

SUPPLEMENT TO AN INVERTEBRATE SURVEY OF TILBURY ASHFIELDS IN 2022

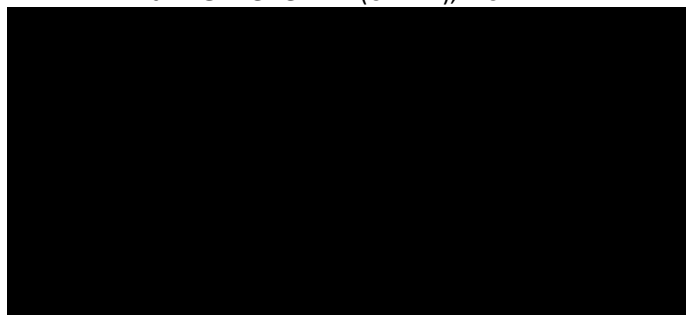


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About the author

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1 Summary

- A general invertebrate survey was carried out of a site at Tilbury Ashfields, Essex, in 2022 and reported on by Telfer (2023).
- One compartment of that survey area, called 'The Rest', was found to be of very high conservation importance for Invertebrates in a national context.
- Here, the Rest has been divided into 10 sub-compartments, and the 2022 results have been used to make assessments of each sub-compartment.
- The assessments have been summarised in a table and on a map.

2 Introduction

Telfer (2023) reported on an invertebrate survey of the Tilbury Ashfields, carried out during 2022.

The survey area was divided into six compartments, of which five were selected as being of principal interest, with the remaining area treated as a single compartment and dubbed 'The Rest' (Figure 1).

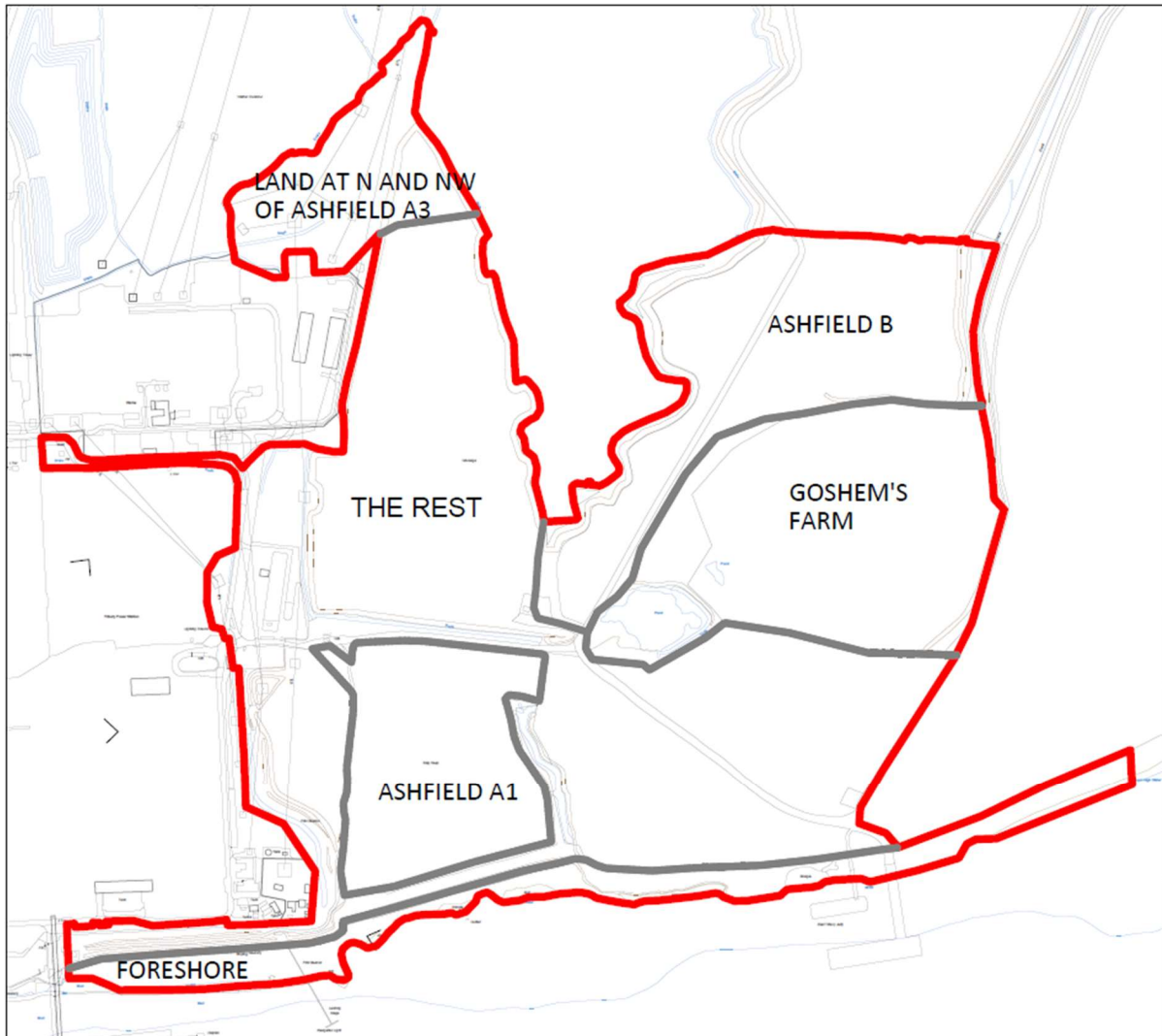


Figure 1: The invertebrate survey area and its six compartments.

Separate assessments were made for each compartment with regard to their importance for invertebrates. The assessment of The Rest includes the following:

“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.”

This brief supplementary report was commissioned to re-examine the survey data from The Rest and use it to make assessments of sub-compartments within The Rest.

3 Methods

Invertebrate sampling of The Rest in 2022 had been structured such that samples were collected from 15 sub-compartments.

The species lists for each of these 15 sub-compartments were analysed to find the following:

- number of species recorded
- number of Species of Principal Importance (inclusive of ‘research only’ species)
- number of Species of Principal Importance (exclusive of ‘research only’ species)
- number of Key Species
- number of Rare Key Species
- percentage of Key Species
- percentage of Rare Key Species
- number of species analysed by Pantheon
- Pantheon statistics for each well-represented broad biotope and subset (number of species, % representation and Species Quality Index (SQI))

Initial analyses showed that the species lists for some of the sub-compartments were not long enough to enable confident assessments to be made, and thus some of the sub-compartments were amalgamated into larger units. The final analyses covered 7 of the original sub-compartments and 3 amalgamations, making 10 sub-compartments in total. These 10 sub-compartments are mapped below (Figure 2).

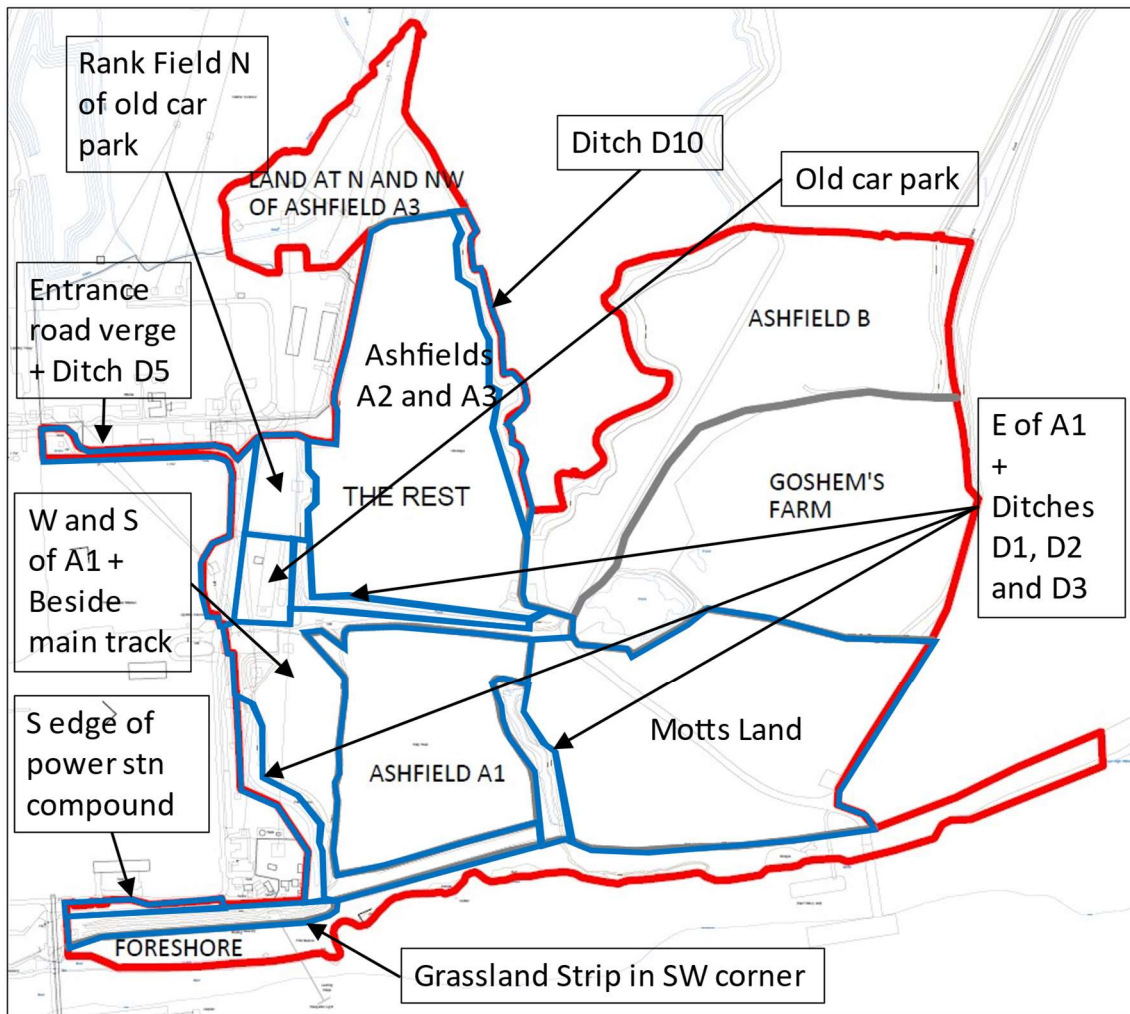


Figure 2: The sub-compartments of The Rest.

4 Results

The results for each of the 10 final sub-compartments are tabulated below (Table 1).

Within the columns of Pantheon results, figures are only presented where the assemblage was well-represented, i.e., where 15 or more species of an assemblage have been recorded. Where the assemblage was not well-represented, the empty cells have been shaded grey.

For the columns of results which are key to the assessments, a colour code has been applied as follows to aid interpretation:

- **red cells**: figures which are high, which exceed the equivalent figure for the whole of The Rest, and which indicate a sub-compartment which is more important in this respect;
- **orange cells**: figures which are at least moderately high, but which do not exceed the equivalent figure for the whole of The Rest, and which indicate importance but less than other sub-compartments;
- **yellow cells**: figures which are low, and which indicate low importance.

Table 1: Results for each of the 10 final sub-compartments. The final row of the table gives the equivalent figures for The Rest compartment as a whole.

Sub-Compartment	Overall assessment	Number of species recorded	No. of SPI, incl. Research Only spp	No. of SPI, excl. Research Only spp	No. of Key Spp	No. of Rare Key Spp	% Rare Key Spp	No. analysed by Pantheon	Broad Biotope: open habitats			Broad Biotope: wetland			Broad Biotope: coastal			Subset: tall sward & scrub			Subset: short sward & bare ground			Subset: marshland					
									No. of species	% representation	SQL	No. of species	% representation	SQL	No. of species	% representation	SQL	No. of species	% representation	SQL	No. of species	% representation	SQL	No. of species	% representation	SQL			
Ditch D10		66	3	2	12	3	18.18%	4.55%	62	34	<1	130	18	<1	189			21	<1	100									
S edge of power stn compound		44	0	0	8	2	18.18%	4.55%	38	22	<1	190																	
E of A1 + Ditches D1, D2 and D3		174	2	2	30	3	17.24%	1.72%	157	76	2	121	46	2	137	19	4	305	57	2	111	17	1	156	33	4	150		
Motts Land		95	1	1	14	1	14.74%	1.05%	87	48	1	132	23	<1	157				35	1	109				18	2	156		
W and S of A1 + Beside main track		116	4	3	13	5	11.21%	4.31%	99	71	2	142							49	2	113	19	1	221					
Entrance road verge + Ditch D5		146	3	3	16	6	10.96%	4.11%	132	90	2	155	27	<1	112				59	2	129	31	2	207	17	2	100		
Ashfields A2 and A3		194	4	3	20	6	10.31%	3.09%	177	133	3	124							85	3	111	47	4	148					
Old car park		87	1	1	8	1	9.20%	1.15%	75	50	1	169							37	1	136								
Grassland Strip in SW corner		108	1	1	5	0	4.63%	0.00%	96	70	2	119							55	2	113	15	1	120					
Rank Field N of old car park		12	0	0	0	0	0.00%	0.00%	8																				
The Rest overall		640	9	7	93	19	14.53%	2.97%	582	355	8	149	104	4	153	30	6	280	237	9	124	114	9	203	65	8	145		

5 Assessments of sub-compartments

5.1 DITCH D10

Ditch D10 on the eastern edge of Ashfields A2/A3 is a freshwater ditch which is largely reed-choked except for a section where a landslip or heave has engulfed the old ditch, and a new ditch has been dug.

The very high potential importance of this ditch, and in particular the new section, was not recognised until it had nearly dried out, after which it was surveyed primarily by pitfall-trapping (it being in an area of Asbestos contamination). Even under these constraints, it proved to be one of the most important sub-compartments of The Rest, with extremely high percentages of Key Species and Rare Key Species, and an extremely high 'wetland' SQI. It was one of three places which were found to be supporting Saltmarsh Shortspur *Anisodactylus poeciloides*, a Species of Principal Importance. A sub-compartment of high importance.

5.2 S EDGE OF POWER STN COMPOUND

This area is adjacent to the 'Grassland Strip in SW corner' sub-compartment, but separated by the perimeter of the old power station compound.

A varied sub-compartment of unmanaged grassland, ruderal vegetation, trees and shrubs.

Surveyed on a single visit, yielding extremely high percentages of Key Species and Rare Key Species, and an extremely high SQI for 'open habitats'. A sub-compartment of high importance.

5.3 E OF A1 + DITCHES D1, D2 AND D3

The Rest as a whole was found to be an important compartment for species of the 'wetland' and 'coastal' broad biotopes. High concentrations of rare and scarce Key Species from these assemblages were found in the brackish ditches D1, D2 and D3. In view of the rather small species lists for each ditch, they have been aggregated together, along with the 'East of A1' sub-compartment, which is the narrow strip of land containing Ditch D3.

This aggregated compartment yielded a very high percentage of Key Species, and high SQI figures for the 'coastal' and 'marshland' assemblages. A sub-compartment of high importance.

5.4 MOTTS LAND

At the start of the survey, the Motts Land sub-compartment supported some small pools and areas of wetland habitat, as well as extensive areas of bare and sparsely-vegetated ruderal habitats, though earthworks during the course of the survey diminished these habitats to some extent.

Although the disturbance from earth-moving work severely constrained the survey of the Motts Land sub-compartment, it still yielded a high percentage of Key Species. The wetland habitats which were present at the start of the survey period yielded small samples of high quality but had been destroyed by the end of the survey.

Motts Land is probably best assessed as a mid-ranking sub-compartment within The Rest. However, where vegetation has been allowed to develop without disturbance, or with

infrequent disturbance, Motts Land has supported important invertebrate assemblages, and it could do so again.

5.5 W AND S OF A1 + BESIDE MAIN TRACK

This area consists of the verges beside the main east-west track on the north side of Ashfield A1, as well as the similar habitats on the west and south sides of A1. It includes the steep banks of A1. The habitats are largely rank, unmanaged grassland, with some extensive areas of scrub and bramble, but also including many patches of shorter or more disturbed vegetation especially along tracksides.

This aggregated sub-compartment has been assessed as mid-ranking. It yielded a high percentage of Rare Key Species, and a high SQI for the 'short sward & bare ground' assemblage, though these results might not be robust if larger samples were available.

5.6 ENTRANCE ROAD VERGE + DITCH D5

The entrance road is the access to the survey area from the Tilbury2 site. Ditch D5 runs parallel to the entrance road within the fenced compound.

Both are sub-compartments of high importance. The road verge (see cover photograph) is particularly noteworthy for the presence of Tall Fescue Planthopper *Ribautodelphax imitans*, a Species of Principal Importance which was not found elsewhere within the survey area. The Ditch D5 sub-compartment was of low importance for aquatic and wetland species but the ditch was flanked by habitats supporting high quality 'open habitats' and 'short sward & bare ground' assemblages. This aggregated sub-compartment has been assessed as of high importance.

5.7 ASHFIELDS A2 AND A3

A large sub-compartment which was thoroughly surveyed, including by pitfall trapping, generating a longer species list (194 species) than for any other sub-compartment.

This sub-compartment yielded a slightly higher percentage of Rare Key Species than was found from The Rest compartment as a whole, but was otherwise unremarkable relative to the other sub-compartments. It has been assessed as a sub-compartment of mid-ranking importance.

5.8 OLD CAR PARK

An area dominated by bare concrete, tarmac and aggregate, but with peripheral areas of pioneer vegetation, scrub and ornamental planted trees.

This sub-compartment was notable for a very high SQI for 'open habitats' species but was generally of mid-ranking relative to other sub-compartments. A sub-compartment of mid-ranking importance.

5.9 GRASSLAND STRIP IN SW CORNER

This is the area south of the perimeter of the old power station compound. It lies adjacent to the 'S edge of power stn compound' sub-compartment.

An area of rather rank grassland, succeeding to scrub in large areas, though prior to the survey it had been substantially impacted by earthworks.

This sub-compartment was relatively thoroughly surveyed and appears to be of low importance.

5.10 RANK FIELD N OF OLD CAR PARK

This compartment was visually assessed as being of low importance. A small amount of survey effort was very unproductive, and nothing amongst the few species recorded gave any indication of other than low importance.

6 Map of sub-compartment assessments

The sub-compartment map (Figure 2) is repeated here (Figure 3) with each compartment colour coded according to its importance as follows:

- **red**: the sub-compartments of greatest importance within The Rest;
- **orange**: the sub-compartments of middle-ranking importance within The Rest;
- **yellow**: the sub-compartments of lowest importance within The Rest.

For clarity, sub-compartment name labels have been omitted from Figure 3, but the names may be gleaned by reference to Figure 2.

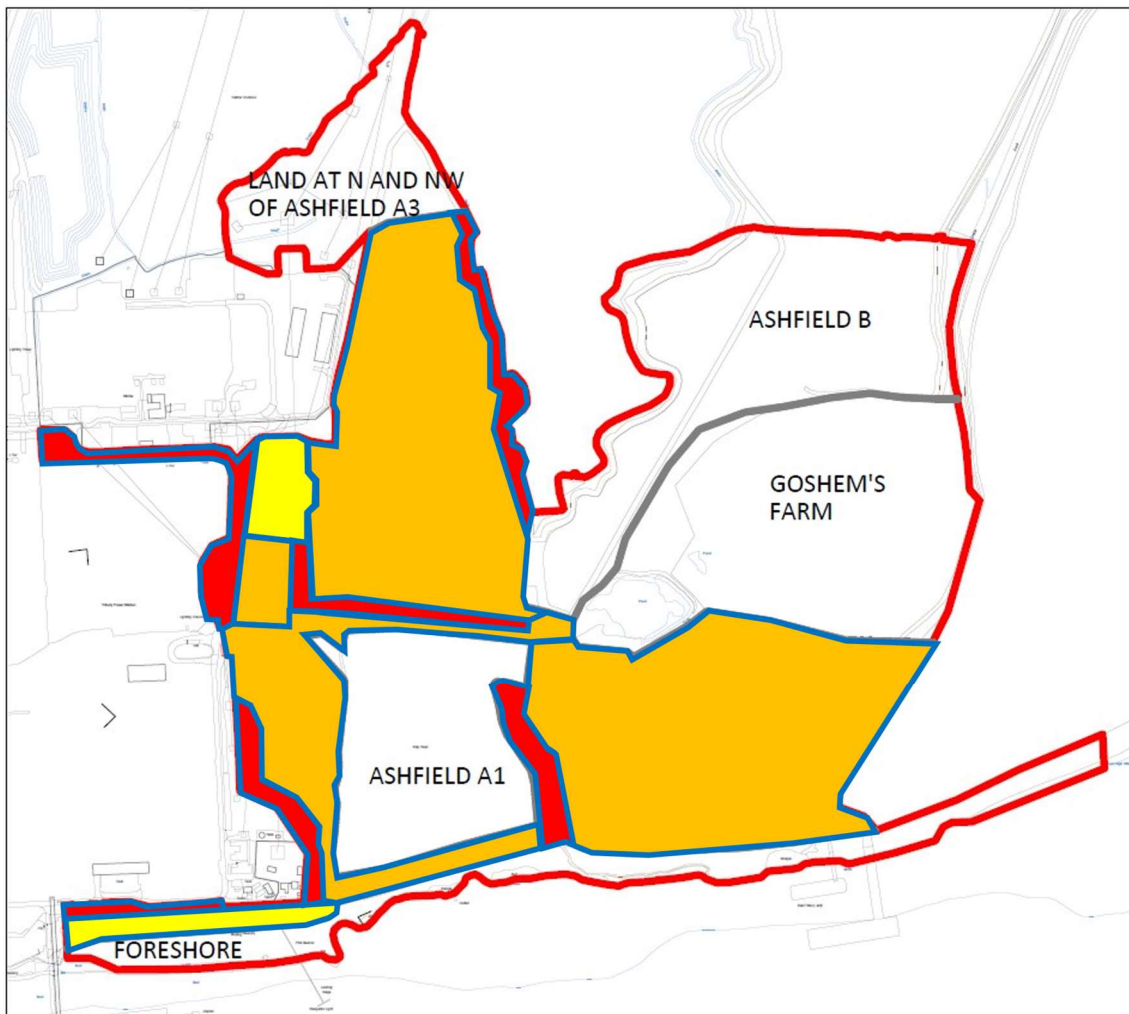


Figure 3: Sub-compartments colour coded for their conservation importance for invertebrates.

The four compartments shaded red (Ditch D10, S edge of power stn compound, E of A1 + Ditches D1, D2 and D3, and Entrance road verge + Ditch D5) are of greatest importance within a compartment which was assessed as being of very high conservation importance for invertebrates in a national context by Telfer (2023). These areas are thus also of at least the same importance or higher.

The middle-ranking sub-compartments, shaded orange, may be regarded as of high conservation importance for invertebrates in a national context, but outweighed by those of greatest importance.

The sub-compartments of lowest importance, shaded yellow, may be regarded as of local importance.

7 Acknowledgements

I would like to thank Rebecca Read and Dominic Woodfield for commissioning this work.

8 Reference

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