

CHIGWELL ROW WOOD

ADDITIONAL IDENTIFICATIONS

A BRIEF SUMMARY

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1 SUMMARY

- 1.1** A list of the species recently identified from previously unidentified material collected at Chigwell Row Wood by Barbara Schulten and John Ismay in 2002 is provided in Appendix 3, together with national and Essex statuses. This list and all the resultant records are also provided as an Excel file.
- 1.2** A total of 121 species was identified from 1733 specimens in the taxonomic groups Arachnida (spiders, harvestmen and pseudoscorpions), aculeate Hymenoptera (bees, wasps and ants) , Dermaptera (earwigs), Isopoda (woodlice), Myriapoda (centipedes and millipedes) and Orthoptera (grasshoppers and crickets).
- 1.3** These species include two Nationally Scarce Notable A taxa, five Nationally Scarce Notable B and nineteen Nationally Local species, as well as seven included in the Essex Red Data list. In addition one Nationally Scarce centipede is New to Essex.
- 1.4** If all the data is examined, including that in the Ismay & Schulten report (2002) then a Species Quality Index (see appendix) gives a figure suggesting an assemblage of national importance.
- 1.5** Specialised survey for invertebrate groups not targeted by the Schulten and Ismay survey would undoubtedly find many more species of significance and interest.

2 ANALYSIS ON THE BASIS OF NATIONAL STATUS

2.1 In order to provide a broad indication of site quality, an Invertebrate Index can be calculated (Ball, 1986). Using this method, invertebrates recorded are scored according to their national status as follows:

RDB species	100 points
Notable - Na species	50 points
Notable - Nb species	40 points
Notable - N species	40 points
Local species	20 points
Common/Unknown species	no score

2.2 Adding together the scores in each category provides the overall **Invertebrate Index**.

2.3 However, increased effort at a site will increase the number of species recorded and in time the Invertebrate Index will also increase, rendering use of the Invertebrate Index alone of limited value unless all the sites in a comparison are thoroughly and equally recorded. In order to take account of the overall number of species recorded (as a measure of recording effort) in assessing the rarity value of a species assemblages, a **Species Quality Index (SQI)** may be calculated through simple division of the Invertebrate Index gained from a site by the number of species recorded at that site.

2.4 In this way, SQI is effectively the average number of points which each recorded species is worth. A site with ten recorded species, all of which were of Red Data Book status and so with a species value of 100 points each, would score 10 x 100 points to give an invertebrate index of 1000. Dividing this index by the ten species gives an SQI value of 100.

2.5 In fact, sites always support a mix of common and scarcer species so that the SQI value is always well below 100. How far below, is a measure of the value of the site to invertebrate ecology on a national scarcity basis. As a general guide, a "good" invertebrate site in England would have an SQI value of at least 5.00 after moderate recording coverage. An "excellent" site might have a value of 7.50 and any site with an SQI value approaching 10.00 is almost certainly of national significance.

2.6 If the data from the current identifications is combined with those provided in the Schulten & Ismay report (2002) then the following summary of species status is found:

Status	Score	Count	Index
RDB3	100	1	100
RDBK	100	2	200
Data Deficient, [formerly RDB1]	100	1	100
Scarce	40	8	320
Notable/N	40	9	360
Notable/Na	40	9	360
Notable/Nb	40	19	760
Local	20	120	2400
Unknown	0	58	0
Recently described	0	1	0
Common/Other	0	282	0
Total		510	4600
Species Quality Index			9.0

2.7 The Species Quality Index value of 9.0 is a high value, indicating an important assemblage.

3 NOTES ON SPECIES OF SPECIAL NATURE CONSERVATION SIGNIFICANCE

3.1 Araneidae, *Zilla diodia*, Nationally Scarce (Notable/Nb), Regionally Important

This spider is confined to the southern half of Britain, and is especially frequent in parts of south-east England. The spider is found on tall heather, brambles, bushes and the lower branches of trees, usually in sheltered shady places and among scrub on cliffs by the coast. It occurs at the edge of clearings or rides in broad-leaved or mixed woodland, in old hedgerows, green lanes, scrub and sometimes gardens. The spider is relatively frequent in southern and eastern Essex in scrub and woodland edge habitat. It has been recorded in 118 post-1979 10km squares (Harvey *et al.*, 2002) and its status will be downgraded in a forthcoming status review.

3.2 Theridiidae, *Achaearanea simulans*, Nationally Scarce (Notable/Nb), Regionally Important

This comb-footed spider occurs in the southern half of England and is relatively frequent in Essex in scrub and woodland edge habitat. It has been recorded in 118 post-1979 10km squares (Harvey *et al.*, 2002) and its status will be downgraded in a forthcoming status review.

3.3 Gnaphosidae, *Haplodrassus silvestris*, Nationally Scarce (Notable/Nb), Regionally Important

Haplodrassus silvestris has been recorded from the south coast of England to Perthshire, but is widely scattered except in the south-east. It is local and apparently never numerous. The spider is found in woodland, amongst litter, under bark, stones, etc. In Essex, where the spider has been recorded from six other sites, it appears to be confined to woodlands on sandy soils, occurring in chestnut coppice or other broad-leaved woodland, or nearby heathland and grassland areas. It is important to maintain open areas in woodland through coppicing and to retain dead wood (Harvey *et al.*, 2002).

3.4 Chernetidae, *Pselaphochernes scorpioides*, Local, Essex Red Data species

There is only one previous modern Essex record of this species, from Colchester in 1986. However pseudoscorpions are not a particularly well recorded group in the county, so it may be more widespread than otherwise indicated. Nationally the species has widely scattered records, and favours rich decaying organic material and is often found in synanthropic habitats such as compost, manure and straw debris, although it is also found in leaf litter and dead wood (Legg & Jones, 1988).

3.5 Formicidae, *Lasius brunneus*, Notable/Na, Essex Red Data, Regionally Important

The ant *Lasius brunneus* has an inland distribution in southern England, in the Thames Valley and the Severn Vale (Alexander & Taylor, 1997). The ant is widespread in suitable habitat in south western Essex as far north as Hatfield Forest. It is a tree-dwelling ant, typically nesting in old oak trees in parkland, but is also sometimes found in hedgerows. In recent years it seems to be increasing in range and frequency.

3.6 Myriapoda, Polydesmidae, *Polydesmus denticulatus*, Essex Red Data species

A male was identified from area WP and a female from HP (trap sites in Schulten & Ismay). This millipede is supposed to be a common inhabitant of old oak and mixed deciduous woods, sometimes quite acid, often in association with *P. angustus*, but not often recorded away from woodlands (Blower, 1985). The 1988 preliminary national atlas records the species for S. Essex with a pre-1971 record for TQ89. The only relatively recent record for the county was by S.J. Gregory for Donyland Wood (TM015206) near Colchester in North Essex in 1991 (Harvey, 2000). Although there is seemingly plenty of suitable habitat in Essex, there are no other records and these are the first Essex specimens the author has seen.

3.7 Myriapoda, Lithobiidae, *Lithobius muticus*, Notable/Nb, New to Essex

One male and one female were found in two sets of material from site HP (trap site in Schulten & Ismay). *Lithobius muticus* is characteristically collected from woodland in south-east England (Barber & Keay, 1988) but most records shown in the atlas are south of the Thames and these are the first records for Essex.

3.8 Orthoptera, Conocephalidae, *Conocephalus discolor*, Notable/Na, Essex Red Data species

Conocephalus discolor is a small brown and green bush cricket which inhabits areas of long grass, reeds or rushes in wet places. Until recent years it was almost always found within a few miles of the sea and confined to the south coastal area, with records from Dorset, Hampshire, Sussex and Kent. However it has been spreading widely and was first recorded in the extreme west of Essex in 1995. It has now colonised more than thirteen 10km squares (Gardiner 2003). However, when the Essex Red Data list was prepared the records indicated that the species was currently rare in Essex and because of this it is currently included on the Essex Red Data list (Gardiner 2002). However this may need to be changed in future.

APPENDIX 1: NATIONAL STATUS DEFINITIONS

Red Data Book species

National Red Data Book species are those falling within the Status categories defined in the *British Red Data Books* (Bratton, 1991; Shirt, 1987). These are internationally recognised species listed in the various *Red Data Books* published by, or under the auspices of, the International Union for the Conservation of Nature (IUCN). Species included may not be informally removed or transferred between categories. **Nationally Endangered (RDB1)** taxa are those considered to be in danger of extinction and whose survival is unlikely if the causal factors continue operating. These include species known from only a single locality since 1970, species restricted to habitats which are especially vulnerable, species which have shown a rapid and continuous decline in the last twenty years and are now estimated to exist in five or fewer ten km squares and species believed extinct but which would need protection if re-discovered. **Nationally Vulnerable (RDB2)** taxa are those that are believed likely to move into the Endangered category in the near future if the causal factors causing their decline continue operating. This includes species declining throughout their range, species in vulnerable habitats and species whose populations are low. **Nationally Rare (RDB3)** taxa are those with small populations that are not at present Endangered or Vulnerable, but are at risk. This includes species known or estimated to exist in only 15 or fewer post 1970 ten km squares. **Insufficiently Known (RDBK)** taxa are those suspected of falling into categories 1-3, but about which there is insufficient information to be certain.

Some families in Diptera (flies) have recently had new status reviews published (Falk, S.J. & Crossley, R., 2005; Falk, S.J. & Chandler, P., 2005). A brief outline of the revised IUCN criteria and their application, as summarised in these reviews, is given below.

EXTINCT (EX). A taxon is *Extinct* when there is no reasonable doubt that the last individual has died.

EXTINCT IN THE WILD (EW). A taxon is *Extinct* in the wild when it is known to survive only in cultivation, in captivity or as a naturalised population (or populations) well outside the past range. A taxon is presumed extinct in the wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual) throughout its range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.

CRITICALLY ENDANGERED (CR). A taxon is *Critically Endangered* when it is facing an extremely high risk of extinction in the wild in the immediate future, as detailed by any of the criteria A to E. *

ENDANGERED (EN). A taxon is *Endangered* when it is not *Critically Endangered* but is facing a very high risk of extinction in the wild in the near future, as defined by any of the criteria A to E. *

VULNERABLE (VU). A taxon is *Vulnerable* when it is not *Critically Endangered* or *Endangered* but is facing a high risk of extinction in the wild in the medium term future, as defined by any of the criteria A to D. *

LOWER RISK (LR). A taxon is Lower Risk when it has been evaluated but does not satisfy the criteria for any of the categories *Critically Endangered*, *Endangered* or *Vulnerable*. Taxa included in the Lower Risk category can be separated into three sub-categories:

- **Conservation Dependent (cd).** Taxa which are the focus of a continuing taxon-specific or habitat-specific conservation programme targeted towards the taxon in question, the cessation of which would result in the taxon qualifying for one of the threatened categories above within a period of five years.
- **Near Threatened (nt).** Taxa which do not qualify for *Lower Risk (Conservation Dependent)*, but which are close to qualifying for *Vulnerable*.
- **Least Concern (lc).** Taxa which do not qualify for *Lower Risk (Conservation Dependent)* or *Lower Risk (Near 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 or Lower Risk. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that a threatened category is appropriate.

NOT EVALUATED (NE). A taxon is *Not Evaluated* when it has not been assessed against the criteria.

Nationally Scarce species

The concept of Nationally Scarce (Notable) species was introduced by Ball (1986). They are species which are estimated to occur within the range of 16 to 100 ten-kilometre squares of the British National Grid system since 1970 and are subdivided as follows: **Notable/Na** refers to species estimated to occur within the range of 16 to 30 10-kilometre squares of the National Grid System. **Notable/Nb** refers to species estimated to occur within the range 31 to 100 10-kilometre squares of the National Grid System. Diptera (flies) and some Coleoptera (beetles) are not separated. Categorisations have been revised for various taxonomic groups including Araneae (spiders) in Merrett (1990), aculeate Hymenoptera in Falk (1991a), Coleoptera in Hyman & Parsons (1992, 1994), Diptera in Falk (1991b), Hemiptera in Kirby (1992) and Pyralidae (Lepidoptera) in Parsons (1993).

The concept of nationally scarce (Notable) species is unaltered in the new status reviews (Falk, S.J. & Crossley, R., 2005; Falk, S.J. & Chandler, P., 2005), but the status is now known as Scarce.

Nationally Local species

Nationally LOCAL species are those estimated to have been recorded from over one hundred ten-kilometre squares of the UK National Grid and which are less widespread than common species. Local designations have been obtained from the RECORDER 3 software. Remaining species have either been formally declared “Common” or else are listed as “Unknown” where insufficient data is available to assign a species to any category.

APPENDIX 2: ESSEX STATUS DEFINITIONS

Essex Red Data species are included in the provisional Essex Red Data list produced on behalf of English Nature, which is available at www.essexfieldclub.org.uk. In the Diptera only those families covered by the national status review (Falk, 1991) have so far been covered by the list. The Essex threat statuses used for Arachnida, aculeate Hymenoptera and Syrphidae (Diptera) are based on the definitions used for ants (Harvey 1998) and harvestmen (Harvey 1999). Essex Threat statuses have not been evaluated or assigned for other taxonomic groups.

WATSONIAN ESSEX THREAT CATEGORIES

These Watsonian Essex threat categories are defined as:

Essex Endangered

- species which are known as a single extant population within a single post 1980 one km square or only from threatened or vulnerable sites in the county.
- species believed extinct in the county but which if rediscovered would need protection.

Essex Vulnerable

- species known from only two extant populations within the county.
- Essex Rare species which are restricted to habitats or sites known to be under threat in the county e.g. from agricultural improvement, development or inappropriate management.
- species which only occur at sites within the county known to be vulnerable.
- species which have shown a continuous decline over the last twenty years and are now known to exist in less than 1% of the covered post 1980 one km squares in the county.

Essex Threatened

- scarce species with an Essex rarity status of Rare or Scarce and with a Frequency Ratio of less than 1.5 and Tetrad percentage of less than 1.0 indicating widely isolated populations within the county.
- Essex Scarce species which are restricted to habitats or sites known to be under threat in the county e.g. from agricultural improvement, development or inappropriate management.
- species which have shown a continuous decline over the last twenty years.

Regionally Important

- species which are important in a national context because the county contains a significant proportion* of the national populations.
- species which are important in a national context because they have a close association with a specific nationally threatened habitat included in the Biodiversity Action Plan.
- species which are important in a national context because they are dominant in or peculiar to a specific habitat for which the county contains a large percentage of the national habitat.

*the following definitions have been used to define a *significant proportion* of the national population, using the definitions of RDB and Notable categories in Shirt (1987), Ball (1986), revised by Falk (1991):

RDB species - all species not already defined as Essex Endangered or Essex Vulnerable are included;

Notable A - species with records from 3 or more ten km squares, representing at least 10% of the known national distribution;

Notable B - species with records from 5 or more post-1980 ten km squares, representing at least 5% of the known national distribution.

Essex Unknown

species for which there is insufficient data available to determine a reliable threat status but which may be under significant habitat or site threat.

Species of Arachnida, aculeate Hymenoptera and Syrphidae (Diptera) not assigned an Essex Threat status are assumed to be under no direct threat of severe decline or extinction in Essex at the present time or the county is not known to contain a significant proportion of the national populations of the species. Other taxonomic groups have not been assigned a threat status.

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APPENDIX 3: LIST OF SPECIES IDENTIFIED FROM CHIGWELL ROW WOOD MATERIAL

+ERD species are those included in the Essex Red Data list (see Appendix 2)

***for those taxa with an Essex Threat status assigned (see Appendix 2)**

Order	Family	Taxon	Status	Essex Status	Essex Threat	Chigwell Row Wood: HA	Chigwell Row Wood: HP	Chigwell Row Wood: OAP	Chigwell Row Wood: T25A	Chigwell Row Wood: T27P	Chigwell Row Wood: WA	Chigwell Row Wood: WP
Arachnida: Araneae	Agelenidae	Tegenaria gigantea	Local						+			
Arachnida: Araneae	Agelenidae	Tegenaria silvestris	Local				+	+		+		
Arachnida: Araneae	Amaurobiidae	Amaurobius fenestralis							+			
Arachnida: Araneae	Anyphaenidae	Anyphaena accentuata							+		+	
Arachnida: Araneae	Araneidae	Araneus diadematus										+
Arachnida: Araneae	Araneidae	Zilla diodia	Notable/Nb	ERD species	Regionally Important						+	
Arachnida: Araneae	Araneidae	Zygiella atrica									+	
Arachnida: Araneae	Clubionidae	Clubiona brevipipes							+		+	
Arachnida: Araneae	Clubionidae	Clubiona corticalis							+		+	
Arachnida: Araneae	Clubionidae	Clubiona reclusa					+					
Arachnida: Araneae	Clubionidae	Clubiona terrestris					+			+		+
Arachnida: Araneae	Dysderidae	Dysdera crocata										+
Arachnida: Araneae	Dysderidae	Harpactea hombergi	Local						+			
Arachnida: Araneae	Gnaphosidae	Drassodes lapidosus					+					
Arachnida: Araneae	Gnaphosidae	Haplodrassus silvestris	Notable/Nb	ERD species	Essex Threatened		+					
Arachnida: Araneae	Linyphiidae	Bathyphantes gracilis					+	+		+		
Arachnida: Araneae	Linyphiidae	Bathyphantes parvulus					+					
Arachnida: Araneae	Linyphiidae	Ceratinella brevis					+					
Arachnida: Araneae	Linyphiidae	Diplocephalus picinus					+			+		+
Arachnida: Araneae	Linyphiidae	Erigone atra						+				
Arachnida: Araneae	Linyphiidae	Erigone dentipalpis								+		
Arachnida: Araneae	Linyphiidae	Floronia bucculenta	Local				+					

