

BASELINE COLEOPTERA SURVEY
FOR THE
MERSEY GATEWAY

WIDNES WARTH
2010



**RACHEL
HACKING
ECOLOGY**

52 Church Lane, Marple, Stockport, Cheshire, SK6 7AW

Tel: 0161 427 3548 Mobile: 07734 296424

mail@rachelhackingecology.co.uk www.rachelhackingecology.co.uk

CONTENTS

1. INTRODUCTION	Page 2
2. METHODOLOGY	3
3. RESULTS	4
4. ASSESSMENT	8
5. LIMITATIONS TO THE SURVEY	9
6. RECOMMENDATIONS	9
REFERENCES	10
APPENDIX 1 – Total list of invertebrate species found	
APPENDIX 2 - List of species with descriptions taken from Recorder software	
SITE LOCATION PLAN at back of report	

1. INTRODUCTION

- 1.1 Rachel Hacking Ecology Limited was commissioned in 2010 by Halton Borough Council (Mersey Gateway Team) to assess the Coleoptera (beetle) assemblage on Widnes Warth saltmarsh. The new Mersey Gateway crossing is to be constructed on parts of the saltmarsh towards the west and the survey was commissioned as part of pre-construction ecological work. The survey results will also help guide future management of the site, some of which may be part of any post-construction habitat works such as instigating a grazing regime.
- 1.2 Widnes Warth saltmarsh is located between the St. Helens Canal and the River Mersey, south of Widnes town centre. The survey site at Widnes Warth is approximately 40ha in size and comprises saltmarsh habitat with a number of creeks and brackish lagoons. The grass sward is dense and comprises mainly Sea Couch *Eltrigia atherica*, Common Cord-grass *Spartina anglica* and Common Couch *Elytrigia repens*. Sea Aster *Aster tripolium* is locally frequent. The saltmarsh is inundated twice a year so the survey was timed to avoid these high tides.
- 1.3 The aims of the survey were to:
 - Determine the species assemblage present at Widnes Warth and assess the assemblage within a local and national context,
 - Determine whether any locally or nationally rare beetles are present at Widnes Warth, some of which could impact on the development or any future management regime.

2. METHODOLOGY

- 2.1 A walkover survey of the saltmarsh was conducted to determine four locations for sampling. These were labelled Sites 1 to 4, running east to west (illustrated on the Site Location Plan at the back of the report). Site 1 was chosen for its proximity to an area where cattle are to be introduced.
- 2.2 Sampling for Coleoptera can include a variety of methods. Due to the large expanse of saltmarsh across the site and the minimal amount of public disturbance, a static collection technique could be used. Pitfall trapping was undertaken at each of the four sites. At each site a grid of nine pitfall traps was set. These were plastic cups dug into the ground so that the rim of the cup was flush with the soil surface. Into each cup, a small amount of solution (60% ethanol) was poured. This would kill and preserve the beetles. Across the top of each trap, a small metal grid was placed, made out of pieces of galvanised fencing. This was to prevent small mammals from entering the traps.
- 2.3 Other sampling techniques were also used:
 - Sweep-netting – A robust insect net was used to sweep the saltmarsh vegetation to collect low-flying beetles.
 - Hand-searching – This involved searching under driftwood, in grass tussocks and beneath any seaweed or flotsam that had been brought in on the high tide.
- 2.4 Each of the four sites was trapped out and surveyed twice to catch both spring and autumn breeders. The first trapping period commenced on the 28th May 2010 and finished on the 18th June 2010. An interim collection was carried out on 8th June 2010 and the traps re-set with fresh ethanol. The second trapping period commenced on the 29th September 2010 and finished on the 9th October 2010, with no interim collection. Sweep-netting and hand-searching took place on the days visited for the collection of the pitfall traps.
- 2.5 All of the beetles caught within the traps, or seen whilst conducting other survey techniques, were potted in 70% ethanol to be identified later, unless identification could be made in the field, in which case the animal was released.
- 2.6 Rachel Hacking undertook the sampling, with assistance from Paul Oldfield and Andy Harmer. Rachel has many years experience of Coleoptera surveying and is the Cheshire recorder for Carabidae (ground beetles).
- 2.7 Rachel Hacking identified the Coleoptera with critical specimens being sent to Mike Denton FRES, a Coleoptera recorder for south Yorkshire.

3. RESULTS

General

- 3.1 Forty-two species of Coleoptera were recorded across all four sites. Sites 1 and 2 supported the highest number of species, with 25 species in total being recorded from each. Site 4 recorded the lowest number of species. Coleoptera nomenclature follows Duff, 2008.
- 3.2 The sites with the largest catch of beetles were Sites 2 and 4, with a total of 174 beetles caught and 173 beetles caught respectively. Site 3 recorded the lowest catch of beetles with 77 beetles found.
- 3.3 Most of the species recorded are common throughout the UK and the north-west of England. Eleven species are considered 'Local' which means the species is not scarce but has a restricted habitat requirement. One species *Tournotaris bimaculatus* (a weevil), which was recorded from all four sites, is designated Nationally Scarce (Notable B). Notable B (Nb) is given to species that are known to occur in between 31 and 100 10-kilometre squares of the national grid.
- 3.4 A complete species list per site can be found in Appendix 1. Brief descriptions of each of the 42 Coleoptera species recorded can be found in Appendix 2. Locations of each of the four sites can be found on the Site Location Plan at the back of the report.

Site 1- SJ52898498

- 3.5 Site 1 is the most easterly site on Widnes Warth saltmarsh, just west of an inlet creek. The pitfall trap grid was located just next to the mean high water level, where the vegetation ended in a small cliff, south of which was the River Mersey. The grass sward was dense here and tidal refuse was frequent.
- 3.6 Twenty-five species of Coleoptera were recorded from Site 1. The first trapping period yielded 21 species and the second trapping period yielded 12 species. In total, 131 Coleoptera specimens were taken at Site 1. The largest number of specimens came from the Silphidae family, the carrion beetles. This was due to the high volume of amphipods which had entered the traps and started to rot, attracting the carrion beetles. Thirty-seven specimens of *Silpha tristis* were caught in the pitfall traps over the two trapping periods. The Local *Cercyon littoralis* was recorded here. This species occurs on decaying seaweed and therefore has a restricted distribution in the UK.
- 3.7 Eight species of Carabidae (ground beetles) were recorded. This total included ten specimens of *Pterostichus macer*, a Local species which, in the west of Great Britain, is restricted to the coast. The Notable B weevil *Tournotaris bimaculatus* was recorded from this site. This species occurs on rushes and sedges and was found in the pitfall traps and whilst sweep-netting. Orange Ladybird *Halysia sedecimguttata* was recorded from this site. This species is considered Local.

Site 2 - SJ52688481

- 3.8 Site 2 is located on the edge of the high water mark, further west than Site 1. Structurally, this site is very similar to the other sites, having a dense sward of saltmarsh grass species. The site was sandwiched between an inlet creek and a series of wooden posts.
- 3.9 Twenty-five species of Coleoptera were recorded from Site 2. The first trapping period yielded 22 species and the second trapping period yielded 11 species. In total, 174 specimens were caught from this site, with the majority being caught during the first trapping period. Similarly to Site 1, a large number of carrion beetles were attracted to the traps including 51 specimens of *Silpha tristis* and 15 specimens of *Nicrophorus vespillo* during the first trapping period.
- 3.10 Thirteen species of Carabidae were recorded from the pitfall traps and from hand-searching. These included the saltmarsh specialist *Dicheirotrichus gustavii* which is restricted to this habitat throughout the UK and therefore classed as Local. The Local Carabid *Poecilus cupreus* was common in the pitfall traps. This green beetle can often be seen on open ground on sunny days. Nineteen specimens of the click beetle *Agriotes obscurus* were collected along with 11 specimens of the soldier beetle *Cantharis rufa*. The Notable B weevil *Tournotaris bimaculatus* was also recorded from this site.

Site 3 – SJ52098476

- 3.11 Site 3 is located just south of a large brackish pond. This site is the furthest from the River Mersey, compared to the other sites. The vegetation is similar to the previous sites, with dense grass coverage although at this site, patches of bare mud were evident.
- 3.12 A total of 23 species of Coleoptera were recorded from Site 3, with a fairly even spread between the two trapping periods. A total of 77 specimens were collected from this site across the two trapping periods. This is the lowest catch of any site. The first trapping period yielded 51 specimens and the second trapping period yielded 26 specimens. Fewer specimens of carrion beetles were recorded from this site, although three species of Silphidae were present.
- 3.13 The coastal rove beetle *Tasgius ater* was recorded from this site (as well as all the other sites). Ten species of Carabidae were recorded including *Leistus fulvibarbis*, a common species but which was only found at Site 3. *Agonum thoreyi* was recorded from this site. This is a hygrophilous Carabid, occurring near to water. Ten specimens of the Notable B weevil *Tournotaris bimaculatus* were caught. Another weevil was found here during the sweep-netting. This was *Sitona lepidus*, a species restricted to leguminous plants, some of which occurred near to the canal. This beetle is common throughout the UK.

Site 4 – SJ51928473 (1st visit) + SJ51868471 (2nd visit)

- 3.14 Site 4 is the most westerly of the four sites. During the first sampling period, the pitfall traps were located at SJ51928473, directly beneath where the new Mersey crossing will span. The 2nd visit location was moved slightly west due to the ground being waterlogged where the traps had previously been dug. This location further west also allowed sampling to the west of the new crossing. Site 4 supported dense tussocks of saltmarsh grasses with pockets of open mud.
- 3.15 A total of 20 species of Coleoptera were recorded from Site 4, with 15 species being recorded during the first trapping period and 11 species being recorded from the second trapping period. This is the lowest species count out of all of the sites. However, Site 4 yielded the second largest number of beetles with 173 specimens being caught or seen. The first trapping period yielded 156 specimens, the second period yielded 17 specimens.
- 3.16 Most of the beetles caught came from the ground beetle family (Carabidae). Seventy-two specimens of *Bembidion aeneum* were caught in the first trapping period. This species is hygrophilous and lives typically in marshes and muddy habitats. In total, ten species of Carabidae were recorded including the Local beetles *Pterostichus vernalis* and *Poecilus cupreus*. Only one species of carrion beetle was recorded; *Nicrophorus vespillo*. *Saprinus semistriatus* was recorded here. This species can live on dung but also in decaying vegetation. Three species of rove beetle were recorded including the Local *Quedius simplicifrons*. This species occurs on saltmarshes and is very common in south-east England, being more localised in the north.

Species of restricted distribution

- 3.17 One Notable B beetle was recorded from all four sites. This was the weevil *Tournotaris bimaculatus*. This species is known to occur on emergent aquatic vegetation at freshwater and brackish sites. The nearest existing record to Widnes Warth for this species is from Burton Saltmarsh, south of Neston, Wirral from 1993. It has also been recorded from Wigan. A number of specimens of *T. bimaculatus* were collected from Widnes Warth including 10 from Site 3. Therefore it is likely that a viable population exists across the saltmarsh.
- 3.18 Eleven 'Local' species were recorded from the saltmarsh. These are species which have restricted habitat requirements but can be widespread throughout the UK and not considered scarce. Table 1 shows the eleven species and which sites they were recorded from as well as a brief example of habitat preference.

Species	Habitat preference	Site 1	Site 2	Site 3	Site 4
<i>Leistus fulvibarbis</i>	Damp woodland/dunes			+	
<i>Poecilus cupreus</i>	Dry grasslands		+	+	+
<i>Pterostichus macer</i>	On damp clay	+	+		
<i>Pterostichus vernalis</i>	Damp grasslands	+	+	+	+
<i>Anisodactylus binotatus</i>	Damp, open habitats		+		
<i>Dicheirotichus gustavii</i>	Saltmarshes		+		
<i>Cercyon littoralis</i>	Coastal on seaweed	+			
<i>Ochthebius dilatatus</i>	Muddy water			+	
<i>Silpha tristis</i>	Carrion and dung	+	+	+	
<i>Quedius simplicifrons</i>	Saltmarshes	+	+	+	+
<i>Halzyia sedecimguttata</i>	Emergent vegetation	+		+	

3.19 Four of the Coleoptera species recorded are restricted to saltmarsh habitats. These were the ground beetle *Dicheirotichus gustavii*, the rove beetle *Quedius simplicifrons*, the rove beetle *Brundinia marina* and a member of the Hydrophilidae (scavenger beetles), *Cercyon littoralis*. Very little is known about the distribution of *Brundinia marina* (hence the 'U' on the spreadsheet in Appendix 1). The NBN Gateway shows a lack of records for this species in the locality of Widnes. The nearest records are from the coast near to Carlisle. It has no rarity designation in the UK.

4. ASSESSMENT

- 4.1 No rare (e.g. Red Data Book) or legally protected Coleoptera species were recorded from any of the four sites. One Nationally Scarce (Notable B) species was recorded from all four sites; *Tournotaris bimaculatus*. This species is known to occur in between 31 and 100 10-kilometre squares of the national grid. Eleven 'Local' beetles were recorded. These have restricted habitat distributions and are listed in Table 1.
- 4.2 The site supports a diverse assemblage of ground beetle (Carabidae) species. In total, 17 species of ground beetle were recorded, including one saltmarsh specialist; *Dicheirotichus gustavii*. Given the homogeneity of the habitat, this is a good total from across the four sites.
- 4.3 The area studied as part of this survey is considered to encompass the lower and middle zones of a saltmarsh. The lower zone, nearest to the sea, is mainly open mud, frequently inundated and the Coleoptera assemblage within a lower zone is typically species poor. The middle zone can support a more diverse plant assemblage and therefore tends to support a greater number of Coleoptera species. At Widnes Warth, the habitat was homogenous both botanically and structurally, therefore the total of 42 species of Coleoptera found could be considered to be a diverse assemblage from this type of habitat. But the total species number is poor when compared against the size of the site.
- 4.4 Comparing the four sites, Site 3 proved to support the least amount of Coleoptera biomass with 77 specimens recorded. However, the species total from Site 3 is not the lowest at 23. Site 4 exhibited the lowest species total with 20 species being recorded, however, the biomass at Site 4 was high with 173 specimens caught. Both Sites 1 and 2 recorded a total of 25 species. Given the similarity between the four sites, it is difficult to explain the differences in species totals and biomass yield. The ground beetle assemblage was evenly spread throughout the four sites.
- 4.5 The two trapping periods differed in the length of time the traps were left active. The first trapping period lasted for 21 days. The second trapping period lasted for 10 days. It was decided that the second trapping period would be reduced to limit the amount of amphipods that would enter the traps and therefore attract carrion beetles. The first trapping period, therefore, yielded a greater number of species at each of the sites and a greater number of individual specimens.
- 4.6 In summary, no legally protected or rare invertebrates were recorded from within the site. There are no limitations placed on the development of the new Mersey Crossing due to the Coleoptera fauna that is present. The extent of the habitat suggests that any construction disturbance would have a minimal effect on the habitat as a whole. The

results of the survey also suggest that any new management regime instigated, such as grazing, will not have a deleterious impact on the Coleoptera fauna. It is highly likely that any such future management will increase the species diversity of the Widnes Warth saltmarsh.

5. LIMITATIONS

- 5.1 Widnes Warth is a large site and having four locations, each with a grid of nine traps, inevitably means that some species may have been missed. It is unlikely that many species were missed, given the homogeneity of the habitat.
- 5.2 A huge number of saltwater amphipods such as *Gammarus* spp. and *Orchestia* spp. inhabit the mud on the saltmarsh and these inevitably ended up being caught in the traps. The huge numbers of these dead amphipods caused an attractant to carrion beetles, therefore a large percentage of beetle specimens were species which were not necessarily in existence on Widnes Warth.
- 5.3 There are approximately 4000 species of Coleoptera in Britain. However, the ecology and distribution of many of these species is poorly understood. Therefore caution is needed when interpreting the conservation status of specific species.

6. RECOMMENDATIONS

- 6.1 An invertebrate group such as the Coleoptera favours botanically diverse areas as many species are reliant on specific plant species or plant families to feed. The greater the botanical and structural diversity within the habitat, the greater the invertebrate species diversity will be. Therefore it is recommended that grazing is commenced to allow the dense, grass sward to be disturbed. This will, in turn, allow other plant species to colonise open pockets with less competition from quick-growing, grass species. Allowing a greater floristic diversity to flourish will in turn create a more structurally diverse habitat.

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APPENDIX 1 – Total list of invertebrate species found

L = 'Local', U = Unknown, C = Common, N(b) – Nationally Scarce (Notable B).

	National Status	Site 1 1st Visit	Site 1 2nd Visit	Site 2 1st Visit	Site 2 2nd Visit	Site 3 1st Visit	Site 3 2nd Visit	Site 4 1st Visit	Site 4 2nd Visit
Carabidae									
<i>Leistus fulvibarbis</i> Dejean, 1826	L						1		
<i>Nebria brevicollis</i> (Fabricius, 1792)	C				1	2		1	
<i>Clivina fossor</i> (Linnaeus, 1758)	C			1					
<i>Trechus obtusus</i> Erichson, 1837	C						8		1
<i>Bembidion aeneum</i> Germar, 1824	C	5	1	8	3	1		72	4
<i>Bembidion lunulatum</i> (Geoffroy in Fourcroy, 1785)	C	5	1	5	2	1		6	1
<i>Poecilus cupreus</i> (Linnaeus, 1758)	L			5	1	4	1	14	2
<i>Pterostichus macer</i> (Marsham, 1802)	L	10	2	7					
<i>Pterostichus niger</i> (Schaller, 1783)	C	1		1		3	1	1	
<i>Pterostichus strenuus</i> (Panzer, 1796)	C	10	1	3	1	6		16	2
<i>Pterostichus vernalis</i> (Panzer, 1795)	L	4		7		5	1	21	1
<i>Agonum fuliginosum</i> (Panzer, 1809)	C			1				6	
<i>Agonum thoreyi</i> (Dejean, 1828)	C	1				1			
<i>Amara ovata</i> (Fabricius, 1792)	C		1						
<i>Harpalus rufipes</i> (De Geer, 1774)	C	1		2				2	1
<i>Anisodactylus binotatus</i> (Fabricius, 1787)	L			1					
<i>Dicheirotichus gustavii</i> Crotch, 1871	L			1					
Hydrophilidae									
<i>Sphaeridium scarabaeoides</i> (Linnaeus, 1758)	C			3					
<i>Cercyon littoralis</i> (Marsham, 1802)	L		1						
<i>Megasternum concinnum</i> (Marsham, 1802)	C						1		
Histeridae									
<i>Saprinus semistriatus</i> (Scriba, 1790)	C	1						1	
Hydraenidae									
<i>Ochthebius dilatatus</i> Stephens, 1829	L						1		
Silphidae									
<i>Nicrophorus vespillo</i> (Linnaeus, 1758)	C	14	1	15	1	6	1	3	
<i>Thanatophilus sinuatus</i> (Fabricius, 1775)	C	8	2			2			
<i>Silpha tristis</i> Illiger, 1798	L	36	1	51	2	6	1		
Staphylinidae									
<i>Anotylus sculpturatus</i> (Gravenhorst, 1806)	C			3				1	
<i>Lathrobium brunnipes</i> (Fabricius, 1792)	C							1	
<i>Philonthus cognatus</i> Stephens, 1832	C	2							
<i>Philonthus laminatus</i> (Creutzer, 1799)	C	1							
<i>Philonthus splendens</i> (Fabricius, 1793)	C			1					
<i>Tasgius ater</i> (Gravenhorst, 1802)	C		3		3		4		1
<i>Quedius simplicifrons</i> Fairmaire, 1861	L		1		3		3		2
<i>Mocyta fungi</i> (Gravenhorst, 1806)	C						1		
<i>Brundinia marina</i> (Mulsant & Rey, 1853)	U								1
<i>Aleochara bipustulata</i> (Linnaeus, 1761)	C	1		1					
<i>Aleochara curtula</i> (Goeze, 1777)	C	2							

	National Status	Site 1 1st Visit	Site 1 2nd Visit	Site 2 1st Visit	Site 2 2nd Visit	Site 3 1st Visit	Site 3 2nd Visit	Site 4 1st Visit	Site 4 2nd Visit
Elateridae									
<i>Agriotes obscurus</i> (Linnaeus, 1758)	C	7	1	19	4	2			
Cantharidae									
<i>Cantharis rufa</i> Linnaeus, 1758	C	1		11	1			9	
Coccinellidae									
<i>Coccinella septempunctata</i> Linnaeus, 1758	C	1		4		1	1		1
<i>Halzyia sedecimguttata</i> (Linnaeus 1758)	L	1				1			
Curculionidae									
<i>Sitona lepidus</i> Gyllenhal, 1834	C					1			
Erirhinidae									
<i>Tournotaris bimaculatus</i> (Fabricius, 1787)	N(b)	3		2		9	1	2	
TOTAL NUMBER OF SPECIES		21	12	22	11	16	14	15	11
TOTAL NUMBER OF SPECIES PER SITE		25		25		23		20	
TOTAL NUMBER OF BEETLES		115	16	152	22	51	26	156	17
TOTAL NUMBER OF BEETLES PER SITE		131		174		77		173	

APPENDIX 2 – List of species with descriptions taken from Recorder software

Leistus fulvibarbis Dejean,1826 Local.

Small black ground beetle of moist places, often in woodland. Widely distributed but never abundant.

Nebria brevicollis (Fabricius,1792) Common.

Fairly large (10.0-14.0mm) black ground beetle. No particular habitat specificity, being extremely abundant in situations ranging from the shore, through woodland to high moorland.

Clivina fossor (Linnaeus,1758) Common.

A small (5.5-6.5mm), black ground beetle with fossorial habits, found commonly under stones, among litter and in grass tussocks on all types of open ground, preferring it not too dry and more or less vegetated. It is locally common throughout the British Isles except for the Scottish Highlands. It has the thorax divided from the abdomen by a waist and the forelegs are modified for digging. It is distinguished from the less common *Clivina collaris* by its black instead of reddish-brown wing cases.

Trechus obtusus Erichson,1837 Common.

3.5-4.0mm long orange brown ground beetle. Most habitats from high moorland to estuarine mud.

Bembidion aeneum Germar,1824 Common.

3.5-4.5mm long bronze-black ground beetle living among vegetation usually among mud at the side of freshwater and in muddy estuaries and saltmarshes. Locally abundant throughout much of Britain, especially on the coast.

Bembidion lunulatum (Geoffroy in Fourcroy,1785) Common.

3.5-4.0mm long black ground beetle with obscure reddish apical spot. Lives at the side of freshwater, usually on mud or among vegetation. Also on the shore. Very common in most of southern and midland England and Wales, at least as far north as Yorkshire. Much rarer north of this.

Poecilus cupreus (Linnaeus,1758) Local.

11.0-13.0mm long attractive coppery green predatory ground beetle living in damp meadows and, sometimes near water. Widespread but local, abundant where it occurs.

Pterostichus macer (Marsham,1802) Local.

11.0-15.0mm long black, flattened ground beetle found under bark or in fissures in slumping boulder clay cliffs. Most frequent on the coast. England north to Co. Durham but much rarer in the north.

Pterostichus niger (Schaller,1783) Common.

15.0-20.0mm long predatory black ground beetle. Common in most habitats, including gardens and arable, although does not occur in very dry places. Adults live under stones, under bark, in tussocks etc.

Pterostichus strenuus (Panzer,1796) Common.

5.0-7.0mm long black ground beetle. Predatory. Very common in almost every habitat, usually living among plant litter but also under stones. Common in gardens and on arable land.

Pterostichus vernalis (Panzer, 1795) Local.

6.0-7.5mm long black ground beetle living under stones and among litter etc in moist meadows and also beside freshwater. Widespread and common over much of southern England and all of Wales, apparently much more local in the far north of England and Scotland.

Agonum fuliginosum (Panzer, 1809) Common.

5.0-8.0mm long brownish black ground beetle. Predatory. Very common in most moist habitats, being found under stones, in leaf litter, under bark, on river shingle, on the shore etc.

Agonum thoreyi (Dejean 1828) Common

6.0-8.0mm long black ground beetle. This species is widely distributed in England and Wales. It inhabits well-vegetated marshes and reed beds.

Amara ovata (Fabricius, 1792) Common.

8.0-9.5mm long oval blue-black ground beetle of dry, open ground with sparse vegetation, such as quarries, railway embankments etc. Widespread and common in southern Britain, perhaps becoming more local in the north.

Harpalus rufipes (De Geer, 1774) Common.

10.0-17.0mm long black ground beetle with red legs and yellowish pubescence. Common in grassland, gardens, arable land, waste ground etc. Phytophagous, sometimes a pest of strawberries *Fragaria* spp.

Anisodactylus binotatus (Fabricius, 1787) Local.

10.0-13.0mm long black, phytophagous ground beetle of open grassland, usually near water but sometimes on arable land. Local and fairly uncommon throughout Britain.

Dicheirotrichus gustavi Crotch, 1871 Local.

5.0-7.5mm dimorphic ground beetle, the males almost completely black, the females yellow to red-brown, sometimes marked with black. A saltmarsh species, living in strandline debris at the top of the shore. Locally common on most muddy shores.

Sphaeridium scarabaeoides (Linnaeus, 1758) Common.

5.0-8.0mm long oval black beetle with red and yellow markings. Adults are attracted to very fresh (liquid) cow dung, wherein the larvae develop. Very common throughout Britain.

Cercyon lateralis (Marsham, 1802) Local.

2.5mm long black beetle living in dung.

Megasternum concinnum (Marsham, 1802) Common.

1.5-2.0mm long dark red to black globose beetle living in decaying organic matter, dung and in plant litter in water. Very common everywhere.

Saprinus semistriatus (Scriba, 1790) Common.

Shiny black carrion beetle. Dung, carrion and decaying vegetation. Usually in dry places, e.g. heathland. Opportunistic species, fairly common.

Ochthebius dilatatus Stephens, 1829 Local.

A water beetle found in the muddy margins of lowland ponds.

Nicrophorus vespillo (Linnaeus,1758) Common.
12.0-20.0mm long black and red sexton beetle with conspicuous yellow pubescence. Feeds on carrion, pairs of beetles burying whole dead small mammals or birds, or pieces of larger ones for the larvae to develop in. Widespread and common, not associated with any particular habitat type.

Thanatophilus sinuatus (Fabricius,1775) Common.
12.0mm long dull black carrion beetle, feeding on suppurating animal flesh. Widespread and common.

Silpha tristis Illiger,1798 Local.
15.0mm long dull black carrion beetle. Local but widespread, reported from all parts of the country apart from northern Scotland.

Anotylus sculpturatus (Gravenhorst,1806) Common.
4.0-6.0mm long shiny black rove beetle. Most habitat types, occurring in grass tussocks, leaf litter, reed litter, moss, dung etc and also on bare mud by water. Very common throughout Britain.

Lathrobium brunnipes (Fabricius,1792) Common.
Elongate black rove beetle with brown legs. Lives under stones and in grass tussocks. Not confined to a particular habitat type. Widespread and common over much of the British Isles.

Philonthus cognatus Stephens,1832 Common.
8.0-10.0mm long metallic black rove beetle. Under stones, in leaf litter, tussocks etc, usually in woodland. Generally common species.

Philonthus laminatus (Creutzer,1799) Common.
8.0-11.0mm long greenish black metallic rove beetle living in dung, carrion, decaying fungi, also in leaf litter and moss. Predatory. Common, not specific to any habitat type.

Philonthus splendens (Fabricius,1793) Common.
A moderately-sized (8.0-12.0mm) rove beetle, black with bronze-green elytra. Found in a wide range of decaying organic materials, including rotting vegetation, dung and carrion. Widely distributed and common.

Tasgius ater (Gravenhorst,1802) Common.
Generally confined to coastal habitats, occasionally inland.

Quedius simplicifrons Fairmaire,1861 Local.
Red and black rove beetle found in saltmarshes, mainly in south-east England.

Mocyta funqi (Gravenhorst,1806) Common.
<No species account available>

Brundinia marina (Mulsant & Rey,1853) Unknown.
A coastal species which is found in saltmarshes.

Aleochara bipustulata (Linnaeus,1761) Common.
4.0-6.0mm long black and red rove beetle, usually found in dung or carrion but also often in leaf litter, moss etc. Generally common.

Aleochara curtula (Goeze,1777) Common.

5.0-9.0mm long reddish rove beetle living in litter, decaying vegetable matter etc.

Agriotes obscurus (Linnaeus,1758) Common.

A small, brown click beetle whose larva is a common wireworm pest in arable land, pasture and lawns. It attacks the roots, especially in spring and autumn, and may live in grassland for four or five years. The adult appears early in the year and is nocturnal, spending the day under clods or at grass roots.

Cantharis rufa Linnaeus,1758 Common.

Large reddish soldier beetle with variable markings. Common on flowers in early summer throughout Britain. Larvae predatory, probably among plant litter.

Coccinella septempunctata Linnaeus,1758 Common.

6.5-8.0mm long red ladybird with seven black spots. Gardens, hedgerows etc. Larvae aphidophagous. Very common, often with vast immigrations from the Continent.

Halysia sedecimguttata (Linnaeus, 1758) Local

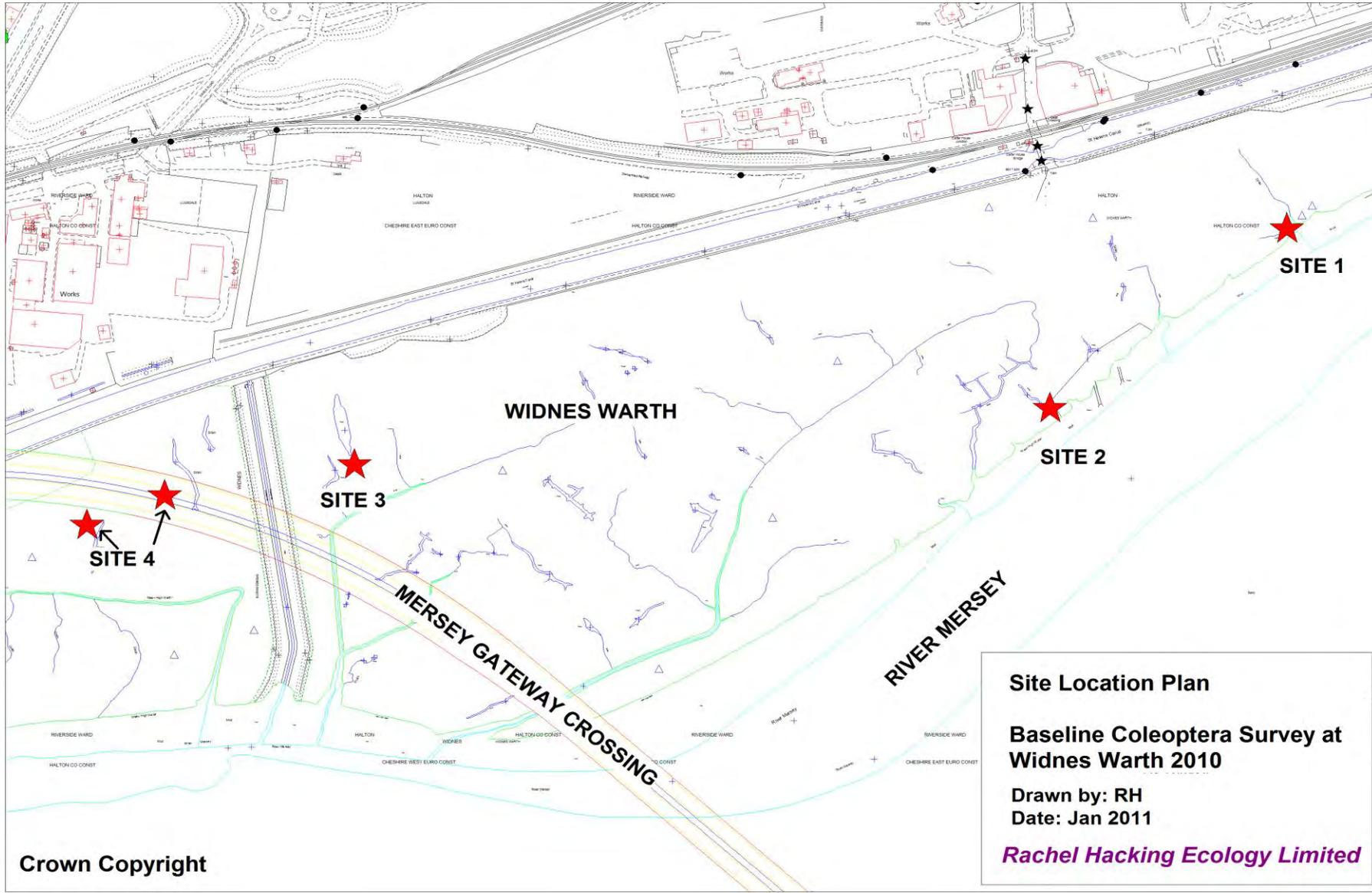
This Ladybird is widely distributed within specific habitats but is considered local and scarce in the UK. It is found in deciduous woodland and the adults can be found overwintering on bark.

Sitona lepidus Gyllenhal,1834 Common.

A 4.3-5.7mm long weevil, covered in brownish scales. Associated with leguminous plants, including clovers *Trifolium* spp., especially Red Clover *Trifolium pratense* and White Clover *Trifolium repens*. Larvae develop in root nodules, adults feed on the leaves. Widely distributed and common.

Tournotaris bimaculatus (Fabricius,1787) Notable/Nb.

Large weevil (5.5-8.7mm) found on sedges *Carex* spp. and rushes *Juncus* spp. in wet places. Widespread but local.



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