuta</i>	Acute Bladder-snail	None					1	1
Gastropoda	Pulmonata	Punctidae	<i>Paralaoma servilis</i>	a snail	NA	1					1
Gastropoda	Pulmonata	Vertiginidae	<i>Vertigo pygmaea</i>	Common Whorl-snail	LC	1					1
TOTALS						621	229	197	380	373	640