APPENDIX 4.6

INVERTEBRATE SURVEY OF

HAMBLE AIRFIELD

SOUTH HAMPSHIRE

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Mr SG Dodd Msc MCIEEM MRES

&

Dr. J Denton Bsc (Hons) FRES FLS CEcol MCIEEM

Summary

A survey of terrestrial invertebrates was carried out across the site on the following dates;- 4th May, 5th, 16th June, 16th July, 3rd, 4th 28th July, 4th, 18th August, 12th, 15th and 21st September 2021.

Species total: A total of 472 invertebrate taxa were identified of which 22 had conservation statuses. These are listed below;-

Species	Family	Order	Conservation status
Nigma puella	Dictynidae	Araneae	NS
Meioneta simplicitarsis	Linyphiidae	Araneae	NS
Philodromus rufus	Philodromidae	Araneae	pNS
Ballus chalybeius	Salticidae	Araneae	NS
Dryophilus anobioides	Anobiidae	Coleoptera	NR
Cassida prasina	Chrysomelidae	Coleoptera	NS
Mecinus circulatus	Curculionidae	Coleoptera	Nb
Mecinus collaris	Curculionidae	Coleoptera	Nb
Polydrusus formosus	Curculionidae	Coleoptera	[Na]
Ectobius lapponicus	Blattellidae	Dictyoptera	NS
Micropeza lateralis	Micropezidae	Diptera	pNS
Cistogaster globosa	Tachinidae	Diptera	[RDB 1] pNS
Gymnosoma rotundatum	Tachinidae	Diptera	RDB 3: PNS
Trypeta zoe	Tephritidae	Diptera	pNS
Berytinus hirticornis	Berytidae	Hemiptera	Nb
Scottianella dalei	Delphacidae	Hemiptera	Nb
Lestiphorus bicinctus	Crabronidae	Hymenoptera	Nb
Smicromyrme rufipes	Mutillidae	Hymenoptera	Nb
Nemobius sylvestris	Gryllidae	Orthoptera	NS

Section 41 Priority Species - research			
Tyria jacobaeae	Erebidae	Lepidoptera	Section 41 Priority Species - research only
Coenonympha pamphilus	Nymphalidae	Lepidoptera	NT;Section 41 Priority Species

New Vice-county records
Philodromus rufus
Dryophilus anobioides

PANTHEON analysis
Three SATS were in favourable condition;- F001 Scrub edge, F003 scrub-heath & moorland and F112 Open short sward.

INTRODUCTION

The project brief was to provide baseline records for invertebrates across the site.

METHODOLOGY AND SITE VISITS

The main emphasis of the survey was to find as many rare and notable species as possible within the reviewed groups.

The site was visited specifically for invertebrate surveying on the following dates;- 4th May, 5th, 16th June, 16th July, 3rd, 4th 28th July, 4th, 18th August, 10th, 12th and 21st September 2021

Standard field techniques were employed to sample the invertebrate fauna across the site. These included sweeping vegetation with a wide mouthed sweep net, beating trees and bushes over a beating tray, and grubbing amongst tussocks and key host plant rosettes etc. A battery powered suction sampler was also employed to collect terrestrial species.

Because it is impracticable to survey all the potential invertebrates within any given site, only specific groups of species were examined during fieldwork. These groups are sufficiently well known as to allow meaningful comparisons to be made with other sites, both locally and nationally. They are also important as indicators of the quality of a site and the habitats present (see Brooks 1993).

Groups covered during the survey were:

- Mollusca (slugs and snails)
- Arachnida (spiders, harvestmen & pseudoscorpions)
- Isopoda (woodlice)
- Thysanura (bristletails)
- Ephemeroptera (mayflies)
- Odonata (dragonflies & damselflies)
- Plecoptera (stoneflies)
- Orthoptera (grasshoppers & crickets)
- Dictyoptera (cockroaches)
- Dermaptera (earwigs)
- Hemiptera-Heteroptera (true-bugs)
- Hemiptera-Homoptera (hoppers)
- Neuroptera (lace-wings)
- Mecoptera (scorpion-flies)
- Lepidoptera (butterflies & moths)
- Trichoptera (caddis flies)
- Diptera (true flies)
- Aculeate Hymenoptera (ants, bees & wasps)
- Coleoptera (beetles)

RESULTS

A total of 472 species of invertebrate were recorded. A full species list with UK statuses is given in Appendix 1. Of these, 22 species have a conservation designation: These are summarised in Table 1 (Descriptions of these species and their ecology and distribution are given in appendix 3). IUCN re-evaluated species have their IUCN criteria given followed by their current UK rarity status in brackets. Those species that have not yet been IUCN re-evaluated have their current statuses in square brackets. The definitions for these criteria are given in appendix 2.

Table 1. list of species with a conservation designation.

Species	Family	Order	Conservation status
Nigma puella	Dictynidae	Araneae	NS
Agyneta simplicitarsis	Linyphiidae	Araneae	NS
Philodromus rufus	Philodromidae	Araneae	pNS
Ballus chalybeius	Salticidae	Araneae	NS
Dryophilus anobioides	Anobiidae	Coleoptera	NR
Cassida prasina	Chrysomelidae	Coleoptera	NS
Mecinus circulatus	Curculionidae	Coleoptera	Nb
Mecinus collaris	Curculionidae	Coleoptera	Nb
Polydrusus formosus	Curculionidae	Coleoptera	[Na]
Ectobius lapponicus	Blattellidae	Dictyoptera	NS
Dorycera graminum	Ulidiidae	Diptera	pNS: Section 41 Priority Species
Micropeza lateralis	Micropezidae	Diptera	pNS
Cistogaster globosa	Tachinidae	Diptera	[RDB 1]
Gymnosoma rotundatum	Tachinidae	Diptera	RDB 3
Trypeta zoe	Tephritidae	Diptera	pNS
Berytinus hirticornis	Berytidae	Hemiptera	Nb
Scottianella dalei	Delphacidae	Hemiptera	Nb
Lestiphorus bicinctus	Crabronidae	Hymenoptera	Nb
Smicromyrme rufipes	Mutillidae	Hymenoptera	Nb
Tyria jacobaeae	Erebidae	Lepidoptera	Section 41 Priority Species - research only
Coenonympha pamphilus	Nymphalidae	Lepidoptera	NT;Section 41 Priority Species
Nemobius sylvestris	Gryllidae	Orthoptera	NS

UKBAP / SPI (NERC S41) species:
Tyria jacobaeae - Cinnabar
Coenonympha pamphilus- Small heath
Dorycera graminum- Phoenix fly

HABITAT ASSESSMENT- USING PANTHEON TO MEASURE SITE QUALITY

There is currently no standard framework for evaluating the invertebrate value of a site as part of Ecological Impact Assessment, however most active invertebrate ecologists have adopted the Pantheon programme to assess sites. Pantheon was developed by Natural England and the Centre for Ecology & Hydrology to analyse invertebrate sample data and assess assemblage data for favourable versus unfavourable condition by SSSI standards. Hence if one or more assemblages are found to be in favourable condition this would indicate that the site is likely to be of significant importance for invertebrates. Further information on Pantheon is available here: http://www.brc.ac.uk/pantheon/about/pantheon.

Users import lists of invertebrates (called "samples") into Pantheon, which then matches the species to the preferred name in the *UK species inventory* (A list of species maintained by the Natural History Museum). Not all macro-invertebrate taxa are included in the database. To date over c13,000 species have been assessed, this being about a quarter of the total macro-invertebrate fauna (estimated at 37,000). It remains limited to those taxa and families where there is enough ecological information to give a fair level of coding accuracy. These include species such as beetles, flies, bugs and hoppers, moths, ants, bees, wasps, spiders and molluscs.

The method for defining species resources was broadly similar to that followed in Natural England Research Report 024 (Webb et. al., 2010).

> *'For each species, a literature search was undertaken. All relevant ecological information was extracted and added to a spreadsheet. This included 'structural elements of the habitats that the species is generally associated with (e.g. emergent vegetation, seed heads) and/or other environmental factors that it requires, host plant and/or animal species alongside ecological guild of larvae as well as adults where these differed, (e.g. herbivore, carnivore). Only those resources which were considered important to the species in completing its life cycle were included'.*

The assemblage types are labelled in terms that relate to their favoured habitats in order to make them accessible to non-specialists. However, they are actually defined by lists of characteristic species that are generally found together in nature. Two levels are recognised in the classification. Broad assemblage types (BATs) are a comprehensive series of assemblage types that are characterised by more widespread species. They can be expressed in lists from a wide range of sites. Specific assemblage types (SATs) are characterised by ecologically restricted species and are generally only expressed in lists from sites with conservation value. Since 2008 there has also been a third category of assemblage types that cut across this classification. They are mainly defined by lists of

species dependent on a particular environmental resource, such as flowers as a source of pollen and nectar. The assemblage type classification is given below. Textual descriptions of each assemblage type and its habitats have been prepared for incorporation into a web-based database.

Table 2. Specific assemblage types

Code	SAT	No. of species	% representation	SQI	Reported condition
F001	scrub edge	25	11	140	Favourable
F003	scrub-heath & moorland	17	5	141	Favourable
F112	open short sward	13	6	146	Favourable
F002	rich flower resource	11	5	100	Unfavourable (11 of 15 species)
A212	bark & sapwood decay	9	2	100	Unfavourable (9 of 19 species)
F111	bare sand & chalk	5	1	100	Unfavourable (5 of 19 species)

Three SATS were in favourable condition;- F001 Scrub edge, F003 scrub-heath & moorland and F112 Open short sward.

SURVEY LIMITATIONS

The moth fauna is always under-represented when only diurnal surveys are employed. Light trapping surveys with 2-3 MV and actinic Robinson type traps would add hundreds of species of moth and additional night flying species (Ichneumonidae, Coleoptera etc.)

The summer of 2021 was the worst on record for flying invertebrates, the damp cloudy May, was followed by indifferent weather punctuated by brief warm spells. Flower visiting species were extremely scarce with stands of flowers with only the occasional bee of fly present.

ECOLOGICAL ASSESSMENT

The former airfield is a vast open area but rather limited floristically. There are some small areas with a more acid grassland elements but most of the site is rather dull neutral grassland with extensive bramble stands. Broom is locally dominant and yielded the stilt-legged fly *Micropeza lateralis*, and most significantly the first vice-county records of broom woodworm *Dryophilus anobioides.* Ragwort was super abundant in 2021 largely as the cinnabar moth population crashed, presumably in response to the awful weather in May. As a result the extensive herbivory of its distinctive caterpillars did not occur and it grew and flowered largely unchecked.

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APPENDICES

Table 1. Species list for 2021

Species	Family	Order	Conservation status
Agelena labyrinthica	Agelenidae	Araneae	common
Amaurobius fenestralis	Amaurobiidae	Araneae	common
Agalenatea redii	Araneidae	Araneae	common
Araneus diadematus	Araneidae	Araneae	common
Araneus triguttatus	Araneidae	Araneae	local
Araniella cucurbitina	Araneidae	Araneae	common
Argiope bruennichi	Araneidae	Araneae	local
Gibbaranea gibbosa	Araneidae	Araneae	common
Mangora acalypha	Araneidae	Araneae	common
Neoscona adianta	Araneidae	Araneae	local
Nuctenea umbratica	Araneidae	Araneae	common
Zilla diodia	Araneidae	Araneae	local
Zygiella atrica	Araneidae	Araneae	common
Zygiella x-notata	Araneidae	Araneae	common
Clubiona brevipes	Clubionidae	Araneae	common
Clubiona comta	Clubionidae	Araneae	common
Clubiona diversa	Clubionidae	Araneae	common
Dictyna arundinacea	Dictynidae	Araneae	common
Briggitia latens	Dictynidae	Araneae	local
Dictyna uncinata	Dictynidae	Araneae	common
Nigma puella	Dictynidae	Araneae	NS
Harpactea hombergi	Dysderidae	Araneae	common
Haplodrassus signifer	Gnaphosidae	Araneae	local
Zelotes latreillei	Gnaphosidae	Araneae	common
Cnephalocotes obscurus	Linyphiidae	Araneae	common
Erigone atra	Linyphiidae	Araneae	common
Erigone dentipalpis	Linyphiidae	Araneae	common
Hypomma cornutum	Linyphiidae	Araneae	common
Lepthyphantes minutus	Linyphiidae	Araneae	common
Linyphia triangularis	Linyphiidae	Araneae	common
Agyneta simplicitarsis	Linyphiidae	Araneae	NS
Tenuiphantes tenuis	Linyphiidae	Araneae	common
Pardosa nigriceps	Lycosidae	Araneae	common
Pardosa pullata	Lycosidae	Araneae	common
Trochosa terricola	Lycosidae	Araneae	common
Philodromus albidus	Philodromidae	Araneae	common
Philodromus aureolus	Philodromidae	Araneae	common
Philodromus cespitum	Philodromidae	Araneae	common
Philodromus rufus	Philodromidae	Araneae	pNS
Tibellus oblongus	Philodromidae	Araneae	common

Pisaura mirabilis	Pisauridae	Araneae	common
Ballus chalybeius	Salticidae	Araneae	NS
Euophrys frontalis	Salticidae	Araneae	common
Heliophanus cupreus	Salticidae	Araneae	common
Heliophanus flavipes	Salticidae	Araneae	common
Metellina segmentata	Tetragnathidae	Araneae	common
Tetragnatha montana	Tetragnathidae	Araneae	common
Tetragnatha obtusa	Tetragnathidae	Araneae	common
Anelosimus vittatus	Theridiidae	Araneae	common
Enoplognatha ovata	Theridiidae	Araneae	common
Neottiura bimaculata	Theridiidae	Araneae	common
Paidiscura pallens	Theridiidae	Araneae	common
Phylloneta sisyphia	Theridiidae	Araneae	common
Platnickina tincta	Theridiidae	Araneae	common
Simitidion simile	Theridiidae	Araneae	local
Theridion varians	Theridiidae	Araneae	common
Misumena vatia	Thomisidae	Araneae	common
Xysticus cristatus	Thomisidae	Araneae	common
Zora spinimana	Zoridae	Araneae	common
Dilta hibernica	Machilidae	Archaeognatha	local
Dryophilus anobioides	Anobiidae	Coleoptera	NR
Ochina ptinoides	Anobiidae	Coleoptera	local
Apion cruentatum	Apionidae	Coleoptera	common
Apion haematodes	Apionidae	Coleoptera	common
Betulapion simile	Apionidae	Coleoptera	common
Ceratapion gibbirostre	Apionidae	Coleoptera	common
Ceratapion onopordi	Apionidae	Coleoptera	common
Exapion ulicis	Apionidae	Coleoptera	common
Ischnopterapion loti	Apionidae	Coleoptera	common
Oxystoma pomonae	Apionidae	Coleoptera	common
Perapion curtirostre	Apionidae	Coleoptera	common
Perapion marchicum	Apionidae	Coleoptera	local
Protapion apricans	Apionidae	Coleoptera	common
Protapion fulvipes	Apionidae	Coleoptera	common
Byturus ochraceus	Byturidae	Coleoptera	common
Cantharis cryptica	Cantharidae	Coleoptera	common
Cantharis flavilabris	Cantharidae	Coleoptera	common
Cantharis rufa	Cantharidae	Coleoptera	common
Cantharis rustica	Cantharidae	Coleoptera	common
Malthinus seriepunctatus	Cantharidae	Coleoptera	common
Rhagonycha fulva	Cantharidae	Coleoptera	common
Rhagonycha lignosa	Cantharidae	Coleoptera	common
Amara aenea	Carabidae	Coleoptera	common
Amara lunicollis	Carabidae	Coleoptera	local
Bembidion lampros	Carabidae	Coleoptera	common

Dromius meridionalis	Carabidae	Coleoptera	common
Dromius quadrimaculatus	Carabidae	Coleoptera	common
Harpalus affinis	Carabidae	Coleoptera	common
Paradromius linearis	Carabidae	Coleoptera	common
Philorhizus melanocephalus	Carabidae	Coleoptera	common
Grammoptera ruficornis	Cerambycidae	Coleoptera	common
Pseudovadonia livida	Cerambycidae	Coleoptera	common
Rutpela maculata	Cerambycidae	Coleoptera	common
Agelastica alni	Chrysomelidae	Coleoptera	common
Bruchidius villosus	Chrysomelidae	Coleoptera	common
Bruchus loti	Chrysomelidae	Coleoptera	common
Bruchus rufimanus	Chrysomelidae	Coleoptera	common
Cassida prasina	Chrysomelidae	Coleoptera	NS
Cassida rubiginosa	Chrysomelidae	Coleoptera	common
Cassida vibex	Chrysomelidae	Coleoptera	common
Chrysolina banksii	Chrysomelidae	Coleoptera	local
Cryptocephalus labiatus	Chrysomelidae	Coleoptera	common
Cryptocephalus moraei	Chrysomelidae	Coleoptera	local
Cryptocephalus pusillus	Chrysomelidae	Coleoptera	common
Gonioctena olivacea	Chrysomelidae	Coleoptera	local
Lochmaea crataegi	Chrysomelidae	Coleoptera	common
Longitarsus dorsalis	Chrysomelidae	Coleoptera	local
Longitarsus flavicornis	Chrysomelidae	Coleoptera	common
Longitarsus pratensis	Chrysomelidae	Coleoptera	common
Neocrepidodera transversa	Chrysomelidae	Coleoptera	common
Psylliodes chrysocephala	Chrysomelidae	Coleoptera	common
Sphaeroderma rubidum	Chrysomelidae	Coleoptera	common
Adalia decempunctata	Coccinellidae	Coleoptera	common
Coccinella septempunctata	Coccinellidae	Coleoptera	common
Exochomus quadripustulatus	Coccinellidae	Coleoptera	common
Harmonia axyridis	Coccinellidae	Coleoptera	common
Nephus redtenbacheri	Coccinellidae	Coleoptera	local
Propylea quattuordecimpunctata	Coccinellidae	Coleoptera	common
Rhyzobius chrysomeloides	Coccinellidae	Coleoptera	common
Rhyzobius litura	Coccinellidae	Coleoptera	common
Scymnus frontalis	Coccinellidae	Coleoptera	local
Subcoccinella vigintiquattuorpunctata	Coccinellidae	Coleoptera	common
Tytthaspis sedecimpunctata	Coccinellidae	Coleoptera	common
Micrambe ulicis	Cryptophagidae	Coleoptera	common
Andrion regensteinense	Curculionidae	Coleoptera	common
Anthonomus pomorum	Curculionidae	Coleoptera	common
Barypeithes araneiformis	Curculionidae	Coleoptera	common
Barypeithes pellucidus	Curculionidae	Coleoptera	common
Ceutorhynchus typhae	Curculionidae	Coleoptera	common

Curculio glandium	Curculionidae	Coleoptera	common
Glocianus distinctus	Curculionidae	Coleoptera	common
Hadroplontus litura	Curculionidae	Coleoptera	common
Hypera nigrirostris	Curculionidae	Coleoptera	common
Liophloeus tesselatus f maurus	Curculionidae	Coleoptera	common
Hypera postica	Curculionidae	Coleoptera	common
Mecinus circulatus	Curculionidae	Coleoptera	Nb
Mecinus collaris	Curculionidae	Coleoptera	Nb
Mecinus pascuorum	Curculionidae	Coleoptera	common
Mecinus pyraster	Curculionidae	Coleoptera	common
Orchestes avellanae	Curculionidae	Coleoptera	common
Orchestes pilosus	Curculionidae	Coleoptera	common
Orchestes signifer	Curculionidae	Coleoptera	common
Phloeotribus rhododactylus	Curculionidae	Coleoptera	common
Phyllobius pomaceus	Curculionidae	Coleoptera	common
Phyllobius pyri	Curculionidae	Coleoptera	common
Phyllobius roboretanus	Curculionidae	Coleoptera	common
Polydrusus formosus	Curculionidae	Coleoptera	[Na]
Rhinoncus castor	Curculionidae	Coleoptera	common
Sitona hispidulus	Curculionidae	Coleoptera	common
Sitona lineatus	Curculionidae	Coleoptera	common
Sitona striatellus	Curculionidae	Coleoptera	common
Strophosoma melanogrammum	Curculionidae	Coleoptera	common
Trachyphloeus angustisetulus	Curculionidae	Coleoptera	local
Trichosirocalus troglodytes	Curculionidae	Coleoptera	common
Tychius picirostris	Curculionidae	Coleoptera	common
Anthrenus verbasci	Dermestidae	Coleoptera	common
Agriotes obscurus	Elateridae	Coleoptera	common
Athous haemorrhoidalis	Elateridae	Coleoptera	common
Cartodere bifasciata	Latridiidae	Coleoptera	common
Cortinicara gibbosa	Latridiidae	Coleoptera	common
Enicmus transversus	Latridiidae	Coleoptera	common
Cordylepherus viridis	Malachiidae	Coleoptera	common
Malachius bipustulatus	Malachiidae	Coleoptera	common
Eulagius filicornis	Mycetophagidae	Coleoptera	naturalized
Meligethes aeneus	Nitidulidae	Coleoptera	common
Meligethes flavimanus	Nitidulidae	Coleoptera	common
Oedemera lurida	Oedemeridae	Coleoptera	common
Oedemera nobilis	Oedemeridae	Coleoptera	common
Olibrus aeneus	Phalacridae	Coleoptera	common
Olibrus affinis	Phalacridae	Coleoptera	common
Olibrus liquidus	Phalacridae	Coleoptera	local
Deporaus betulae	Rhynchitidae	Coleoptera	common
Hoplia philanthus	Rutelidae	Coleoptera	common
Salpingus planirostris	Salpingidae	Coleoptera	common

Anaspis fasciata	Scraptiidae	Coleoptera	common
Anaspis maculata	Scraptiidae	Coleoptera	common
Amishca analis	Staphylinidae	Coleoptera	common
Amishca decipiens	Staphylinidae	Coleoptera	common
Anotylus rugosus	Staphylinidae	Coleoptera	common
Bisnius fimetarius	Staphylinidae	Coleoptera	common
Drusilla canaliculata	Staphylinidae	Coleoptera	common
Paederus littoralis	Staphylinidae	Coleoptera	common
Stenus brunnipes	Staphylinidae	Coleoptera	common
Stenus clavicornis	Staphylinidae	Coleoptera	common
Stenus ossium	Staphylinidae	Coleoptera	common
Tachinus rufipes	Staphylinidae	Coleoptera	common
Tachyporus dispar	Staphylinidae	Coleoptera	common
Tachyporus hypnorum	Staphylinidae	Coleoptera	common
Xantholinus linearis	Staphylinidae	Coleoptera	common
Lagria hirta	Tenebrionidae	Coleoptera	common
Nalassus laevioctostriatus	Tenebrionidae	Coleoptera	common
Forficula auricularia	Forficulidae	Dermaptera	common
Ectobius lapponicus	Blattellidae	Dictyoptera	NS
Phytomyza ilicis	Agromyzidae	Diptera	common
Chirosia histricina	Anthomyiidae	Diptera	common
Dioctria atricapilla	Asilidae	Diptera	common
Dioctria baumhaueri	Asilidae	Diptera	common
Dioctria rufipes	Asilidae	Diptera	common
Leptogaster cylindrica	Asilidae	Diptera	common
Bibio marci	Bibionidae	Diptera	common
Dilophus febrilis	Bibionidae	Diptera	common
Lucilia sericata	Calliphoridae	Diptera	common
Jaapiella veronicae	Cecidomyiidae	Diptera	common
Lasioptera carophila	Cecidomyiidae	Diptera	common
Lasioptera rubi	Cecidomyiidae	Diptera	common
Dolichopus trivialis	Dolichopodidae	Diptera	common
Fannia canicularis	Fanniidae	Diptera	common
Lipoptena cervi	Hippoboscidae	Diptera	common
Homoneura notata	Lauxaniidae	Diptera	common
Minettia fasciata	Lauxaniidae	Diptera	common
Sapromyza quadripunctata	Lauxaniidae	Diptera	common
Micropeza lateralis	Micropezidae	Diptera	pNS
Morellia aenescens	Muscidae	Diptera	common
Sciara hemerobioides	Sciaridae	Diptera	common
Limnia unguicornis	Sciomyzidae	Diptera	common
Sepsis cynipsea	Sepsidae	Diptera	common
Pachygaster atra	Stratiomyidae	Diptera	common
Cheilosia impressa	Syrphidae	Diptera	common
Chrysogaster solstitialis	Syrphidae	Diptera	common

Chrysotoxum bicinctum	Syrphidae	Diptera	common
Epistrophe grossulariae	Syrphidae	Diptera	common
Episyrphus balteatus	Syrphidae	Diptera	common
Eristalis arbustorum	Syrphidae	Diptera	common
Eristalis pertinax	Syrphidae	Diptera	common
Eristalis tenax	Syrphidae	Diptera	common
Eupeodes corollae	Syrphidae	Diptera	common
Eupeodes latifasciatus	Syrphidae	Diptera	common
Eupeodes luniger	Syrphidae	Diptera	common
Helophilus pendulus	Syrphidae	Diptera	common
Helophilus trivittatus	Syrphidae	Diptera	migrant
Melanostoma mellinum	Syrphidae	Diptera	common
Myathropa florea	Syrphidae	Diptera	common
Platycheirus albimanus	Syrphidae	Diptera	common
Sphaerophoria scripta	Syrphidae	Diptera	common
Syritta pipiens	Syrphidae	Diptera	common
Volucella inanis	Syrphidae	Diptera	local
Xanthogramma pedissequum	Syrphidae	Diptera	common
Xylota segnis	Syrphidae	Diptera	common
Haematopota pluvialis	Tabanidae	Diptera	common
Cistogaster globosa	Tachinidae	Diptera	[RDB 1] pNS
Eriothrix rufomaculata	Tachinidae	Diptera	common
Gymnosoma rotundatum	Tachinidae	Diptera	RDB 3: pNS
Chaetorellia jaceae	Tephritidae	Diptera	common
Tephritis vespertina	Tephritidae	Diptera	common
Trypeta zoe	Tephritidae	Diptera	pNS
Urophora cardui	Tephritidae	Diptera	common
Urophora quadrifasciata	Tephritidae	Diptera	common
Urophora stylata	Tephritidae	Diptera	common
Nephrotoma flavescens	Tipulidae	Diptera	common
Tipula oleracea	Tipulidae	Diptera	common
Tipula paludosa	Tipulidae	Diptera	common
Trichocera regelationis	Trichoceridae	Diptera	common
Elasmostethus interstinctus	Acanthosomatidae	Hemiptera	common
Elasmucha grisea	Acanthosomatidae	Hemiptera	common
Anthocoris confusus	Anthocoridae	Hemiptera	common
Anthocoris nemoralis	Anthocoridae	Hemiptera	common
Anthocoris nemorum	Anthocoridae	Hemiptera	common
Temnostethus pusillus	Anthocoridae	Hemiptera	common
Aphrophora alni	Aphrophoridae	Hemiptera	common
Philaenus spumarius	Aphrophoridae	Hemiptera	common
Aneurus laevis	Aradidae	Hemiptera	common
Berytinus hirticornis	Berytidae	Hemiptera	Nb
Berytinus minor	Berytidae	Hemiptera	common
Alebra albostriella	Cicadellidae	Hemiptera	common

Anoscopus serratulae	Cicadellidae	Hemiptera	local
Aphrodes makarovi	Cicadellidae	Hemiptera	common
Doratura stylata	Cicadellidae	Hemiptera	local
Eurhadina pulchella	Cicadellidae	Hemiptera	common
Iassus lanio	Cicadellidae	Hemiptera	common
Megophthalmus scabripennis	Cicadellidae	Hemiptera	common
Megophthalmus scanicus	Cicadellidae	Hemiptera	local
Oncopsis flavicollis	Cicadellidae	Hemiptera	common
Oncopsis tristis	Cicadellidae	Hemiptera	common
Ribautiana ulmi	Cicadellidae	Hemiptera	common
Tachycixius pilosus	Cixiidae	Hemiptera	common
Coreus marginatus	Coreidae	Hemiptera	common
Coriomeris denticulatus	Coreidae	Hemiptera	common
Ditropis pteridis	Delphacidae	Hemiptera	common
Javesella pellucida	Delphacidae	Hemiptera	common
Scottianella dalei	Delphacidae	Hemiptera	Nb
Stenocranus minutus	Delphacidae	Hemiptera	local
Issus coleoptratus	Issidae	Hemiptera	common
Kleidocerys resedae	Lygaeidae	Hemiptera	common
Peritrechus geniculatus	Lygaeidae	Hemiptera	common
Acetropis gimmerthalii	Miridae	Hemiptera	common
Amblytylus nasutus	Miridae	Hemiptera	common
Asciodema obsoleta	Miridae	Hemiptera	common
Campyloneura virgula	Miridae	Hemiptera	common
Capsus ater	Miridae	Hemiptera	common
Closterotomus norwegicus	Miridae	Hemiptera	common
Cyllecoris histrionius	Miridae	Hemiptera	common
Deraeocoris ruber	Miridae	Hemiptera	common
Deraeocoris lutescens	Miridae	Hemiptera	common
Heterocordylus tibialis	Miridae	Hemiptera	common
Heterotoma planicornis	Miridae	Hemiptera	common
Leptopterna dolabrata	Miridae	Hemiptera	common
Lopus decolor	Miridae	Hemiptera	local
Lygocoris pabulinus	Miridae	Hemiptera	common
Lygus rugulipennis	Miridae	Hemiptera	common
Megalocoleus molliculus	Miridae	Hemiptera	common
Miridius quadrivirgatus	Miridae	Hemiptera	local
Neolygus contaminatus	Miridae	Hemiptera	common
Oncotylus viridiflavus	Miridae	Hemiptera	common
Orthocephalus saltator	Miridae	Hemiptera	local
Orthotylus prasinus	Miridae	Hemiptera	common
Orthotylus adenocarpi	Miridae	Hemiptera	common
Orthotylus virescens	Miridae	Hemiptera	common
Phylus melanocephalus	Miridae	Hemiptera	local
Phytocoris ulmi	Miridae	Hemiptera	common

Phytocoris varipes	Miridae	Hemiptera	common
Pilophorus perplexus	Miridae	Hemiptera	common
Pithanus maerkelii	Miridae	Hemiptera	common
Plagiognathus arbustorum	Miridae	Hemiptera	common
Plagiognathus chrysanthemi	Miridae	Hemiptera	common
Polymerus unifasciatus	Miridae	Hemiptera	local
Psallus perrisi	Miridae	Hemiptera	common
Psallus mollis	Miridae	Hemiptera	local
Psallus varians	Miridae	Hemiptera	common
Stenodema calcarata	Miridae	Hemiptera	common
Stenodema laevigata	Miridae	Hemiptera	common
Stenotus binotatus	Miridae	Hemiptera	common
Himacerus mirmicoides	Nabidae	Hemiptera	common
Himacerus apterus	Nabidae	Hemiptera	common
Nabis flavomarginatus	Nabidae	Hemiptera	common
Nabis rugosus	Nabidae	Hemiptera	common
Aelia acuminata	Pentatomidae	Hemiptera	common
Dolycoris baccarum	Pentatomidae	Hemiptera	common
Palomena prasina	Pentatomidae	Hemiptera	common
Pentatoma rufipes	Pentatomidae	Hemiptera	common
Piezodorus lituratus	Pentatomidae	Hemiptera	common
Podops inuncta	Pentatomidae	Hemiptera	common
Arytaina genistae	Psyllidae	Hemiptera	common
Arytainilla spartiophila	Psyllidae	Hemiptera	common
Myrmus miriformis	Rhopalidae	Hemiptera	common
Rhopalus subrufus	Rhopalidae	Hemiptera	common
Eurygaster testudinaria	Scutelleridae	Hemiptera	common
Acalypta parvula	Tingidae	Hemiptera	local
Derephysia foliacea	Tingidae	Hemiptera	local
Tingis cardui	Tingidae	Hemiptera	common
Andrena haemorrhoa	Andrenidae	Hymenoptera	common
Panurgus calcaratus	Andrenidae	Hymenoptera	common
Apis mellifera	Apidae	Hymenoptera	common
Bombus hypnorum	Apidae	Hymenoptera	common
Bombus lapidarius	Apidae	Hymenoptera	common
Bombus lucorum	Apidae	Hymenoptera	common
Bombus pascuorum	Apidae	Hymenoptera	common
Bombus pratorum	Apidae	Hymenoptera	common
Bombus terrestris	Apidae	Hymenoptera	common
Colletes hederae	Colletidae	Hymenoptera	common
Astata boops	Crabronidae	Hymenoptera	local
Cerceris rybyensis	Crabronidae	Hymenoptera	common
Ectemnius continuus	Crabronidae	Hymenoptera	common
Lestiphorus bicinctus	Crabronidae	Hymenoptera	Nb
Lindenius panzeri	Crabronidae	Hymenoptera	common

Andricus aries	Cynipidae	Hymenoptera	common
Andricus curvator	Cynipidae	Hymenoptera	common
Andricus foecundatrix	Cynipidae	Hymenoptera	common
Andricus kollari	Cynipidae	Hymenoptera	common
Andricus lignicola	Cynipidae	Hymenoptera	common
Andricus quercuscalicis	Cynipidae	Hymenoptera	common
Biorhiza pallida	Cynipidae	Hymenoptera	common
Diplolepis rosae	Cynipidae	Hymenoptera	common
Neuroterus albipes	Cynipidae	Hymenoptera	common
Neuroterus numismalis	Cynipidae	Hymenoptera	common
Neuroterus quercusbaccarum	Cynipidae	Hymenoptera	common
Formica cunicularia	Formicidae	Hymenoptera	local
Formica fusca	Formicidae	Hymenoptera	common
Lasius flavus	Formicidae	Hymenoptera	common
Lasius niger	Formicidae	Hymenoptera	common
Lasius platythorax	Formicidae	Hymenoptera	common
Myrmica ruginodis	Formicidae	Hymenoptera	common
Myrmica scabrinodis	Formicidae	Hymenoptera	common
Temnothorax nylanderi	Formicidae	Hymenoptera	local
Lasioglossum leucozonium	Halictidae	Hymenoptera	common
Sphecodes gibbus	Halictidae	Hymenoptera	common
Osmia bicornis	Megachilidae	Hymenoptera	common
Smicromyrme rufipes	Mutillidae	Hymenoptera	Nb
Ormyrus nitidulus	Ormyridae	Hymenoptera	common
Athalia rosae	Tenthredinidae	Hymenoptera	common
Euura bridgmanii	Tenthredinidae	Hymenoptera	common
Torymus varians	Torymidae	Hymenoptera	common
Vespa crabro	Vespidae	Hymenoptera	common
Vespula germanica	Vespidae	Hymenoptera	common
Vespula vulgaris	Vespidae	Hymenoptera	common
Armadillidium vulgare	Armadillidiidae	Isopoda	common
Philoscia muscorum	Philosciidae	Isopoda	common
Porcellio scaber	Porcellionidae	Isopoda	common
Blastobasis rebeli	Blastobasidae	Lepidoptera	common
Agriphila geniculea	Crambidae	Lepidoptera	common
Agriphila tristella	Crambidae	Lepidoptera	common
Chrysoteuchia culmella	Crambidae	Lepidoptera	common
Crambus pascuella	Crambidae	Lepidoptera	common
Nomophila noctuella	Crambidae	Lepidoptera	common
Drepana falcataria	Drepanidae	Lepidoptera	common
Eilema lurideola	Erebidae	Lepidoptera	common
Euclidia glyphica	Erebidae	Lepidoptera	common
Orgyia antiqua	Erebidae	Lepidoptera	common
Tyria jacobaeae	Erebidae	Lepidoptera	Section 41 Priority Species - research only

Dyseriocrania subpurpurella	Eriocraniidae	Lepidoptera	common
Callisto denticulella	Gracillariidae	Lepidoptera	common
Caloptilia rufipennella	Gracillariidae	Lepidoptera	common
Gracillaria syringella	Gracillariidae	Lepidoptera	common
Parornix anglicella	Gracillariidae	Lepidoptera	common
Phyllonorycter acerifoliella	Gracillariidae	Lepidoptera	common
Phyllonorycter harrisella	Gracillariidae	Lepidoptera	common
Thymelicus lineola	Hesperiidae	Lepidoptera	common
Thymelicus sylvestris	Hesperiidae	Lepidoptera	common
Euthrix potatoria	Lasiocampidae	Lepidoptera	common
Favonius quercus	Lycaenidae	Lepidoptera	common
Lycaena phlaeas	Lycaenidae	Lepidoptera	common
Polyommatus icarus	Lycaenidae	Lepidoptera	common
Stigmella atricapitella	Nepticulidae	Lepidoptera	common
Stigmella aurella	Nepticulidae	Lepidoptera	common
Stigmella confusella	Nepticulidae	Lepidoptera	common
Stigmella crataegella	Nepticulidae	Lepidoptera	common
Stigmella floslactella	Nepticulidae	Lepidoptera	common
Stigmella hybnerella	Nepticulidae	Lepidoptera	common
Stigmella malella	Nepticulidae	Lepidoptera	common
Stigmella microtheriella	Nepticulidae	Lepidoptera	common
Stigmella oxyacanthella	Nepticulidae	Lepidoptera	common
Stigmella perpygmaeella	Nepticulidae	Lepidoptera	common
Stigmella plagicolella	Nepticulidae	Lepidoptera	common
Stigmella roborella	Nepticulidae	Lepidoptera	common
Autographa gamma	Noctuidae	Lepidoptera	common
Cosmia trapezina	Noctuidae	Lepidoptera	common
Orthosia cerasi	Noctuidae	Lepidoptera	common
Phalera bucephala	Notodontidae	Lepidoptera	common
Aglais io	Nymphalidae	Lepidoptera	common
Aphantopus hyperantus	Nymphalidae	Lepidoptera	common
Coenonympha pamphilus	Nymphalidae	Lepidoptera	NT;Section 41 Priority Species
Maniola jurtina	Nymphalidae	Lepidoptera	common
Melanargia galathea	Nymphalidae	Lepidoptera	common
Pararge aegeria	Nymphalidae	Lepidoptera	common
Pyronia tithonus	Nymphalidae	Lepidoptera	common
Vanessa atalanta	Nymphalidae	Lepidoptera	common
Carcina quercana	Peleopodidae	Lepidoptera	common
Colias croceus	Pieridae	Lepidoptera	common
Pieris brassicae	Pieridae	Lepidoptera	common
Pieris rapae	Pieridae	Lepidoptera	common
Luffia lapidella	Psychidae	Lepidoptera	common
Psyche casta	Psychidae	Lepidoptera	common
Homoeosoma sinuella	Pyralidae	Lepidoptera	common
Bembecia ichneumoniformis	Sesiidae	Lepidoptera	local

Tischeria ekebladella	Tischeriidae	Lepidoptera	common
Acleris variegana	Tortricidae	Lepidoptera	common
Cydia ulicetana	Tortricidae	Lepidoptera	common
Grapholita compositella	Tortricidae	Lepidoptera	common
Tortrix viridana	Tortricidae	Lepidoptera	common
Zygaena filipendulae	Zygaenidae	Lepidoptera	common
Chrysoperla carnea group	Chrysopidae	Neuroptera	common
Aeshna mixta	Aeshnidae	Odonata	common
Sympetrum striolatum	Libellulidae	Odonata	common
Dicranopalpus ramosus sensu lato	Phalangiidae	Opiliones	common
Odiellus spinosus	Phalangiidae	Opiliones	common
Paroligolophus agrestis	Phalangiidae	Opiliones	common
Chorthippus brunneus	Acrididae	Orthoptera	common
Chorthippus parallelus	Acrididae	Orthoptera	common
Conocephalus fuscus	Conocephalidae	Orthoptera	common
Nemobius sylvestris	Gryllidae	Orthoptera	NS
Meconema thalassinum	Meconematidae	Orthoptera	common
Leptophyes punctatissima	Phaneropteridae	Orthoptera	common
Roeseliana roeselii	Tettigoniidae	Orthoptera	common
Valenzuela flavidus	Caeciliusidae	Psocoptera	common
Ectopsocus briggsi sensu stricto	Ectopsocidae	Psocoptera	common
Ectopsocus petersi	Ectopsocidae	Psocoptera	common
Elipsocus hyalinus	Elipsocidae	Psocoptera	common
Metylophorus nebulosus	Psocidae	Psocoptera	common
Graphopsocus cruciatus	Stenopsocidae	Psocoptera	common
Arion subfuscus	Arionidae	Pulmonata	common
Discusrotundatus	Discidae	Pulmonata	common
Arianta arbustorum	Helicidae	Pulmonata	local
Cornu apsersum	Helicidae	Pulmonata	common
Eriophyes prunispinosae	Eriophyidae	Trombidiformes	common

Appendix 2. Status categories for rare and Notable species

Red Data Book Category 1 (RDB 1) – Endangered

Definition.
Taxa in danger of extinction *in Great Britain* and whose survival is unlikely if the causal factors continue operating.

Included are those taxa whose numbers have been reduced to a critical level or whose habitats have been so dramatically reduced that they are deemed to be in

immediate danger of extinction. Also included are *some* taxa that are *possibly* extinct.

Criteria.
Species which are known *or believed to occur* as only a single population within one 10 km square of the National Grid.

Species which only occur in habitats known to be especially vulnerable.

Species which have shown a rapid or continuous decline over the last twenty years and are now *estimated* to exist in five or fewer 10 km squares.

Species which are *possibly* extinct *but have been recorded this century* and if rediscovered would need protection.

Red Data Book Category 2 (RDB 2) - Vulnerable

Definition.
Taxa *believed* likely to move into the endangered category in the near future if the causal factors continue operating.

Included are taxa of which most or all of the populations are decreasing because of *over-exploitation*, extensive destruction of habitat or other environmental disturbance; taxa with populations that have been seriously depleted and whose ultimate security is not yet assured; and taxa with populations that are still abundant but are under threat from serious adverse factors throughout their range.

Criteria.
Species declining throughout their range.

Species in vulnerable habitats.

Red Data Book Category 3 (RDB 3) – Rare

Definition.
Taxa with small populations *in Great Britain* that are not at present endangered or vulnerable, but are at risk.

These taxa are usually localised within restricted geographical areas or habitats or are thinly scattered over a more extensive range.

Criterion.

Species which are estimated to exist in only fifteen or fewer 10 km squares. *This criterion may be relaxed where populations are likely to exist in over fifteen 10 km squares but occupy small areas of especially vulnerable habitat*

Nationally Scarce Category A - Notable A (Na)

Definition.
Taxa which do not fall within **RDB** categories but which are none-the-less uncommon in Great Britain and are thought to occur in 30 or fewer 10 km squares of the National Grid or, for less well recorded groups, within seven or fewer vice-counties.

Nationally Scarce Category B - Notable B (Nb)

Definition.
Taxa which do not fall within **RDB** categories but which are none-the-less uncommon in Great Britain and are thought to occur in between 31 and 100 10 km squares of the National Grid or, for less well recorded groups, within eight and twenty vice-counties.

Nationally Scarce - Notable (N)

Definition.
Taxa which do not fall within **RDB** categories but which are none-the-less uncommon in Great Britain and are thought to occur in between 16 to 100 10 km squares of the National Grid. Species within this category are often too poorly known for their status to be more precisely estimated.

Summary of the IUCN categories and criteria.

GB Rarity Status categories and criteria

- **Nationally Rare (NR)**

Native species which have not been recorded from more than 15 British hectads since 31st December 1979 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 since 31st December 1979 and where there is

reasonable confidence that exhaustive recording would not find them in more than 100 hectads.

Other species status terminology.

- **Local**. Species that are restricted in distribution either geographically or by habitat. Also used for species that are widespread but infrequently encountered, e.g. encountered in no more than 300 10km squares of the national Ordnance Survey grid since 1970. Or those species listed as such, based upon modern geographical data, by ISIS (2010) and/or relevant recording schemes.
- **Common.** Generally widespread throughout the UK.

APPENDIX 3. RARE AND NOTABLE SPECIES RECORDED

Rare and Notable species are listed below, the criteria for the statuses are given in appendix 2.;-

ARACHNIDA (SPIDERS)
Dictynidae
***Nigma puella* (Nationally Scarce)**
A distinctive spider with purple and yellow males and cream females with a distinctive red bleeding-heart mark on the abdomen. Formerly largely restricted to the south coast this species is spreading rapidly inland and is now well established through Hampshire and Surrey into London.

Linyphiidae
***Agyneta (formerly Meioneta) simplicitarsis* (Nationally Scarce)**
A small money spider found mainly in open grassland. Widespread but local across the southeast and scarce in Hampshire.

Philodromidae
***Philodromus rufus* (pNationally Scarce)**
A rufous false-crab spider found on tree and scrub foliage. A recent addition to the UK list having been previously split from *P.albidus,* but it is proving to be widespread and increasing. This appears to be the first record for South Hampshire. Not yet assigned a status but likely to be NS.

Salticidae
***Ballus chalybeius* – Weevil spider (Nationally Scarce)**
A small dumpy jumping spider which lives on tree and shrub foliage. Widespread and frequent in the south.

DICTYOPTERA (Cockroaches)
Blattelidae
***Ectobius lapponicus* - Dusky Cockroach (Nationally Scarce B)**
A widespread species in the south in scrubby habitats.

DIPTERA
Micropezidae
***Micropeza lateralis* (Nationally Scarce)**
A stilt-legged fly associated primarily with stands of broom**.** Widespread but local.

Tephritidae
***Tephritis zoe* (Nationally notable)**

A picture winged fly which mines the leaves of mugwort, widespread and seemingly spreading across England

Uliidae

***Dorycera graminum*- Phoenix fly (Nationally Scarce, Schedule 41 priority species.**

This species was formerly widespread but underwent a drastic decline in the late 20th Century so much so that it was used as a flagship species and placed on schedule 41. It is however spreading rapidly once more and is now very widespread and frequent in a wide variety of grasslands and can no longer be justified as scarce or indeed as a reliable indicator of quality grassland and should be demoted to local.

ORTHOPTERA

***Nemobius sylvestris* – Wood cricket (Nationally Scarce)**

A very localised species commonest in New Forest and Dorset and scattered along coastal areas of Hampshire. Found amongst leaf litter under trees and hedges in sunny situations.

HEMIPTERA

***Berytinus hirticornis* (Nationally Scarce)**

A stilt bug possibly associated with grass vetchling. It has spread rapidly across south-east England in recent decades, and in Hampshire is now known from three sites around the Solent and one near Ringwood.

Delphacidae

***Scottianella dalei* (Nationally Scarce B)**

A minute delphacid hopper found in open grassland, mires and heaths. Very uncommon and the first record outside the New Forest in South Hampshire.

HYMENOPTERA

Mutillidae

***Smicromyrme rufipes* (Nationally Notable B)**

A small wasp which parasitizes ground nesting aculeates. Local and largely confined to dunes heaths and sand pit areas.

Crabronidae

***Lestiphorus bicinctus* (Nationally Notable B)**

A small yellow and black solitary wasp found in scrubby and brambly places. Local but widespread.

DIPTERA

Tachinidae

***Cistogaster globosa* (provisionally Nationally Scarce)**

A parasite of bishop's mitre *Aelia acuminata*. It has spread dramatically in the 21st Century. It is still listed as RDB2 but likely to be reassigned NS in upcoming review.

Gymnosoma rotundatum **(provisionally Nationally Scarce)**
A parasite of shieldbugs. It has spread dramatically across the south of England since the late 20th Century. It is still listed as RDB3 but likely to be reassigned NS in upcoming review.

COLEOPTERA (Beetles)
Anobiidae

Dryophilus anobioides **–Broom woodworm (Nationally Rare)**
NEW VICE-COUNTY RECORD
An anobiid beetle which develops in dead broom stems. First record for South Hampshire (VC11), and only the second Hampshire record.

Chrysomelidae
Cassida prasina- **Yarrow tortoise beetle (Nationally Scarce)**
A small tortoise beetle associated with yarrow. Local but widespread across the south.

Curculionidae
Mecinus circulatus- **(Nationally Scarce)**
A scarce weevil which is local and mainly restricted to coastal counties of England & Wales, where it feeds on ribwort plantain.

Mecinus collaris- **(Nationally Scarce)**
A scarce weevil which is very local and restricted to coastal counties of England & Wales, where it feeds on sea plantain. It is only known in Hampshire from the Hamble valley and Portsdown Hill, and the presence of adults on trees at the eastern edge of the site represents wintering from populations on the adjacent saltmarsh areas.

Polydrusus formosus **(Nationally Scarce)**
A green weevil which has spread rapidly over past two decades or so and is now locally frequent on foliage of trees and bushes across the south-east.

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