Natural England Commissioned Report NECR195

A review of the status of the Dolichopodidae flies of Great Britain

Species Status No.30

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Foreword

Natural England commission a range of reports from external contractors to provide evidence and advice to assist us in delivering our duties. The views in this report are those of the authors and do not necessarily represent those of Natural England.

Background

Making good decisions to conserve species should primarily be based upon an objective process of determining the degree of threat to the survival of a species. The recognised international approach to undertaking this is by assigning the species to one of the IUCN threat categories.

This report was commissioned to update the threat status of Dolichopodid flies last undertaken in 2005, using the IUCN methodology for assessing threat.

Reviews for other invertebrate groups will follow.

This report should be cited as:

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Further information
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1.1 The Species Status project

The Species Status project is a recent initiative, providing up-to-date assessments of the threat status of taxa using the internationally accepted Red List guidelines developed by the International Union for Conservation of Nature (IUCN) (IUCN, 2012a; 2012b; IUCN Standards and Petitions Subcommittee, 2013, 2014). It is the successor to the JNCC's Species Status Assessment project (http://jncc.defra.gov.uk/page-3352) which ended in 2008. This publication is one in a series of reviews to be produced under the auspices of the new project. Under the Species Status project, the UK's statutory nature conservation agencies, specialist societies and NGOs will initiate, resource and publish Red Lists and other status reviews of selected taxonomic groups for Great Britain which will then be submitted to JNCC for accreditation (http://jncc.defra.gov.uk/page-1773). This means that the UK's statutory nature conservation agencies and JNCC will be able to publish red lists. All publications will explain the rationale for the assessments made. The approved threat statuses will be entered into the JNCC spreadsheet of species conservation designations (http://jncc.defra.gov.uk/page-3408).

1.2 The status assessments

This review adopts the procedures recommended for the regional application of the IUCN threat assessment guidelines which can be viewed at http://cmsdocs.s3.amazonaws.com/keydocuments/Reg_Guidelines_en_web%2Bcover%2Bbackcover.pdf. Section 3 and Appendix 1 provide further details. This is a two-step process, the first identifying the taxa threatened in the region of interest using information on the status of the taxa of interest in that region (IUCN, 2001), the second amending the assessments where necessary to take into account interaction with populations of the taxon in neighbouring regions (IUCN Standards and Petitions Subcommittee, 2013). In addition, but as a separate exercise, the standard GB system of assessing rarity, based solely on distribution, is used alongside the IUCN system.

1.3 Species status and conservation action

Sound decisions about the priority to attach to conservation action for any species should primarily be based upon objective assessments of the degree of threat to the survival of a species. This is conventionally done by assigning the species to one of the IUCN threat categories. However, the assessment of threats to survival should be separate and distinct from the subsequent process of deciding which species require action and what activities and resources should be allocated.

The current review period is 1990-2012, though some later records and species new to the UK up to early 2018 have been included where these substantially alter the conservation status position or the description of the extent of the UK fauna.

Suggested Review date: 2025

2. Introduction to the Dolichopodidae

The first account of threatened British Diptera was included in the *British Red Data Books: 2. Insects* (Shirt, 1987). This listed 827 species of Diptera, including 58 Dolichopodidae (see Table 1) and provided a single data sheet, for *Poecilobothrus ducalis*.

Table 1. Red List Categories for species covered in Shirt, 1987

Family	Category 1 Endangered	Category 2 Vulnerable	Category 3 Rare	Category 5 Endemic	Appendix No post 1900 records
Dolichopodidae	18	15	25		

This was followed by the publication of *A review of the scarce and threatened flies of Great Britain (Part 1)* (Falk, 1991) which gave statuses but not data sheets for 121 species of Dolichopodidae, of which 55 were included in Red Data Book categories (or extinct) (see Table 2), and 66 were Nationally Scarce (Notable). JNCC adopted revised IUCN Guidelines (IUCN 1994) in 1995, which were subsequently updated (IUCN, 2001), making it necessary to revise the status of all species.

Table 2. Red List Categories for species covered in Falk, 1991

Family	Category 1 Endangered	Category 2 Vulnerable	Category 3 Rare	Category K Insufficiently Known (RDBK)	Appendix No post 1900 records
Dolichopodidae	13	13	25	2	2

In *A review of the scarce and threatened flies of Great Britain. Part 3 . Empidoidea*, Falk & Crossley (2005) provided the first comprehensive review of the Dolichopodidae using the IUCN criteria (see Table 3). As well as providing the criteria for threatened or near threatened species, the category of nationally scarce was retained to provide both some historical continuity and to maintain an understanding of spatial distribution.

Data sheets were given for all 84 of these species. A number of species were excluded, either because they were too common or because they were recent additions to the British list so lacked sufficient data to make a judgement on their rarity or threat. A few were known only from Ireland so were not part of the British fauna.

Table 3. Red List Categories for species covered in Falk & Crossley, 2005								
Family	**Category 1 Endangered**	**Category 2 Vulnerable**	**Category 3 Rare**	**Category Near Threatened**	**Category 5 Endemic**	**Category K Insufficiently Known (DDPK)**	**Appendix No post 1900 records**	**Nationally Scarce**
Dolichopodidae	5	3		24		8	2	42

The number of dolichopodid species found in Britain continues to grow. The 1945 checklist had 262 species. The standard British identification guide (d'Assis-Fonseca, 1978) listed 267 species, Chandler (1998) listed 285 British species but the number in 2012 stood at just over 300, and several more were known in Britain but whose presence had not been published then. The current review ascribes 79 taxa (some 26% of the 2017 dolichopodid checklist fauna of 304 species, though this work includes 3 extra taxa) to the IUCN Threatened, Regionally Extinct, Near-Threatened or Data Deficient Categories http://www.dipteristsforum.org.uk/documents/BRITISH_ISLES_CHECKLIST.pdf. However, some of the Nationally Rare taxa are so poorly worked that this figure probably over-exaggerates the position in domestic rarity categorisation.

Table 4. Conservation status category summary from the current review.

Category (rounded up)	Number of Species	% of the IUCN category assessed
RE	2	0.6%
Threatened		7%
CR	6	2%
EN	5	2%
VU	11	4%
NT	6	2%
LC	220	74%
DD	49	18%
Total	299	100%
Nationally Rare	75	25%
Nationally Scarce	64	21%
Endemic to GB		%
International Responsibility*		%
Schedule 5/8		%
NA		-
NE	8	-

The Microphoridae, with four British species, was treated as a separate family by Chandler and by Falk & Crossley, but has since been regarded as a subfamily of the Dolichopodidae. Three species known only from Ireland are not included in this review. *Dolichopus calinotus* was added in 2016 (Drake & Pollet, 2016) and has been included within this review but only insofar as Data Deficient. Pollet *et al.* (2015) split the widespread *Sympycnus desoutteri* into *S. pulicarius* and *S. septentrionalis* Pollet, with the latter being Data Deficient. *Lamprochromus kowarzi* is included here, despite being published in early 2018, largely for the sake of completeness in representing the current UK fauna. It has enough data to consider it as DD. *Thrypticus atomus* and *intercedens* are both currently excluded from this review on the grounds that they have not been published and so cannot yet be considered part of the UK fauna.

3. The IUCN threat categories and selection criteria as adapted for Invertebrates in Great Britain

3.1 Summary of the 2001 Threat Categories

A brief outline of the revised IUCN criteria and their application is given below. For a full explanation see Appendix 2 IUCN (2001; 2013) and the IUCN web site (http://www.iucnredlist.org/; www.iucn.org/). The definitions of the categories are given in Figure 1 and the hierarchical relationship of the categories in Figure 2. The categories *Extinct in the wild* and *Regionally Extinct* have not been applied in this review. All categories refer to the status in Great Britain (not globally).

REGIONALLY EXTINCT (RE)
A taxon is Extinct when there is no reasonable doubt that the last individual has died. In this review the last date for a record is set at fifty years before publication.

CRITICALLY ENDANGERED (CR)
A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered (see Table 4).

ENDANGERED (EN)
A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered (see Table 4).

VULNERABLE (VU)
A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable (see Table 4).

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

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

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

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

Figure 1. Definitions of IUCN threat categories (from IUCN 2001 with a more specific definition for regional extinction)

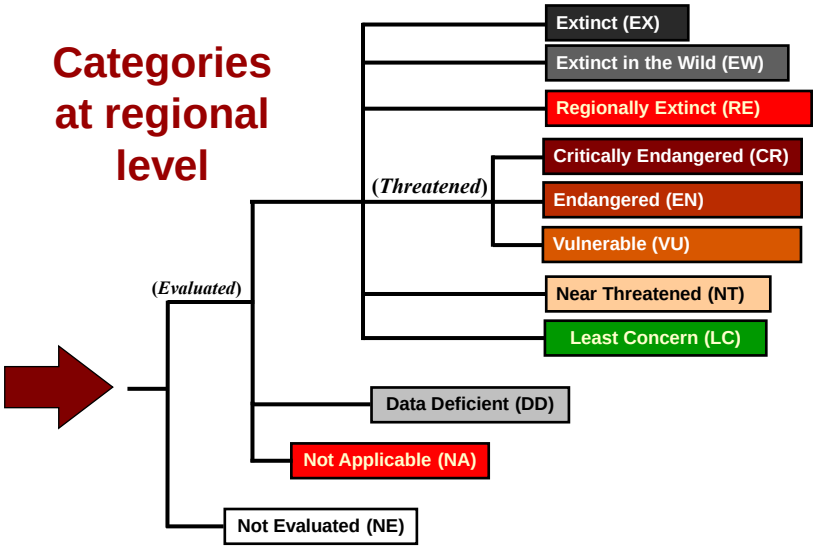

Figure adapted from IUCN (2001)

Figure 2. Hierarchical relationships of the categories

Taxa listed as *Critically Endangered*, *Endangered* or *Vulnerable* are defined as Threatened (Red List) species. For each of these threat categories there is a set of five main criteria A-E, with a number of sub-criteria within A, B and C (and an additional sub-criterion in D for the *Vulnerable* category), any one of which qualifies a taxon for listing at that level of threat. The qualifying thresholds within the criteria A-E are detailed in **Appendix 2. IUCN Criteria and Categories**.

In the main, the status evaluation procedure relies on an objective assessment of the available evidence. In certain cases, however, subjective assessments are acceptable as, for example, in predicting future trends and judging the quality of the habitat and methods involving estimation, inference and projection are acceptable throughout. Inference and projection may be based on extrapolation of current or potential threats into the future (including their rate of change), or of factors related to population abundance or distribution (including dependence on other taxa), so long as these can be reasonably supported. Suspected or inferred patterns in the recent past, present or near future can be based on any of a series of related factors, and these factors should be specified as part of the documentation. Some threats need to be identified particularly early, and appropriate actions taken, because their effects are irreversible or nearly so (IUCN, 2001). Since the criteria have been designed for global application and for a wide range of organisms, it is hardly to be expected that each will be appropriate to every taxonomic group or taxon. Thus a taxon need not meet all the criteria A-E, but is allowed to qualify for a particular threat category on any single criterion.

The guidelines stipulate/advise that a precautionary approach should be adopted when assigning a taxon to a threat category and this should be the arbiter in borderline cases. The threat assessment should be made on the basis of reasonable judgment, and it should be particularly noted that it is not the worst-case scenario that will determine the threat category to which the taxon will be assigned.

The categorization process is only to be applied to wild populations inside their natural range (IUCN, 2001), with a long-term presence (since 1500 AD) in Britain. Taxa deemed to be ineligible for assessment at a regional level were placed in the category of '**Not Applicable (NA)**'. This category is typically used for introduced non-native species whether this results from accidental or deliberate importation. It may also be used for recent colonists (or attempted colonists) responding to the changing conditions available in Britain as a result of human activity and/or climate change.

3.2 Application of the Guidelines to Invertebrates

The criteria A, C, D1 and E are rarely appropriate for Dolichopodidae as population data have not been gathered and quantitative analysis has not been undertaken for this group.

In this Review, **Extent of occurrence** (EOO) is not applied to species of Dolichopodidae as an agreed methodology for its measurement in relation to these species is not available. There are some instances where the known EOO can be measured but these are the exception. These tend to be species known to occur from one or a few sites and where their habitat resource is easily definable, in a restricted area and where intensive survey work has been undertaken to ascertain their distribution.

Area of occupancy (AOO) is another measure that is more widely applied to invertebrate records and populations as defined by the IUCN guidelines (IUCN, 2012a; 2012b; 2013).

"Area of occupancy is defined as the area within its 'extent of occurrence' that is occupied by a taxon, excluding cases of vagrancy. The measure reflects the fact that a taxon will not usually occur throughout the area of its extent of occurrence, which may contain unsuitable or unoccupied habitats. In some cases (e.g. irreplaceable colonial nesting sites, crucial feeding sites for migratory taxa) the area of occupancy is the smallest area essential at any stage to the survival of existing populations of a taxon. The size of the area of occupancy will be a function of the scale at which it is measured, and should be at a scale appropriate to relevant biological aspects of the taxon, the nature of threats and the available data. To avoid inconsistencies and bias in assessments caused by estimating area of occupancy at different scales, it may be necessary to standardize estimates by applying a scale-correction factor. It is difficult to give strict guidance on how standardization should be done because different types of taxa have different scale-area relationships." (IUCN, 2012a).

The IUCN have recommended a scale of 4km^2 (a tetrad) as the reference scale (IUCN, 2013). This needs to be applied with caution and there will be instances where a different scaling is more applicable, or where attempting to apply any scale is extremely difficult. For common and widespread species applying this rule will lead to under-estimation of their true AOO and

a degree of interpretation is required. This highlights the importance of peer review and shared expert opinion for making decisions on scale. For rarer, more restricted, species the tetrad is more applicable, in particular those species which may occur on a few fragmented sites within the UK and/or whom are often restricted to certain, well-defined habitat types that are easily identified. In most instances, the reviewer (and his peers) is best placed to judge which these species are.

3.2.1 The two-stage process in relation to developing a Red List

The IUCN regional guidelines (IUCN, 2003) indicate that if a given taxon is known to migrate into or out of the region it should be assessed using a two-stage approach. Populations in the region under review should firstly be assessed as if they were isolated taxa. They should then be reassessed and can be assigned a higher or a lower category if their status within the region is likely to be affected by emigration or immigration. Although recruitment from abroad has clearly accounted for the establishment of some newcomers to the British fauna, migration within Britain and between Britain and the Continent of populations of Dolichopodid flies under threat is not considered to be a significant factor.

3.2.2 The use of the Near Threatened category

The IUCN guidelines recognise a Near Threatened category to identify species that need to be kept under review to ensure that they have not become Threatened. This category is used for species where a potential threat, natural habitat dependency or range change demand frequent review of status.

This category would be best considered for those species that come close to qualifying as CR, EN or VU but not quite, i.e. meets many but not all of the criteria and sub-criteria. For those criteria that are not quite met, there should be sufficient evidence to show that the taxon is close to the relevant threatened thresholds. As such, it is up to the reviewers to provide evidence and methods for discerning this.

The Invertebrate Inter Agency Working Group and JNCC have defined the following for the use of B2bii which is commonly used in reviews. Continuing decline has to be demonstrated – and proven that it isn't an artefact of under-recording. If decline is demonstrated then the reviewer needs to consider whether or not B2a (and B2c if the data is present) is met. If it is, then the following rules apply:

- If 10 or less current localities then Critically Endangered, Endangered, Vulnerable is applicable;
- If 11 or 12 current localities then Near Threatened applies;
- If 13-15 and the taxon can be shown to be vulnerable to a specific and realistic threat, then Near Threatened applies;
- If more than 15 locations then Least Concern applies.

4. GB Rarity Status categories and criteria

At the national level, countries are permitted under the IUCN guidelines to refine the definitions for the non-threatened categories and to define additional ones of their own. The Nationally Rare and Nationally Scarce categories are unique to Britain. Broadly speaking, the Nationally Rare category is equivalent to the Red Data Book categories used by Bratton (1991), namely: Endangered (RDB1), Vulnerable (RDB2), Rare (RDB3), Insufficiently Known (RDBK) and Extinct. These are not used in this review. The Nationally Scarce category is directly equivalent to the combined Nationally Notable A (Na) and Nationally Notable B (Nb) categories used in the assessment of various taxonomic groups (e.g. by Hyman and Parsons (1992) in assessing the status of beetles) but was not used in Falk (1991) to assess Dolichopodid flies.

For the purposes of this review, the following definitions of Nationally Rare and Nationally Scarce have been applied:

Nationally Rare	Native species recorded from 15 or fewer hectads of the Ordnance Survey national grid in Great Britain since 31st December 1989 and where there is reasonable confidence that exhaustive recording would not find them in more than 15 hectads. This category includes species that are probably extinct.
Nationally Scarce	Native species which are not regarded as Nationally Rare AND which have not been recorded from more than 100 hectads of the Ordnance Survey national grid in Great Britain since 31st December 1989 and where there is reasonable confidence that exhaustive recording would not find them in more than 100 hectads.

Rather than a strict reliance of determining national rarity based on hectad counts, criteria have been derived to allow for audited deviation based on expert opinion. The moderated domestic rarity statuses are denoted by the superscript M. Where this occurs on its own it denotes a moderation beyond NS, i.e. local or common. Blank cells for this review indicate a natural status beyond NS as indicated by the hectad data in Appendix 1. *Medetera* as a genus is an issue based on the level of confidence placed on indentifications made when not following detailed genitalia dissection procedures.

This national set of definitions is referred to as the GB Rarity Status within this document. Importantly, Nationally Rare and Nationally Scarce are not categories of threat.
The choice of 1990 as the start of the modern recording period for Dolichopodid flies is discussed in Section 5.

5. Methods and sources of information in this review

5.1 Assessing the Dolichopodidae

Within the Dolichopodidae, the degree of threat and risk of extinction are hard to assess given our current limited knowledge of their life histories and their ecological requirements, together with the lack of practical experience in attempting to conserve these species. It should be borne in mind that most Dolichopodidae are predators (many as both larvae and adults) and so they may be vulnerable to habitat changes and loss affecting the availability of their prey.

For the Dolichopodidae, the quantitative elements of the criteria that can be applied are:

- Number of hectads (applied post 1990 since more recent records have better spatial resolution compared to say, those from 1908)
- Decline (based upon hectads occupied pre- and post-1990)
- Area of occupancy (AOO), based on the number of hectads occupied

Because recording activity for Dolichopodids is small relative to that of some other insect groups, such as Lepidoptera, or even the Syrphidae (hoverflies), some consideration has been made for likely under-recording, particularly for small, inconspicuous species or those that are difficult to locate or identify. However, many are well recorded and are considered Least Concern.

Only two species, *Dolichopus melanopus* and *Poecilobothrus majesticus*, are regarded as Regionally Extinct, with no records of either species for over 100 years and each being represented by single specimens on the one occasion when they were found. Both of these species were included as Extinct in Falk & Crossley (2005). Another species, *Rhaphium pectinatum* previously regarded as extinct, was refound in 2015. Two other species are potential contenders for extinction but have been given Data Deficient status; until recording adds new records their status cannot improve. If re-found then their status can be revised.

Diaphorus winthemi was last recorded in 1946 and the three identifications are based on females which are difficult to identify. Verrall doubted his own two 19th century records, so the species may not be British or is possibly extinct. *Hercostomus sahlbergi* is known from only one record from Speyside in 1938, and so is considered Data Deficient, the relatively low levels of recording in Scotland opening up the possibility that it may still occur there. This is unlike the situation with the other species where with the recording effort (within the New Forest for *Dolichopus melanopus*, or the Essex coast for *Poecilobothrus majesticus*), one would have expected them to have been encountered by now.

Data Deficient has been used moderately frequently as it became clear that the data were sometimes inadequate to apply a more accurate status. Data Deficient has been applied to forty-nine species that include several that have only recently been recognised as British or

whose presence has not yet been formally published, and those whose taxonomic status is unresolved.

The genus *Medetera* is noticeably under-recorded compared to other small dolichopodids, a reflection of the difficulty in using the key to this large genus. While in reality some species may be just Nationally Scarce and other undoubtedly threatened, the data were too sparse to make a sensible judgement. The unsatisfactory 'suitcase' nature of the Data Deficient category is recognised, and can be refined only through the publication of more reliable and easier keys to foster greater recording effort. The almost block ascription to DD to part of the genus *Medetera* has increased the number in this category, meaning that this is now some 20% of the assessed UK dolichopodid fauna. *Dolichopus calinotus* and *Lamprochromus kowarzi* were added in the late stages of this review, and are similarly assessed.

Some species were Not Evaluated. *Campsicnemus dasycnemus*, *Syntormon setosus* and *Systenus alpinus* are currently known only from Ireland, but may be expected to occur in Britain. *Chrysotus longipalpus* and *Medetera grisescens* are hot-house aliens, and *Micropygus vagans* is a New Zealand species established recently in the wild. *Chrysotus angulicornis* and *Medetera striata* are almost certainly not British but misidentifications of related species.

5.2 Sources of data

Sources of data were mainly the Empid & Dolichopodid Recording Scheme which runs under the auspices of the Dipterists Forum, and the Dipterists Forum's database of records held by Roger Morris obtained during field meetings, from 2000 onwards. All the records extracted by Steven Falk which formed the basis of his 1991 review, were also input; these are on cards archived with Centre for Ecology and Hydrology at Lancaster. The recording scheme was far from comprehensive so additional records were obtained from recent issues, back to 1990, of the entomological journals *Dipterists Digest, Entomologist's monthly Magazine* and the *British Journal of Entomology and Natural History.* Several sources listed in Falk & Crossley were also included, as were the personal records of Roy Crossley. Records were also obtained from the NBN Gateway (www.searchnbn.net). Many of these were entirely plausible but a few were rejected as needing verification. The records of several diligent recorders are known to be missing, as are some mentioned in Falk & Crossley (2005) that could not be traced, and the Yorkshire Naturalist Union database which was input by BRC too late for inclusion here.

This Review uses 1990 as the **point of measurement** between old and recent date classes to assess decline, as this was judged to be the date most applicable to the data concerned. The IUCN criteria assess declines based on data from the last ten years, but this is clearly not feasible for most invertebrate groups. The reviewer has needed to assess whether reductions in the Area of Occupancy represent significant decline or lack of data. This will vary considerably between taxonomic groups and for different species within taxonomic groups depending on survey effort. Use of B2b for any taxon therefore demands justification by an explanation of confidence in the rate of decline.

Records made up to 2012 were included in the assessment. In a few instances, more recent records made up to 2017 were taken into account where these data significantly altered the assesment of the conservation status.

Data from the disparate sources were amalgamated into a single 'archive' sheet. The hectad and year were extracted from the grid reference and date using formulae. A limited form of this spreadsheet is given in Appendix 1 at the end of the review. The three relevant fields of species name, hectad and year were extracted and reduced to unique 'records' by removing duplicates (using Excel's built-in function). A matrix of species by all hectads with land (obtained from BRC's website) was populated with the occurrence of records using an array formula, with old (pre-1990) and recent records in two separate matrices. Counts of the number of hectads occupied before and after 1989/1990 and those in common, were summed from the matrices. As the analysis was based on hectads, the number of records in the archive sheet was immaterial, especially as they included many duplicates. The final list comprised about 41,500 items (species in a hectad in a year).

An indication of decline was given by the percentage that 'old' hectads formed of all occupied hectads. This was compared with the criteria for rates of decline since 1990. Dual hectads were not found to be a useful measure since, on average, only 10% of hectads had both old and new records. This suggests merely that recorders of dolichopodids do not often return to previously worked sites.

Assessments were then made using the data in the spreadsheet alongside the author's expert judgement followed by peer review from members of the invertebrate Inter Agency Working Group, JNCC and key individuals. The results are presented in sections 8 to 12.

European distributions were obtained primarily from Fauna Europaea (Pollet, 2011).

6. Red List of Dolichopodidae

This table details 308 species with their IUCN threat status and UK rarity status. The latter includes moderated domestic rarity statuses, denoted by the superscript M. Where this occurs on its own it denotes a moderation beyond NS, i.e. local or common. Blank cells for this review indicate a "natural" status beyond NS as indicated by the hectad count data in Appendix 1. *Medetera* as a genus is an issue based on the level of confidence placed on indentifications made when not following detailed genitalia dissection procedures.

Taxonomic list of IUCN classes and Nationally Rare & Scarce species

Species Name	**Shirt 1987**	**Falk 1991**	**Falk & Crossley 2005**	**This review (IUCN Status)**	**This review (GB Rarity Status) Superscript M denotes status moderation**
Achalcus bimaculatus				LC	NS
Achalcus britannicus	-	-	-	LC	NS^{M}
Achalcus cinereus				LC	^{M}
Achalcus flavicollis				LC	^{M}
Achalcus nigropunctatus	-	-	-	DD	NR
Achalcus thalhammeri	-	-	-	LC	NR
Achalcus vaillanti	-	-	-	LC	NS^{M}
Acropsilus niger	RDB1	RDB1	DD	DD	NR
Anepsiomyia flaviventris				LC	
Aphrosylus celtiber				LC	^{M}
Aphrosylus ferox				LC	^{M}
Aphrosylus mitis	RDB3	RDB3	LCns	LC	NS
Aphrosylus raptor	-	Nb	-	LC	NS^{M}
Argyra argentina				LC	
Argyra argyria				LC	
Argyra atriceps	-	Nb	-	LC	NS
Argyra auricollis	RDB2	Nb	LCns	LC	NS^{M}
Argyra diaphana				LC	
Argyra elongata	-	RDB3	-	LC	NS
Argyra grata	RDB2	RDB2	NT	NT	NR
Argyra ilonae				LC	^{M}
Argyra leucocephala				LC	
Argyra perplexa				LC	
Argyra vestita				LC	^{M}
Asyndetus latifrons	-	-	-	DD	NR
Australachalcus melanotrichus	-	Nb	-	LC	NS^{M}
Campsicnemus alpinus				LC	^{M}
Campsicnemus armatus				LC	^{M}
Campsicnemus compeditus	RDB3	Nb	-	LC	^{M}

Campsicnemus curvipes				LC	
Campsicnemus dasycnemus	-	-	-	NE	-
Campsicnemus loripes				LC	
Campsicnemus magius	RDB3	RDB3	NT	VU	NR
Campsicnemus marginatus	-	Nb	-	LC	M
Campsicnemus picticornis				LC	M
Campsicnemus pumilio	RDB3	Nb	LCns	LC	NS
Campsicnemus pusillus	-	Nb	Notable - error in JNCC website	LC	NS
Campsicnemus scambus				LC	
Campsicnemus umbripennis	-	-	-	DD	NR
Chrysotimus flaviventris	-	Nb	-	LC	M
Chrysotimus molliculus				LC	M
Chrysotus angulicornis	-	Nb	-	NE	-
Chrysotus blepharosceles				LC	
Chrysotus cilipes				LC	
Chrysotus collini	-	Nb	-	VU	NR
Chrysotus cupreus				LC	NS
Chrysotus femoratus				LC	M
Chrysotus gramineus				LC	
Chrysotus laesus				LC	M
Chrysotus longipalpus	-	-	-	NE	-
Chrysotus melampodius	-	Nb	LCns	EN	NR
Chrysotus monochaetus	-	Nb	NT	CR	NR
Chrysotus neglectus				LC	
Chrysotus obscuripes	-	Nb	-	LC	M
Chrysotus palustris	-	Nb	-	LC	M
Chrysotus pulchellus				LC	NS
Chrysotus suavis	-	Nb	-	LC	M
Chrysotus verralli	-	RDB3	LCns	DD	NR
Cyrturella albosetosa	RDB1	RDB1	EN	CR	NR
Diaphorus hoffmannseggii	RDB1	RDB1	NT	LC	NR
Diaphorus nigricans				LC	M
Diaphorus oculatus				LC	M
Diaphorus winthemi	RDB1	RDB1	DD	DD	NR
Dolichophorus kerteszi	-	-	-	DD	NR
Dolichopus acuticornis	-	Nb	-	LC	NS[M]
Dolichopus agilis	RDB2	RDB2	LCns	VU	NR
Dolichopus andalusiacus	RDB3	RDB3	-	LC	NS
Dolichopus arbustorum	RDB3	RDB3	LCns	LC	NS[M]
Dolichopus argyrotarsis	-	Nb	LCns	NT	NR
Dolichopus atratus				LC	
Dolichopus atripes				LC	
Dolichopus brevipennis				LC	
Dolichopus caligatus	RDB2	Nb	LCns	LC	NS[M]

Dolichopus calinotus	-	-	-	DD	NR
Dolichopus campestris				LC	
Dolichopus cilifemoratus	RDB2	RDBK	LCns	LC	NS
Dolichopus claviger				LC	M
Dolichopus clavipes				LC	M
Dolichopus diadema				LC	M
Dolichopus discifer				LC	
Dolichopus excisus	-	-	-	DD	NR
Dolichopus festivus				LC	
Dolichopus griseipennis				LC	
Dolichopus laticola	RDB1	RDB1	EN	EN	NR
Dolichopus latilimbatus				LC	
Dolichopus latipennis	-	RDB3	VU	CR	NR
Dolichopus lepidus				LC	M
Dolichopus linearis	RDB3	Nb	-	LC	NS
Dolichopus lineatocornis	RDB1	RDB1	NT	VU	NR
Dolichopus longicornis				LC	
Dolichopus longitarsis				LC	M
Dolichopus maculipennis	RDB2	RDB2	NT	DD	NR
Dolichopus mediicornis	RDB2	RDB2	NT	EN	NR
Dolichopus melanopus	RDB1	Extinct	EX	EX	-
Dolichopus migrans	RDB3	RDB3	NT	VU	NR
Dolichopus nigripes	RDB1	RDB1	EN	VU	NR
Dolichopus nitidus	-	-	-	LC	NS[M]
Dolichopus notatus	-	Nb	LCns	LC	NS
Dolichopus nubilus				LC	
Dolichopus pennatus				LC	
Dolichopus phaeopus				LC	NS
Dolichopus picipes				LC	
Dolichopus planitarsis				LC	M
Dolichopus plumipes				LC	
Dolichopus plumitarsis	RDB1	RDB1	EN	EN	NR
Dolichopus popularis				LC	
Dolichopus rupestris				LC	M
Dolichopus sabinus				LC	M
Dolichopus signatus				LC	M
Dolichopus signifer	RDB1	RDB2	LCns	LC	NS
Dolichopus simplex				LC	
Dolichopus strigipes	-	Nb	LCns	LC	M
Dolichopus subpennatus				LC	
Dolichopus trivialis				LC	
Dolichopus ungulatus				LC	
Dolichopus urbanus				LC	
Dolichopus virgultorum	-	Nb	LCns	LC	NS

Dolichopus vitripennis				LC	
Dolichopus wahlbergi				LC	
Ethiromyia chalybea	-	Nb	-	LC	M
Gymnopternus aerosus				LC	
Gymnopternus angustifrons	RDB2	RDB2	LCns	LC	NS
Gymnopternus assimilis				LC	M
Gymnopternus blankaartensis				LC	NS
Gymnopternus brevicornis				LC	M
Gymnopternus celer				LC	
Gymnopternus cupreus				LC	
Gymnopternus metallicus				LC	
Gymnopternus silvestris				LC	M
Hercostomus chetifer				LC	M
Hercostomus fulvicaudis	-	RDB3	LCns	DD	NR
Hercostomus germanus				LC	M
Hercostomus gracilis				LC	M
Hercostomus nanus				LC	
Hercostomus nigrilamellatus	-	Nb	LCns	LC	NS
Hercostomus nigripennis				LC	
Hercostomus nigriplantis				LC	M
Hercostomus parvilamellatus				LC	M
Hercostomus plagiatus	RDB3	Nb	LCns	LC	M
Hercostomus praeceps				LC	
Hercostomus rothi	-	-	-	DD	NR
Hercostomus sahlbergi	RDB1	RDB1	EN	DD	NR
Hercostomus verbekei	-	-	-	DD	NR
Hydrophorus albiceps	-	-	-	NT	NS
Hydrophorus balticus				LC	M
Hydrophorus bipunctatus				LC	M
Hydrophorus litoreus				LC	M
Hydrophorus nebulosus				LC	M
Hydrophorus oceanus				LC	M
Hydrophorus praecox				LC	M
Hydrophorus rufibarbis	RDB2	Nb	LCns	LC	NS
Hydrophorus viridis	-	RDB3	NT	LC	NR
Lamprochromus bifasciatus	-	Nb	-	LC	M
Lamprochromus kowarzi				DD	NR
Lamprochromus semiflavus	-	-	DD	DD	NR
Liancalus virens				LC	
Machaerium maritimae				LC	M
Medetera abstrusa				LC	M
Medetera ambigua	-	Nb	-	LC	NS[M]
Medetera bispinosa	-	-	-	DD	NR

Medetera borealis	-	RDB2	-	DD	NR
Medetera cuspidata	RDB3	RDB3	NT	DD	NR
Medetera dendrobaena				LC	M
Medetera diadema				LC	NS[M]
Medetera excellens	RDB3	RDB2	NT	DD	NR
Medetera fasciata	-	-	-	DD	NR
Medetera flavipes				LC	M
Medetera freyi	-	-	-	DD	NR
Medetera grisescens	-	-	-	NE	-
Medetera impigra				LC	M
Medetera infumata	RDB3	RDB3	NT	DD	NR
Medetera insignis	-	-	-	DD	NR
Medetera inspissata	RDB3	RDB3	NT	DD	NR
Medetera jacula				LC	M
Medetera jugalis	-	Nb	-	LC	NS[M]
Medetera melancholica	RDB3	RDB3	NT	DD	NR
Medetera micacea				LC	M
Medetera muralis				LC	M
Medetera nitida	-	Nb	-	DD	NR
Medetera obscura	-	Nb	LCns	DD	NR
Medetera oscillans	RDB3	RDB3	-	DD	NR
Medetera pallipes				LC	M
Medetera parenti	-	RDBK	DD	DD	NR
Medetera petrophila	-	Nb	-	DD	NS[M]
Medetera petrophiloides				LC	M
Medetera pinicola	RDB3	Nb	LCns	DD	NR
Medetera saxatilis				LC	
Medetera setiventris	-	-	-	DD	NR
Medetera striata	RDB3	RDB3	Not British	NE	-
Medetera tristis				LC	M
Medetera truncorum				LC	
Medetera unisetosa	RDB3	RDB3	NT	DD	NR
Medetera veles	-	-	DD	DD	NR
Melanostolus melancholicus	RDB2	RDB3	LCns	LC	NS
Micromorphus albipes	-	Nb	-	DD	
Microphor anomalus	-	Nb	-	LC	M
Microphor crassipes				LC	M
Microphor holosericeus				LC	
Microphor strobli				DD	NS[M]
Micropygus vagans	-	-	-	NE	
Muscidideicus praetextatus	-	Nb	LCns	VU	NS[M]
Nematoproctus distendens	RDB2	RDB2	NT	LC	NR
Neurigona abdominalis	RDB1	RDB1	NT	EN	NR
Neurigona biflexa	-	-	DD	DD	NR

Neurigona erichsoni	-	-	DD	DD	NR
Neurigona pallida				LC	M
Neurigona quadrifasciata				LC	M
Neurigona suturalis	-	Nb	-	LC	NS
Orthoceratium lacustre	-	Nb	-	LC	NS
Ortochile nigrocoerulea	-	Nb	VU	CR	NR
Poecilobothrus chrysozygos				LC	M
Poecilobothrus ducalis	RDB2	RDB2	NT	VU	NR
Poecilobothrus majesticus	RDB1	RDB1	DD	EX	
Poecilobothrus nobilitatus				LC	
Poecilobothrus principalis	-	Nb	-	LC	M
Rhaphium albomaculatum				LC	M
Rhaphium antennatum	-	Nb	-	LC	NS
Rhaphium appendiculatum				LC	
Rhaphium auctum	-	Nb	-	LC	M
Rhaphium brevicorne				LC	M
Rhaphium caliginosum				LC	
Rhaphium commune				LC	M
Rhaphium consobrinum				LC	M
Rhaphium crassipes				LC	
Rhaphium elegantulum				LC	NS
Rhaphium fasciatum				LC	NS
Rhaphium fascipes	-	Nb	LCns	VU	NS^M
Rhaphium fractum	-	Nb	LCns	LC	NS
Rhaphium gravipes	-	Nb	LCns	VU	NR
Rhaphium lanceolatum	-	Nb	LCns	NT	NS^M
Rhaphium laticorne				LC	M
Rhaphium longicorne				LC	M
Rhaphium micans	-	Nb	LCns	LC	NS
Rhaphium monotrichum				LC	
Rhaphium nasutum	-	Nb	-	LC	NS
Rhaphium patulum	-	Nb	LCns	VU	NR
Rhaphium pectinatum	RDB1	Extinct	EX	DD	NR
Rhaphium penicillatum	RDB2	RDB2	NT	LC	NS^M
Rhaphium riparium				LC	M
Rhaphium rivale	-	Nb	LCns	LC	NS^M
Rhaphium suave	-	-	-	DD	NR
Scellus notatus				LC	
Schoenophilus versutus	RDB3	Nb	-	LC	NS
Sciapus basilicus	-	-	-	DD	NR
Sciapus contristans	-	Nb	-	LC	M
Sciapus heteropygus	RDB1	RDB1	NT	CR	NR
Sciapus laetus	-	Nb	LCns	LC	NS
Sciapus longulus				LC	M

Sciapus maritimus	-	-	-	DD	NR
Sciapus platypterus				LC	
Sciapus wiedemanni				LC	M
Sciapus zonatulus	-	-	-	DD	NR
Sybistroma crinipes				LC	M
Sybistroma discipes	-	Nb	-	LC	M
Sybistroma obscurellum				LC	
Sympycnus aeneicoxa				LC	M
Sympycnus cirripes				LC	M
Sympycnus pulicarius				LC	-
Sympycnus septentrionalis				DD	-
Sympycnus spiculatus	-	Nb	-	LC	NS
Syntormon aulicus				LC	M
Syntormon bicolorellus				LC	M
Syntormon denticulatum				LC	
Syntormon filiger	-	Nb	LCns	LC	NS^{M}
Syntormon fuscipes	-	Nb	-	LC	NS
Syntormon luteicornis	-	-	-	DD	NR
Syntormon macula	RDB1	RDB3	NT	LC	NS
Syntormon mikii	RDB2	RDB2	NT	LC	NR
Syntormon monilis	-	-	-	LC	NS
Syntormon pallipes				LC	
Syntormon pseudospicatum	-	-	-	DD	NS
Syntormon pumilus				LC	
Syntormon setosus	-	-	-	NE	-
Syntormon silvianus				LC	M
Syntormon sulcipes				LC	M
Syntormon tarsatus				LC	M
Syntormon zelleri	-	Nb	-	LC	M
Systenus alpinus	-	-	-	NE	-
Systenus bipartitus	-	RDB3	LCns	DD	NS
Systenus leucurus	-	Nb	LCns	LC	NS^{M}
Systenus mallochi	-	-	-	LC	NR
Systenus pallipes	RDB3	Nb	-	LC	NS
Systenus scholtzii	-	Nb	LCns	LC	M
Systenus tener	RDB3	RDB3	NT	NT	NR
Tachytrechus consobrinus	-	Nb	LCns	LC	NS
Tachytrechus insignis				LC	M
Tachytrechus notatus				LC	M
Tachytrechus ripicola	-	RDB3	VU	CR	NR
Telmaturgus tumidulus	RDB1	RDB3	LCns	LC	NR
Teuchophorus calcaratus				LC	M
Teuchophorus monacanthus				LC	M
Teuchophorus nigricosta				LC	M

Teuchophorus simplex				LC	M
Teuchophorus spinigerellus				LC	
Thinophilus flavipalpis				LC	M
Thinophilus ruficornis	-	Nb	LCns	LC	M
Thrypticus bellus				LC	M
Thrypticus cuneatus	RDB1	RDB1	NT	NT	NR
Thrypticus divisus	RDB3	RDB3	LCns	LC	NS[M]
Thrypticus laetus	-	Nb	-	LC	M
Thrypticus nigricauda	RDB3	Nb	LCns	LC	NS[M]
Thrypticus pollinosus	-	Nb	-	LC	NS[M]
Thrypticus smaragdinus	-	-	DD	LC	NR
Thrypticus tarsalis	RDB3	RDB3	LCns	LC	NS[M]
Xanthochlorus galbanus				LC	M
Xanthochlorus ornatus				LC	
Xanthochlorus silaceus	-	-	-	DD	NR
Xanthochlorus tenellus				LC	M

7. Species listed by IUCN status category

Regionally Extinct	*Dolichopus melanopus* *Poecilobothrus majesticus*
Critically Endangered	*Chrysotus monochaetus* *Cyrturella albosetosa* *Dolichopus latipennis* *Ortochile nigrocoerulea* *Sciapus heteropygus* *Tachytrechus ripicola*
Endangered	*Chrysotus melampodius* *Dolichopus laticola* *Dolichopus mediicornis* *Dolichopus plumitarsis* *Neurigona abdominalis*
Vulnerable	*Campsicnemus magius* *Chrysotus collini* *Dolichopus agilis* *Dolichopus lineatocornis* *Dolichopus migrans* *Dolichopus nigripes* *Muscidideicus praetextatus* *Poecilobothrus ducalis* *Rhaphium fascipes* *Rhaphium gravipes* *Rhaphium patulum*
Near Threatened	*Argyra grata* *Dolichopus argyrotarsis* *Hydrophorus albiceps* *Rhaphium lanceolatum* *Systenus tener* *Thrypticus cuneatus*
Data Deficient	*Achalcus nigropunctatus* *Acropsilus niger* *Asyndetus latifrons* *Campsicnemus umbripennis* *Chrysotus verralli* *Diaphorus winthemi* *Dolichophorus kerteszi* *Dolichopus calinotus* *Dolichopus excisus* *Dolichopus maculipennis* *Hercostomus fulvicaudis*

Hercostomus rothi
Hercostomus sahlbergi
Hercostomus verbekei
Lamprochromus kowarzi
Lamprochromus semiflavus
Medetera bispinosa
Medetera borealis
Medetera cuspidata
Medetera excellens
Medetera fasciata
Medetera freyi
Medetera infumata
Medetera insignis
Medetera inspissata
Medetera melancholica
Medetera nitida
Medetera obscura
Medetera oscillans
Medetera parenti
Medetera petrophila
Medetera pinicola
Medetera setiventris
Medetera unisetosa
Medetera veles
Micromorphus albipes
Microphor strobli
Neurigona biflexa
Neurigona erichsoni
Rhaphium pectinatum
Rhaphium suave
Sciapus basilicus
Sciapus maritimus
Sciapus zonatulus
Syntormon luteicornis
Syntormon pseudospicatum
Syntormon septentrionalis
Systenus bipartitus
Xanthochlorus silaceus

8. Species listed by GB Rarity Status Category

Nationally Rare

The 75 Nationally Rare taxa in this list is very much a reflection of the poor state of knowledge and record base for this fauna

Achalcus nigropunctatus
Achalcus thalhammeri
Acropsilus niger
Argyra grata
Asyndetus latifrons
Campsicnemus magius
Campsicnemus umbripennis
Chrysotus collini
Chrysotus melampodius
Chrysotus monochaetus
Chrysotus verralli
Cyrturella albosetosa
Diaphorus hoffmannseggii
Diaphorus winthemi
Dolichophorus kerteszi
Dolichopus agilis
Dolichopus argyrotarsis
Dolichopus calinotus
Dolichopus excisus
Dolichopus laticola
Dolichopus latipennis
Dolichopus lineatocornis
Dolichopus maculipennis
Dolichopus mediicornis
Dolichopus migrans
Dolichopus nigripes
Dolichopus plumitarsis
Hercostomus fulvicaudis
Hercostomus rothi
Hercostomus sahlbergi
Hercostomus verbekei
Hydrophorus viridis
Lamprochromus kowarzi
Lamprochromus semiflavus
Medetera bispinosa
Medetera borealis
Medetera cuspidata
Medetera excellens
Medetera fasciata
Medetera freyi
Medetera infumata
Medetera insignis

Medetera inspissata
Medetera melancholica
Medetera nitida
Medetera obscura
Medetera oscillans
Medetera parenti
Medetera pinicola
Medetera setiventris
Medetera unisetosa
Medetera veles
Nematoproctus distendens
Neurigona abdominalis
Neurigona biflexa
Neurigona erichsoni
Ortochile nigrocoerulea
Poecilobothrus ducalis
Rhaphium gravipes
Rhaphium patulum
Rhaphium pectinatum
Rhaphium suave
Sciapus basilicus
Sciapus heteropygus
Sciapus maritimus
Sciapus zonatulus
Syntormon luteicornis
Syntormon mikii
Systenus mallochi
Systenus tener
Tachytrechus ripicola
Telmaturgus tumidulus
Thrypticus cuneatus
Thrypticus smaragdinus
Xanthochlorus silaceus

Nationally Scarce

Achalcus bimaculatus
Aphrosylus mitis
Argyra atriceps
Argyra elongata
Campsicnemus pumilio
Campsicnemus pusillus
Chrysotus cupreus
Chrysotus pulchellus
Dolichopus andalusiacus
Dolichopus cilifemoratus
Dolichopus linearis
Dolichopus notatus

Dolichopus phaeopus
Dolichopus signifer
Dolichopus virgultorum
Gymnopternus angustifrons
Gymnopternus blankaartensis
Hercostomus nigrilamellatus
Hydrophorus albiceps
Hydrophorus rufibarbis
Melanostolus melancholicus
Neurigona suturalis
Orthoceratium lacustre
Rhaphium antennatum
Rhaphium elegantulum
Rhaphium fasciatum
Rhaphium fractum
Rhaphium micans
Rhaphium nasutum
Schoenophilus versutus
Sciapus laetus
Sympycnus spiculatus
Syntormon fuscipes
Syntormon macula
Syntormon monilis
Syntormon pseudospicatum
Systenus bipartitus
Systenus pallipes
Tachytrechus consobrinus

Nationally Scarce, as moderated
Achalcus britannicus
Achalcus vaillanti
Aphrosylus raptor
Argyra auricollis
Australachalcus melanotrichus
Dolichopus arbustorum
Dolichopus acuticornis
Dolichopus caligatus
Dolichopus nitidus
Medetera ambigua
Medetera diadema
Medetera petrophila
Medetera jugalis
Microphor strobli
Muscidideicus praetextatus
Rhaphium fascipes
Rhaphium lanceolatum
Rhaphium penicillatum
Rhaphium rivale
Syntormon filiger
Systenus leucurus

Thrypticus divisus
Thrypticus nigricauda
Thrypticus pollinosus
Thrypticus tarsalis

9. Criteria used for assigning species to threatened categories (see Annex II for criteria and categories)

Species Name	Status	Criteria used
Chrysotus monochaetus	CR	B2a, bii, biv
Cyrturella albosetosa	CR	B2a, bii, biv
Dolichopus latipennis	CR	B2a,bii, biv
Ortochile nigrocoerulea	CR	C1, C2a i; D
Sciapus heteropygus	CR	B2a,bii, biv
Tachytrechus ripicola	CR	B2a, bii, biv
Chrysotus melampodius	EN	B2a, bii, biv
Dolichopus laticola	EN	B2a, bii, biv
Dolichopus mediicornis	EN	B2a, bii, biv
Dolichopus plumitarsis	EN	B2a, bii, biv
Neurigona abdominalis	EN	B2a, bii, biv
Dolichopus agilis	VU	B2a, bii, biv
Campsicnemus magius	VU	B2a, bii, biv
Chrysotus collini	VU	B2a, 2b ii & iv
Dolichopus lineatocornis	VU	D2
Dolichopus migrans	VU	B2a, bii, biv
Dolichopus nigripes	VU	D2
Muscidideicus praetextatus	VU	B2a, bii, biv
Poecilobothrus ducalis	VU	B2a, bii, biv
Rhaphium fascipes	VU	B2a, bii, biv
Rhaphium gravipes	VU	B2a, bii, biv
Rhaphium patulum	VU	B2a, bii, biv

10. Format of the species accounts

The species' name
Nomenclature follows the most recent Diptera check list (Chandler 1998) and the updated version of this given in the Dipterists Forum website (www.dipteristsforum.org.uk). Any previous name used in Shirt (1987), Falk (1991) or Falk & Crossley (2005) is indicated, with a citation of any relevant references.

Identification
British Dolichopodidae are dealt with by d'Assis-Fonseca (1978). Drake (2011) lists papers that cover species added to the British list since this standard work. New species are often recognised using the keys of Parent (1938) and Lindner (1930-1979). Only adults can be reliably identified at present.

Distribution
Distributions were derived from data collated from several sources and were based on hectads (10km squares), often with Watsonian Vice-counties (Dandy 1969) where this could be accurately judged from the grid reference.

The records were plotted to give a broad overview of the national distribution and these formed the basis of the statements giving the overall pattern of distributions. The method doing this is described below.

Habitat and Ecology
There are few studies that allow a clear assessment of either the habitat requirements or ecology of most dolichopodids, so the statements given in the accounts are derived from comments appended to records and the literature, or deduced from the locations of records. A few northern European workers have contributed most to the broader understanding of the habitats used by dolichopodid, notably Marc Pollet in Belgium and Hans Meyer and Ronald Bellstedt in Germany. Almost nothing is known about the larval stages of dolichopodids; the majority are predators living in dry to wet soil or similar habitat. Many *Medetera* are associated with dead bark or dead wood where they prey on beetle larvae, *Aphrosylus* larvae prey on inter-tidal barnacles and *Thrypticus* larvae are unusual in being vegetative miners in monocotyledons. None is likely to be completely aquatic but given the strong association of some species with water margins, their larvae are probably 'amphibious'.

Status
It is upon this statement that the status category is based. This can be assessed in two ways: first, the perceived scarcity or otherwise of a species as indicated by the available records, and second, the association of a species with a particular type of habitat which itself may be scarce and/or threatened to some degree. The process for assigning species to the various categories is discussed more fully under section 5.

Assessments of status can only be based on available records which are unlikely to be comprehensive in the majority of cases. Most of these reflect the recording preferences of a limited number of dipterists over the years, and it has been necessary to make assumptions from the available records in order to arrive at the best estimate of the likely national distribution of each species.

An idea of the level of recording, and hence how useful the thresholds are, is given in Appendix 1 which shows the number of hectads with records before and after the 1990 threshold, and all hectads with records. The use of NCC's original definition of nationally scarce species (16-100 hectads) may have been appropriate for well recorded species but not for a group where recent records have been received from only half the British hectads, and from about two thirds of all the hectads for records of all dates. However, until a global UK change of the criteria for Nationally Scarce and Nationally Rare can be effected, the existing working definition has been maintained in this Review to ensure consistency across other reviews.

Threats

It is those human activities that result in the loss of sites or that change the nature of habitats that are most likely to pose the greatest threats to insect populations. Where specific threats might arise they are mentioned, otherwise the statements attempt to summarise in general terms those activities which are considered most likely to put populations of these flies at risk. Where known sites have the benefit of statutory protection, as, for example, in the case of National Nature Reserves (NNRs), this is noted.

Management and conservation

Preventative measures and positive action designed to maintain populations are suggested where these are known or can reasonably be inferred. Inevitably, in many cases this section tends to be generalised, identifying practices that have been found to favour those aspects of the habitat with which the species may be associated. Kirby (2001) and Fry & Lonsdale (1991) provide further, more detailed, information on the management of habitats for the conservation of invertebrates.

Published sources

Literature references that refer to the previous conservation status of the species in Britain, or that have contributed information to the Data Sheet, are cited here.

11. Acknowledgements

Bjorn Beckman and Steph Rorke of the Biological Records Centre at CEH, Wallingford, put in considerable time in getting data to me. Val Burton input a large number of records submitted by Roy Crossley. Much information has been taken from the recent review by undertaken by Roy Crossley and Ian McLean (Falk & Crossly, 2005). Roger Morris kindly forwarded records from the Dipterists Forum field meetings database together with his personal records. IAWG editing was carried out by David Heaver, Michael Howe, Jon Curson, Steve Falk and Jon Webb. The editors are grateful to Ant Maddock (JNCC) for providing additional guidance on the use and application of the IUCN criteria.

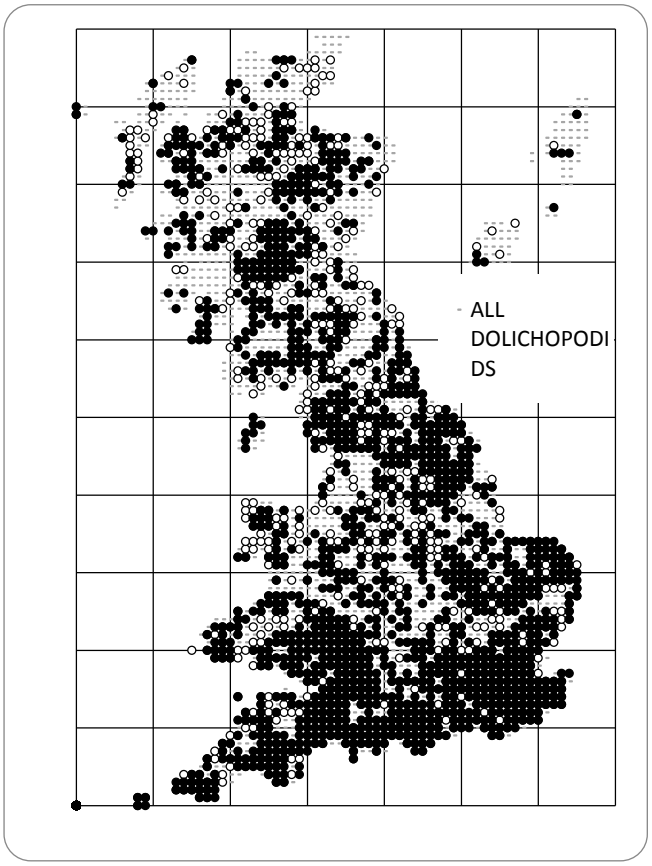

Figure 3. Distribution of records of all Dolichopodids used in the analysis

12. The data sheets

The data sheets are given in alphabetical order by scientific name within the family.

ACHALCUS NIGROPUNCTATUS

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Achalcus nigropunctatus Pollet & Brunhes, 1996

Identification: Keyed by Pollet (1997)

Distribution: The species was first recorded in Britain in 2007 and has been found only in the Norfolk's Broadland (VC27) where it appears to have stable colonies on several fens in three hectads.

In Europe it has been found only in France, Germany, Switzerland and the Czech Republic.

Habitat and ecology: All site are fens of high botanical quality but several captures were made in areas with *Salix cinerea* or *Alnus glutinosa* carr; other records were from more open fen with low *Phragmites* or tussocky *Carex* vegetation.

Habitat key words: fen, carr

Status: As the species was described and then found in Britain only recently, there has been insufficient time to assess the status. It is locally frequent in the northern half of Broadland, indicating that other East Anglian fens could support it. All captures were made using a suction sampler so it is probably overlooked when sampling by sweep-netting.

Not listed in Falk & Crossley (2005) or Shirt 1987.

Threats: Degradation of fens through drying out.

Management and conservation: All sites lie within the Broads National Park. Barton Fen, Stalham Fen and Sutton Fen are within the Ant Broads and Marshes SSSI; Hickling Broad is within the Upper Thurne Broads and Marshes SSSI; Woodbastwick Fen is a National Nature Reserve within the Bure Broads and Marshes SSSI.

Published sources: Drake (2008).

ACROPSILUS NIGER

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Acropsilus niger (Loew, 1869)

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: Cornwall: near Padstow (1902) and St Merryn (1905) (VC1). On 15 July 1990 a female was found at Norley Copse in the New Forest, Hampshire (VC11), and this is the only known example to have been found since the early years of the last century. The Natural England ISR gives a second capture at Norley Copse by the same recorder on the later date of 22 June 2000 but this record has not been verified and may be an input error.

Its European distribution ranges from Spain to Denmark and is mainly mid-Europe.

Habitat and ecology: The St Merryn locality was said to be a marshy hollow near a common, but this is now destroyed. Norley Copse is mature woodland, but the site at which the adult was found is an open area with seepages, sloping into a small pond which was full of white water-lily *Nymphaea alba* L. An area of scrub shields the pond, and similar shallow pools with sheltering scrub are close by. Nothing is known of the ecology of this species but there may be an association with seepages or aquatic habitats.

Habitat key words: None.

Status: This is clearly an extremely rare or elusive species. It may be under-recorded due to its very small size (about 1.75mm) although its bright violet-black body colour would preclude it being overlooked if recognised as a dolichopodid.

The species does not qualify as Threatened under Criteria A,B,C,D or E. .

Had the Norley Copse record not been made it might have seemed worth as listing as Regionally Extinct. Whilst a status of Critically Endangered might now seem appropriate as it is known from a single site, its status is maintained at Data Deficient (Falk & Crossley, 2005), as only new British records can improve our understanding of it.

Threats: Not known.

Management and conservation: In the absence of further knowledge, the main objective must be to manage the recent known site in such a way as to preserve the existing environment intact. Norley Copse sits within the New Forest SSSI.

Published sources: d'Assis-Fonseca (1978); Shirt (1987); Falk & Crossley (2005) from which most of this account was derived.

ARGYRA GRATA

NEAR THREATENED B2

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Argyra grata Loew, 1857

Identification: Keyed by d'Assis Fonseca (1978).

Distribution: *Argyra grata* occurs in three small areas of England: Kent (VC15, 16), Yorkshire (VC61, 64), and in the west at Herefordshire (VC36), Worcestershire (VC37) and Shropshire (VC40); it has been recorded in all three areas since 1990 but may be more frequent in Kent. There is a single nineteenth century record for Glamorganshire (VC41). The clumped distribution suggests a poor dispersal ability.

In Europe *A. grata* is widespread from Spain to north-west European Russia.

Habitat and ecology: In Kent *A. grata* is associated mainly with drier deciduous woodland but in Yorkshire and Shropshire is has been found in wet willow woodland and other old deciduous woodland bordering small to large rivers. The larval ecology is unknown.

Habitat key words: deciduous woodland, wet woodland, river margins

Status: Early pre-1990 records were found in nine hectads, and between the 1990 and the 2012 cut-off date for this review, *A. grata* had been found in only three hectads. In the four succeeding years it had occurred in another nine hectads although these hardly extended the range. Although Vulnerable based on the review period data, this subsequent recording out of the review period has added more UK records, and indicates both a lack of decline and enhanced AoO. In light of the revised hectad count, an exception is made and the species is assigned Near Threatened following the IAWG ruling.

Previous status of Lower Risk (Near Threatened) (Falk & Crossley, 2005); Vulnerable (Shirt 1987).

Threats: The threat appears to be woodland clearance in all areas and draining of wet woodlands close to rivers in western and northern areas.

Management and conservation: Maintain old woodland, pools, streams and associated marshy areas in a natural state, retaining any lush vegetation, and undertake any necessary clearance work on a rotational basis.

Published sources: Allen (1991), d'Assis-Fonseca (1978), Falk & Crossley (2005), Howe (2002), Shirt (1987).

ASYNDETUS LATIFRONS

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Asyndetus latifrons (Loew, 1857)

Identification: Keyed by Parent (1938), Grichanov (2006).

Distribution: This species is known from only two northern English rivers. It was discovered in 2005 and again in 2006 on the River Lune at Lower Broomfield, Lancashire (VC 60), and in 2006 on the River Coquet at Hepple, Northumberland (VC 68) (Godfrey & Drake, 2012).

It is widely distributed in Europe from Italy to Russia.

Habitat and ecology: The species is closely associated with expansive stony exposed riverine sediments in Britain. Other species in the genus are associated with marine coastal habitats that include beaches and inland habitats with shores of lakes and river margins (Bickel, 1996). Pollet (2000) stated that *A. latifrons* is strongly associated with open biotopes with short grassy vegetation on moist sandy soil but gave a list of habitats where it had been found in eastern Europe that suggests little specialism: woods, gardens, marshes, river banks and sand dunes.

Habitat key words: wetland edge, shingle.

Status: The species does not qualify as Threatened under Criteria A,B,C,D or E. .

The relatively recent discovery of this species rules out any notion of population decline under sub-criterion B, whilst it does meet D2 Vulnerable for number of locations, though it is quite possible it occurs on other river gravels in the vicinity. It would require a plausible river-wide impact to drive it to CR assuming it is not restricted to a shingle gravel bar and that that is its favoured habitat. Whilst *Asyndetus latifrons* is likely to be Vulnerable owing to its probable restricted habitat requirement of extensive exposed riverine sediments, the lack of any trend line threat means that Data Deficient at this time is more appropriate. It is regarded as rare in The Netherlands and Belgium (Pollet, 2000).

Threats: Assuming that *Asyndetus latifrons* is restricted to stony exposed riverine sediments, then the threats are direct loss of, or damage to, sediments by removal, river regulation, canalisation and shoring-up eroding banks, or due to natural causes including continuous very low flows leading to lack of re-sorting by floods or perhaps excessive floods.

Management and conservation: Maintenance of exposed riverine sediments on stony rivers.

Published sources: Bickel (1996), Godfrey & Drake (2012), Grichanov (2006), Parent (1938), Pollet (2000).

CAMPSICNEMUS MAGIUS

VULNERABLE B2, B2a, bii, biv

Fancy-legged Fly

Order DIPTERA

Family DOLICHOPODIDAE

Campsicnemus magius (Loew, 1845)

Identification: Keyed by Parent (1938) and d'Assis-Fonseca (1978).

Distribution: The species occurs mainly on pools and wet mud in salt-marshes in East Susses (VC14), Kent (VC15, 16) and East Anglia (VC18, 19, 25), and particularly in parts of the Thames Estuary. The extensive marshes from Cliffe to Sheppey seem to hold the greatest population (Lee *et al*, 2012). There is a verified record of a female from Norfolk (VC28).

There are several records from the inland Bell's Pond area of Thorne Moors (VC63), a consequence of the previous saline pumping from the now disused coal mine. Other verified inland sites occur at a disused clay pit between Peterborough and Whittlesey (VC29) and the River Weaver, Runcorn (VC58).

This species has a wide European distribution, although it may remain scarce in all of its habitats because of the potential reductions in coastal habitat.

Habitat and ecology: A small, 3mm long species, notable for the 1st-3rd segments of fore tarsus bearing very long processes covered with long hairs (Grichanov, 2012), this giving rise to its common English name. Lee *et al* (2012) note that this both sexes of this fly have been reported preying on larval *Ochlerotatus cantans* mosquitos, although as they note, this is unlikely given the habitat choice of that mosquito, but it is likely with other *Ochlerotatus* species. 80% of the records were from coastal grazing marsh, or from lagoons or ponds on coastal marshes that were probably once drained pasture, though there remains uncertainty over some of the habitat descriptions in areas where one habitat grades into another. The main requirement appears to be slightly to strongly brackish water margins with exposed mud (Lee *et al,* 2012).

Status: This species seems to have declined from 22 hectads down to 8 between the two time periods, or a 57% decline. Its listing as a S41 Priority species has increased interest in it, so it is likely that the intensity of recording effort has also increased in the second period.

The species does not qualify as Threatened under Criteria A, C,D or E. .

These data qualify as Vulnerable under B2 AoO, and B2b ii & iv for the number of locations (down to 8 hectads) and the decline, both observed and projected, to meet B2a. Under D2 it does not meet Vulnerable for number of locations or AoO, though with coastal squeeze through sea level rise, the plausible threat is real and happening.

This is a Species "of principal importance for the purpose of conserving biodiversity" covered under section 41 (England) of the NERC Act (2006).
http://jncc.defra.gov.uk/_speciespages/2123.pdf

Threats: The clearest threat is from continued sea level rise and the resulting coastal squeeze on this species habitat.

Management and conservation: Prevent loss of habitat at known sites due to development of sea defences. Prevent environmental pollution causing degradation of specialised microhabitat. Prevent recreational pressure.

Published sources: Lee *et al*, 2012; Grichanov, 2012

CAMPSICNEMUS UMBRIPENNIS

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Campsicnemus umbripennis Loew, 1856

Identification: Keyed by Parent (1938).

Distribution: *Campsicnemus umbripennis* is known from only one record in July 1998 at The Spittles, Lyme Regis, Dorset (VC9) (Perry,1999).

It is widely distributed in Europe from Spain to Poland.

Habitat and ecology: The site was on the strip of grassland above an extensive and actively slumping area of soft-rock cliff. It is not certain that the fly was necessarily associated with the soft-rock habitats that characterise this site (seepages, pools, sand and mud marsh) but all other British *Campsicnemus* are wetland species so it seems most likely that *C. umbripennis* is one too.

Habitat key words: Wetland.

Status: Falk & Crossley (2005) excluded the species from their review on the grounds that the single record was too recent to infer anything about the fly's status. It is sufficiently

distinct that it would not have been overlooked in later recording at similar nearby sites. Its wide European distribution suggests that it may not be associated with such a narrowly defined habitat.

The species does not qualify as Threatened under Criteria A,B,C,D or E.

Whilst a status of Endangered or higher might seem appropriate as the single site is very actively slumping soft-rock cliff which is an uncommon habitat in England, the lack of any more records must maintain the species as Data Deficient.

Threats: The site is an SSSI under the management of The National Trust. It is very actively slumping and, while most of the site has arable land above it, there is housing at either end, so there may be pressure to de-water the cliff.

Management and conservation: Do not interrupt by drainage the processes that keep the site from slumping.

Published sources: Falk & Crossley (2005), Parent (1938), Perry (1999)

CHRYSOTUS COLLINI

VULNERABLE B2a, 2b ii & iv

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Chrysotus collini Parent, 1923

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: *Chrysotus collini* has been recorded widely in England and Wales from Norfolk to Anglesey southwards, but since 1990 only from Gwent (VC35), Northamptonshire (VC32), Kent (VC15) and East Sussex (VC14). There is a preponderance of coastal records.

Chrysotus collini is known from Spain, France, Germany, Italy, Switzerland and the Caucasus (Maslova & Negrobov, 2011; Naglis, 2015).

Habitat and ecology: *Chrysotus collini* has been recorded mainly from sites whose common feature is dry, often sparsely vegetated ground, although with nearby still water-bodies such as pools and ditches; many sites are on clay. The sites include coastal grazing marshes, upper saltmarsh and adjacent grassy sea walls, and disused clay quarries. Fewer records are from poor fen and dry herb-rich grassland, and one was from a drying lake bed.

Habitat key words: dry grassland

Status: *Chrysotus collini* appears to have undergone a marked decline in occurrence even thought the range is similar to that indicated by older records.

The species does not qualify as Threatened under Criteria A,C, or E.
Whilst the possibility of being overlooked exists, the drop from 20 hectads to a mere 7 in the second period does tend to look somewhat significant and the marked decline in occurrence over the same range might hint at deeper processes at work. The species is too widespread across England and Wales for D2 to be applied, and there is no clear threat at work here. It satisfies B2a as Vulnerable, with 2b ii and iv sub-criteria being met. This is a species to watch to ascertain if there is any loss of location in addition to a perceived reduction in occurrence.

Threats: Coastal defence scheme could impact part of its range. If the juxtaposition of dry, or at least well drained, grassland and small water bodies is necessary then loss of this small-scale mosaic may be detrimental.

Management and conservation: Most sites where it has been recorded since 1990 are SSSI (The Swale, Kent; Llandegfedd Reservoir, Gwent; Dogsthorpe Star Pit, Cambridgeshire).

Published sources: d'Assis-Fonseca (1978), Drake (2002), Stubbs *et al.* (1982)

CHRYSOTUS MELAMPODIUS

ENDANGERED B2, B2a, bii , biv

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Chrysotus melampodius Loew, 1857

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: Records before 1990 show that *C. melampodius* was widely distributed in lowland England (Dorset VC9, Hampshire VC11, Surrey VC17, Cambridgeshire VC29, Herefordshire VC36) and Wales (Glamorgan VC41, Caernarvonshire VC44, Pembrokeshire VC45, Merionethshire VC48), and once from Rannoch (VC88) in Scotland (though this record is unverified). Since 1990 there have been only two records, one from Nunhead Cemetery, Surrey (VC17) (quoted in Falk & Crossley (2005) but with no further information), and from Creigiau Gwbert, Pembrokeshire (VC46) in 2003 (Knight & Howe 2006).

It has been widely but sparsely recorded in Europe (France, Italy, Spain, Poland, Sweden).

Habitat and ecology: There is no useful information on its ecology. Some records may come from wetlands, and one record refers to seepages; the most recent one is from a disused

cemetery. Most other *Chrysotus* are associated with moderately open habitats such as grasslands, marsh and scrubland. It was water-trapped at Creigiau Gwbert, South Ceredigion, between 16 June and 07 July 2003.

Habitat key words: None

Status: The species does not qualify as Threatened under Criteria A, C, D or E

As *Chrysotus melampodius* is known from only three hectads post 1990 compared to 13 earlier hectads, it appears to be showing a strong decline, and certainly far greater than many other small dolichopodids. This species qualifies as Endangered under B2 as it is present in two locations (considered less than 4km^2 AoO), severely fragmented, and is in decline under B2bii and iv. It satisfies Vulnerable D2 under AoO, but there is no plausible threat operating here that can be codified.

Its sparse European distribution suggests either that European dipterists may have the same problems as British entomologists in recognising this species, or that it is genuinely very rare.

Previous status of Lower Risk (Nationally Scarce) (Falk & Crossley, 2005).

Threats: Not known.

Management and conservation: No useful suggestions are possible. Of recent records, only that from Hatfield Moors may be within the SSSI.

Published sources: d'Assis-Fonseca (1978), Falk & Crossley (2005), Knight & Howe (2006)

CHRYSOTUS MONOCHAETUS

CRITICALLY ENDANGERED B2, B2a, bii, biv

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Chrysotus monochaetus Kowarz, 1874

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: *Chrysotus monochaetus* has been recorded from a narrow band of southern English counties (Somerset VC5, 6, Wiltshire VC8, Hampshire VC12, Kent VC16, Berkshire VC22, Buckinghamshire 24), most recently in 1989 and with 1980s records from the centre of this range. It is unlikely to have been misidentified as it has conspicuously different antennae to most in the *Chrysotus* genus.

It has been widely but infrequently recorded in Europe from Spain to Ukraine and further east in Asia.

Habitat and ecology: The only records with specific data is 'garden mixed habitat with open country'. Others are from old broad-leaved woodlands - Grovely Wood (VC8), Abbey Wood (VC16), Pamber Forest HWT reserve (VC12) - possibly with streams or rivers, or from valley fen, but this is speculation based on some locality names. Gelbič & Olejníček (2011) trapped this species rarely (0.12% of the total catch) in a Czech Republic survey between 2002-2004 in a habitat they describe as "a mosaic of different landscape elements, with a wetland of less than 0.1 km^2 with wet meadows, two small permanent pools of about 25 and 300 m^2 (the latter one is actually a chain of several connected smaller pools with alders, birches and oaks on their banks), and several old fruit trees adjacent to the wet meadows."

Habitat key words: None.

Status The species does not qualify as Threatened under Criteria A, C, D or E
This species qualifies as Critically Endangered under B2a though it is present in less than one location (considered less than 4km^2 AoO), and is in decline in both Area of Occupancy and number of locations (B2bii and iv). In view of the absence of records for some 23 years spanning the second time period of this review and with the historically limited southern distribution, a status of Critically Endangered is appropriate. Under D2 it is considerably below the D2 level for Vulnerable though the absence of plausible threat makes full qualification difficult. CR seems to be a better precautionary position.

Threats: Not known but they possibly include woodland clearance for agriculture or intensive forestry.

Management and conservation: If this is, indeed, a woodland species, it is clearly desirable to maintain such habitats in a natural condition, avoiding any practices which are likely to degrade the sites.

Published sources: d'Assis-Fonseca (1978); Shirt (1987), Falk & Crossley (2005) on which this account was partly based.

CHRYSOTUS VERRALLI

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Chrysotus verralli Parent 1923

Identification: Keyed by d'Assis Fonseca (1978).

Distribution: There are very few but scattered records from Cornwall (VC1, 2), Kent (VC16), Essex (VC18), Cambridgeshire (VC29), Cumbria (VC69) and the Isle of Wight (VC10) from where the type specimens were collected by G.H. Verrall and sent by J.E. Collin to Parent who described them as *verralli*.

There are no records from elsewhere in Europe; *C. verralli* would appear to be endemic to Britain, as noted by C.E. Dyte (quoted in Henshaw & White, c. 1997).

Habitat and ecology: No habitat data are available but several southern records are from coastal sites.

Habitat key words:

Status: All records predate 1990, the most recent being 1987 and most considerably older. Although its apparently endemic status is cause for suspicion that the species is genuine, Verrall (1905) noticed that his specimens appeared to be distinctly different from related species and Parent (1923) gave a convincing account of these differences. It is possible that the status of DD will need to be modified to a threat status.

Previous status of Lower Risk (Nationally Scarce) (Falk & Crossley, 2005); not listed in Shirt (1987).

Threats: Not known.

Management and conservation: No useful suggestions are possible.

Published sources: d'Assis-Fonseca (1978), Falk & Crossley (2005), Parent (1923), Verrall (1905).

CYRTURELLA ALBOSETOSA

CRITICALLY ENDANGERED B2, B2a, bii, biv

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Cyrturella albosetosa (Strobl in Czerny & Strobl, 1909)

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: There is only one recent record made in 2007 from Ducan's Marsh, Caxton, Norfolk (VC27) (Drake, 2007b). Previously it was known from only Chippenham Fen NNR, Cambridgeshire (VC29) where it was found in one small area between the years 1935 and 1951 but was assumed to have gone extinct after this time as it was not found in the extensive East Anglian Fen survey work (1988-1990) or in other searches over the intervening decades.

It is rare in its entire range which includes only Portugal, Spain, Hungary and Germany.

Habitat and ecology: It is probably restricted to ground-water-fed fen as this is the feature in common between Chippenham Fen and Ducan's Marsh which is a calcareous valley mire with frequent black-bog rush *Schoenus nigricans* – blunt-flowered rush *Juncus subnodulosus* mire (M13). It has not been found in tall-herb fen in Norfolk and may require the shorter vegetation associated with spring-fed mire.

Habitat key words: peat, calcareous mire.

Status: This is one of the smallest British dolichopodids (less than 1mm in length) so it is probably over-looked and under-collected although fairly obviously distinct under a microscope. There is a real danger that it could go extinct at Ducan's Marsh which is a tiny site consisting of a single field less than 4ha in area. It is the best remaining valley fen in Norfolk, suggesting that there may be few other suitable sites in East Anglia. It may be assumed that it has gone extinct at Chippenham Fen. If it is restricted to short sward M13, then this habitat is very rare and fragmented.

The species does not qualify as Threatened under Criteria A, C, or E

This species qualifies as Critically Endangered under B2 as it is present in one location (B2a) and has declined since it was almost certainly present at Duncan's marsh whilst Chippenham fen was considered the only GB location., The AoO (for B2) is considered to less than 4km^2 (actually 0.04 km^2), and now only present at only one site (B2bii and iv). Under D2 it satisfies Vulnerable in both AoO, the single location and the plausible threat of sward structure changes operating against it.

This status remains unaltered from that given by Falk & Crossley (2005). The species appears to be rare in Europe so the tiny British population has special significance.

Threats: The main threat is likely to arise from any lowering of the water table so that the springs are reduced, and changes to the open mire by either over-grazing or cessation of grazing leading to scrub invasion.

Management and conservation: Ducan's Marsh, Claxton, is a very small SSSI managed by a local conservation trust. It is currently lightly grazed by ponies with the aim of preventing rush *Juncus* from becoming dominant. The water table needs to be kept stable and high so that the springs and seepages continue to flow.

At Chippenham Fen, it is important to maintain a high, stable water level. Vegetation should continue to be managed by regular mowing to keep it open and moderately short. It is unlikely that the ditches are important to this species.

Published sources: d'Assis-Fonseca (1978), Drake (2007b), Falk & Crossley (2005), Shirt (1987)

DIAPHORUS WINTHEMI

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Diaphorus winthemi Meigen, 1824

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: There are only three old southern English records: Freshwater, Isle of Wight (VC10) (1946); Three Bridges (VC13) (1872) and Plashett (VC14) (1868), both in Sussex. All are based on females which are difficult to identify, and indeed Verrall (1904) doubted his own two 19th century Sussex records, so the species may not even be British or is possibly extinct.

Its European distribution is mainly central Europe northwards to Poland.

Habitat and ecology: The Isle of Wight record is from a coastal area; the habitats for the two 19th century records are unknown.

Habitat key words: None.

Status: The status is maintained as Data Deficient (Falk & Crossley 2005) as only new UK records can improve its standing. The next review should take a decision on whether, after 71 years having passed at the time of writing, to declare this species Regionally Extinct if nothing changes.

Threats: Not known.

Management and conservation: Nothing can be suggested as the actual collection sites are unknown.

Published sources: d'Assis-Fonseca (1978), Falk & Crossley (2005), Verrall (1904)

DOLICHOPHORUS KERTESZI

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Dolichophorus kerteszi Lichtwardt, 1902

Identification: Keyed by Parent (1938).

Distribution: *Dolichophorus kerteszi* was first discovered in Britain in July 2004 at the Ouse Washes RSPB Reserve, Cambridgeshire (VC29) (Drake, 2005). A second record came in July 2007 from Terrington St Clement, Norfolk (VC28), which is a few kilometres from the lower reaches of the River Ouse. The sites are relatively close together in the East Anglian Fenland.

It has a wide European distribution from Spain to Russia.

Habitat and ecology: The original record was from a ditch margin in permanent pasture of the River Ouse washland that is frequently flooded in winter. The second records was by a ditch in arable farmland. This habitat suggest that it is likely to be a relatively unspecialised wetland species dependent on water margins.

Habitat key words: Shallow standing water, emergent vegetation.

Status: The limited distribution of *Dolichophorus kerteszi* in East Anglian Fenland suggests that a small range seems quite possible as it has not been found in wetlands of higher quality in East Anglia (e.g. Chippenham Fen, Wicken Fen, Norfolk Broads) and it is conspicuous, so is unlikely to have been overlooked and was not noted in the East Anglian Fen survey (1988-1990). Its apparent habitat – ditch margins – is an abundant resource in Fenland, even if most are within intensively farmed arable countryside. There is a possibility that the species may be a recent man-aided introduction as its sites are close to the small port of Kings Lynn at the mouth of the River Ouse, but it is more likely that there has been inadequate recording in the unpromising arable countryside of Fenland. However, the lack of more records over a longer period of time means that it must sit as Data Deficient.

Threats: Unseasonal or excessive periods of flooding, and drying-up of ditches. In the long term, sea-level rise may obliterate much of Fenland if not defended. Its presence in arable countryside and in the Ouse floodplain, which carries a moderately high nutrient load, militate against high water quality being an issue.

Management and conservation: Ditches need to retain water all year, and their margins should be well vegetated. Ditch clearance should be undertaken when the vegetation has reached about the mid stage in its succession to being choked. The Ouse Washes are an SSSI.

Published sources: Drake (2005)

DOLICHOPUS AGILIS

VULNERABLE B2a, bii, biv

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Dolichopus agilis Meigen, 1824

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: *Dolichopus agilis* has a wide but sparse distribution in England and Wales, reaching north to Yorkshire and with a concentration in East Anglia. Records since 1990 are from Dorset (VC9), Suffolk (VC26), Norfolk (VC28), Gloucestershire (VC34), Cardiganshire (VC46) and South-east Yorkshire (VC61), and these records almost encompass the range those made earlier.

It is found in most central and northern European countries from France eastwards to Russia.

Habitat and ecology: This species is appears to be associated most often dry grassland, dry heath and wetlands, including fens, bogs and grazing marsh, but also from dry woods and possibly coastal dunes. Although the biology is unknown, the larvae probably develop in dry to damp soil.

Habitat key words: dry grassland, wet grassland, fen

Status: *Dolichopus agilis* has been recorded from 18 hectads, and fewer since 1990 than previously. Although its overall range does not shows signs of contraction, there are far fewer recent records for the centre of England and a probably more resilient core population in central East Anglia.

The species does not qualify as Threatened under Criteria A,C, or E.

Dolichopus agilis never seems to have widespread and was only ever found in 11 hectads in the first recording period, so failing to reach that in the second period perhaps raises some concern. It could be just a function of recording on a rare taxon, but could equally point to the subtle changes in habitats making it rarer. The habitat range is wide so perhaps hard to pin down specific threats, though with such a small population base, the impacts would be felt. With a decline to 7 hectads, it satisfies Vulnerable under B2, and sub-criteria Bii and iv are met. The range spread and number of hectads do not meet Vulnerable under D2, nor is a key threat driving it into higher extinction risk classes that obvious.

This species would benefit from some specific searches of its known locations to better understand both its ecology and real distribution.

Threats: The main threats are probably degradation of dry grasslands and heaths by scrubbing-over, and drying-out of fens and bogs.

Management and conservation: Seven of the eight records since 1990 are within or immediately next to SSSIs.

Published sources: d'Assis-Fonseca (1978), Coulson & Butterfield (1979), Emley (1992), Falk & Crossley (2005), Gibbs (1988), Shirt (1987)

DOLICHOPUS ARBUSTORUM

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Dolichopus arbustorum Stannius, 1831

Identification: Keyed by d'Assis Fonseca (1978).

Distribution: *Dolichopus arbustorum* has a historically sparse distributed from the southern English coast (Kent to Dorset) northward to a line from the Humber to the Mersey, but with no records for the East Midlands or East Anglia. There is a single old record for Wales (Glamorganshire). The distribution appears to have contracted southwards since 1990, with frequent populations only in Kent and sparse records westwards to Worcestershire.

In Europe it has a wide distribution from France to central European Russia and northwards to Sweden.

Habitat and ecology: The occupied habitats have little in common, and include wet and dry woodlands possibly with streams, but mainly open habitats such as wet or dry grasslands, including chalk grassland, reedbeds, and tall vegetation at still-water margins. It has been reared from a rotting oak stump.

Habitat key words: woodland, grassland, reedbed, water margin

Status: *Dolichopus arbustorum* underwent a decline in frequency after 1990, being recorded from 30 hectads before this date and 11 afterwards, with a marked absence of recent records from most of central England. However, since the 2012 cut-off date for this review it has been recorded at a further 9 hectads, predominantly in Kent. Accepting the importance of the post-review data moves the species out of the threat category of Near Threatened; it is considered useful to nevertheless retain the species account here as an information resource for this species.

Previous status of Lower Risk (Nationally Scarce) (Falk & Crossley, 2005); Rare (Shirt 1987).

Threats: The threat appears to be woodland clearance in all areas and draining of wet woodlands close to rivers in western and northern areas.

Management and conservation: The principal objectives should be to manage sites as far as possible so as to retain a natural succession of vegetation types and ensure that any wet areas are not allowed to dry-out.

Published sources: d'Assis-Fonseca (1978), Drake (2003), Falk & Crossley (2005), Perry (2007), Roper (2004), Shirt (1987), Skidmore (1985).

DOLICHOPUS ARGYROTARSIS

NEAR THREATENED bii, biv

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Dolichopus argyrotarsis Wahlberg, 1850

Identification: Keyed by d'Assis Fonseca (1978).

Distribution: *Dolichopus argyrotarsis* has a mainly western and northern distribution, with a greater frequency of records for Highland than any other part of Britain. It occurs very sparsely south of central Scotland, just reaching Wales in Gwent, and from Yorkshire to Cornwall. Isolated confirmed records are in East Sussex and Hampshire.

In Europe *Dolichopus argyrotarsis* is widespread from France eastward to central European Russia, and Scandinavia.

Habitat and ecology: *Dolichopus argyrotarsis* is closely associated with exposed riverine sediments or pools within sediments, in both sandy and stony large rivers. It is sometimes found by upland streams. Some sites are shaded. The larvae are probably semi-aquatic predators.

Habitat key words: exposed riverine sediment

Status: The fall in the number of records suggests decline, though this, as ever, needs to be tempered by a consideration of survey effort in the second period. The species fails to satify B2 in not reaching the appropriate hectad threshold, though the decline in records is real making Near Threatened an appropriate status and following the IAWG guideline. Previous status of Lower Risk (Nationally Scarce) (Falk & Crossley, 2005). Not listed in Shirt (1987).

Threats: River engineering and gravel-winning that remove large banks of gravel.

Management and conservation: The principal management objective should be to maintain sites in a natural, undisturbed state, retaining any lush vegetation and marshy areas. Retain some trees or shrubs for shade.

Published sources: d'Assis-Fonseca (1978), Drake (2003), Drake *et al*. (2007), Falk & Crossley (2005), Howe and Howe (2001), Rotheray and Robertson (1993), Shirt (1987).

DOLICHOPUS CALINOTUS

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Dolichopus calinotus Loew, 1871

Identification: Keyed by Grichanov (2006), Parent (1938) and Stackelberg (1930).

Distribution: *Dolichopus calinotus* was discovered in Britain in 2015 and the single Kentish site (VC15) remains its only known locality. As such, this species is post-Review period, but is included for sake of completeness.

In Europe the distribution is mainly from Belgium to Ukraine, north into Sweden, and Spain. It is rare throughout its range.

Habitat and ecology: The Kent site was extensive mid to upper saltmarsh with adjacent stands of common reed *Phragmites* and club rush *Bolboschoenus*. In Belgium and the Netherlands it is found in brackish marsh and close to saltmarsh. Sites further south in Europe are inland and are presumably freshwater.

Habitat key words: saltmarsh

Status: It is unclear whether this species is a recent immigrant or resident at very low population levels. The only obvious potential source of colonists is the near continental population in Belgium and the Netherlands which occupies a small area at the countries' boundary. This tiny source suggests that it is more likely to have been resident.

Not listed in Falk & Crossley (2005) or Shirt (1987).

Threats: Not known.

Management and conservation: No useful suggestions are possible. The single site is within Sandwich Bay to Hacklinge Marshes SSSI.

Published sources: Drake & Pollet (2016)

DOLICHOPUS EXCISUS

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Dolichopus excisus Loew, 1859

Identification: Keyed by Stackelberg in Lindner (1930), Parent (1938), Grichanov (2006).

Distribution: *Dolichopus excisus* was first recorded in Britain in 2005 (Gibbs, 2006) and has been recorded from three sites in Suffolk (VC 25), three sites in Kent (VC15), two sites in East Sussex (VC14) and two sites in Dorset (VC9). All records are close to the coast but not in coastal habitats.

In Europe *Dolichopus excisus* is widespread and known from most countries from Spain to Central European Russia, but absent from northern countries (Denmark, Scandinavia, Lithuania and countries north of it).

Habitat and ecology: *Dolichopus excisus* has been found by freshwater ditches on grazing marshes, reedbeds, reed-dominated ground, fen, beside a pond with wet tussocky grassland and by another pond in rough pasture. The common feature of the sites appears to be still-water margins or damp ground with tall grass or reeds, in open places. Despite the proximity of all records to the coast, no site is brackish or obviously influenced by coastal conditions, other perhaps than mild winter temperature.

Habitat key words: water margin, fen, reedbed, grazing marsh

Status: It is unclear whether *Dolichopus excisus* is a recent immigrant that has spread rapidly or has been present at undetectably low numbers and has undergone a recent increase in abundance. The dates of records from the extremes of its range, Suffolk and Dorset, were made with two years of each other, which does not support the argument for expansion of range from a single point of entry to England, but no old records have come to light, which suggests recent immigration.

Threats: Drying-out of wetlands; damage to water margins, for example by excessive grazing and trampling.

Management and conservation:

Published sources: Clemons (2009), Gibbs (2006), Vincent (2011a).

DOLICHOPUS LATICOLA

ENDANGERED B2a, bii, biv

Broads Long-legged Fly

Order DIPTERA

Family DOLICHOPODIDAE

Dolichopus laticola Verrall, 1904

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: *Dolichopus laticola* has a restricted distribution in Norfolk's Broadland (VC27), where it is widespread, and outlying colonies at Walberswick National Nature Reserve, Suffolk (VC25) and Thompson Common, Norfolk (VC28). The distribution is mapped by Drake (2013).

Outside Britain, *D. laticola* is known only from Belgium and Denmark.

Habitat and ecology: *Dolichopus laticola* is confined to fens of high quality, preferring vegetation characterised by a larger proportion of tall herb vegetation and moderate amounts leaf litter (Drake 2011). Higher densities of flies are found in wetter areas of fen.

Habitat key words: fen

Status: With only 3 or 4 hectads to its name, this species is rare in the UK and strongly associated with a few sites. Having had the benefit of more detailed survey investigation, our understanding of it is higher than with many other dolichopodid species. In location terms, it has 3 locations, with the strongest population seeming to occur in only one of these.

The species does not qualify as Threatened under Criteria A,C, or E.

The fact that it prefers a particular structural regime with a good water table makes it vulnerable to these factors not being abundant or close enough to satisfy its needs. It satisfies D2 Vulnerable having both a clustered distribution for the bulk of its population, and with habitat quality shift as a strong and plausible threat that, with only 3 location centres, could drive it into even higher risk category. It satisfies B2a for Endangered, and whilst it seems static within its restricted range, one can project habitat quality decline (biii) as a threat here as well as projecting a reduction in the number of locations (biv).

Threats: Draining of fens of high quality, cessation of fen management so that it becomes scrub, and inundation by saline or brackish water.

Management and conservation: *Dolichopus laticola* shows a distinct preference for tall fen vegetation that has been cut on a long cycle rather than annually cut, but it does require fen that is not entirely neglected, and avoids places dominated by tall dense reed to the exclusion of tall herb vegetation. Most of its sites are SSSI or fall within the Norfolk Broads National Park.

Published sources: d'Assis-Fonseca (1978), Collin (1952), Drake (2011, 2013), Falk & Crossley (2005), Laurence (1995), Vincent (2011b).

DOLICHOPUS LATIPENNIS

CRITICALLY ENDANGERED B2, B2a, bii, biv

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Dolichopus latipennis Fallén, 1823

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: *Dolichopus latipennis* has been recorded from two areas on the coasts of East Anglia and Dumfriesshire: Aldeburgh (1910, 1919) and Southwold (1908), Suffolk (VC25); River Chet and Reedham, Norfolk (VC27) (1937) (Parmenter 1944); Caerlaverock NNR, Dumfriesshire (VC72) (1970-1980; a later record from 1987, quoted in Falk & Crossley (2005) has not been traced). There is an unlikely record from Goring Heath, Oxfordshire (VC23) (1964) which is probably an error but was mentioned in Falk & Crossley (2005) who obtained it from d'Assis-Fonseca (1978).

It has a predominantly northern European distribution from France through all of the Scandinavian countries and Estonia. The Czech Republic is also included but in addition to being furthest south is the only one which does not border the North or Baltic Seas, which suggests a mis-identification.

Habitat and ecology: This is coastal wetland species that may be restricted to brackish fen or reedbed, brackish coastal grazing marsh or upper saltmarsh, which are features that are found at all sites. Although the biology is unknown, the larvae probably develop in mud or damp soil.

Habitat key words: upper saltmarsh, brackish water.

Status: *Dolichopus latipennis* has only ever been recorded in five hectads (ignoring the Oxfordshire record), most of these before World War Two, and none since 1990. It has a very small area of occupancy and has declined substantially in East Anglia where it has not been recorded for 75 years, strongly suggesting that it may even be extinct here. The Caerlaverock population may still be extant as the fly was recorded here on several occasions in the 1970s.

The species does not qualify as Threatened under Criteria A, C, or E

The status of Critically Endangered is a reflection of the absence of records in the second recording period. This species qualifies as Critically Endangered under B2 as it is present in

less than one location, Caerlaverock (considered less than 4km^2 AoO), and has shown decline in both AoO and location (B2bii and iv). It satisfies D2 Vulnerable under both location and AoO, with the plausible threat being coastal squeeze and sea level rise both observed and projected.

Threats: The main threats relate to coastal squeeze from rising sea levels, coastal defence , agricultural reclamation and development resulting in loss or deterioration of saltmarsh and brackish marshes.

Management and conservation: Maintain a full transition of vegetation types at saltmarshes and on the banks of tidal rivers, ensuring unimpeded tidal patterns. The most recent records are from within the Upper Solway Flats and Marshes SSSI.

Published sources: d'Assis-Fonseca (1978). Falk & Crossley (2005), Parmenter (1944), Shirt (1987)

DOLICHOPUS LINEATOCORNIS

VULNERABLE D2

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Dolichopus lineatocornis Zetterstedt, 1843

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: *Dolichopus lineatocornis* has been recorded from a small cluster of 5 hectads since 1990 in the Fenland of eastern England, and at an outlier North Duffield Carrs, Yorkshire (VC61). The Cambridgeshire sites are highly localised, being a group of gravel pits in Fenstanton (VC31) and the Ouse and Nene Washes at Pymore, Mepal and Eldernell (VC29). It was recorded in two nearly adjacent Kentish woods (Hemstead Forest, VC15, 1972, 1981; Angley Wood VC16, 1966) which suggests that there was another local cluster here. It has not been seen in the New Forest, Hampshire (VC11) since 1953. There is an old 1929 record from the Quantocks in Somerset (VC5).

Its European distribution is boreal, extending eastwards from The Netherlands into Russian and Asia, and no further south than Germany in the parts of its range that are closer to Britain.

Habitat and ecology: *Dolichopus lineatocornis* is a wetland species with recent records from well vegetated water margins of gravel pits and washlands on Tertiary clay or gravel soils in Cambridgeshire, and from fen in Yorkshire. Within the Ouse and Nene Washes, it was found by pools, ponds and ditches, and in swamp dominated by reed sweet-grass *Glyceria maxima*, large *Carex* or reed canary-grass *Phalaris arundinacea*, or in tall-herb fen (with common reed *Phragmites australis*). An old record (1901) from Cambridge was from flood meadow

and pools, which is similar to that for the recent records (Perry, 2007). Old records from two Kentish woodlands and from the New Forest were probably from mire.

Habitat key words: Wetland edge: mud

Status: The small population clusters indicate a species with poor powers of dispersal and make the fly susceptible to local extinction. While there is no overt threat to many of the recent sites (some are SSSIs), they are wetlands that may suffer from drought which is increasingly probable in eastern England. The absence of more recent records from Kent and Hampshire suggests that it exceptionally scarce in these well recorded counties. It is apparently on the far western edge of its range in eastern England, so may not be found much more widely in Britain, and may decline further with climatic warming.

The species does not qualify as Threatened under Criteria A, C, or E

This species qualifies as Vulnerable under D2 as it is present in five locations, with clustered populations and restricted area of occupancy that has declined from 7 to 5 hectads between the two recording periods. A plausible threat is a susceptibility to hydraulic draw-down, and a fast-acting one at that. The issue is always that wetland vegetation has a greater tolerance than small aquatic larvae, and aquatic conditions could become adverse for invertebrates whilst the vegetation survives. Under B2 it is on the edge of Endangered for B2a and B2bii and iv, though the decline is very slight, and continuing reductions in AoO or locations are weak.
Status revised upwards from that in Falk & Crossley (2005).

Threats: Deterioration in the quality of water margins due to drought, leading to excessive drawdown in gravel pits and ditch systems in the washlands. Conversely, prolonged summer flooding of the washlands with warm, highly nutrient-rich water from the rivers, leading to anoxia in submerged land and disappearance of the adult's habitat under water.

Management and conservation: Water margins are probably important to this species, and need to be managed in ditch systems using conventional guidance. Gravel margins should not experience excessive fluctuations in water level. The three sites with records made since 1990 are SSSI (River Derwent, Yorkshire; Ouse Washes, Nene Washes, Cambridgeshire).

Published sources: d'Assis-Fonseca (1978), Falk & Crossley (2005), Perry (2007). Shirt (1987)

DOLICHOPUS MACULIPENNIS

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Dolichopus maculipennis Zetterstedt, 1843

Identification: Keyed by d'Assis Fonseca (1978).

Distribution: The distribution is confined to two small areas of Scotland: the Grampian Mountains around Ben Lawers (VC87, 88) where *D. maculipennis* occupies a number of contiguous hectads, and a well separated smaller colony in the North-west Highlands at Beinn Dearg (VC106). These areas are unusual in Scotland in sharing calcareous schist geology that weathers to provide base-rich soils (MacGowan1987).

The European distribution is boreal, from North European Russia to Germany, including all Scandinavian countries and Denmark.

Habitat and ecology: *Dolichopus maculipennis* is a montane species found in Scotland between 600m and 900m. It has been found at peat pools, wet upland grassland and seepages.

Habitat key words: montane, bogs, seepages

Status: With the exception of a batch of records from the same expedition, all records pre-date 1990, but the low level of recent recording almost certainly reflects the difficult terrain and access. The species may be more widespread in Scottish mountains but is likely to be constrained by the apparent requirement for base-rich soils.

Previous status of Lower Risk (Near Threatened) (Falk & Crossley, 2005); Vulnerable (Shirt 1987).

Threats: Probably recreation on fragile montane habitat.

Management and conservation: Visitor control may be necessary. No major change in land-use, for example, afforestation or winter sports.

Published sources: d'Assis-Fonseca (1978), Edwards (1933), Falk & Crossley (2005), Horsfield (1988), Nelson (1984), Shirt (1987).

DOLICHOPUS MEDIICORNIS

ENDANGERED B2, B2a, bii, biv

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Dolichopus mediicornis Verrall, 1875

Identification: Keyed by d'Assis-Fonseca (1978). Kahanpää (2008) has suggested that *D. mediicornis* may be a specimen of another species demasculinised by parasitic nematodes, but the type specimen has not been checked to assess this.

Distribution: *Dolichopus mediicornis* has been recorded from two hectads since 1990 (Canaston Wood, Narbeth, and Stackpole, both 2010), "close" to an older record (Llandeloy, 1973) in Dyfed (VC45); a relatively recent (1986) record from Dolaucothi (VC44) is moderately close, suggesting that there is a cluster of sites in south-west Wales. A second cluster composed of old records ran from Southampton Water through the New Forest, Hampshire, (VC11) to Studland, Dorset (VC9) but the most recent record from this area was made in 1953. There is an isolated old (1909) record from Dingwall, Highland (VC106).

The species is clearly very rare across its range (France, Germany, Finland, Sweden).

Habitat and ecology: The only habitat data are for the 1986 Dyfed record collected from a small area of wet heath/basin mire at the edge of mature willow and alder carr. The old records from Hampshire and Dorset could have been made from heath or acid mire. Wagner *et al* (2011) see this species as associated with riparian habitats.

Habitat key words: Wetland.

Status: The clumped distribution in the UK may make *Dolichopus mediicornis* more susceptible to local extinction. Its absence from the well recorded New Forest and Dorset heaths suggests that it may already be lost from here; Verrall (1904) described it as occurring in considerable numbers when he found it here in 1871 (from which specimens he first described the species). Given its rarity in Europe, the small population in Wales holds special significance.

The species does not qualify as Threatened under Criteria A, C, or E

This species qualifies as Endangered under B2a as it is present in two locations of less than 200km^2 (B2) and has shown decline from 7 to 2 hectads between the two recording periods, and so qualifying under B2bii and iv, its locations in the New Forest and Dorset seeming to have been lost. Under D2, it satisfies Vulnerable in both AoO and number of locations, though plausible threats that have led to its localised extinctions in England remain unclear.

Status revised upward from that in Falk & Crossley (2005).

Threats: Not known.

Management and conservation: The lack of clarity about its habitat makes it difficult to suggest threats or management.

Published sources: d'Assis-Fonseca (1978), Falk & Crossley (2005), Howe (2002), Shirt (1987), Verrall (1904)

DOLICHOPUS MIGRANS

VULNERABLE B2a, bii, biv

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Dolichopus migrans Zetterstedt, 1843

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: *Dolichopus migrans* has one stable population forming a discrete cluster in the Breckland of Suffolk and Norfolk (VC26, 28) where it is frequent, and two isolated sites, at Risby Warren, Lincolnshire (VC54), and Barmby Moor, Yorkshire (VC61) where the colonies appear stable. Old records from elsewhere in southern England confirmation although one from Tubney, Oxfordshire VC23 (1925), is likely to have come from the fly's preferred habitat.

In Europe, *Dolichopus migrans* is widespread and found in most countries from France eastwards to Russia, and in all Scandinavian countries.

Habitat and ecology: *Dolichopus migrans* is a species of dry sandy grassland and sandy heath.

Habitat key words: dry grassland, dry heath

Status: The species does not qualify as Threatened under Criteria A, C, or E

Dolichopus migrans only started off with 12 hectads across the whole of Great Britain, this not being matched by the 7 hectads of the second recording period. Whilst there are 7 hectads, in location terms this resolves into 3 outlier locations (with Cranwich Heath being particularly isolated) and a slightly more southerly Breckland population centre. This latter hectad cluster is tight and relatively contiguous, and can be viewed as having 3 population centres over which a threat might operate. Given that breakdown of land management might operate either across or between a number of sites, the threat of the decline in condition of earlier successional Breckland swards suggests 3 locations here, giving 6 in all. This satisfies B2 Vulnerable, with B2a ii & iv met by the decline in AoO and number of locations between the 2 recording periods. Though having a relatively restricted population structure, D2 is neither met in terms of the number of locations, or in there being plausible threat that would lose it at least 2 locations over the short period demanded.

Threats: Loss of sparsely vegetated dry grasslands, for example, through agricultural improvement such as fertilizing herb-rich grassland, or cessation of grazing that will allow bracken and scrub to encroach, and forestry.

Management and conservation: Maintain open, short grassland by grazing, particularly by rabbits and sheep. Most of the current sites are SSSI.

Published sources: d'Assis-Fonseca (1978), Crossley (1999).

DOLICHOPUS NIGRIPES

VULNERABLE D2

Bure Long-legged Fly

Order DIPTERA

Family DOLICHOPODIDAE

Dolichopus nigripes Fallén, 1823

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: *Dolichopus nigripes* is currently confined to the Broadland fens in Norfolk (VC27). It is probably extinct in Dorset (VC9) where the species was first recognised as British from a single occurrence at Glanvilles Wootton in 1839 (Verrall, 1904). Within Broadland it occupies an inexplicably restricted range, mainly in fens in the Bure Valley where it has a locally strong population at Woodbastwick Fen, and with isolated occurrences within Reedham Fen in the Ant valley in 2011 (Drake 2013).

Its European distribution extends from Austria to Scandinavia and Russia, making Britain the most western outpost and in an uncharacteristically Atlantic biogeographic area.

Habitat and ecology: *Dolichopus nigripes* is found in fens of high quality, especially in shorter vegetation such as fen-meadow and mown grass paths rather than tall-herb fen, reedbed or sedge beds. It is found within the fen itself and is not associated with riparian margins of ditches and ponds although saturated peat is probably essential.

Habitat key words: fen, reedbeds and reed litter.

Status: Although the Broadland population is strong and is entirely within the Norfolk Broad National Park, and mostly within the Bure Marshes NNR and other SSSIs, it is very restricted compared to the occurrence of fen habitat of similar quality elsewhere in Broadland. This potentially makes it vulnerable to the issues that cause deterioration of fens. These include nutrient enrichment, leading to the loss of floristic diversity and encroachment of dense reed, and excessive drought to which the east of England is becoming increasingly prone. This is a Species "of principal importance for the purpose of conserving biodiversity" covered under section 41 (England) of the NERC Act (2006).

The species does not qualify as Threatened under Criteria A, C, or E

This species qualifies as Vulnerable under D2 as it is present in two hectads (considered two locations, centred on the Bure and Ant rivers), with a very restricted range. There seems to

be population persistence, the hectad count of 2 occurring in both recording periods. The vulnerability of the habitat in terms of potential management impacts, leading to quick loss of shorter sward and open ground, as well as drought effects, indicate that Vulnerable better reflects its status. There is a background threat from saline incursion of its habitat, either from gradual sea level rises or point flood events. Panter, Mossman & Dolman (2011) note that "Environment Agency river monitoring data showed that, between 1990 – 2010, chloride concentrations in the upper reaches of the River Bure (Horstead Mill), River Yare (Trowse Mill) and River Ant (Honing Lock) were less than 120 mg/l (except one record of 181 mg/l in August 1998 at Horstead Mill) and relatively stable".

However, the situation locally may differ with spring upwellings "protecting" larval populations from at least the gradual saline impacts. Conversely, there have been several notable tidal surges (November 2007, December 2013 & January 2017) which have the potential to compromise wetlands.

It meets Endangered under B2 AoO, and B2a, bii & iv, although with an indication of population stability at some level, the underlying rationale of the B2b sub-criteria ii & iv is not met as continuing decline is not observed. Whether the projected decline under B2biii (or indeed, in a reduction of locations or AoO) will occur is harder to say as it is dependent on levels of flood defence and maintenance of structures.

Threats: There are few immediate threats although changes in fen management may affect the species unpredictably (since its habitat requirement do not appear to be obvious). The main threat is the long-term and unstoppable sea-level rise that would results initially in incursion of brackish water which would presumably destroy both the species and its habitat.

Management and conservation: Current practices at the Bure Marshes NNR are clearly appropriate. They include regular mowing of the grass paths on which *Dolichopus nigripes* can be readily found, and mowing and light grazing by ponies and cattle that create small areas of fen meadow which appears to be preferred by *Dolichopus nigripes* over taller fen vegetation. Encroachment of willow *Salix cinerea* and bog myrtle *Myrica gale* scrub and expansion of *Cladium mariscus* sedge-beds will be detrimental.

Published sources: d'Assis-Fonseca (1978), Drake (2013), Falk & Crossley (2005), Laurence (1995a), Lott *et al*. (2002), Shirt (1987), Verrall, (1904)

DOLICHOPUS NITIDUS

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Dolichopus nitidus Fallén, 1823

Identification: Keyed by d'Assis Fonseca (1978).

Distribution: *Dolichopus nitidus* is found mainly in western Britain with concentrations of records in Cumbria (VC69, 70) and Wales (VC41, 46, 48, 49 plus Hereford VC36), and isolated and widely spaced near-coastal records from Cornwall to Durham (VC1, 9, 15, 18, 25, 53), and inland at south-west Scotland (VC72, 75) and Highland (VC95, 96).

It is found throughout most of Europe.

Habitat and ecology: It is found on open wetlands including grazing marsh and other wet grasslands including hillside seepages, poor fen and water-side swamp, and wet dune slacks. Open saturated nutrient-poor conditions appear to be the common factor. The larvae are probably semi-aquatic predators.

Habitat key words: marsh, fen, dune slack

Status: Prior to 1990 there were records from 11 hectads, and afterwards for 13 hectads. It does not appear to have undergone a change in overall distribution, and recent records confirm the concentration of record from south Wales to Cumbria. Accepting the importance of the post-review data moves the species out of the threat category of Near Threatened; it is considered useful to nevertheless retain the species account here as an information resource for this species.

Not listed in Falk & Crossley (2005) or Shirt (1987).

Threats: Drainage of wet pasture, marshes and fens, and their nutrient-enrichment.

Management and conservation: Several sites where *D. nitidus* has been recorded since 1990 are SSSI.

Published sources: d'Assis-Fonseca (1978), Falk & Crossley (2005), Kirby (1995), Shirt (1987).

DOLICHOPUS PLUMITARSIS

ENDANGERED B2, B2a, bii, biv

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Dolichopus plumitarsis Fallén, 1823

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: Records that are unambiguously of this species (and not obvious input errors for *Dolichopus plumipes*) are from a small cluster of tiny patches of relict fen meadow spanning the conjunction of the Suffolk / Norfolk / Cambridgeshire borders near Lakenheath. It was first found in this area at Shippea Hill Farm (VC28) (perhaps the same area that is now

a geological SSSI) in 1943 which was presumably the first British record. It was later found at Lakenheath Poors Fen SSSI (V26) (1988) and at Pashford Poors Fen SSSI (VC26) (1988, 1995), making the last record the only one since 1990. These sites lie on the transition from the sandy Breckland and the arable prairie that occupy the once-vast fens of the now-misnamed Fenland. A record from Clowes Wood, Warwickshire (VC38) in 1987 requires confirmation and seems unlikely, given the context, to be correct.

It is found widely in central and northern Europe, well eastward into central Asia and the Nearctic.

Habitat and ecology: The first record from Lakenheath Poors Fen was from a damp meadow and the second from beside a stream outside the reserve. The Pashford Fen record was from beside a small spring-fed stream. It seems probable that *Dolichopus plumitarsis* is associated with fen meadow, and perhaps more specifically with running water in this habitat, rather than with ditches. Shippea Hill Farm in 1943 may have been a different habitat from the current intensively farmed arable landscape. The species' very wide international distribution suggests that does not have stringent requirements.

Habitat key words: Fen meadow, running water (possibly).

Status: With only two recent records, this must be considered as one of our rarest and most threatened dolichopodids. It has not been reported elsewhere in spite of considerable recording activity in East Anglia in recent years. The small Area of Occupancy, the few individuals found and few records in total satisfy Endangered status for this species. The tiny British population is, however, of low consequence internationally.

The species does not qualify as Threatened under Criteria A, C, or E

This species qualifies as Endangered under B2a as it is present in two locations and, under B2, its AoO is less than 200km^2. It also shows some decline (B2bii and iv) and certainly no increase, dropping from 3 to 2 locations between recording periods. It matches D2 Vulnerable under both AoO and number of location, and a plausible threat is projected in vegetational changes leading to more enclosed conditions not so typical of well managed fen meadow. In precautionary terms, the high threat level is selected.

Status remains unchanged from that in Falk & Crossley (2005).

Threats: The species appears to be confined to tiny fragments of habitat set within the extensive arable Fenland, lying on the transition from sand to peat. This once extensive habitat is now very scarce as it has been agriculturally improved with consequent nutrient enrichment and drainage that will adversely impact on the tiny fragments of remaining grassland and fen. Pashford and Lakenheath Poors fens are managed by the Suffolk Wildlife Trust. In 2013 these SSSI were considered to be in unfavourable condition.

Management and conservation: Attempt to keep a high water table. As the habitats requirements of *Dolichopus plumitarsis* are unknown, no further advice can be given. Current light grazing by cattle is probably appropriate in maintaining an open vegetation that would have characterised these sites in the past.

Published sources: d'Assis-Fonseca (1978), Falk & Crossley (2005), Laurence (1995a), Perry (1996), Shirt (1987)

HERCOSTOMUS ROTHI

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Hercostomus rothi (Zetterstedt, 1859)

Identification: Keyed by Stackelberg in Lindner (1934) as *praeceps* (Loew, 1869), Parent (1938) as *praeceps*, Grichanov (2006).

Distribution: *Hercostomus rothi* has a concentration of records in Fenland and nearby areas (VC 26, 28, 29, 31) where it is recorded mainly from several fens, and two nearby sites in Somerset (VC5).

In Europe *Hercostomus rothi* is recorded from France to Poland and Sweden.

Habitat and ecology: *Hercostomus rothi* has been recorded mainly from fens where it has been found by water margins, reedbeds, *Salix* scrub and a spring-fed stream, and beside a fast lowland river in arable. One record was from an urban garden and another from a potato field in peatland. It may have a slight preference for some shade, or at least tall herbaceous vegetation. Continental records suggest an association with arable land but this is only partly true of British records.

Habitat key words: water margin, fen, reedbed

Status: *Hercostomus rothi* was first recognised in Britain in 2005 (Drake *et al*., 2013) although earlier records and their clustering in Fenland suggest that the species may have been present for some time. Its more recent occurrence in Somerset bears this out. It had been confusion with the uncommon species *H. fulvicaudis* (Walker, 1851) and some eastern records of that species may refer to *H. rothi*; indeed, all checked specimens of *H. fulvicaudis* from East Anglia were found to be *H. rothi*. It seems probable that *H. rothi* has an eastern and southern distribution, contrasting with the western distribution of *H. fulvicaudis*. It had been recorded in 6 post-1990 hectads by 2012 and two more since then.

Threats: Draining of fens and smaller water bodies within fenlands.

Management and conservation: No clear guidance is offered as the fly occurs in some moderately intensively farmed sites as well as semi-natural wetlands that are SSSI.

Published sources: Drake *et al*. (2013)

HERCOSTOMUS SAHLBERGI

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Hercostomus sahlbergi (Zetterstedt, [1838])

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: There is a single record from Grantown-on-Spey, Highland (VC95) in 1938.

The distribution in Europe is boreal, extending eastwards from Switzerland to Scandinavia and central Russian.

Habitat and ecology: This was not noted for the Scotland record, but was probably peat bog (as stated by Parent (1938) for its occurrence in France). Nothing is known of the biology of this species. Jonassen *et al* (2013) deployed malaise traps in Finnmark, northern Norway and took this species a number of times in habitats they describe as "Fast running stream with stony bed, in forested area with pine (*Pinus sylvestris*), birch (*Betula pubescens*), willow (*Salix* spp.) and alder (*Alnus incana*)", and " river, with stony bed and bank zone with stones, gravel and sand and patches of vegetation dominated by grass, sedges and willow."

Status: The species does not qualify as Threatened under Criteria A, C, or E
In spite of much recording activity over the years in the general area of the original discovery, there have been no further records of this species. The remaining small bog on the south-west bank of the River Spey at Spey Bridge should be investigated as a possible location for this species. The loss of valley peat bogs throughout the Spey Valley gives serious concern over the future for this species and for others associated with this declining habitat. The very small known range and lack of recent records despite searches, might indicate Critically Endangered status. However, the status can only change in the light of more records, despite the previous ascription in Falk & Crossley (2005). Future reviews need to consider whether, after 79 years with no records, an "extinct" status is more appropriate.

Threats: These are unknown although there have been considerable changes in agricultural practices in this part of the Spey Valley in recent decades. These changes have considerably reduced the extent of wetland habitats in the floor of the valley, particularly small valley peat bogs.

Management and conservation: In the absence of precise habitat information for Scotland it is not possible to offer any suggestions regarding management, other than retaining valley peat bogs with high, stable water tables and preventing encroachment of shrubs and trees.

Published sources: d'Assis-Fonseca (1978); Parent (1938); Falk & Crossley 2005 – this is their account

HERCOSTOMUS VERBEKEI

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Hercostomus verbekei Pollet, 1993

Identification: The species has not been included in any key. Pollet 1993 describes differences from the related *H. plagiatus* (Loew). *H. plagiatus* and *verbekei* sit within the same species group in a phylogenetic relationships based on Bayesian analysis of the COI mitochondrial DNA dataset (Pollet *et al*, 2010).

Distribution: This species remains known from only one site in Suffolk (VC26) where it was found in 1987.

In Europe *Hercostomus verbekei* has been recorded from Spain, France, Italy, Belgium and the Netherlands.

Habitat and ecology: The single British record was from the sandy bank of the River Lark. In Belgium it is found 'reedmarshes' on clay (probably equivalent to British reedbeds and tall fen).

Habitat key words: reedbed, fen, river-bank

Status: *Hercostomus verbekei* closely resembles *H. plagiatus* and is likely to have been overlooked as it was described relatively recently. The single record is included in Pollet (1993) and was presumably identified by him, so will be correct. The absence of *H. verbekei* among many *H. plagiatus* checked in recent years indicates that *H. verbekei* is clearly a rare species.

Falk & Crossley (2005) excluded this species but suggested that it may warrant at least the same status as *H. plagiatus* which they gave the status Lower Risk (Nationally Scarce). Not listed in Shirt (1987).

Threats: Presumably drainage of wetlands.

Management and conservation: No useful suggestions are possible.

Published sources: Hodge (1996), Pollet (1993).

HYDROPHORUS ALBICEPS

NEAR THREATENED B2

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Hydrophorus albiceps Frey, 1915

Identification: Keyed by d'Assis Fonseca (1978).

Distribution: *Hydrophorus albiceps* has been frequently recorded in upland Scotland north of the Firth of Forth, and in upland areas in a band from Cumbria to Yorkshire, in central Wales and with isolated occurrences in Devon and Dorset.

In Europe *Hydrophorus albiceps* is found from the Alps northwards to Belgium and Denmark, Scandinavia and North European Russia.

Habitat and ecology: Adults are often found on the water of pools and loch in bogs, blanket mire and other acidic habitats, and in the sedge-dominated fringes of lochs and ponds. Most records are from upland areas but it also occurs at low altitudes on bogs, for example in the Dorset heaths and Thorne Moors in Yorkshire. The larvae are probably semi-aquatic predators.

Habitat key words: bog, pools

Status: There has been a reduction from 32 to 11 hectads occupied after 1990. Part of this may be due to relatively low recording effort in upland Scotland away from Speyside, although there appears to be a slight retraction in all parts of its range, and it has not been recorded in any new areas apart from Dartmoor in Devon. The observed decline satisfies B2, but it fails to satisfy B2a, and so leads to Near Threatened being met.

Not listed in Falk & Crossley (2005) or Shirt (1987).

Threats: Draining bogs and heavy grazing of water margins.

Management and conservation: No major change in land-use, for example, afforestation or winter sports in upland areas.

Published sources: d'Assis-Fonseca (1978), Crossley (2003, 2007), Falk & Crossley (2005), Sheppard (1987), Shirt (1987), Skidmore (1970), Skidmore *et al*. (1985), Whiteley *et al.* (1994), Yerbury (1912-13).

LAMPROCHROMUS KOWARZI

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Lamprochromus kowarzi Negrobov & Chalaja 1988 (Chalaja sometimes translated as Tshalaja)

Identification: Keyed by Drake (2018), Grichanov & Ahmadi (2017).

Distribution: *Lamprochromus kowarzi* is recorded sparsely on the coast of south England from Devon to Hampshire (VC3, 9, 11), Suffolk (VC25) and Glamorgan (VC41).

Elsewhere, *Lamprochromus kowarzi* has been recorded from Azerbaijan, Israel, Russia (Chechnya) and Slovakia.

Habitat and ecology: *Lamprochromus kowarzi* has been found at coastal marshes, and the preferred habitat is brackish marsh with water margins of pools, ditches or remnant saltmarsh channels now subsumed within grazed marsh, at the transition of upper saltmarsh to non-saline pasture. Some sites are grazed by cattle, but at least one is reedbed. Most of the sites are next to estuarine saltmarsh but the fly appears to be on brackish marsh rather than on true upper saltmarsh. Some records from mainland Europe appear to be well removed from the sea.

Habitat key words: brackish marsh

Status: *Lamprochromus kowarzi* was recognised in Britain in 2016 and had been confused with *L. semiflavus* (=*strobli*). It appears to be the more frequent of the two species although both are scarcely known. The published record of *L. strobli* by Perry (2016) is *L. kowarzi*. Nearly all records are recent but the earliest specimen was collected by Verrall in 1908. This underlying uncertainty indicates Data Deficient.

Not listed in Falk & Crossley (2005) or Shirt (1987). This species is post review, but is added for the sake of completeness.

Threats: The preferred habitat will eliminated by drainage of brackish marshes at the tidal limit and building or restoration of sea walls. Cessation of light grazing may lead to the scrubbing-over of open water margins and saturated low vegetation.

Management and conservation: Retain moderately open marsh by light grazing and continued occasional tidal or storm-surge inundation.

Published sources: Drake (2018), Perry (2016).

LAMPROCHROMUS SEMIFLAVUS

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Lamprochromus semiflavus (Strobl, 1880)
= *Lamprochromus strobli* Parent, 1925

Identification: Keyed by d'Assis Fonseca (1978) as *L. strobli*, Drake (2018), Grichanov & Ahmadi (2017). All keys before 2017 are unsatisfactory, particularly for females.

Distribution: *Lamprochromus semiflavus* is recorded from scattered sites in lowland England in Devon (VC3), Sussex (VC14), Oxfordshire (VC23) and Cambridgeshire (VC29). Some records (Dorset, Suffolk, Oxfordshire) previously attributed to this species are *L. kowarzi*.

In Europe *Lamprochromus semiflavus* is distributed from France to Ukraine, North-west European Russia, Finland, Bulgaria and Turkey.

Habitat and ecology: It has been found at freshwater reedbeds, a calcareous spring, wet grassland and washland with ditches. In Belgium it is associated with reedbeds, and in Bulgaria and Russia with river margins.

Habitat key words: reedbed, wet grassland

Status: *Lamprochromus semiflavus* had been confused with *L. kowarzi* Negrobov & Chalaja at some sites, and appears to be the less frequent of the two species, although both are scarcely known. The published record by Perry (2016) is *L. kowarzi*. This underlying uncertainty indicates Data Deficient.

Previous status (as *strobli*) of Data Deficient (Falk & Crossley, 2005). Not listed in Shirt (1987).

Threats: Drainage and degradation of fens and reedbeds.

Management and conservation: Maintain fens through light grazing or cutting so that some open saturated areas are retained.

Published sources: d'Assis-Fonseca (1978), Drake (2018), Falk & Crossley (2005), Hodge (1992), Perry (2016).

MICROMORPHUS ALBIPES

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Micromorphus albipes (Zetterstedt, 1843)

Identification: Keyed by d'Assis Fonseca (1978). This taxon is known to consist of at least three species in Britain and may include undescribed species.

Distribution: The taxon *Micromorphus* '*albipes*' is widespread in England and southern Wales, but relatively scarce in Scotland, with more records on the west coast. It is not possible to distinguish which species these records refer to as two of the component taxa are fairly widespread and occasionally frequent, although one appears to be coastal. Which form refers to Zetterstedt's *albipes* has not been established.

Micromorphus albipes has been recorded from most European countries from Spain to Central European Russia, but only from Sweden in Scandinavia. The three other described European species are clearly all rare (*claripennis* (Strobl), *minusculus* Negrobov, *shamshevi* Negrobov).

Habitat and ecology: This taxon occurs in many types of wetland. Coastal habitats, which may refer to one of the more frequent component species, include wet dune slacks, dune grassland and marram, rocky sea shores, streams and seepages on soft-rock cliffs, saltmarsh and brackish marsh. Freshwater habitats include damp grasslands, grazing marsh and water meadows with ditches, seepages in pasture, swamp, fen, and vegetated pond and river margins. There are infrequent records from dry grassland and even woodland. The lack of specificity is presumably the result of the muddle over the three or more taxa, of which two are widespread and frequent.

Habitat key words: wetland

Status: It is accepted that two of the component species are too frequent to deserve a rarity status but, given the uncertainty in the species involved and their very small size, it seemed sensible to give the status of Data Deficient to alert recorders to the possibility of at least one of the species being uncommon.

Previous status of Notable (Falk 1991) but excluded by Falk & Crossley (2005); not listed in Shirt (1987).

Threats: None clearly identified.

Management and conservation: No suggestions are possible.

Published sources: Allen (1991), d'Assis-Fonseca (1978), Falk (1991), Falk & Crossley (2005), Friday & Harley (2000), Shirt (1987), Skidmore (2006, 2008), Yerbury (1912-13).

MICROPHOR STROBLI

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Microphor strobli Chvála, 1986

Identification: Described and keyed by Chvála (1986). The genus was previously included in the Hybotidae and then in its own family, the Microphoridae. It has since been moved with subfamily status to the Dolichopodidae (Sinclair & Cumming, 2006).

Distribution: *Microphor strobli* was first recognised in Britain in 2005 (Plant & Cole, 2005), and has since been recorded from vice-counties 62 to 66 (Yorkshire, Durham) in north-east England.

Microphor strobli is known from the cluster of central European countries from Switzerland to Slovakia, and central European Russia.

Habitat and ecology: Several records are from exposed riverine sediments of the large rivers Swale and Wharfe, and river banks of the Ure. At another site, adults were on reed *Phragmites* and swept from post-industrial flower-rich coastal grassland, scrub and scrubby woodland. A final site was calcareous fen.

Habitat key words: river margin, fen

Status: *Microphor* is a genus of small black undistinguished species more resembling empids than dolichopodids so are probably overlooked, and are difficult to identify. The few records are the result of just three recorders, but there are sufficient in a small part of England to suggest that it cannot be particularly rare. There remain insufficient data to make a more informed decision, so *M. strobli* remains Data Deficient, although it has been moved beyond NR under criteria 6 & 8.

Not listed in Falk & Crossley (2005) or Shirt (1987).

Threats: Possibly degradation of exposed riverine sediments by gravel-winning or river-flow regulation.

Management and conservation: Retain natural hydrofluvial processes.

Published sources: Plant & Cole (2005)

MUSCIDIDEICUS PRAETEXTATUS

VULNERABLE B2a, bii, biv

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Muscidideicus praetextatus (Haliday, 1855)

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: *Muscidideicus praetextatus* has been recorded since 1990 from a restricted range of saltmarshes on the south and east English coast, Wales and west Scotland. It has been found repeatedly at a few saltmarshes, including Dawlish Warren, Devon (VC3), and those on the north Norfolk coast (VC 27, 28), but not at many other well worked sites.

Muscidideicus praetextatus is found in Ireland and in countries bordering the Atlantic and North Sea from Portugal to Germany and Denmark. It is 'Threatened with extinction' in Belgium.

Habitat and ecology: *Muscidideicus praetextatus* is an obligate saltmarsh inhabitant but may occur on nearby dunes or estuarine mud.

Habitat key words: saltmarsh

Status: The species does not qualify as Threatened under Criteria A, C, or E.
With only 12 hectads in the first recording period for a saltmarsh species (and only 8 in the second period), this is clearly a restricted species. It has population persistence at several of its locations, and these locations themselves are widely spaced, but it seemingly does not turn up at saltmarsh systems between these points. Compared to many other saltmarsh dolichopodids, it is distinctly scarce. With such a spread and number of hectads, D2 cannot be met here. Whilst the decline in hectads is slight, the species just edges into Vulnerable under B2a, b2ii & iv.

It is likely that most of its sites are IUCN-defined locations, as the threats are more likely to be site specific rather than acting generically across a wider geographic range. There is a possibility that the North Norfolk coastal cluster *might* be regarded as 1 location or possibly 2, though this would move the species closer towards or, indeed, into Endangered. More targeted survey might demonstrate that it remains as Vulnerable and is advocated before the next review period.

Threats: Loss of saltmarsh due to rising sea-levels, sea-defence works that truncate the upper saltmarsh transition, over-grazing by sheep, recreational pressures and developments. Its sparse distribution suggests a poor ability to disperse or particularly fastidious requirements.

Management and conservation: Allow natural tidal processes and control grazing intensity.

Published sources: d'Assis-Fonseca (1978), Whiteley (1994).

NEURIGONA ABDOMINALIS

ENDANGERED B2, B2a, bii, biv

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Neurigona abdominalis (Fallén, 1823)

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: *Neurigona abdominalis* had been recorded only at four places in a small area of eastern England: Colchester, Essex VC19 (1989-1994) (Bowden, 1998); Letchworth, Hertfordshire VC20 (1940); Norwich, Norfolk VC27 (1992 and 1993) (Laurence 1993, 1995b); Kirtling, Cambridgeshire VC29 (1926). At Colchester it was recorded at two suburban sites within 500m of each other and for a period of several years, suggesting that the population was once stable there. However, Andy Godfrey (Godfrey & Hill, 2016) recorded a female from malaise trap set within the shelterbelt southeast of Tile Lodge Farm at Westbere, Kent in 2014.

A 1963 record from Hampshire on the NBN needs verifying as it has not been cited elsewhere.

The European distribution of *Neurigona abdominalis* is mainly northern, from Germany and the Czech Republic to all Scandinavian countries and northern Russia. It may be on the climatic edge of its range in eastern England. It is recorded as Near Threatened in Sweden.

Habitat and ecology: *Neurigona abdominalis* appears to be a species of woodland edge or light woodland. Bowden (1998) found that it was particularly associated in his garden where he observed the fly for several years, with a cultivated border with shade-tolerant shrubs and herbs in the shade of a yew hedge and fence, along with *N. quadrifasciata* and *Sciapus platypterus* which are typically woodland species. The small woodland nearby where it was also frequently seen was described as 'scrub woodland', dominated by hawthorn *Crataegus* with some oak *Quercus robur* and isolated ash *Fraxinus* and silver birch *Betula alba*. Bowden also describes a requirement of the adults for 'exudates and secretions' found on plants, such as aphid honey dew and other deposits (presumably pollen). All four records are from gardens (a house in one case) but this must be a consequence of gardens providing the right lightly wooded habitat that it may require.

Habitat key words: Scrub edge, arboreal canopy.

Status: The species does not qualify as Threatened under Criteria A, C, or E.

There has been decline from 4 to 2 hectads between recording periods over a small range and sparseness of records indicate a particularly scarce and restricted species but all the records come from gardens or suburban sites, which is not a scarce habitat though is heavily managed. With two locations, restricted area of occupancy, and 50% decline in records, it qualifies as Vulnerable under D2. If the restriction to conditions more commonly found in urban gardens than much of the wider countryside is, indeed, real then garden management ("gardening") or site development is a very plausible threat. It satisfies B2 Endangered for AoO, and B2a ii & iv in terms of locations and AoO, showing a decline between the recording periods. If it is climatically challenged and confined to the extreme south-eastern parts of the UK, and is dependent on the vagaries of delivering the correct habitat structure, the choice of Endangered over Vulnerable is more precautionary.

The 2014 Kent record, although outside of the review period, does not actually alter the status that much, asides from confirming an extreme eastern distribution in the UK, and in giving comfort that it continues to be a UK species. The shelterbelt provides an additional habitat type. One should be mindful of the restricted access and sizes of gardens in many urban situations, and the reluctance to record in such areas even when the opportunity presents itself. There is thus little incentive to improve our understanding of this species in the UK. Its status does imply a struggling species, perhaps because Britain's climate is too oceanic.

Threats: None obvious.

Management and conservation: None can be suggested.

Published sources: d'Assis-Fonseca (1978), Bowden (1998), Falk & Crossley (2005), Godfrey & Hill, 2016, Laurence (1993, 1995b), Shirt (1987)

NEURIGONA BIFLEXA

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Neurigona biflexa Strobl in Czerny & Strobl, 1909

Identification: Keyed by Parent (1938), Negrobov & Fursov (1988) and, more recently, Drake & Hunnisett (2014).

Distribution: *Neurigona biflexa* has been recorded from only one site at Newborough Warren NNR, Anglesey (VC52) in 1987 (Cole 1991).

The species is poorly recorded in Europe: Portugal, Spain, France, Poland. If the Polish records are questioned, the western distribution suggests an Atlantic or Lusitanian distribution which would fit with the occurrence on dunes in Anglesey.

Habitat and ecology: The habitat needs are unknown; the one specimen was found in scrub in the centre of a coastal dune system. Adults of the genus are often found in close proximity to trees, males of some species having been recorded flying a zigzag course up the trunks (d'Assis-Fonseca 1978).

Habitat key words: None.

Status: The species does not qualify as Threatened under Criteria A,B,C,D or E.

It may be under-recorded as it is very similar to *N. quadrifasciata*, and therefore a status of Vulnerable rather than Endangered might seem appropriate. However, the status is maintained as Data Deficient (Falk & Crossley, 2005) as only new UK records can improve its standing.

Threats: Not known.

Management and conservation: At this stage no meaningful suggestions can be made. The only record is from a National Nature Reserve.

Published sources: d'Assis-Fonseca (1978), Cole (1991), Falk (1991), Falk & Crossley (2005), Howe (2002), Negrobov & Fursov (1988), Shirt (1987), Drake & Hunnisett (2014).

NEURIGONA ERICHSONI

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Neurigona erichsoni (Zetterstedt, 1843)

Identification: Keyed by Drake & Hunnisett (2014), Grichanov (2006), Parent (1938).

Distribution: It has been recorded in Dorset (VC9), Surrey (VC17) and Kent (VC15) but, as it was discovered recently, it is likely to have been overlooked. There is a possible pre-1850 specimen that has not been traced. Though post review, it is included for the sake of completeness.

In Europe it is widespread from France to Central European Russia, including western Scandinavian countries, but not found in southern Europe.

Habitat and ecology: British records are from deciduous woodland, including hazel coppice and ancient woodland.

Habitat key words: deciduous woodland

Status: With only three recent records widely spaced in southern England, it seems likely that the species will be found to be more widespread, although it is certain to remain uncommon. Two of the three records were made using Malaise traps so perhaps sweep-netting is an ineffective method of recording the species.

Not listed in Falk & Crossley (2005) or Shirt (1987).

Threats: Destruction of broad-leaved woodland.

Management and conservation: No suggestions can be made as it is unclear what type of deciduous woodland the fly requires.

Published sources: Drake & Hunnisett (2014)

ORTOCHILE NIGROCOERULEA

CRITICALLY ENDANGERED C1, C2a i; D

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Ortochile nigrocoerulea Latreille, 1809

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: *Ortochile nigrocoerulea* was previously found widely in southern England, particularly in the south-east. The only recent "record" from Warmwell Heath, Dorset, in 1998 has been confirmed as an error for *Hercostomus nigripennis*. The record before that seems to be from 1939, where 31 individuals were found at Abbey Wood in Kent (as reported in Falk & Crossley, 2005). *Ortochile nigrocoerulea* is a moderately obvious species to identify so is unlikely to have been overlooked.
http://dolicho.narod.ru/PhotoOrtochilenigrocoerulea.html

The species has a Mediterranean distribution and has been recorded in only a few mid or northern European countries (Austria, Hungary, Poland, Sweden). It is likely to be at its northern climatic limit in southern England.

Habitat and ecology: Several were seen in a Cambridge garden in 1903 (Perry, 2007). The adults are noted across their range as one of the more frequent flower visitors among the Dolichopodidae. Drake (1999b) cites Andrewes (1939) as noting *Ortochile nigrocoerulea* as being on ox-eye daisy *Leucanthemum vulgare*.

Habitat key words: None.

Status: The species does not qualify as Threatened under Criteria A or E .

With no recent records compared to 20 occupied hectads before 1990, *Ortochile nigrocoerulea* shows the greatest decline of any once-widespread dolichopodid, and qualifies for Critically Endangered on account of this. The decline under C1and C2a i has been extensive, and down from the 31 individuals last noted to, effectively, zero, with Criterion D being met for Critically Endangered in light of the perceived current population level. The last record was 76 years ago from the date of this review. For Criterion B it falls out of the category of Critically Endangered since it has no current locations, though clearly has declined, and satisfies B2.

This species is best described as Critically Endangered.

Status revised upward from Vulnerable in Falk & Crossley (2005).

Threats: Not known.

Management and conservation: None can be suggested.

Published sources: d'Assis-Fonseca (1978), Falk & Crossley (2005), Howe *et al*. (2001), National Museum of Wales (2004), Perry 2007, Shirt (1987)

POECILOBOTHRUS DUCALIS

VULNERABLE B2a, bii, biv

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Poecilobothrus ducalis (Loew, 1857)

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: *Poecilobothrus ducalis* is a coastal species found on the English coast from Suffolk to Hampshire, but with post-1990 records only from Suffolk (VC25), Essex (VC18) and north Kent (VC15, 16). A small population occurs around the Parrett estuary the Somerset coast (VC5, 6). An old (1908) record for Bute in Scotland on what appears to be a rocky shore seems improbable.

The European distribution extends from Portugal to Russia, south to Sicily and north to Sweden. Some countries in central Europe do not border the sea.

Habitat and ecology: In Britain *Poecilobothrus ducalis* is confined to upper saltmarsh and brackish marsh.

Habitat key words: saltmarsh, brackish marsh

Status: Were it not for the Somerset population cluster, this species might be viewed as a classic east coast saltmarsh species. This distribution clearly breaks up the threat scenarios, although the eastern coastal sites are dispersed enough to be considered themselves as locations, even under small sea level rise impacts. The decline in records (from a position that, at best, was Near Threatened) pushes into Vulnerable under B2a, b2 ii & iv, though projected impacts on upper saltmarsh from increased storm wave action could well meet b2iii. It is too widespread and with too high a hectad count to meet D2 Vulnerable.

The species does not qualify as Threatened under Criteria A, C or E.

Threats: It may be susceptible to erosion of its saltmarsh habitat. Coastal defence structures may confine its habitat availability if not well designed.

Management and conservation: Allow natural tidal processes and control grazing intensity.

Published sources: d'Assis-Fonseca (1978), Cole (2005), Godfrey (2005), McLean (1984), Shirt (1987), Stubbs, McLean & Sheppard (1982).

RHAPHIUM FASCIPES

VULNERABLE B2a, bii, biv

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Rhaphium fascipes (Meigen, 1824)

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: *Rhaphium fascipes* has a markedly disjunct distribution, with most records from the southern counties of England and south Wales, and a few late 19th – early 20th century records from Highland. Post-1990 records are from Gower (VC41), Devon (VC4), Somerset (VC5), Dorset (VC9), Hampshire (VC11), Kent (VC16) and Surrey (VC17).

In Europe, *Rhaphium fascipes* has been recorded in nearly all countries from Spain to Russia, all in Scandinavia and south to Greece.

Habitat and ecology: *Rhaphium fascipes* occupies a range of wetland habitats including wet acid grasslands, marshes, fen and bog. Records from the Dorset heaths may be from valley bog. Many sites are unshaded or only partly so.

Habitat key words: fen, bog, acid grassland, marsh

Status: The species does not qualify as Threatened under Criteria A, C or E. The records in the second period have halved from that of the first, which in itself represented on 21 hectads, so far from common. It does not satisfy D2 as its spread suggests a lack of restriction over which the threat could operate. For B2, whilst it occurs at 10 hectads in the second period, a number of those may refer to fewer locations, especially within the Dorset heaths, and it may be prudent to regard this as an upper location total. If so, then it sits slightly below the cusp between VU and NT which, given the decline, may be indicative of a threat process in operation. It is prudent here to adopt a precautionary approach and to classify as VU, but to watch this species and amend the status if the number of records increase under more survey effort.

Threats: Draining of wet areas for agricultural improvement or forestry; scrubbing-over of wetlands.

Management and conservation: Maintenance of open wetlands is needed through light grazing. Some sites of records made since 1990 are SSSI - Stoborough and Creech Heaths, Stokeford Heaths (Dorset), Botley Wood, The New Forest (Hampshire), Blindley Heath (Kent).

Published sources: Andrewes & Perry (no date), d'Assis-Fonseca (1978), Eyre (1998), Howe *et al.* (2001), Parmenter (1950), Shirt (1987)

RHAPHIUM GRAVIPES

VULNERABLE B2a, bii, biv

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Rhaphium gravipes Haliday, 1851

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: Reliable records are restricted to the Cairngorms (VC92, 95, 96), coastal sites on the Cromarty Firth (VC96, 106), and northern Cumbria (VC96, 70). A record from the River Almond, Lothian (VC83) in intensively farmed and developed countryside may be correct, as is one from the River Monnow, Gwent (VC35). Others from southern England are treated as errors.

Abroad, *Rhaphium gravipes* is recorded in Scandinavia, central Europe (Germany, Austria), Romania and NW Russia.

Habitat and ecology: There is almost no information on the habitat preference but many sites are close to rivers, usually with stony sediments although also from a lowland Scottish river. Some records may be from the margins of still water.

Habitat key words: rivers

Status: The species does not qualify as Threatened under Criteria A, C or E. This species only managed to be found in eleven hectads in the first period, this falling to eight in the second, with three of those being sites common to both periods. So it was far from common in the past, and has now shown some small decline. It is too widespread to satify D2, and there could not be a common threat that operated across those locations in a short time to push it into a higher threat category. It satisfies B2 on the number of locations for Vulnerable, especially as the Vice county spread suggests individual locations rather than the records being clustered within sub-catchments, which might then be considered as fewer locations. Vulnerable under B2, bii & iv seems to best describe its current position. It suggests that more work on Scottish exposed riverine sediments is neded to assess whether the decline is a survey artefact or indicative of an underlying process, such as increased stock over-wintering on ERS, making the gravels unfavourable for many ERS invertebrates.

Threats: Modification of river flows, canalisation of rivers, emplacement of flood-defences of eroding banks and gravel-winning.

Management and conservation: Retaining natural and unimpeded hydrofluvial processes. Many of the Highland records were made from within SSSI.

Published sources: d'Assis-Fonseca (1978), Howe (1998), MacGowan (1987), Rotheray & Robertson (1993), Shirt (1987), Yerbury (1911).

RHAPHIUM LANCEOLATUM

NEAR THREATENED Bii, Biv

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Rhaphium lanceolatum Loew, 1850

Identification: Keyed by d'Assis Fonseca (1978).

Distribution: *Rhaphium lanceolatum* is found most frequently in Scotland, with most old records in the northern half of the country (VC105 – 108), particularly in Speyside (VC95, 96), and further south in the Grampians (VC87, 88, 92). In England it occurs only in a few northern counties (VC64, 66, 70) and there is a single verified record from the New Forest in Hampshire (VC11). There is one record for Gwynedd in north Wales (VC49). A few records

for northern England and many more for central and eastern counties have been disregarded as possible errors as, if these are based on females, there is much room for confusion with related species. Very old records from Northamptonshire refer to *R. caliginosum* whose nomenclature used to be confused with that of *R. lanceolatum.*

In Europe it has a scattered distribution including France and Belgium, the 'Alpine' countries, Romania and Scandinavia.

Habitat and ecology: Habitats include a variety of wetlands with no apparent common feature: valley bog, seepages, wet birch wood, exposed riverine sediments and acid upland lochs.

Habitat key words:

Status: The species does not qualify as Threatened under Criteria A, C or E. This species has undergone a large reduction in occupied hectads from 27 in the first period to 11 in the second, with a particularly notable reduction in Scotland where less loss might be expected. A large number of records from central and eastern England have been ignored in making this assessment. It does not satify D2 in that it is neither restricted or subject to an overall short term threat process. It satisfies B2 in the decline in the second period but exceeds the number of hectads required, with sub-criteria bii and biv being applicable here in support of the decline. It thus sits as Near Threatened. Given this decline it is a species worth watching, especially if the declines in Scotland are considered to be real and ongoing.

Previous status of Lower Risk (Nationally Scarce) (Falk & Crossley, 2005). Not listed in Shirt (1987).

Threats: These are not known, but the most likely hazard facing this species is the possible loss of wetland environments as a consequence of drainage, or the loss of riparian habitats due to river improvement schemes or damage to bankside vegetation

Management and conservation: A principal aim of management should be the maintenance of known sites in a natural condition, free from excessive disturbance or disruptive activities.

Published sources: d'Assis-Fonseca (1978), Falk & Crossley (2005), MacGowan (1987), Rotheray & Robertson (1993), Shirt (1987), Perry 1991.

RHAPHIUM PATULUM

VULNERABLE B2a, bii, biv

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Rhaphium patulum (Raddatz, 1873)

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: *Rhaphium patulum* is a northern species with most records from central and northern Scotland (VC76, 83, 85, 86, 87, 89, 90, 95, 96) westward to Mull (VC103), and sparse scattered records in England and Wales: Cumbria (VC70), Yorkshire (VC63) and Powys (VC42). Records from eastern England in Suffolk (VC25) and Northamptonshire (VC32) seem unlikely to be correct.

The European distribution is northern, with records from Germany and Austria northwards to all Scandinavian countries and Russia.

Habitat and ecology: *Rhaphium patulum* has been recorded mainly from river margins, including from exposed riverine sediments of northern and western rivers, and from a muddy river margin and reedbeds.

Habitat key words: river, reedbed

Status: The species does not qualify as Threatened under Criteria A, C or E. With only ten hectads in the first period, this was far from being a common fly. The decline in records to seven in the second period possibly indicates a decline and while several post-1990 records extended the range of *R. patulum*, there are relatively few recent Scottish records, notably from the well recorded Speyside area where many early records were made. This indicates a likely decline in a principal stronghold. The geographic spread seems to rule out the application of D2 in both population restriction and a threat operating across a short period to increase the threat category. In B2 terms, it satisfies a mid position for VU for the number of hectads, with the decline matching the sub-criteria bii and biv. This suggests that more targeted survey of fine sediment ERS in Scotland is required to properly assess whether the core distribution of this species is really under a threat that is driving down its conservation position.

Threats: Modification of river flows, canalisation of rivers, emplacement of flood-defences of eroding banks and gravel-winning.

Management and conservation: Retaining natural and unimpeded hydrofluvial processes. At least two records made since 1990 are from SSSI (River Eden and Tributaries SSSI, Cumbria; River Wye, Powys).

Published sources: d'Assis-Fonseca (1978), Skidmore (1977, 2008), Watt *et al*. (1997)

RHAPHIUM PECTINATUM

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Rhaphium pectinatum (Loew, 1859)

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: The only record of this species was from Richmond, Surrey when a male and female were taken on 19 July 1868, and it was regarded as extinct in the UK. However, a survey of Devon Wildlife Trust's Old Sludge Beds reserve (VC3) on 25 June 2015 yielded a single male.

It has a patchy European distribution from France to East European Russia and Sweden, and is scarce throughout its range.

Habitat and ecology: It is possible that the fly is associated with brackish conditions. The Old Sludge Beds is the site of former sediment settlement lagoons linked to a sewage works which lies sandwiched between the Exeter Ship Canal and the head of the Exe estuary. The reserve is now covered with a range of tall fen habitats, primarily common reed *Phragmites* reedbed, with sallow patches. There are extensive tidal reedbeds nearby as well as grazing marsh (Wolton & Drake, 2015). The whole of this SSSI unit (it being part of the larger Exe Estuary SSSI) is only some 39ha in extent, and the area of habitat potentially used by this species is much less than that.

Status: Although outside of the review period, the 2015 record is of such significance that it cannot be ignored, having placed the species once again on the extant British species list. Having just moved out of Extinct, this species is Data Deficient, as we do not know how much more of the Exe Estuary habitat is potentially capable of providing habitat for it, and whether it occurs in more population centres there. More recording effort in similar vegetation stands in July is called for.

Threats: If it is a brackish species, then sea level rise may result in coastal squeeze of its habitat.

Management and conservation: Requires more study to understand the ecology of the species.

Published sources: Wolton & Drake (2015), Verrall (1875)

RHAPHIUM SUAVE

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Rhaphium suave (Loew, 1859)

Identification: Keyed by Parent (1938), Negrobov in Lindner (1979), Grichanov (2006).

Distribution: *Rhaphium suave* has a disjunct distribution, known from single sites in Gwent (VC35), Cheshire (VC58) and Northumberland (VC68).

In Europe *Rhaphium suave* is recorded from a cluster of countries from France to Poland and, after a gap in the distribution, from Finland to South-east European Russia.

Habitat and ecology: The only British records are from the margins of large sandy rivers in their piedmont stage where there was exposed sediments and sparse or tall marginal herbaceous vegetation, or willow scrub. There appeared to be a preference for wet sandy shores with silt with nearby taller vegetation providing some shade. Its larvae may be aquatic.

Habitat key words: exposed riverine sediment, sandy river shore

Status: With only three widely separated records, obtained in just two years, it is likely that *Rhaphium suave* is present at very low densities but may be expected to occur on other suitable sandy rivers.

Threats: disturbance to natural hydro-geological processes that prevent the deposition of sand and silt in otherwise gravelly rivers.

Management and conservation: Retaining natural and unimpeded hydrofluvial processes. Two of the rivers are within SSSI (Tweed Catchment Rivers, Northumberland; River Usk, Monmouthshire).

Published sources: Drake (2007a)

SCIAPUS BASILICUS

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Sciapus basilicus Meuffels & Grootaert, 1990

Identification: Keyed by Grichanov (2006), Meuffels & Grootaert (1990).

Distribution: There are two clusters of records, in the Usk valley, Gwent (VC35) and the Wharfe and Swale valleys in Yorkshire (VC65).

In Europe *Sciapus basilicus* is recorded from a small cluster of countries: Austria, Switzerland, Germany, The Netherlands, Norway and Sweden.

Habitat and ecology: The few records have been made from exposed riverine sediments of large stony or sandy rivers: Usk, Wharfe and Swale. More records were from cobbles or pebbles than from finer sediment but there are too few records to know whether this is a real preference.

Habitat key words: exposed riverine sediments

Status: *Sciapus basilicus* was first recognised as British from the River Usk in 1997 (Cole, 1998) and since then all other records are from surveys undertaken in a single year (2005). It has been found in 6 hectads.

Threats: Disturbance of exposed riverine sediments and interference with natural fluvial processes.

Management and conservation: Retaining natural and unimpeded hydrofluvial processes. Records from the River Usk are all within the SSSI; none of those from the Yorkshire rivers are within designated sites.

Published sources: Cole (1998).

SCIAPUS HETEROPYGUS

CRITICALLY ENDANGERED B2, B2a, bii, biv

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Sciapus heteropygus Parent, 1926

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: There are no recent records and only three before 1990 in three widely spaced English counties: Bristol, Gloucestershire (VC34) (1958); Torquay, Devon (VC3) (1958-1960) (Woollatt, 1972); and Chesham, Buckinghamshire (VC24) (1988). This is one of most conspicuous species of the genus and is unlikely to have been overlooked or misidentified.

It has a central European distribution with Denmark as the most northern country, so Britain may have an unfavourably Atlantic climate for this species.

Habitat and ecology: The two older English records were from gardens and the more recent (1988) from broadleaved woodland on the site of former brick-clay diggings which have left a few ponds. The biology is unknown.

Status: *Sciapus heteropygus* is probably genuinely rare but the widely scattered recorded sites and apparently unspecific habitats suggest that it may be more frequent than is currently supposed. However, the only site (at Torquay) where a population was clearly established is now destroyed. Thirty years have passed at the time of writing since the last record.

The species does not qualify as Threatened under Criteria A, C or E

The decline from 3 hectads in the previous recording period to zero in the current signals severe declines in area of occupancy (B2) satisfying B2b (ii & iv), and with only the one location (B2a) from the last record in 1988. It satisfies D2 with respect to locations and AoO, but no plausible threat can be established.

Status revised upward from that in Falk & Crossley (2005).

Threats: These are unclear at present, but the destruction of damp woodland is likely to be a potential threat.

Management and conservation: Retain areas of damp woodland at known locations, and especially any wet areas, dead wood and old or diseased trees.

Published sources: d'Assis-Fonseca (1978), Shirt (1987), Woollatt (1972), Falk & Crossley (2005) on which this account is partly based.

SCIAPUS MARITIMUS

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Sciapus maritimus Becker, 1918

Identification: Keyed by Meuffels and Grootaert (1990), Grichanov (2006). The key by d'Assis Fonseca (1978) fails as the species has been confused with two others, and most '*maritimus*' refer to *zonatulus* (Zetterstedt) and perhaps some *basilicus* Meuffels & Grootaert.

Distribution: Given the wide scope for misidentification, the true distribution is unclear. Not only do unchecked records pre-dating the 1990 revision by Meuffels & Grootaert need confirming, but also those made later in ignorance of this paper using d'Assis Fonseca

(1978). The only known correct records are from Ayrshire (VC75) and, remarkably for a supposedly coastal species, from York city (VC64) (Crossley 1998, 2009).

In Europe it occurs from Spain to North-west European Russia, including much of Scandinavia, and south-east to Romania. However, how many of these records refer to the true *maritimus* is unknown. Meuffels & Grootaert (1990) have seen specimens from Belgium, the Netherlands and Sweden.

Habitat and ecology: Meuffels & Grootaert (1990) state that *Sciapus maritimus* "Seems to be chiefly a coastal species" in Belgium and the Netherlands. The reliable British records are from fore dunes and suburban York.

Habitat key words: dunes

Status: The lack of clarity of which records refer to which species, and where the true records are, pose enough uncertainty for Data Deficient to be the only acceptable category within which to place this species.

Not listed in Falk & Crossley (2005) or Shirt (1987).

Threats: Development and recreational pressure on dune systems are probably the key threats.

Management and conservation: Allow dune development, including natural blow-outs, and control visitor pressure on more sensitive fore-dunes.

Published sources: Crossley (1998, 2009), Emley (1992), Meuffels and Grootaert (1990).

SCIAPUS ZONATULUS

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Sciapus zonatulus (Zetterstedt, 1843)

Identification: Keyed by Grichanov (2006), Meuffels & Grootaert (1990). Specimens identified as *maritimus* in the key by d'Assis Fonseca (1978) nearly always refer to *zonatulus*.

Distribution: *Sciapus zonatulus* is sparsely but patchily distributed in England from Dorset to Yorkshire (VC9, 11, 15, 34, 35, 40, 61, 63), south Wales(VC35, 41), and with a single

Scottish record from Ayrshire (VC75). There are apparent clusters of records in Dorset and Hampshire, and in Yorkshire.

In Europe *Sciapus zonatulus* is recorded from a few countries bordering the North Sea from Belgium to Poland, including Sweden, Austria and Spain.

Habitat and ecology: Most records are from dry sandy places with sparse vegetation, including soft sandstone cliffs, extensive exposed riverine sediments, dry heathland and sand quarries. Few records refer specifically to a more wetland situation, one of lush vegetation of a pond, and another a bog. The requirement for dry places is reflected in the records from coastal sites, heathlands and sand quarries.

Habitat key words: dry sand

Status: It has been assumed that old, unchecked records of *maritimus* refer to *zonatulus*, and this does not seem unreasonable given how few genuine *maritimus* records exist. More early records mentioned in d'Assis Fonseca (1978) have not been found for this review so the total known hectads occupied before 1990 was low, at six compared to 19 after this date. The absence of these early records is due to the species being thought to be insufficiently uncommon to warrant collating museum records for the first Diptera review (Falk, 1991). Despite the improved key by Meuffels & Grootaert (1990), there have been relatively few recent records and these are clearly geographically restricted. Given that we do not know whether this spcies is stable, increasing, or in some decline, the status of Data Deficient is the most appropriate.

Not listed in Falk & Crossley (2005) or Shirt (1987).

Threats: Loss of sparse vegetation in dry places by stabilisation of soft coastal cliffs, and scrubbing-over of disused sand quarries and heathlands.

Management and conservation: The rather wide range of habitats makes it difficult to provide meaningful advice.

Published sources: Meuffels & Grootaert (1990), Speight (1991), Skidmore (1998)

SYMPYCNUS SEPTENTRIONALIS

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Sympycnus septentrionalis Pollet, 2015

Identification: Described by Pollet *et al*. (2015). Keyed by Negrobov *et al*. (2017).

Distribution: Known records are from Suffolk (VC25), Gwynedd (VC46, 48) and Nairn (VC96). All site are coastal.

In Europe it is known from Germany, Denmark, Sweden and Finland.

Habitat and ecology: Records are from saltmarsh.

Habitat key words: saltmarsh

Status: The existence of a second species that keys to the very common and widespread *S. pulicarius* (=*desoutteri*) has been known for some time (Cole, 1987) but few records have been forthcoming. In the short time since its description, it became evident that it was very scarce in comparison with *S. pulicarius*, so it may prove to be very uncommon.

Not listed in Falk & Crossley (2005) or Shirt (1987).

Threats: Loss of saltmarsh due to rising sea-levels, sea-defence works that truncate the upper saltmarsh transition, over-grazing by sheep, recreational pressures and developments. Its sparse distribution suggests a poor ability to disperse or particularly fastidious requirements.

Management and conservation: Allow natural tidal processes and control grazing intensity.

Published sources: Pollet *et al*. (2015)

SYNTORMON LUTEICORNIS

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Syntormon luteicornis Parent, 1927

Identification: Keyed by Parent (1938), Grichanov (2007) (females only).

Distribution: It is known from two males from the Gwent Levels (VC35).

In Europe it is known from only Spain, France and Belgium, each from a single record, and of these only a single female specimen (the type) is known to still exist (Speight *et al*., 1995). It is doubtfully present in the Czech republic and the check list for that country does not include it (Olejníček, 1997).

Habitat and ecology: Presumably it is a wetland species, like other *Syntormon*.

Habitat key words:

Status: The species is not likely to have been overlooked as it superficially resembles only *S. bicolorellum* (Zetterstedt). Indeed, this did result in the species being inadvertently added to the Irish list before the error was recognised (Blackith *et al*. 1990, Speight 1990, Speight *et al*. 1995). However, the main problem is that the two listed keys are in theory only applicable to females as males were unknown when the keys were written.

Not listed in Falk & Crossley (2005) or Shirt (1987).

Threats: Unknown.

Management and conservation: None can be provided.

Published sources: Howe (2002)

SYNTORMON PSEUDOSPICATUM

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Syntormon pseudospicatum Strobl, 1899; the synonym is *Syntormon pseudospicatus* Strobl

Identification: Keyed by Negrobov (1971), with figure, but not included in any Palaearctic key as it is regarded as a synonym of *S. pallipes* by Becker (1918), Parent (1938) and Grichanov (2006, 2007). The species was included in the British list on the advice of C.E. Dyte (Chandler, 1998) but the basis for its inclusion is unexplained. It is unclear whether *Syntormon pseudospicatum* exists in Britain, and Negrobov (*pers. comm*. to R. Crossley) considers that the British specimens attributed to *pseudospicatum* are merely the very common and variable *S. pallipes*.

Distribution: Records of supposed *pseudospicatum* are widely scattered in England from Sussex to Yorkshire, and a few in Scotland and the tiny island of Sule Skerry off the north Scottish coast. Records are both coastal and inland, mirroring the pattern in *S. pallipes*.

In Europe *Syntormon pseudospicatum* has been recorded from the Iberian peninsular (Algeciras in Spain is the type locality), Italy, Hungary and Belgium; it is known from north Africa and the Near East.

Habitat and ecology: British records with habitat information are saltmarsh and brackish lagoons, pools and scrapes.

Habitat key words: saltmarsh, brackish wetlands

Status: Should the species be confirmed as British, it is unlikely to deserve a threat status as existing records are widespread. But given the uncertainty of correct identification, its status is given as Data Deficient.

Not listed in Falk & Crossley (2005) or Shirt (1987).

Threats:

Management and conservation:

Published sources: Plant (1995)

SYSTENUS BIPARTITUS

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Systenus bipartitus (Loew, 1850)

Identification: Keyed by d'Assis Fonseca (1978).

Distribution: Records are distributed widely in England north to Cumbria and with no clumping in any particular area (VC 3, 11, 15, 16, 18, 22, 29, 31, 34, 36, 56, 62, 63, 69). There are records for Scotland from Midlothian (VC83) and Elgin (VC95). Old records are confined to the southern half of England, and more recent ones (post-1990) extend the distribution to northern England and Scotland.

The European distribution is a narrow north-south corridor from Croatia through Germany to Scandinavia and North-west European Russia.

Habitat and ecology: Adults have been found on ash (*Fraxinus*) with exposed sapwood and bracket fungi, and collected from oak (*Quercus robur* and *Q. cerris*) by insecticidal fogging. It has been reared from material collected from rot-holes in elm (*Ulmus*), sycamore (*Acer pseudoplatanus*) and horse chestnut (*Aesculus hippocastanum*).

Habitat key words: rot-hole debris, sap-run

Status: Only eight records have been made since 1990 compared to 15 before that date. However, the apparent scarcity of all species of *Systenus* may be partly due to them being

infrequently found using sweep-netting, and a high proportion of records are from rearing or direct observations at development sites. *Systenus bipartitus* may possibly be more frequent than the few records suggest, although a decline in frequency seems unarguable. Data Deficient is selected here as it recognises the data are heavily biased by collection technique, and it is far from clear if the fall in records between the first and second periods is real, or an artefact. More rearing of rot hole material over its UK range to would clarify the position.

Previous status Lower Risk (Nationally Scarce) (Falk & Crossley 2005). Not listed in Shirt (1987).

Threats: Felling and removal of old trees from woods and parklands.

Management and conservation: Retain old trees and manage surrounding younger trees to prevent them killing the older specimens.

Published sources: Allen (1992), Collin (1938), Crossley (2001), Dyte (1992), Perry (2007), Robertson (1999).

SYSTENUS TENER

NEAR THREATENED B2, B2a

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Systenus tener Loew, 1859

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: *Systenus tener* has been recorded from only four hectads since 1990 and three previously, in a small band from Hampshire to the London area with an old outlier in Herefordshire. The south-east cluster includes: New Forest, Hampshire (VC11) (1905); Rotherfield Park, Hampshire (VC12) (2002); White Waltham, Berkshire (VC22) (2008); Blackheath (1970) and Oxleas Wood, Kent (VC16) (1990); Epping Forest, Essex (VC18) (1998, 2000). The outlying site is Haugh Wood, Herefordshire (VC36) (1907,1908); in view of its isolated position, this record may refer to the more common *S. bipartitus* (Loew) (see Status below).

Habitat and ecology: *Systenus tener* has been reared once from a rot-hole in an apple *Malus* tree. Dyte (1990) gives beech *Fagus*, oak *Quercus* and walnut *Juglans* as trees with which it has been either reared from or associated with. The flies have been seen in the vicinity of elm *Ulmus* and oak *Quercus*. It has been found in old woodland and parkland.

Habitat key words: Rot-holes, ancient woodland, parkland.

Status: Like other members of the genus, this species is probably under-recorded. A further difficulty with this species has been its taxonomic status, about which there has been doubt, although Kassebeer (1998) has confirmed its specific status. Some authorities consider that *S. tener* is synonymous with the more common *S. bipartitus* (Loew).

The species does not qualify as Threatened under Criteria A, C, or E.

The restricted Area of Occupancy (400 km^2) and number of locations (4) qualifies under B2a for Endangered but there is no indication of a decline, making B2 b sub-criteria inappropriate. It is clearly quite rare, but with little evidence of threat given that it seems to be a more generalist saproxylic species, B2biii (continuing decline in area, extent and/or quality of habitat) is a little harder to justify across all of its locations, though will still have relevance, especially for any populations centred on orchard trees. Under D2 it satisfies the number of locations but the plausible threat is a bit generic, and the spread and nature of those locations is reasonably wide. Some of the sites (Epping Forest, for example) are fairly large and have much supporting saproxylic habitat. The fact that rearing may be the best way of sourcing new specimens suggests under-recording and should be borne in mind. Near Threatened might best describe this species, but a close watch is suggested.

Status as given in Falk & Crossley (2005).

Threats: The removal of old or decaying forest trees from woods and parkland is likely to constitute the most serious threat to this species and other members of the genus.

Management and conservation: Wherever possible, old, dying and decaying trees should be left *in situ* in order to provide potential breeding sites.

Published sources: Allen (1992), d'Assis-Fonseca (1978), Denton & Chandler (2005), Dyte (1990), Falk & Crossley (2005), Ismay (2000), Shirt (1987).

TACHYTRECHUS RIPICOLA

CRITICALLY ENDANGERED B2a, bii, biv

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Tachytrechus ripicola Loew, 1857

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: Records of this species are restricted to coastal localities in England: Devon (no further details), Arne (1906) and Studland (1912), Dorset (VC9); and Wales: Porthcawl (1903-1906); Oxwich, Glamorgan (VC41) (1952, 1953 and 1972); Dyffryn (1926) and Morfa Harlech (1955), Gwynedd (VC48); Dulas Bay, Anglesey (VC52) (1953). The most recent

record (17 May, 2014) was made at Studland and Godlingston SSSI, Dorset (VC9), the first since 1972 (Drake, 2014).

Habitat and Ecology: Few details were available from the older records but it is said to occur on coastal sand near fresh-water (d'Assis-Fonseca 1978) and on black mud at the mouth of the River Kenfig (Yerbury 1918). The most recent record (Drake, 2014) reports it by the edge of a small lagoon on sandy substrate. The biology of this species is unknown. Adults have been recorded between May and September.

Status: The species does not qualify as Threatened under Criteria A, C, or E.

Although outside of the review period, the 2014 record is of such significance that it should not be ignored. With now only one record since 1972 this must be considered to be a genuinely rare species, especially as the greatly increased recording at suitable localities which has taken place in recent years has failed to produce any new records. The observed decline down to one hectad in the second review time period, combined with the restricted conditions favoured by adults, indicates Critically Endangered status.

The drop from 9 hectads in the previous recording period to one in the current one (although the later recording period is exceptionally extended here to include 2014 record) signals grave problems for such a large and conspicuous dolichopodid. This species is best described at Critically Endangered as it has undergone decline B2b (ii & iv) and has been recorded from only one location B2a, thus satisfying CE. Under D2 is satisfies Vulnerable under both number of locations and AoO, the plausible threat being the decline in quality of open and wet sandy substrates to succession or excessive disturbance, and an increasing risk of enhanced saline impacts on coastal sites from sea-level rise or storm surges. In precautionary terms, CR is selected.

Previously Vulnerable (Falk & Crossley, 2005) and RDB3 (Shirt, 1987).

Threats: Sandy coastal areas are particularly fragile and vulnerable habitats which are subject to much damaging recreational pressures; these are likely to pose the main threats.

Management and conservation: The priorities of management should be to prevent damaging activities, and also to ensure that as far as is practicable freshwater streams, seepages and wet flushes are maintained in good condition. Studland and Godlingston is both SSSI and NNR.

Published sources: d'Assis-Fonseca (1978); Deeming (1995); Drake (2014); Goodier (1968); Howe (2002); Shirt (1987); Yerbury (1918)

[Account based largely on Falk & Crossley, 2005]

THRYPTICUS CUNEATUS

NEAR THREATENED B2a.

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Thrypticus cuneatus (Becker, 1917)

Identification: Keyed by d'Assis-Fonseca (1978).

Distribution: *Thrypticus cuneatus* has been recorded in four hectads since 1990 and in two hectads before this time, in widely scattered sites in Keysworth Marshes, Dorset (VC9) (2005), the once-flooded Fenland and East Anglia lowlands at Quy Fen (VC29) (1986) and Orton Pit (1997), Cambridgeshire (VC31), Howlands Marsh, Essex (VC19) (2004), Little Reedham, Norfolk (VC27) (2009) and Speyside, Highland (VC98) (1913).

Habitat and ecology: *Thrypticus cuneatus* is a wetland species that is almost certainly associated with spike-rush *Eleocharis* spp which was frequent at two of the sites. Members of this genus have phytophagous larvae which mine the stems of monocotyledons (d'Assis-Fonseca 1978; Dyte 1959, 1993). It has been found in tall-herb fen, coastal marshes (freshwater and possibly brackish fleet) and a disused clay pit with numerous shallow pools (Perry 1986; Drake 1999).

Status: The genus comprises mainly small flies (1.5 – 2.5mm) and is considered 'difficult' and often avoided by recorders, although *T. cuneatus* is one of the most obvious species in the genus so unlikely to have been misidentified once examined. The recent expansion of records showing a wide distribution in lowland England suggests that it is not unduly threatened although is probably genuinely rare. Its habitat of the spike-rush *Eleocharis*-dominated drawdown zone of water-margins is also relatively uncommon but not a threatened habitat.

The species does not qualify as Threatened under Criteria A, C, or E.

The number of current locations (4) qualifies as Endangered under B2a but there is no indication of decline between recording periods (it has actually risen from 2 hectads to four) discounting B2b sub-criteria. Under D2 it satisfies the number of locations, and could be Vulnerable under a plausible threat of enhanced grazing pressure impacting *Eleocharis* stands. Such grazing pressure would also be severely impacting other valued fenland vegetation stands and suggests management intervention would be in place by that point, so rather negating that threat. In the absence of a sound argument for higher threat categories, Near Threatened is an appropriate status for this species.

Threats: The most likely threat would appear to be the loss of waterside vegetation as a consequence of drainage or other developments, or excessive trampling by grazing stock.

Management and conservation: The principal objective of management should be to ensure a high water level at this and future sites, encouraging the growth of a rich and varied hydrosere, and using rotational pond or ditch management if possible. Allowing natural summer drawdown will encourage a zone of *Eleocharis*.

Published sources: d'Assis-Fonseca (1978); Cole (2000); Drake (1999a); Dyte (1959, 1993); Parmenter (1940), Perry (1986, 1988); Shirt (1987).

XANTHOCHLORUS SILACEUS

DATA DEFICIENT

A long-legged fly

Order DIPTERA

Family DOLICHOPODIDAE

Xanthochlorus silaceus **Chandler & Negrobov, 2008**

Identification: Keyed by Chandler and Negrobov (2008) who described it.

Distribution: *Xanthochlorus silaceus* has been recorded from several southern counties of England from Devon to Kent (VC3, 6, 16, 17, 22, 23, 34) and Gwent in Wales (VC35).

It has not yet been recognised elsewhere in Europe.

Habitat and ecology: Adults have been found in dry and damp deciduous woodland, often on calcareous soils. It has been reared from soil at the base of willow (*Salix*) and from moist debris from a mossy tree stump in open countryside near the River Thames, indicating that it is not confined to woods.

Habitat key words: dry deciduous woodland

Status: As the species was recently described, few records may be expected. There are five records for specimens collected before 1990 and 13 after this year, including several after the 2012 cut-off date. It is clearly far scarcer than other British *Xanthochlorus* and appears to be confined to the extreme south of Britain, so may remain an uncommon species, but is unlikely to qualify for a threat status.

Not listed in Falk & Crossley (2005) or Shirt (1987).

Threats: None can be identified.

Management and conservation: No sensible suggestions are possible.

Published sources: Chandler and Negrobov (2008).

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Appendix 1. All Species reviewed in the Dolichopodidae

The GB Rarity status values presented here are unmoderated and will differ from any moderated values given in Table 6. The criteria used to explain the moderation are given here in the rationale and will be reflected in the rarity status given in Table 6.

Species Name	GB IUCN Status	Qualifying Criteria	Unmoderated GB Rarity Status	Rationale	Presence in England	Presence in Scotland	Presence in Wales	AoO(hectads)<1989	AoO(hectads)1990-2012	Dual Hectads
Achalcus bimaculatus	LC		NS	Described new to science in 1997; recorded in 16-19 hectads since 1990, widespread in southern England and Wales and may be found to be too widespread for Scarce status. A wetland species found mainly in wet grassland, swamp and saturated water margins, with occasional records which may represent strays from core habitat from saltmarsh, drier grassland and wet copses. Found on mainly on mineral soils..	E		W	2	18	0
Achalcus britannicus	LC		NR	Described new to science in 1997; recorded in 6-15 hectads since 1990 scattered from Cornwall to Norfolk, A wetland species found in fen, poor fen, reedbed and carr (probably strays from adjacent open mire), usually of high quality. Found mainly on peat	E			2	13	1

				soils. Moved beyond NR under Criterion 7.						
Achalcus cinereus	LC		NS	Widespread in England and Wales, not declining. Moved beyond NS under Criterion 7.	E	S	W	70	82	19
Achalcus flavicollis	LC		NS	Widespread in England and Wales. Moved beyond NS under Criterion 7.	E	S	W	59	79	11
Achalcus nigropunctatus	DD		NR	Published as new-to-Britain in 2008 so probably under-recorded. Adults in usually scrubby or tall fen and fen carr so there may be a need for sheltered base-rich fen peat. All records are from high quality Broadland fens. It may prove more widespread but will be rare as its habitat is restricted.	E			0	3	0
Achalcus thalhammeri	LC		NR	Added to the British list in 1995, and recorded in 6-15 hectads since 1990. It is restricted to eastern England A wetland species found in reedbeds, reed-lined ditches on grazing marshes, tall-herb fen; probably requires dense and tall vegetation. On mineral and peat soils. Possibly vulnerable to grazing.	E			1	10	1
Achalcus vaillanti	LC		NR	Described in 1987 so likely to be under-recorded; recorded since 1990 intermittently from Dorset to Norfolk (one from southern Scotland needs confirming). A wetland species found most frequently in fen and swamp but also acid mire, fen carr, chalk-stream margins, sheltered saltmarsh; usually in unshaded taller vegetation. It may prove more	E	S		4	15	0

				widespread and move into Nationally Scarce. Moved beyond NR to NS under Criterion 7.						
Acropsilus niger	DD		NR	Only one recent record (VC11), the other two being in close proximity (in VC1) >100 years ago. A tiny fly which is probably overlooked, so CE is unreasonable even though the data fit the criteria for this category.	E			3	1	1
Anepsiomyia flaviventris	LC			Recorded in >100 hectads since 1990.	E	S	W	53	187	17
Aphrosylus celtiber	LC		NS	Widespread on western English and Welsh coast (scarce elsewhere), not declining. Moved beyond NS under Criteria 2 & 8.	E	S	W	21	59	10
Aphrosylus ferox	LC		NS	Widespread around British coast (scarce in Scotland and east England), not declining. Moved beyond NS under Criterion 7	E	S	W	27	58	2
Aphrosylus mitis	LC		NS	Recorded in 20-30 hectads since 1990 and not declined; patchily distributed on the coast from Cornwall to Essex (one S Wales site). A maritime species found in sheltered estuaries and shore often where *Fucus* seaweed is abundant or at the *Halimione* zone of sheltered saltmarsh; larvae probably feed on barnacles. Mainly in estuaries but also on more exposed shores in Cornwall.Apparently more restricted than the available habitat allows.	E		W	10	20	1

Aphrosylus raptor	LC		NR	Recorded since 1990 from Anglesey to Hampshire with outliers (errors?) in Kent, Grampian, Outer Hebrides and Orkney. A maritime species found on rocky shores although some sites could be more sheltered shores. Larvae probably feed on barnacles. Previously regarded as of no conservation concern but restricted in distribution and small proportion of recent to old records suggests that it is uncommon. Moved beyond NR to NS under Criteria 2 & 7	E	S	W	22	13 (+ 5 post period hectads)	3
Argyra argentina	LC			Recorded in >100 post-1989 hectads, very wide distribution.	E	S	W	43	114	7
Argyra argyria	LC			Recorded in >100 hectads since 1990.	E	S	W	84	147	15
Argyra atriceps	LC		NS	Widespread in western and northern England but scarce in Midlands and east, rare in Scotland. It appears to be scarcer than previously in lowland England. Possibly restricted by a habitat association with shaded streams and rivers, or old woodland.	E	S	W	28	18	2
Argyra auricollis	LC		NR	Widespread in Britain but very sparsely distributed, not declining. Possibly associated with running water in woodlands. Moved beyond NR under Criteria 7 & 8.	E	S	W	6	12	1
Argyra diaphana	LC			Recorded in >100 hectads since 1990.	E	S	W	87	199	26
Argyra elongata	LC		NS	Recorded sparsely but widely distributed in Britain but more frequent in Scotland. Found mainly in fens and acid mires, and saturated sites near water bodies; may be	E	S	W	29	20	5

				associated with peat soils, usually unshaded but sometimes in carr woodland. It may be declining in England where it was once more frequent.						
Argyra grata	NT		NR	Very sparsely distributed and with apparently clumped distribution of sites, suggesting poor dispersal ability. Possibly associated mainly with old broadleaved woodland but also recorded on a rich fen, though the former is not a threatened resource. Although Vulnerable based on the review period data, subsequent recording out of the review period has added more UK records, and indicates both a lack of decline and enhanced AoO. In light of the revised hectad count, an exception is made and the species is assigned Near Threatened following the IAWG ruling.	E		W	9	5 (+ 1 in 2015 Shropshire, +5 2016 Kent post review hectads)	0
Argyra ilonae	LC		NS	Widespread in England (scarce elsewhere), not declining markedly. Moved beyond NS under criteria 7 & 8.	E		S	34	50 (+38 post review hectads added)	1
Argyra leucocephala	LC			Recorded in >100 hectads since 1990.	E	S	W	134	278	55
Argyra perplexa	LC			Very wide distribution.	E	S	W	60	120	15
Argyra vestita	LC		NS	Widespread in southern Britain, scarce in the north and Scotland. Moved beyond NS under Criterion 7	E	S	W	46	80	9
Asyndetus latifrons	DD		NR	Discovered in 2007 on two northern English rivers. Known in Britain from large almost bare stony ERS.	E			0	2	0

				May end up as VU owing to the restricted habitat requirement of extensive ERS.						
Australachalcus melanotrichus	LC		NR	Widely distributed in lowland England and scarce in north England and Wales; very likely overlooked (several records are from rearing from rot-hole debris) and not living in unusual habitats. The decline is not considered specific enough in terms of threat to yet warrant NT. Moved beyond NR under Criteria 2 & 7.	E	S	W	21	14	2
Campsicnemus alpinus	LC		NS	Widespread in upland Britain, scarce at acid lowland sites; apparently declining. Moved beyond NS under Criteria 1 & 8.	E	S	W	74	53	9
Campsicnemus armatus	LC		NS	Moved beyond NS under Criteria 1,2, & 8.	E	S	W	70	76	25
Campsicnemus compeditus	LC		NS	Recorded in upland Britain and not declining markedly, although with no recent records for Wales; likely to be under-recorded in Scotland and more widespread than records suggest. Moved beyond NS under criteria 2 & 7.	E	S	W	30	24 (+ 3 post review hectads)	4
Campsicnemus curvipes	LC			Recorded in >100 hectads since 1990.	E	S	W	330	530	150
Campsicnemus dasycnemus	Not Evaluated			Known only from Ireland.				0	0	0
Campsicnemus loripes	LC			Recorded in >100 hectads since 1990.	E	S	W	125	282	40
Campsicnemus magius	VU	B2a; B2b (ii & iv)	NR	Possibly declining. A near-obligate halophile in Britain; adults recorded mainly by mildly brackish ditches on coastal marshes which is a restricted	E			22	8	4

				habitat in Britain; associated with small expanses of exposed wet mud; It is restricted to a narrow brackish zone that is vulnerable to sea-level rise.						
Campsicnemus marginatus	LC		NS	Recorded and widespread in 'upland' Britain, not declining, associated with river shores and sandy still-water margins. Moved beyond NS under Criteria 1 & 8.	E	S	W	21	46	4
Campsicnemus picticornis	LC		NS	Recorded and widespread in eastern England to Yorkshire, scarce elsewhere, possibly declining (large proportion of old records). Moved beyond NS under Criteria 7 & 8.	E		W	49	54	20
Campsicnemus pumilio	LC		NS	Recorded in 20-30 hectads since 1990 and apparently much more frequent than previously in southern England but scarce from Midland northwards, and with no recent Scottish records. A wetland species found next to water (streams, rivers, ponds, ditches, mire pools); possibly favoured by sand or silt substratum and short to tall unshaded vegetation.	E	S	W	25	22	1
Campsicnemus pusillus	LC		NS	Recorded mainly in southern England and Wales, and apparently more widespread than previously; rare in Scotland and no records from northern England. A wetland species found in fens, bog, sandy river margins. It show a slight apparent preference for acidic or peaty unshaded sites.	E	S	W	17	26	3
Campsicnemus scambus	LC			Recorded in >100 hectads since 1990.	E	S	W	131	305	52

Campsicnemus umbripennis	DD		NR	Only one record from an uncommon habitat (coastal mud landslips, VC9). Although only recently discovered in Britain (published 1999), it is a distinct fly so will not have been overlooked.	E			0	1	0
Chrysotimus flaviventris	LC		NS	Recorded in >30 post-1989 hectads. Moved beyond NS under Criterion 7.	E	S	W	26	37	4
Chrysotimus molliculus	LC		NS	Recorded widely in England. Moved beyond NS under Criterion 7	E	S	W	25	98	15
Chrysotus angulicornis	Not Evaluated			Misidentifications of *Chrysotus gramineus*; true *angulicornis* has not been found in Britain.				7	6	0
Chrysotus blepharosceles	LC			Recorded in >100 hectads since 1990.	E	[S]	W	62	132	24
Chrysotus cilipes	LC			Recorded in >100 hectads since 1990.				60	171	15
Chrysotus collini	VU	B2a, 2b ii & iv.	NR	Recorded in 6-15 hectads since 1990 but is widely distributed in the southern half of England (one Welsh record), There are few recent records compared to pre-1990, and a smaller ratio of old: new than found for commoner *Chrysotus* suggesting that it is genuinely uncommon. Likely to be overlooked among commoner species. Probably associated with grasslands with long swards, including that on coastal sea walls and on grazing marshes, but also recorded next to freshwater and brackish standing water.	E		W	20	7	1

Chrysotus cupreus	LC		NS	Although there are few recent records compared to pre-1990, the distribution is widespread across southern England (scarce in Wales and north of the Midlands), so remains Least Concern.	E	S	W	44	22	5
Chrysotus femoratus	LC		NS	Recorded in >40 post-1989 hectads. Moved beyond NS under Criteria 7 & 8.	E	S	W	31	41	5
Chrysotus gramineus	LC			Recorded in >100 hectads since 1990.	E	S	W	195	454	93
Chrysotus laesus	LC		NS	Widespread in the southern half of Britain, scarce in northern England and Wales. Two very old Scottish records are 350km north of the nearest in England and may be incorrect. Moved beyond NS under Criteria 7& 8.	E	[S]	W	38	28	2
Chrysotus longipalpus	Not Evaluated			Hot-house alien.				0	0	0
Chrysotus melampodius	EN	B2a,B2b (ii & iv)	NR	Recorded widely in lowland England and Wales, once in Scotland (unverified), but with only two recent records from Surrey & Pembrokeshire compared to 13 pre-1990 records, suggesting strong decline. Possibly somewhat overlooked or misidentified.	E	S	W	13	2	0
Chrysotus monochaetus	CR	B2a,B2b (ii & iv)	NR	Recorded from a narrow band of southern English counties from Somerset to Surrey, most recently in 1989. It is unlikely to have been misidentified as it has conspicuously different antennae to most in the genus.	E			7	0	0

Chrysotus neglectus	LC			Recorded in >100 hectads since 1990.	E	S	W	49	124	16
Chrysotus obscuripes	LC		NS	Recorded widely in upland Britain, outliers in lowland heath and acid mire; confined to acid mire, wet heath and moorland so this is a true acid bog species. Many Welsh records from 1987-77 which skew the age class unrepresentatively to a preponderance of 'old' records. Moved beyond NS under criteria 4 & 7.	E	S	W	27	18	5
Chrysotus palustris	LC		NS	Recorded in >40 post-1989 hectads; widespread in Britain. Moved beyond NS under criteria 1, 7 & 8.	E	S	W	51	45	2
Chrysotus pulchellus	LC		NS	Recorded in >30 hectads since 1989 and not declining. Wetland species found in mainly acid mire and wet heath, and stony stream margins, fen, broadleaved woodland; probably requires base-poor soils.	E	S	W	35	32	3
Chrysotus suavis	LC		NS	Recorded in >40 post-1989 hectads. Moved beyond NS under criteria 7 & 8.	E	S	W	17	43 (+21 post review period)	3
Chrysotus verralli	DD		NR	Recorded at a few scattered sites mainly in southern England (one for Cumbria), but not since 1987. Nothing can be gleaned from the records although several are coastal or estuarine sites.	E			7	0	0
Cyrturella albosetosa	CR	B2a,B2b (ii & iv)	NR	Only one recent record (Norfolk), and others over 50 years ago from one site in Cambridgeshire where it is assumed to be extinct. Probably	E			1	1	0

				restricted to ground-water-fed fen in East Anglia.						
Diaphorus hoffmannseggii	LC		NR	Recorded in 6-15 post-1989 hectads and stable but very limited in distribution and habitat requirement (shaded sandy river margins). A riverine species found on the shores of just the Monnow, Dore, Dane and Rother, which have a large proportion of sand in the shore deposits; usually on sand or pebbles (less often in dense bank vegetation, or in shade of fringing trees. Record from a Dorset garden ignored.	E		W	4	7	2
Diaphorus nigricans	LC		NS	Recorded widely in England and Wales (scarce in Scotland), not declining. Moved beyond NS under criteria 7 & 8.	E	S	W	26	47	5
Diaphorus oculatus	LC		NS	Widespread in southern England and less so in Wales, scarce elsewhere (reaching to northern England). Moved beyond NS under criteria 7 & 8.	E	S	W	35	39	6
Diaphorus winthemi	DD		NR	There are only three old southern English records (the latest 1946). All are based on females which are difficult to identify (Verrall doubted his own two 19th century records), so the species may not be British or is possibly extinct.	E			3	0	0

Dolichophorus kerteszi	DD		NR	Discovered only in 2005, known from two eastern England wetlands. The two records are from the East Anglian Fenland, one from a washland ditch margin in pasture and the other unspecified. Likely to be relatively unspecialised wetland species. Its limited distribution in East Anglian Fenland suggests that it is not a recent introduction, and is conspicuous so unlikely to have been over-looked.	E			0	2	0
Dolichopus acuticornis	LC		NR	Recorded mainly at dunes systems in Wales but also at scattered dunes and sandy rivers in England and Scotland. Most often recorded at dunes or saltmarsh associated with dune systems, and rarely inland at sandy ERS. Its restricted habitat suggests that opportunities for a wider occurrence are limited. Record from Hackney marsh in London ignored. Moved beyond NR under Criterion 7.	E	S	W	25	14	4
Dolichopus agilis	VU	B2a, 2b ii & iv.	NR	Recorded from scattered sites in England and Wales, but from a wide range of habitats which suggests that it is not a specialist that is likely to be restricted by availability of suitable sites. There appears to be no common features to the habitats recorded. They include dry woodland and dry chalk grasslands, dunes, calcareous fen, reedbed and bog.	E		W	11	7	0

Dolichopus andalusiacus	LC		NS	Recorded with more stability in early and late records in its core areas than for most dolichopodids; very patchily distributed with clumps of records in Cornwall, Hampshire/Dorset and Cambridgeshire, rare elsewhere in England and Wales. A freshwater wetland species occurring at wet mud and gravel at water margins of lakes, reservoirs, large pools, riverine reed-swamp; occaionally on mud and silt of cliff springs but not cliff seepages; not in brackish water although it is coastal (Poulding, 1992). Possibly not increasing its range but becoming more frequent in core areas.	E		W	21	26	8
Dolichopus arbustorum	LC		NR	Recorded since 1990 and possibly contracting its range southwards; recently recorded mostly in southern England. Records are from mainly from broadleaf woodlands but also and damp grassland, reedbed and coastal sites (including grassland and possbily shingle and dune). Emerged from trap over decaying oak trunk. Acceptance of the important post-review records moves out of of Near Threatened. Moved beyond NR under Criterion 7.	E		W	27	13 (+ 9 post-review)	3
Dolichopus argyrotarsis	NT	B2b (ii & iv)	NR	Very patchily distributed in Britain, with a large cluster of records in central Highland / northern Grampian and a small one in the Monnow & Dore catchment; rare scattered records elsewhere. It is clearly associated with exposed riverine sediments of sandy and stony rivers and occasionally smaller streams.	E	S	W	19	11	2

				Apparently recorded more often in England than in Scotland since 1990.						
Dolichopus atratus	LC			Widespread	E	S	W	103	193	32
Dolichopus atripes	LC			Widespread	E	S	W	43	139	11
Dolichopus brevipennis	LC			Widespread	E	S	W	125	194	30
Dolichopus caligatus	LC		NR	Recorded predominantly from Scotland and Wales. Found often at or close to the coast on dunes and inland in fens and probably bogs, so showing a rather wide ecological tolerance. Little information available and these have little incommon apart from being wetlands; they include bog, fen, overgrown grazing marsh, coastal dune sites, probably lake margins, and broadleaf woodland (record uncertain). Given the distribution it is considered that the "decline" is an artefact of recording effort, and that it is better viewed as a position of stability, and so under no obvious threat. Moved beyond NR under Criterion 7.	E	S	W	17	15	0
Dolichopus calinotus	DD		NR	Discovered in 2016 at a Kent saltmarsh. Limited information on its habitats in continental Europe suggest that northern sites are coastal and mainly saltmarsh but those in southern Europe are further inland. There is no indication whether this is a new immigrant or has been present at very low population levels.	E			0	1	0
Dolichopus campestris	LC			Widespread in England and Wales, not declining.	E		W	26	104	5

Dolichopus cilifemoratus	LC		NS	Widespread in central and eastern England, scarce elsewhere in England and Wales; a wetland species associated with winter-flooded grasslands and associated willow woodlands or withy beds on mineral soils, not declining and possibly more common now.	E	S	W	20	20	3
Dolichopus claviger	LC		NS	Recorded in >60 post-1989 hectads. Moved beyond NS under Criterion 7 & 8	E	S	W	40	62	8
Dolichopus clavipes	LC		NS	Widespread around English, Welsh and Scottish coasts, not declining. Moved beyond NS under Criterion 7& 8	E	S	W	37	67	8
Dolichopus diadema	LC		NS	Recorded around the British coast, frequent in southern Britain, rare on the west north of Wales and in Scotland. A species of upper saltmarsh and brackish marsh and associated pools and ditches.Moved beyond NS under Criterion 7& 8	E	S	W	58	79	23
Dolichopus discifer	LC			Recorded in >100 hectads since 1990.	E	S	W	90	203	28
Dolichopus excisus	DD		NR	Discovered in 2005, found in or near coastal wetlands in Kent, Dorset and Suffolk. Possibly associated with wet grasslands or water margins in this habitat. It may be fortuitous that the three records (2 hectads) are coastal sites. Its wide distribution suggests that it is unlikely to be a recent introduction, as has been suggested.	E			0	3	0
Dolichopus festivus	LC			Widespread	E	S	W	88	255	49
Dolichopus griseipennis	LC			Widespread	E	S	W	132	275	54

Dolichopus laticola	EN	B2a, ii & iv.	NR	Confined to fens of high quality in Norfolk Broadland and Suffolk coast where it is locally widespread. A wetland species restricted to fens where it is most frequent in tall-herb fen, and uses associated reedbeds and fen carr. It is less frequent in commercial sedge-beds (Cladium mariscus). It requires permanently damp to saturated peat soils. Apparently stable but with a restricted range.	E			3	4	3
Dolichopus latilimbatus	LC			Widespread	E	S	W	95	176	38
Dolichopus latipennis	CR	B2a,B2b (ii & iv)	NR	Found in two areas, coastal wetlands (probably brackish reedbed) in Norfolk and Suffolk, and Caerlaverock in Dumfrieshire where is was refound on several dates. A wetland species that may be restricted to brackish fen or reedbed, or possibly coastal grazing marsh. Not recorded since 1980. Possibly vulnerable to coastal squeeze. An Oxfordshire record has been dismissed as a probable error.	E	S		6	0	0
Dolichopus lepidus	LC		NS	Widespread and frequent in upland Britain, scarce in lowland England. A wetland species of mires; perhaps associated with peat soils. Moved beyond NS under Criteria 1, 7 & 8	E	S	W	53	68	15
Dolichopus linearis	LC		NS	Widespread in England, scarce in Wales and Scotland, not declining markedly and showing no contraction in range. A wetland species most often recorded by rivers and streams, also in wet grasslands, fen, wet woodland, carr, upper saltmarsh	E	S	W	36	24	5

				(incidental?) It shows a marked concentration of records from Cheshire to Yorkshire,						
Dolichopus lineatocornis	VU	D2	NR	Recorded from 5 hectads since 1990 in a small cluster in the Fenland of eastern England, and an outlier in Yorkshire, making it susceptible to population losses; a wetland species of well vegetated water margins on clay soils in Cambridgeshire (gravel pits and washlands), but also recorded from two Kentish woodlands and old New Forest records probably from mire. Apparently lost from the New Forest and not recorded from the Weald since 1972.	E			7	5	1
Dolichopus longicornis	LC			Widespread in England and Wales.	E	S	W	58	119	14
Dolichopus longitarsis	LC		NS	Recorded in >40 hectads since 1990. Moved beyond NS under criteria 7 & 8.	E	S	W	34	47 (+13 post review)	8
Dolichopus maculipennis	DD		NR	A montane species of base rich flushes restricted to a few clusters in the southern Highlands and western and northern Highlands of Scotland. The one recording scheme record since 1990 stands at odds with the published work of Horsfield & MacGowan (1998)* which gave 11 hectads and so an increase in records between the two periods. However, this figure is the total count (all years) and most of these are up to 1985. A montane species found high up on mountains in a range of mainly wet habitats on or by small		S		8	1	1

				permanent pools, in bryophyte flushes, flushed grasslands and wet mire. All the records are from the more calcareous mountains of the Highlands. With the obvious bias in recording the remoter upland regions in Scotland, it suggests the species may have some more populations yet to be discovered. That said, the current lack of recording effort means that DD is more appropriate as the low figure could well be attributable to strong recording bias.						
Dolichopus mediicornis	EN	B2b(i & iv)	NR	Recorded from 2 hectads since 1990, close to two historical records in Dyfed; old records are from several sites in the heaths of Hampshire and Dorset, and East Ross. The only habitat data are for a 1986 Dyfed record collected from a small area of wet heath/basin mire at the edge of mature willow and alder carr. Its clumped distribution may make it susceptible to local extinction; its absence from the well surveyed New Forest and Dorset heaths suggests that it may already be lost from here.	E		W	7	2	0
Dolichopus melanopus	EX			Only one record in 1872, New Forest, Hampshire.	E			1	0	0
Dolichopus migrans	VU	B2b(ii & iv)	NR	Recorded in 6-15 post-1989 hectads in one stable and strong cluster on the Suffolk Breckland where it is frequent, and two single sites in SE Yorkshire. A species of dry sandy grassland and sandy heath.. Old records from elsewhere (scattered across southern England, Cumbria	E	[S]		12	7	3

				and Highland) require confirmation (some are in the NHM), although one from Tubney, Oxfordshire (1925), is in the correct habitat.						
Dolichopus nigripes	VU	D2	NR	Confined to fens of high quality in Norfolk Broadland (VC27) and a very old one (1839) from Dorset where it is probably extinct. Confined to rich fen, especially in shorter vegetation rather than tall herb-fen, reedbed or sege beds. Unclear why it is so restricted in Broadland. Apparently stable in Norfolk but with an inexplicably restricted range within Broadland where future sea-level rise or brackish incursion could destroy its habitat.	E			2	2	1
Dolichopus nitidus	LC		NR	Widely scattered in England, Wales and southern Scotland, with more records in the western uplands; not declining and possibly now with a wider range than earlier records. Probably dependent mainly on swamp and neutral mire with moderately dense monocot vegetation. Also recorded at densely fringed grazing marsh ditches and hillside flushes. Moved beyond NR under Criteria 1,7 & 8	E	S	W	14	12 (+3 post review)	2
Dolichopus notatus	LC		NS	Five recent inland records (mainly by experienced recorders) require confirming as they are from a variety of habitats. Predominantly a coastal species found in upper saltmarsh and wet parts of dune systems. Some reliable inland records are from East Anglian fens; other inland records are	E	[S]	W	22	26	5

				from acid mire, a pond margin and possibly acid upland.Widespread but sparsely distributed around the coast from Lancashire and Wales to Lincolnshire; reliable inland records in East Anglia. Old Scottish records are inland and may be errors.						
Dolichopus nubilus	LC			Widespread	E	S	W	87	171	39
Dolichopus pennatus	LC			Widespread**.**	E	S	W	112	175	28
Dolichopus phaeopus	LC		NS	Widespread by very patchily distributed mainly in western upland Britain and a few in southern England and East Anglia. A wetland species found in hill-side seepages, acid to base-rich mires, well vegetated margins of ponds and ditches on grazing marsh. There may be an association with peat soils. No indication of change in distribution.	E	S	W	14	22 (+7 post review)	2
Dolichopus picipes	LC			Widespread in Britain.	E	S	W	63	106	18
Dolichopus planitarsis	LC		NS	Widespread but patchily distributed in Britain in a wide range of habitats. A wetland species found water margins of ponds, ditches on grazing marshes, fen; often in carr associated with these wetlands. Found on acid and base-rich soils. Very local but widespread, though the species has an early flight period for a dolichopodid (May, early June). Moderated under criteria 1,3 & 8.	E	S	W	19	22	5
Dolichopus plumipes	LC			Widespread	E	S	W	242	539	93
Dolichopus plumitarsis	EN	B1a, B2a (ii & iv)	NR	Recorded from two locations in a single post-1989 hectad, and one pre-1990 hectad, all within a small area in Suffolk valley fens. Probably	E			3	2	1

				associated with the water margins of small lowland streams on peat soils, or with soligenous fen. Several records from other areas are probably input errors for *D. plumipes.*						
Dolichopus popularis	LC			Widespread	E	S	W	167	359	63
Dolichopus rupestris	LC		NS	A upland species common in northern England and Scotland, perhaps less so in Wales, often at streams, seepages and wet heath. Found at sea level in Shetlands. Moderated beyond NS under criteria 1,7,& 8.	E	S	W	65	41	8
Dolichopus sabinus	LC		NS	Recorded along the coast from Cumbria to Grampian, but most frequent from south Wales to Lincolnshire. A species of upper saltmarsh, brackish pools and ditches and pools on coastal dunes. Moved beyond NS under criteria 2 & 8.	E	S	W	32	43 (+9 post review)	9
Dolichopus signatus	LC		NS	Widespread . Moved beyond NS under Criteria 7 .	E	S	W	30	90	10
Dolichopus signifer	LC		NS	Has a large proportion of post-1990 records suggesting that it is more common now than when given rare statuses (from Endangered in 1987 to Scarce in 2005); very patchily distributed on the coast, mainly form south Wales to Thames estuary, scarce to southern Scottish coasts (east and west). A predominantly coastal species found at cliff seepages, and upper saltmarsh and dunes where there are freshwater streams or ponds; probably at other coastal habitats, but those with firm data suggest that it prefers flowing	E	S	W	19	32	5

				water (seepage, streams). The few inland records include a weakly brackish clay pit, freshwater fen and broadleaved woodland. Some inland records may be input errors for Dolichopus signatus. A few confirmed inland records are from sites with known brackish influence.						
Dolichopus simplex	LC			Widespread	E	S	W	75	204	21
Dolichopus strigipes	LC		NS	Recorded in >30 post-1989 hectads, not declining, confined to coast from Dorset to South Yorkshire and occupying much available saltmarsh. An obligate saltmarsh species found almost exclusively on upper saltmarsh in the zones with Halimione to Juncus gerardii. Moved beyond NS under criteria 2,7 & 8.	E		W	36	37	15
Dolichopus subpennatus	LC			Widespread in Britain, not declining.	E	S	W	30	108	4
Dolichopus trivialis	LC			Widespread	E	S	W	139	342	53
Dolichopus ungulatus	LC			Widespread	E	S	W	239	578	111
Dolichopus urbanus	LC			Widespread in Britain.	E	S	W	51	105	12

Dolichopus virgultorum	LC		NS	Showing an apparent increase in frequency but not expansion of range. Likely to be associated mainly with damp (but not saturated) ground or water margins in broadleaf woodland and scrub rather than more open habitats, but records include grassland, acid mire and brackish lagoon. The conspicuously restricted southern distribution suggests that it is at the northern edge of its range in southern counties but may spread northwards with warming climate.	E		W	26	22	3
Dolichopus vitripennis	LC			Widespread	E	S	W	99	169	34
Dolichopus wahlbergi	LC			Widespread	E	S	W	77	171	26
Ethiromyia chalybea	LC		NS	Widespread in lowland England, scarce in western England and Wales and north of the Midlands. A wetland species of neutral to base-rich mire and swamp, and sometimes in associated carr. Moved beyond NS under criteria 7 & 8.	E		W	58	56 (+14 post review)	13
Gymnopternus aerosus	LC			Widespread	E	S	W	132	311	61
Gymnopternus angustifrons	LC		NS	Widely but patchily distributed in England and Wales; apparently more common than in previous decades but most new records are close to old ones, suggesting little expansion of range from a few core areas. Found in acid mire and wet heath, usually on peat, more rarely in neutral wet situations; occasionally in wet woodland. It has a fairly restricted requirement for acid mire and wet heath.	E		W	14	20	7

Gymnopternus assimilis	LC		NS	Recorded in >80 post-1989 hectads. Moved beyond NS under Criteria 7 & 8.	E	S	W	58	81	15
Gymnopternus blankaartensis	LC		NS	Described as new to science in 1990 since when it has been recorded in 16-19 hectads in ten vice-counties so it is likely to be under-recorded and more widespread. Found in a variety of wetlands, mainly in fens on peat but also ponds and wet woodland on dunes, apparently close to water (ponds, ditches) in a few non-peatland habitats. This is a species to watch.	E		W	2	19	1
Gymnopternus brevicornis	LC		NS	Recorded in >50 post-1989 hectads. Moved beyond NS under criterion 7.	E	S	W	24	57	7
Gymnopternus celer	LC			Widespread in Britain (scarce in Scotland), not declining.	E	S	W	51	115	12
Gymnopternus cupreus	LC			Widespread	E	S	W	135	360	57
Gymnopternus metallicus	LC			Widespread	E	S	W	67	176	24
Gymnopternus silvestris	LC		NS	Recorded in >40 post-1989 hectads; described in 1990 so probably under-recorded in Britain. Moved beyond NS under criterion 7.	E		W	1	44	0
Hercostomus chetifer	LC		NS	Widespread in Britain, common in the south-west (rare in Scotland), not declining. A riverine species of streams and rivers, which can be base-rich to acidic and shaded or unshaded. Moved beyond NS under Criteria 1, 7 & 8	E	S	W	22	58	5
Hercostomus fulvicaudis	DD		NR	Widely scattered in England and Wales, with concentrations of records in Cumbria, East Midlands and Cumbria.. A wetland species found in	E	S	W	7	9	1

				fen and flushed grassland, gravel pits with ponds and lakes, coastal marsh, and wet woodland (but probably not carr).						
Hercostomus germanus	LC		NS	Widespread in Britain. Moved beyond NS under Criteria 7 & 8	E	S	W	23	64	1
Hercostomus gracilis	LC		NS	Moved beyond NS under Criteria 7 & 8. The species is reported as becoming more widespread, though only time and recording will tell if it naturally exceeds the NS threshold.	E		W	18	41	10
Hercostomus nanus	LC			Widespread in England and Wales. Two Scottish records are well north of the range.	E	S?	W	59	107	16
Hercostomus nigrilamellatus	LC		NS	Recorded in 16-19 hectads since 1990, widespread in central and southern England and Wales, with outlying records in Yorkshire, Strathclyde and Grampian (which may need confirming); it shows a wider overall range than previously known, and shows no contraction of its southern range. A woodland species found in broadleaf woods on dry and damp soils but probably not dependent upon wet conditions or water margins although some records come from such wetlands.	E	S	W	21	17	1
Hercostomus nigripennis	LC			Widespread	E	S	W	80	201	28
Hercostomus nigriplantis	LC		NS	Frequent in southern and western England and Wales, particularly in coastal sites. Two distinct habitats are used: broadleaf woodland, often by streams, and coastal dunes and sandy upper saltmarsh. Moved beyond NS under criteria 2,7,& 8.	E	S	W	16	39	1

Hercostomus parvilamellatus	LC		NS	Widespread in England. Moved beyond NS under Criteria 7 & 8	E		W	38	61 (+9 post review)	6
Hercostomus plagiatus	LC		NS	Widespread in lowland England, scarce in SW England, S Wales, Yorkshire, not declining and perhaps becoming more frequently recorded. Moved beyond NS under criteria 2,& 7.	E		W	26	43 (+11 post review)	6
Hercostomus praeceps	LC			Recognised in Britain in 2005 but not published (as at 2013), in 4 tetrads (one 1989, three post-1989) in Cambridgeshire and East Norfolk. Not likely to be more threatened that VU owing to its wide habitat tolerance known from European sites, and its English occurrence in an urban garden and potato field. Found in fen, an arable field and a garden. On mainland Europe it is regarded as frequent in arable countryside.						
Hercostomus rothi	DD	B2a	NR	Recognised in Britain in 2005 but not published (as at 2013), in 4 tetrads (one 1989, three post-1989) in Cambridgeshire and East Norfolk. Its wide habitat tolerance known from European sites, and its English occurrence in an urban garden and potato field suggest it will become more widespread.	E			1	2	0
Hercostomus sahlbergi	DD		NR	Known from only one record from Speyside in 1938, so may be extinct. Possibly acid mire.		S		1	0	0

Hercostomus verbekei	DD		NR	Described in 1993, and known from only one site in Suffolk. It will have been confused with H. plagiatus, and presumably, like that species, will be restricted to southern England. In Belgium where the species was first recognised, it occupies marshy sites on clay. The British record was from a lowland river bank. Given the great uncertainty of past identifications, giving a status other than DD would be misleading.	E			1	0	0
Hydrophorus albiceps	NT		NR	An issue common to all Hydrophorus species is the difficulty of catching them off the water surface without being persistent, so they all suffer from methodological considerations. Recorded from only 11 hectads since 1990 and showing an apparently strong decline when compared with pre-1990 hectads. It is a northern and western species recorded from Wales and Yorkshire northwards, with southern outliers in Dartmoor (Devon) and Dorset bogs. Found on pools and ditches in bogs. It is probably still frequent in Scotland. Moved beyond NR under Criteria 1& 7; if the apparent decline continues it may slip back to NR.	E	S	W	32	11	5
Hydrophorus balticus	LC		NS	An issue common to all Hydrophorus species is the difficulty of catching them off the water surface without being persistent, so they all suffer from methodological considerations. Widespread in eastern half of England, south Wales, rare	E	S	W	21	78	5

				elsewhere. Moved beyond NS under Criteria 7						
Hydrophorus bipunctatus	LC		NS	An issue common to all Hydrophorus species is the difficulty of catching them off the water surface without being persistent, so they all suffer from methodological considerations. Widespread in Wales, scarce elsewhere. Moved beyond NS under Criteria 7	E	S	W	16	69	3
Hydrophorus litoreus	LC		NS	An issue common to all Hydrophorus species is the difficulty of catching them off the water surface without being persistent, so they all suffer from methodological considerations.Widespread in England (scarce in Wales), no apparent habitat specialism, possibly declining. Moved beyond NS under criteria 7.	E	S	W	30	38 (+12 post review)	6
Hydrophorus nebulosus	LC		NS	An issue common to all Hydrophorus species is the difficulty of catching them off the water surface without being persistent, so they all suffer from methodological considerations. Widespread in upland Britain and acidic lowland sites, possibly declining. Moved beyond NS under criteria 1,2 & 7.	E	S	W	17	35	3
Hydrophorus oceanus	LC		NS	An issue common to all Hydrophorus species is the difficulty of catching them off the water surface without being persistent, so they all suffer from methodological considerations Widespread around coast of England and Wales (rare in Scotland). Moved beyond NS under Criteria 7	E	S	W	64	89	30

Hydrophorus praecox	LC		NS	An issue common to all Hydrophorus species is the difficulty of catching them off the water surface without being persistent, so they all suffer from methodological considerations Moved beyond NS under Criteria 7	E	S	W	37	89	12
Hydrophorus rufibarbis	LC		NR	An issue common to all *Hydrophorus* species is the difficulty of catching them off the water surface without being persistent, so they all suffer from methodological considerations Horsfield & MacGowan (1997) recorded a total of 33 hectads and suggested that it is widespread in the Scottish Highlands; they give it Scarce status. Horsfield & MacGowan (1997) state: "... from a wide variety of wet habitats most frequently the surface of small peaty pools but also grassy flushes, bryophyte springs and once from a dubh lochan. The pools were located in a wide range of vegetation on peaty soils, most commonly *Nardus stricta* snow-bed grassland but also *Calluna-Scirpus heath*, *Calluna* heath and *Calluna-Eriophorum* blanket bog. It was most often found between 500 and 1000m OD. There is an outlying record from the Southern Uplands. The near-absence of post-1990 is not regarded as grounds for a higher status, and probably reflects lack of recent recording at high altitudes. Moved beyond NR under Criteria 1,4 & 8		S		21	1	0

Hydrophorus viridis	LC		NR	An issue common to all Hydrophorus species is the difficulty of catching them off the water surface without being persistent, so they all suffer from methodological considerations Recorded most often at seepages on coastal soft cliff, and at a saline scrape and perhaps damp parts of dune systems; the one old inland record was probably from fen. Recorded from widely scattered points on the southern coast from Gwent to Norfolk, and rare old records not far inland, and authentic Shropshire record from a quarry. Its coastal habitat is a moderately scarce resource that probably limits the species's opportunities. Although recent records suggest a wide distribution around southern coasts, they do not extend the range much beyond the few old records.	E		W	4	7	1
Lamprochromus bifasciatus	LC		NS	Widespread in southern Britain, not declining and perhaps becoming more frequently recorded. The very small size of this species means that is almost certainly overlooked by many recorders. Moved beyond NS under criterion 7.	E	S	W	23	36	3
Lamprochromus kowarzi	DD		NR	Added in 2018	E		W			
Lamprochromus semiflavus (=*strobli*)	DD	,	NR	Recorded from scattered sites in lowland England in Devon, Sussex, Oxfordshire and Cambridgeshire. Some records (Dorset, Suffolk, Oxfordshire) previously attributed to this species are *L.kowarzi*.. It is a	E			3	3	0

				wetland species recorded from *Salix* woodland with slightly base-rich springs, unimproved herb-rich meadows with damp hollows, and coastal heathland. Although it is a tiny (1.75 mm) species, the few records compared to those of its congener *L. bifasciatus* (which was once considered Scarce) suggest that it is genuinely very rare.						
Liancalus virens	LC			Widespread	E	S	W	69	102	19
Machaerium maritimae	LC		NS	Widespread around coast of England and Wales (scarce in Scotland). Moved beyond NS under Criteria 7	E	S	W	46	85	25
Medetera abstrusa	LC		NS	Recorded in >30 post-1989 hectads. Moved beyond NS under criteria 6 and 8	E	S	W	21	31	0
Medetera ambigua	LC		NR	Recorded in 6-15 hectads since 1990 and not declining. Moved beyond NR under Criteria 6 & 8	E	S	W	21	15	3
Medetera bispinosa	DD		NR	Added to the British list in 1996 and has been recorded in two post-1989 hectads and recognised among older material identified as nitida. The genus is poorly recorded so little can be inferred from data, which show a wide distribution in England from Cornwall to Yorkshire. Other specimens of *nitida* may be misidentified as *bispinosa* so it is prudent to give DD status to both species.	E			5	2	0
Medetera borealis	DD		NR	Recorded from Yorkshire, Grampian and possibly Gloucestershire. There are too few data to make an evaluation for this poorly recorded	E	S		3	1	1

				genus. One of four species that are often confused, and may all be a single species (*abstrusa*, *borealis*, *jugalis*, *oscillans*).						
Medetera cuspidata	DD		NR	Recorded only in two hectads (Highland, Strathclyde [type specimen]), both before 1990. It has been recognised in several other north European countries so it is clearly regarded as a valid species, and would appear to be possible to identify it accurately using the standard British key, but the genus is poorly recorded so a higher status has not been given. Probably associated with coniferous woodland.		S		2	0	0
Medetera dendrobaena	LC		NS	Recorded in >30 post-1989 hectads, and in a similar number of pre- and post-1990 hectads. It has a wide distribution in England, particularly the south-east lowlands, and has old records for south Wales. There is an indication of possible retraction of its range towards the south-east. It is one of the species more likely to have been correctly identified. Moved beyond NS under criteria 6 and 8.	E		W	34	34	4
Medetera diadema	LC		NR	Recorded at a low level of recording that is representative of a moderately widespread and frequent *Medetera* and easy to identify correctly; its distribution may be compared with other *Medetera* with few records. Moved beyond NR under criteria 7.	E	S		10	13	0
Medetera excellens	DD		NR	Recorded from 10 post-1989 hectads and 4 pre-1990 hectads, one of which from Yorkshire is probably an error.	[E]	S		4	10 (+ 1 post review)	1

				All likely correct records are predominantly from Highland in Scotland. The standard British key includes an unreliable character for this species and a third species (freyi) in this species group has been recently added, so old New Forest records (at least) may be suspect. However, as one of three species with conspicuous venation, it is likely that it would not be overlooked. Associated with pine with beetle galleries.						
Medetera fasciata	DD		NR	Found in a small area Highland, Grampian and Tayside. In Scotland this species was originally misidentified as *M. striata* but no true *striata* have been found in a large proportion of available Scottish material (MacGowan, 2001). Its narrow distribution and apparent association with Scots pine suggests that it is a rare species. A specimen identified as *striata* from Hampshire has not been checked to see whether it is true *striata* or *fasciata*.	[E]	S		2	5	0
Medetera flavipes	LC		NS	Widespread in the southern half of England, particularly the Thames basin, and rare in Wales. This species should be correctly identified so the records probably reasonable representation of the distribution. Moved beyond NS under criteria 6 and 8.	E		W	14	25	1

Medetera freyi	DD		NR	Added to the British list in 2001 and known from only one specimen from Inverness-shire. Reared from under the bark of fallen and decaying branch of aspen (*Populus tremula*). Related species (*inspissata*, *excellens*) are uncommon so freyi is likely to be rarer than these species. However, the genus is poorly recorded so a higher status is not given here.		S		0	1	0
Medetera grisescens	Not Evaluated			Hot-house alien.				0	1	0
Medetera impigra	LC		NS	One of the commoner *Medetera*, widely distributed in England, scarce in Scotland and probably under-recorded in Wales. Found mainly in woodlands and on trees in partial shade. Moved beyond NS under criteria 6 and 8.	E	S	W	27	54	5
Medetera infumata	DD		NR	No records since 1990. Known from several records from a small area of the Scottish Highlands and one old record from Dumbartonshire. Associated with pine with beetle galleries. It is likely to be rare but the genus is poorly recorded so a higher status is not given here.		S		4	0	0
Medetera insignis	DD		NR	Added to the British list in 2007 and known from only one specimen from Somerset. It may have been previously overlooked among the fairly common species *M. pallipes* so a high status is not appropriate for this poorly recorded genus.	E			0	1	0

Medetera inspissata	DD		NR	Recorded from at least 5 hectads since 1990 (known to be more but no recent data for Scotland). Widely but patchily distributed in England and Scotland. Larvae develop under bark of poplars (*Populus tremula, P.canescens, P. nigra*), most probably in association with bark beetles. As it is one of the more conspicuous *Medetera*, it is unlikely to have been overlooked although the genus is poorly recorded.	E	S		7	5	0
Medetera jacula	LC		NS	Widespread in England, scarce in Scotland and occasional on the Welsh coastal fringe. It is possibly more frequent in the east of Britain, where its abundance suggests a moderately common species. It is probably often correctly identified. Moved beyond NS under criteria 6 and 8.	E	S	W	36	89	10
Medetera jugalis	LC		NR	Widely distributed in lowland England and with sparse records from Highland and the Western Isles. Given the poor level of recording of this genus, M. jugalis is likely to be moderately frequent. One of four species that are often confused, and may all be a single species (abstrusa, borealis, jugalis, oscillans). Moved beyond NR under Criteria 1, 6 & 8.	E	S		18	9	0
Medetera melancholica	DD		NR	Recorded once since 1990 and only a few times previous to that; widely distributed (Surrey, Yorkshire, Tayside, Highland); if the records are genuine then the species is almost	E	S		5	1	0

				certainly overlooked over this wide range, and a higher status is inappropriate for this poorly recorded genus. Reared in Europe from larvae beneath the bark of ash and grey alder (*Alnus incanus*).						
Medetera micacea	LC		NS	Widespread and locally common in southern and eastern England and south Wales; one Scottish record for eastern Highlands. A xerophytic species found in tree-free areas of dry grassland, heathland, sandy and shingle sites. Moved beyond NS under criteria 6 and 8.	E	S	W	16	51	5
Medetera muralis	LC		NS	Widespread in England and Wales, scarce in Scotland. It is particularly frequent in south-west England and Wales. A species of woodland and trees in partial shade. Moved beyond NS under criteria 6 and 8.	E	S	W	15	36	0
Medetera nitida	DD		NR	Recorded in only one hectad since 1990 but is in a poorly recorded genus, and older records suggest a wide distribution in England and south Wales. Some records may refer to the apparently scarcer *bispinosa*.	E		W	16	1	0
Medetera obscura	DD		NR	Recorded since 1990 from all three countries. Widely distributed in lowland England, south Wales, Tayside and Highland. There seems to be no decline for this species though it remains rare and with few records.	E	S	W	7	7	0

Medetera oscillans	DD		NR	Described new to science from England in 1972, since when it has been recorded in 7 hectads (only two after 1990) in a cluster from Kent to Cambridgeshire. Doubt over its validity as a distinct species (Falk & Crossley, 2005) may not be justified as this distribution is tighter and much smaller than that of the closely related abstrusa, borealis and jugalis (although some regard these four species as one). Found frequently on *Scolytus*-infected poplars including *Populus italicus* and hybird P. X *canadensis*, and reared from poplar; also adults from Scolytus-infected elm and decayed cherry. Recorded from suburban situations. The number of records obtained since its descriptions and its occurrence on hybrid poplars in suburbia suggest that it is not threatened but may be uncommon	E			6	2	1
Medetera pallipes	LC		NS	Widespread in England, rare in Wales (Gwent), and particularly frequent in southern lowland England It is probably often correctly identified. It appears to be a species of 'woodland edge'. Moved beyond NS under criteria 6 and 8.	E		W	28	41	5
Medetera parenti	DD		NR	Added to the British list in 1989 since when it has been recorded in 4 hectads (2 since 1990). Recorded from three south-eastern English counties and Somerset. Likely to be much under-recorded. Reared from larvae from bark and sappy material	E			2	2	0

				fallen grey poplar (*P. canescens*). Recorded in suburban situations.						
Medetera petrophila	DD		NR	It shows a strongly coastal distribution (so a few inland records may be incorrect) around the British coast, with more frequent records on the eastern Scottish coast. The species may be easily confused with other common species (*jacula*, *petrophiloides*, *saxatilis*) so giving it a rarity status is inappropriate. Probably associated with dry coastal habitats such as dunes. Moved beyond NR under Criteria 6, 7 & 8.	E	S	W	19	7	2
Medetera petrophiloides	LC		NS	Found along much of the England and Welsh coasts, and more sparsely on Scottish coasts. It is a xerophytic species of tree-free places, mostly dunes, coastal shingle and cliffs where is can be locally common. Inland records may be errors apart from those from the Suffolk Breckland. Moved beyond NS under criteria 6 and 8.	E	S	W	20	52	4
Medetera pinicola	DD		NR	Found mainly the Scottish Highlands, with scattered, sparse and mainly old records from England and Wales. Reared from larvae under the bark of Scots pine with wood-boring beetle cavities. Adults noted on pines. The low occurrence of recent records suggests that it is may be scarce.	E	S	W	12	7	1

Medetera saxatilis	LC			Common and widespread in England except the north, found on the Welsh coat, and very sparsely on the Scottish coast. It is found on open ground, such as short grasslands, heaths and river shingles, but sometimes in wetter places, but only rarely in woodland.	E	S	W	52	150	22
Medetera setiventris	DD		NR	Added to the British list in 2001 and known from only one specimen from Highland. Associated with conifers in Europe (probably Scots pine in Britain). It may be confused *with M. fasciata* but many specimens of *fasciata* have been checked (MacGowan 2001) so *setiventris* is likely to be genuinely rare.		S		1	0	0
Medetera striata	Not Evaluated			Possibly not British; Scottish records attributed to *striata* are mainly *fasciata* and one *setiventris* (MacGowan, 2001) but a record from Hampshire has not been checked, so the possibility remains that striata is still extant in Britain (*fasciata* is confined to northern Scottish pinewoods and shows no sign of being present outside this small area).	[E]			6	0	0
Medetera tristis	LC		NS	Sparsely but widely distributed in England north to Yorkshire and Wales, and present in northern Scotland in Highland, Moray and Isle of Skye. Not declining but with few recent records for central England. It may be associated with scrub or trees on fens and marshes. Moved beyond NS under criteria 6 and 8.	E	S	W	19	17	4

Medetera truncorum	LC			A common and widespread species in England and coastal Wales, but sparse near the coast in Scotland. Found on tree trunks in a wide range of situations.	E	S	W	92	237	32
Medetera unisetosa	DD		NR	Recorded only once since 1990 and in only four hectads altogether, three in the New Forest (Hampshire) and nearby south Wiltshire, and one in western Highland. If the Scottish record is an error, the species may be very rare in a small area of southern England. There may be some doubt as to its validity as a species since it has been recorded in Slovakia but nowhere else, and the original description says that it closely resembles *M. glauca* Loew (not British) which has a moderately wide European distribution. There are no published figures of the genitalia to enable a definitive identification. Nevertheless, whatever its identity, it is rare in Britain. It is retained as NR under Criterion 6.	E	S?		4	1	1
Medetera veles	DD		NR	Added to the British list in 1989 since when it has been recorded in 4 hectads (none since 1990), three in Scotland (Highland, Strathclyde) and one in Gwynedd. Probably associated with pine.The wide distribution and low number of records suggests a rare species.		S	W	4	0	0

Melanostolus melancholicus	LC		NS	Distributed widely from Devon and Isle of Wight northwards to Cheshire, and another cluster in Yorkshire. The species occupies two distinct habitats, weepages on soft coastal cliffs, and shores of sandy or pebbly rivers. It has shown a marked increase in occurrence and distribution in the last two decades, although apparently lost from southeastern counties. The species appears to be genuinely becoming commoner.	E		W	7	21	2
Micromorphus albipes	DD		-	The taxon comprises at least three species which cannot be named yet. and as such must be Data Deficient. Species is held at DD under Criterion 5 until better data for the species within this concept is available.	E	S	W	56	126	14
Microphor anomalus	LC		NS	There are issues in the identification of all Microphor species, and this should be borne in mind when using these accounts. Moved beyond NS under criterion 8.	E	S	W	18	41	2
Microphor crassipes	LC		NS	There are issues in the identification of all Microphor species, and this should be borne in mind when using these accounts. Widespread in England. Moved beyond NS under Criterion 8.	E	S	W	31	59	5
Microphor holosericeus	LC			There are issues in the identification of all Microphor species, and this should be borne in mind when using these accounts. Widespread in England and Wales.	E		W	29	106	10

Microphor strobli	DD		NR	There are issues in the identification of all Microphor species, and this should be borne in mind when using these accounts. Recognised in Britain in 2005 and since recorded in 7 post-1989 hectads. It is likely to have been overlooked as it is tiny black undistinguished species and difficult to identify, so the number of modern records suggests that it cannot be particularly rare. Moved beyond NR under Criteria 6 & 8.	E			1	7	0
Micropygus vagans	Not Evaluated			Non-native established in the wild; frequent in southwest Scotland and has spread to Speyside and northern England within 40 years.	E	S		0	18	0
Muscidideicus praetextatus	VU	B2a, B2b (ii & iv)	NR	Recorded from a restricted range of saltmarshes on the south and east English coast, south Wales and west Scotland. A coastal species of brackish dune slacks, upper saltmarsh and brackish lagoon, where it is found on wet mud and sand. It has been found repeatedly at a few sites (Dawlish Warren in Devon, north Norfolk saltmarshes) but not at many other well worked sites, and this suggests a poor ability to disperse or particularly fastidious requirements.	E	S	W	12	8	2
Nematoproctus distendens	LC		NR	Widely dispersed from Hampshire to Yorkshire but very scarce. The New Forest (Hampshire) and nearby area holds the largest concentration of records. This is probably a wetland species requiring saturated conditions which can be provided by bogs, wet grasslands and lake margins. It was	E			4	8	2

				first recorded in Britain in 1962 and the accumulation of records is slow, suggesting that this is a genuinely rare species, but showing no indication of decline and obvious threat.						
Neurigona abdominalis	EN	D2	NR	Recorded in only two hectads since 1990 although at two nearly locations at one of these where it may have a stable population. Records are from East Anglia. A 1963 record from Hampshire on the NBN needs verifying as it has not been mentioned before. The very small range and sparseness of records indicates a particularly scarce species. All the records come from gardens or suburban sites, which are common habitats though are also heavily managed. Probably best described as a woodland edge species. The threat from adverse management suggests VU is more appropriate than EN, and reflects better the circumstances of this conspicuous fly than its previous NT status.	E			4	2 (+1 in 2014)	1
Neurigona biflexa	DD		NR	Recorded from only one hectad where it was first found in Anglesey in 1987. The habitat needs are unknown; the one specimen was found in scrub on a coastal dune system. It may be under-recorded as it is very similar to *N. quadrifasciata*, and therefore a status of DD seems appropriate.			W	1	0	0

Neurigona erichsoni	DD		NR	First recognised from three broadleaf woodlands, in Dorset, Surrey and Kent, from captures in 2012-2014. It is likely to have been overlooked rather than be a recent immigrant.	E			0	3	0
Neurigona pallida	LC		NS	Moved beyond NS under criteria 2 and a notion of 4 in that sweeping tree trunks or high foliage often reveals it.	E		W	13	48	2
Neurigona quadrifasciata	LC		NS	Recorded in >80 post-1989 hectads. Moved beyond NS under Criterion 7.	E	S		32	82	10
Neurigona suturalis	LC		NS	Not declining; widely distributed in lowland England and scarcer to Cumbria and Yorkshire.	E	S	W	28	27	3
Orthoceratium lacustre	LC		NS	No obvious change in range. Although widespread, it is very patchily distributed and its distribution is stable within three core coastal areas: Bristol Channel, Thames estuary and north Norfolk to Lincolnshire. A coastal wetland species found in upper saltmarsh, brackish ponds and ditches on grazing marsh, wet dune slacks. Scarce is an appropriate status although it may prove to be too widespread to retain this status.	E	S	W	38	24	9
Ortochile nigrocoerulea	CR	C1, C2 (a i), D	NR	The species was previously found widely in south and east England. The only recent "record" from about 1978 (from Warmwell Heath, Dorset VC9, 1998) has been confirmed as an error for *Hercostomus nigripennis*. *Ortochile nigrocoerulea* is a moderately obvious species to identify so is unlikely to have been	E			19	**0**	0

				overlooked. The species is therefore in serious decline.						
Poecilobothrus chrysozygos	LC		NS	Recorded in >40 post-1989 hectads. Moved beyond NS under criterion 7.	E		W	27	45 (+15 post review)	4
Poecilobothrus ducalis	VU	B2b(ii & iv)	NR	Showing no change in distribution. A mainly coastal wetland species found mainly on upper saltmarsh, and on brackish ponds and ditches; inland populations are from reedbeds. It occurs disjunctly on the coast from East Sussex to Suffolk, with another smaller population in the Somerset Levels and Moors, and a very old record from Strathclyde in Scotland. It may be susceptible to erosion of its saltmarsh habitat.	E	[S]		16	8	1
Poecilobothrus majesticus	EX			A single specimen from the Essex coast in 1907 which is the type and the only specimen in the world. Possibly extinct or perhaps not a valid species. Presumably saltmarsh.	E			1	0	0
Poecilobothrus nobilitatus	LC			Common in England, very rare in Scotland.	E	S	W	112	390	58
Poecilobothrus principalis	LC		NS	Recorded fairly widely, distributed around the English coast from Hampshire to Lincolnshire, and south Wales (scarce elsewhere), not declining. A species of upper saltmarsh; inland occurrences are two presumably reliable records are from pingo-pool sites in Norfolk, and an old record from fen in Cambridgeshire. Moved beyond NS under criteria 2 & 7.	E		W	36	49	17

Rhaphium albomaculatum	LC		NS	Widespread in 'upland' Britain, not declining. Moved beyond NS under criteria 1 & 3, flying early in England and Wales - mainly May and June - although more in June in Scotland.	E	S	W	15	33	2
Rhaphium antennatum	LC		NS	Widespread in eastern England, scarce in west and Wales, not declining. This is a species to watch to see if the records suggest it is more widespread, and so no longer merits NS.	E		W	35	32	9
Rhaphium appendiculatum	LC			. Widespread	E	S	W	91	262	32
Rhaphium auctum	LC		NS	Moderately widespread in western England and Wales, scattered elsewhere, not declining. Moved beyond NS under criteria 7.	E	S	W	32	50 (+13 post review)	7
Rhaphium brevicorne	LC		NS	Recorded in >70 hectads since 1990, widespread in England and Wales (not lowland England), not declining. Moved beyond NS under Criterion 7 & 8	E	S	W	24	70	4
Rhaphium caliginosum	LC			Widespread	E	S	W	71	240	23
Rhaphium commune	LC		NS	Widespread in southern England, scarce elsewhere (rare in Wales and Scotland). Moved beyond NS under criteria 7. A species with a patchy distribution.	E	S	W	27	32	4
Rhaphium consobrinum	LC		NS	Widespread in England and Wales, not declining. Moved beyond NS under Criterion 7	E	S	W	40	64	10
Rhaphium crassipes	LC			Widespread	E	S	W	59	127	15
Rhaphium elegantulum	LC		NS	Widespread in England south of Yorkshire, scarce in Wales and Scotland, showing a possible increase in frequency since 1990. This is a	E	S	W	21	36	5

				species to watch to see if the records suggest it is more widespread, and so no longer merits NS.						
Rhaphium fasciatum	LC		NS	Widespread in Britain. This is a species to watch to see if the records suggest it is more widespread, and so no longer merits NS.	E	S	W	33	34	4
Rhaphium fascipes	VU	B2b(ii & iv)	NR	Records since 1990 showing a markedly disjunct distribution with records in southern counties of England, scarce records in south Wales and West Midlands, and older ones from west and central Scotland. The patchy distribution, scarcity of recent records from southeast counties and its restricted habitat (possibly wet heath, acid mire) suggests that it is an uncommon species, but it may truly move into the Scarce category if shown to be more frequent in northern sites. It just sits on the cusp of Vulnerable but may be Near Threatened. Currently moved beyond NR under Criteria 7& 8.	E	S	W	21	10	1
Rhaphium fractum	LC		NS	Widespread but patchily distributed in western and northern Britain, and not declining. Often recorded by stony and sandy rivers, usually on exposed sediments. An old Fonseca record from Kent was probably from a dunes system. It will almost certainly be found to be more frequent.	E	S	W	15	16	1

Rhaphium gravipes	VU	B2b (ii & iv)	NR	Records with very localised clusters in Scotland and northern England, but rarely recorded elsewhere. Two Kent records by reputable recorders may be errors as they do not fit the predominantly northern distribution. The single Welsh records is from the usual habitat of this species. Probably associated with exposed sediments of stony rivers. The very clumped distribution suggests a rare species which may be susceptible to decline in its preferred ERS habitat.	E	S	W	11	8	3
Rhaphium lanceolatum	NT		NR	It is found mainly in Scotland but verified records from the New Forest and Norfolk show it has a wide but disjunct distribution. There is one record from North Wales in the 1980s. Habitat requirements unknown. The New Forest record was from acid valley mire beside a stream, and that from Norfolk was rich fen, but these habitats may not be typical of Scottish sites. Very old NBN records from Northamptonshire refer to *caliginosum* whose nomenclature used to be confused with that of *lanceolatum*. Moved beyond NR under Criteria 1,7 & 8.	E	S	W	27	11	2
Rhaphium laticorne	LC		NS	Moderated beyond NS under criteria 2 & 7. The species fidelity to ERS and structural equivalents away from streams means that it should be easy to challenge the moderated status and either confirm it or demote to NS.	E	S	W	19	38	2

Rhaphium longicorne	LC		NS	Widespread in Britain (not central England), not declining. Moved beyond NS under Criterion 7 & 8	E	S	W	26	66	8
Rhaphium micans	LC		NS	Recorded and possibly increasing its range; it is found mainly in southern England but with isolated records in Wales, Yorkshire and Scotland. Associated with margins of both still and flowing water (rivers, streams, ponds), perhaps with a preference for fine sediments. The Scottish records are well isolated and may need checking. Its habitat is not threatened in any way.	E	S	W	21	16	1
Rhaphium monotrichum	LC			Widespread	E	S	W	48	107	11
Rhaphium nasutum	LC		NS	Recorded and not obviously changing its range although there are few recent records for large areas of northern England; widespread in Britain; it may prove too frequent to deserve Scarce status. Associated with the margins of still water (lakes, flooded gravel pits), streams and rivers; frequent in floodplains that inundate often.	E	S	W	27	17	1
Rhaphium patulum	VU	B2b (ii & iv)	NR	Found mainly in Scotland with scattered records in England and Wales, some of which may be errors as the habitats do not fit with those for Scotland. The associations are unclear but the species may depend on fine sediments (sand, mud) by rivers and pits, although also recorded from reed-dominated fen.	E	S	W	10	7	0
Rhaphium pectinatum	DD		NR	Recorded once in 1868 from Kent, and considered Extinct until it was	E			1	1 (in 2015)	0

				re-found at the head of the Exe Estuary on 25 June 2015.						
Rhaphium penicillatum	LC		NR	Recorded mainly in western England and Wales, with outlying records from south-east England and Perthshire in the 1980s, and a very old one from Kent. Associated mainly with the margins and exposed sediments of stony and sandy rivers, with a probable preference for sandy deposits. More records have been obtained recently so that the species appears to be expanding its range but this is due to targeting its habitat (ERS) so this change is illusory. Moved beyond NR under Criteria 2,7,& 8.	E	S	W	7	12	2
Rhaphium riparium	LC		NS	. Moved beyond NS under Criteria 1 & 2.	E	S	W	32	54	4
Rhaphium rivale	LC		NR	Recorded from upland England, Wales and Scotland; widely but sparsely distributed, with no overall change in occurrence or distribution. Associated mainly with the margins and exposed sediments of stony and sandy rivers. Its river-associated habitat is not frequent. Moved beyond NR under Criteria 1& 7.	E	S	W	16	15	2
Rhaphium suave	DD		NR	First found in Britain in 2005-6 at three widely separated sites: Northumbria, Cheshire and Gwent, so it is probably more widespread but restricted to rivers with sandy margins. Its recent recognition and wide distribution suggests that it is unlikely to be Vulnerable but the	E		W	0	3	0

				restricted habitat could lead to it being given a higher status in future.						
Scellus notatus	LC			Widespread	E	S	W	86	167	29
Schoenophilus versutus	LC		NS	Recorded in 16-19 hectads since 1990 and not declining; widely distributed in England and Wales. Found at margins of still water (ponds, ditches, pits) on basic to acidic sites, and brackish and freshwater; slightly more frequent at coasts at dunes slacks and soft rock seepages and pools, than inland. It has probably been overlooked and is not associated with an uncommon habitat.	E		W	19	16	5
Sciapus basilicus	DD		NR	Described in 1990 and found in Britain in 1997. It has since been found in 6 hectads in Gwent and Yorkshire. Recorded at the margins of large rives, on sand, pebbles and cobbles; probably associated with exposed riverine sediments. The rate at which new sites have been found suggests that *basilicus* is likely to be more widespread but still uncommon so may, over time, move category.	E		W	0	6	0
Sciapus contristans	LC		NS	Widespread in eastern England, scarce in west and Wales, not declining. Moved beyond NS under criteria 6 & 7, with a notion of some mis-identification at work both for and against it.	E		W	37	40	6
Sciapus heteropygus	CR	B2a,B2b (ii & iv)	NR	No recent records and from only three pre-1990 hectads in three widely spaced English counties. No useful information is available. The	E			3	0	0

				two older English records were from gardens and more recent (1988) from broadleaved woodland on the site of former brick-clay diggings which have left a few ponds. Likely to be genuinely very rare.						
Sciapus laetus	LC		NS	This is a southern species patchily distributed around the coast from south Wales to Suffolk. The bulk of records are post 1990 which conflicts with statement in Falk & Crossley (2005)that most records were old; it possibly underwent a population dip in late 20th century and is now established again at the same areas as before. A species of upper saltmarsh, often beside pools or freshwater seepages flowing over it, sometimes in wet dune slacks and brackish ditches on grazing marsh. Some old inland records needs verifying.	E		W	24	22	5
Sciapus longulus	LC		NS	Moved beyond NS under Criterion 7 & 8	E	S	W	49	84 (with at least 22 post review hectads added)	18
Sciapus maritimus	DD		NR	Taxonomic confusion with *S. zonatulus* has led to uncertainty over the status of this species, but both these are rarely recorded. *S. maritimus* has been recorded in 4 hectads since 1990. Probably mainly associated with dune systems but some records are inland at unspecified habitats (one garden). Owing to the confusion a rarer status	E	S		6	4	0

				(i.e. NT) is not appropriate, although the species pair is clearly uncommon.						
Sciapus platypterus	LC			Widespread	E	S	W	128	404	69
Sciapus wiedemanni	LC		NS	Widespread in England and Wales (rare in Scotland), not declining. Moved beyond NS under Criterion 7 & 8	E	S	W	16	61 (+ at least 9 new hectads added post review)	4
Sciapus zonatulus	DD		NR	Taxonomic confusion with *S. maritimus* has led to uncertainty over the status of this species, but both these are rarely recorded. *S. zonatulus* has been recorded in 9 hectads since 1990. Possibly associated with soft-rock cliffs but great uncertainty in genuine records Owing to the confusion a threat status is not appropriate, although the species pair is clearly uncommon. Held at NR under Criterion 6 until the position is resolved.	E	S	W	5	9	1
Sybistroma crinipes	LC		NS	Moved beyond NS under Criterion 2, & 7 . Potentially being a canopy species means it is less recorded than it should be.	E	S	W	27	68 (+ at least 19 post review hectads)	9
Sybistroma discipes	LC		NS	Recorded and not declining; widely distributed in Britain (rare in Scotland and eastern England) and occupies an unthreatened habitat (damp broadleaf woodland). Usually found in the wet parts of broadleaf woodland, at seepages, streams and rivers. It is unclear if its canopy habitat makes it less recorded or if it	E	S	W	23	20 (+ 7 post review).	2

				is really as scarce as the data suggests. Moved beyond NS under criteria 2 & 8, though this will need future review to check how justified it is.						
Sybistroma obscurellum	LC			Widespread	E	S	W	99	254	33
Sympycnus aeneicoxa	LC		NS	Recorded in >90 hectads since 1990. Moved beyond NS under Criterion 7.	E	S	W	44	92 (+at least 14 post review)	9
Sympycnus cirripes	LC		NS	A common species of higher ground in upland Britain. Moved beyond NS under Criterion 1 & 8	E	S	W	34	42 (+14 post review period)	7
Sympycnus pulicarius	LC			Split together with *S. septentrionalis* from *Sympycnus desoutteri* which is now a junior synonym.	E	S	W	218	514	88
Sympycnus septentrionalis	DD			Split with *S. pulicarius* from *Sympycnus desoutteri* which is now a junior synonym. It is pinned under Criterion 5 as DD until more records reveal its extent and status.	E	S	W	1	1 (+2 post-review period)	
Sympycnus spiculatus	LC		NS	Moderately widely distributed in limestone areas; not declining. Mainly associated with base-rich seepages in limestone areas, particularly in upland area but also at lower altitudes where calcareous seepages are prominent. It is likely to be more frequent than current records suggest since limestone seepages are widespread in upland Britain.	E	S	W	41	26	7
Syntormon aulicus	LC		NS	Moved beyond NS under criterion 7. A large species which is unlikely to be mis-identified though not looking like the other members of its genus.	E	S	W	29	43 (+15 post review hectads)	1

Syntormon bicolorellus	LC		NS	Widespread in England (scarce in Wales), not declining. Moved beyond NS under Criterion 7 & 8.	E		W	53	68 (+17 post review hectads)	5
Syntormon denticulatum	LC			Widespread	E	S	W	78	247	24
Syntormon filiger	LC		NR	Very sparsely but widely distributed around the English and Welsh coast on saltmarshes (rare in Scotland); not declining. A species of upper saltmarsh and brackish lagoons and ditches. There may be a habitat linkage with *Bolboschoenus maritimus* . Although widespread, it is rarely found except on the East Anglian coast. An inland Cheshire records is from a saline area. Moved beyond NR under Criterion 7.	E	S	W	15	13	3
Syntormon fuscipes	LC		NS	Widely distributed in England and Wales, not declining and with a large proportion of post-1989 hectads. That said, it still stands some way to move out from NS. A species to watch.	E	S	W	29	37 (+ at least 6 post-review hectads)	6
Syntormon luteicornis	DD		NR	Recognised in Britain in 2000 from a single site in Gwent. Likely to have been overlooked. Species confirmed and not the same as '*luteicornis*' of Blackith *et al*. 1995 which was an error for *S. bicolorellus.* Found on a coastal grazing marsh.			W	0	1	0
Syntormon macula	LC		NS	Showing a large increase in occurrence and range in its core area of West Midlands to Devon; scattered records eastwards to Suffolk and Kent. A small species (3.25mm) that flies early and of unremarkable appearance and so may be missed by collectors. A riverine	E		W	6	21 (+15 post-review period)	0

				species found by shaded streams and rivers on base-rich and acid geology. Occasional records are from marshes.						
Syntormon mikii	LC		NR	Showing little change in range from coastal England from Cornwall to Hampshire, with one reliable record from Suffolk; three inland eastern records need checking. Found mainly on upper saltmarsh by pools and freshwater seepages over the marsh, and seepages on soft and hard rock cliffs; less often from pools in wet dune slacks. One verified inland Dorset record was from wet tussocky hillside grassland. One of three unverified eastern inland records is from fen or fen meadow.	E			7	11	0
Syntormon monilis	LC		NS	Recorded as '*monilis*' in >40 hectads since 1990 but most of these are likely to be *S. silvianus* which has been recognised in Britain since 1991 but has not been formally published. *S. silvianus* is by far the commoner of the two species, and the limited records of genuine *S. monilis* suggest that it is uncommon in southern England and probably deserves Scarce status. A wetland species known from fens and valley mire, although probably in a wider range of freshwater habitats. No attempt has been made here to disentangle records of true *monilis* from *silvianus*. It should remain NS under	E	S	W	33	40 (there are 19 hectads of monilis *sensu strictu* from 2005)	2

				Criterion 5 until this separation is achieved.						
Syntormon pallipes	LC			. Widespread	E	S	W	176	368	66
Syntormon pseudospicatum	DD		NS	There is still too much uncertainty about whether this species is distinct from the common *S. pallipes* to make any assessment of its status. There is a slight preponderance of coastal records from saltmarsh and soft cliffs. Held at NS under Criterion 6 until further work is carried out.	E	S	W	3	29	2
Syntormon pumilus	LC			Widespread	E	S	W	105	157	19
Syntormon setosus	Not Evaluated			Known only from Ireland. May be just a form of *S. mikii*.				0	0	0
Syntormon silvianus	LC		NS	Recognised in Britain in 1991 but not published so many records are still submitted under the name *S. monilis*, which is a much scarcer species. *S. silvianus* is a common species. Moved beyond NS under criteria 8.	E	S	W	4	25 (+ at least 20 post-review hectads)	0
Syntormon sulcipes	LC		NS	Recorded in >50 hectads since 1990. Moved beyond NS under Criteria 7 & 1.	E	S	W	29	52 (+24 post review hectads)	9
Syntormon tarsatus	LC		NS	Recorded in >60 hectads since 1990. Moved beyond NS under Criterion 1 & 7 .	E	S	W	40	64 (+19 post review hectads)	11
Syntormon zelleri	LC		NS	Widely distributed in 'upland' Britain as an acid mire species, not declining and with a large proportion of post 1989 hectads. A species of acid mire	E	S	W	24	41 (+ at least 20 post	3

				and seepages. Moved beyond NS under Criteria 1, 2 & 7.					review hectads)	
Systenus alpinus	Not Evaluated			Known only from Ireland. Confirmed as a species distinct from S. scholtzii in 1992.				0	0	0
Systenus bipartitus	DD		NR	Recorded from at least 5 hectads since 1990 but likely to be well under-recorded as it is most often recorded from reared material. As such the decline is not considered to be real. Data Deficient status has been given in reflection of the earlier hectad count and the strong requirement to rear this species to discover it. Larvae develop in sap-runs and wet rot-holes in deciduous trees (elm, horse chestnut, maple and sycamore are known) in parklands and woodlands. Dyte (1990) gives only elm. It may yet be shown to be more common as it is widespread in England and recorded in Scotland. Moved beyond NR under criteria 2,4 & 8	E	S		13	6	0
Systenus leucurus	LC		NR	Recorded from lowland England from Hampshire to Yorkshire since 1990 but likey to be under-recorded and showing indications of a widening distribution. Larvae develop in sap-runs and wet rot-holes in many deciduous trees (beech, elm, horse chestnut, oak, poplar, sycamore) in a wide variety of habitats including woods, parklands, fens. Scarce status may be inappropriate as the records show an increase in occurrence and the	E			13	13	4

				species is not limited by habitat, but the status is retained owing to the narrow zone of records in a small part of lowland England. Moved beyond NR under Criterion 7 & 8.						
Systenus mallochi	LC		NR	Described from Scotland in 1997 and now recorded in 6 hectads since 1990, with four records from London to Suffolk and the single type locality in Grampian. Reared from larvae in rot-holes on several types of broad-leaf tree, in one case from Goat Moth (Cossus) burrow, or adults found at sap-runs on these (ash, birch, elm, oak, sycamore), in parkland, woodland and heathland. Although likely to be under-recorded, the cluster of south-east records suggests a limited local distribution, although the host trees and habitat are not limiting, hence the Least Concern status .	E	S		1	6	0
Systenus pallipes	LC		NS	Not declining, widely but patchily distributed in lowland England (scarce in Scotland). Reared from larvae in rot-holes in elm and poplar, and adults at sap runs most often at horse-chestnut but also oak. Habitats are mainly parkland and woodland, but also carr woodland and urban cemetary. Dyte (1990) additionally gives ash, beech, birch, chestnut, sycamore, willow, yellow buckeye and an unidentifiable conifer. Its frequent occurrence compared to other *Systenus* is at variance with an	E	S		20	19	2

				apparently more restricted suite of host trees and greater reliance on parkland trees.						
Systenus scholtzii	LC		NS	Widely distributed in lowland England, and with many recent records. Reared from larvae in rot-holes in several types of broad-leaf tree (beech, elm, horse-chestnut, poplar, sycamore), from an oak log (presumably decaying); adults at sap runs of oak. Found mainly in woodland and less often in parkland and other habitats with isolated trees (heath, fen, botanic garden, mire). Dyte (1990) additionally gives birch, chestnut, holly, walnut and an unidentifiable conifer. Moved beyond NS under criterion 8.	E			11	26	3
Systenus tener	NT	B2a, B2	NR	Recorded from only four hectads since 1990 and three previously, in a small area from Hampshire to the London area with an outlier in Herefordshire. Reared once from a rot-hole in an apple tree. Found in old woodland and parkland. Dyte (1990) gives beech, oak, walnut. There may have been confusion with *S. bipartitus* which until 1998 were sometimes considered synonymous.	E			3	4	0
Tachytrechus consobrinus	LC		NS	Recorded only strongly in SW England and S Wales on acid mire and wet sandy areas, with scattered records elsewhere in Britain (some coastal ones may be errors for insignis), not declining.	E	S	W	20	35	9

Tachytrechus insignis	LC		NS	Recorded mainly from the coast from Cumbria to Norfolk and some inland sites mainly in eastern England. Moved beyond NS under Criterion 7 & 8.	E	S	W	13	32	3
Tachytrechus notatus	LC		NS	Recorded in >80 hectads since 1990. Moved beyond NS under Criterion 7 & 8.	E	S	W	17	81	4
Tachytrechus ripicola	CR	B2a, B2b (ii & iv)	NR	Re-found in 2014 but before that not recorded since 1972, and before that from three separated areas: north-west Wales and Anglesey, south Wales and Dorset. It has been found on sand of coastal dunes and heaths, and on the black mud at the mouth of a river by dunes. It will almost certainly be a wetland species. It is a large and conspicuous dolichopodids and will not have been overlooked.	E		W	9	(+1, 2014)	0
Telmaturgus tumidulus	LC		NR	Not declining. It is mainly associated with peat soils in acid mire and seepages in the New Forest and Dorset heaths, and tall-herb fen and reedbed in Norfolk. The sites are usually saturated or lose to water margins. There are occasional records from saltmarsh bordering heathland with mire. It is found in two small core areas (Norfolk/Suffolk fens and Hants/Dorset mires), with an outlying population at Gwynedd.	E		W	10	12	9
Teuchophorus calcaratus	LC		NS	Widespread in England and Wales, not declining. Moved beyond NS under Criterion 7 & 8.	E	S	W	21	63	2

Teuchophorus monacanthus	LC		NS	Recorded in >80 hectads since 1990. Moved beyond NS under Criterion 7 & 8.	E	S	W	39	86	7
Teuchophorus nigricosta	LC		NS	Recorded in >50 hectads since 1990. Moved beyond NS under Criterion 7 & 8.	E	S	W	45	57	7
Teuchophorus simplex	LC		NS	Recorded in >50 hectads since 1990. Moved beyond NS under Criterion 7 & 8.	E		W	17	54	5
Teuchophorus spinigerellus	LC			. Widespread	E	S	W	59	113	12
Thinophilus flavipalpis	LC		NS	Recorded on the coast from south Wales to Norfolk. A record from Cumbrian moorland is almost certainly an error. A species of upper saltmarsh and estuaries, usually in sheltered places.. It shows no indication of change in range or occurrence. Moved beyond NS under criteria 1& 2.	E		W	14	22	6
Thinophilus ruficornis	LC		NS	Recorded around the coast from Anglesey to The Wash. A species of upper saltmarsh and estuaries, often those associated with dune systems; rarely in brackish coastal marsh. Some isolated inland records from northern English uplands are probably errors. It shows little change in distribution and is found in many saltmarshes and estuaries. It is no less uncommon than *T. flavipalpis.* Moved beyond NS under criteria 1& 2.	E		W	28	24	9
Thrypticus bellus	LC		NS	This genus is both hard to identify correctly and not particularly easy to find, both of which raise a level of uncertainty over the dataset which	E	S	W	15	49	3

				demands a cautionary approach. Moved beyond NS under criteria 6 & 8.						
Thrypticus cuneatus	NT	B2a,	NR	This genus is both hard to identify correctly and not particularly easy to find, both of which raise a level of uncertainty over the dataset which demands a provisional status. A wetland species that is almost certainly associated with spike-rush (*Eleocharis*) which was frequent at two of the sites. It has been found in fen, coastal marshes and a disused clay pit with numerous shallow pools. Recorded in four hectads since 1990, and only one before this time, in widely scattered sites in the once-flooded Fenland and East Anglia lowlands, and Dorset. It is one of the most obvious species in the genus so unlikely to have been overlooked but the genus is considered 'difficult' and often avoided by recorders, so a higher status (e.g. EN) may be inappropriate.	E	S		2	4	0
Thrypticus divisus	LC		NR	This genus is both hard to identify correctly and not particularly easy to find, both of which raise a level of uncertainty over the dataset which demands a provisional status. Recorded in 6-15 hectads since 1990 and not declining, recorded widely in Britain but most records from Fenland and East Anglia. This does appear to be a genuinely uncommon species although the genus is difficult to identify correctly. Moved beyond NR under criteria 7 & 8.	E	S	W	11	9	1

Thrypticus laetus	LC		NS	This genus is both hard to identify correctly and not particularly easy to find, both of which raise a level of uncertainty over the dataset which demands some caution. Widely distributed in eastern and southern Britain but scarce in the north; no records from Scotland. Records are known to include errors for other species. Moved beyond NS, though this needs to be assessed with more records.	E	S	W	20	31	1
Thrypticus nigricauda	LC		NR	This genus is both hard to identify correctly and not particularly easy to find, both of which raise a level of uncertainty over the dataset which demands a provisional status. Not declining, widely but sparsely distributed in eastern and southern England, rare in the north; one Welsh record. Likely to be under-recorded and there can be problems with identification. Moved beyond NR under Criteria 7 & 8.	E		W	9	15	1
Thrypticus pollinosus	LC		NR	This genus is both hard to identify correctly and not particularly easy to find, both of which raise a level of uncertainty over the dataset which demands a provisional status. Not declining, widely but sparsely distributed in England, rare in the north and Scotland. Likely to be under-recorded and there can be problems with identification. Moved beyond NR under Criteria 7 & 8.	E	S	W	26	13	1

Thrypticus smaragdinus	LC		NR	Recognised in Britain in 1988 and since recorded in 5 hectads. Found in fens but nearly always associated with tall reed rather than tall-herb fen. The Dorset records were from freshwater seepage over sheltered saltmarsh with tall reed. It is found only in Norfolk Fens where it is widely distributed in the main valleys, and a single site in Poole Harbour (two samples either side of a grid line so appears to be 2 hectads). A post-review record was from north Kent marshes. The sites are near sea-level and vulnerable to sea-level rise.	E			1	6	1
Thrypticus tarsalis	LC		NR	This genus is both hard to identify correctly and not particularly easy to find, both of which raise a level of uncertainty over the dataset which demands a provisional status. A wetland species recorded from a wide range of habitats, with no apparent common feature. Not declining, widespread in lowland England, rare in Wales. Moved beyond NR under Criterion 7	E		W	13	15	1
Xanthochlorus galbanus	LC		NS	Previously recorded as *luridus*. Moved beyond NS under criteria 7 & 8.	E		W	6	42 (+ 30 post review hectads)	0
Xanthochlorus ornatus	LC			Widespread	E	S	W	71	158	14
Xanthochlorus silaceus	DD		NR	Described in 2008 and known from southern England and Gwent. Most records are from broad-leaf woodland, particularly in drier calcareous sites. Reared from debris below a willow and another tree on	E		W	4	4	0

				the banks of the River Thames. Undoubtedly more widespread although uncommon.						
Xanthochlorus tenellus	LC		NS	Recorded in >50 post-1989 hectads. Moved beyond NS under Criteria 7 & 8.	E	S	W	19	52	5

Appendix 2. IUCN Criteria and Categories

Summary of the five criteria (A–E) used to evaluate if a taxon belongs in a threatened category (Critically Endangered, Endangered or Vulnerable)

	Critically Endangered	Endangered	Vulnerable
A. Population reduction			
A1	≥ 90%	≥ 70%	≥ 50%
A2, A3 & A4	≥ 80%	≥ 50%	≥ 30%

A1. Population reduction observed, estimated, inferred, or suspected in the past where the causes of the reduction are clearly reversible **AND** understood **AND** have ceased, based on and specifying any of the following:

(a) direct observation

(b) an index of abundance appropriate to the taxon

(c) a decline in area of occupancy (AOO), extent of occurrence (EOO) and/or habitat quality

(d) actual or potential levels of exploitation

(e) effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.

A2. Population reduction observed, estimated, inferred, or suspected in the past where the causes of reduction may not have ceased **OR** may not be understood **OR** may not be reversible, based on (a) to (e) under A1.

A3. Population reduction projected or suspected to be met in the future (up to a maximum of 100 years) based on (b) to (e) under A1.

A4. An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a maximum of 100 years in future), and where the causes of reduction may not have ceased **OR** may not be understood **OR** may not be reversible, based on (a) to (e) under A1.

B. Geographic range in the form of either B1 (extent of occurrence) AND/OR B2 (area of occupancy)			
B1. Extent of occurrence (EOO)	< 100 km²	< 5,000 km²	< 20,000 km²
B2. Area of occupancy (AOO)	< 10 km²	< 500 km²	< 2,000 km²

AND at least 2 of the following:

(a) Severely fragmented, **OR**

Number of locations	= 1	≤ 5	≤ 10

(b) Continuing decline observed, estimated, inferred or projected in any of: **(i)** extent of occurrence; **(ii)** area of occupancy; **(iii)** area, extent and/or quality of habitat; **(iv)** number of locations or subpopulations; **(v)** number of mature individuals.

(c) Extreme fluctuations in any of: **(i)** extent of occurrence; **(ii)** area of occupancy; **(iii)** number of locations or subpopulations; **(iv)** number of mature individuals.

C. Small population size and decline

Number of mature individuals	< 250	< 2,500	< 10,000
AND at least one of C1 or C2:			
C1. An observed, estimated or projected continuing decline of at least (up to a maximum of 100 years in future):	25% in 3 years or 1 generation (whichever is longer)	20% in 5 years or 2 generations (whichever is longer)	10% in 10 years or 3 generations (whichever is longer)
(up to a max. of 100 years in future)			
C2. An observed, estimated, inferred or projected continuing decline **AND** at least 1 of the following 3 conditions:			
(a i) Number of mature individuals in each subpopulation:	≤ 50	≤ 250	≤ 1,000
or			
(a ii) % of mature individuals in one subpopulation =	90–100%	95–100%	100%

(b) Extreme fluctuations in the number of mature individuals.			
D. Very small or restricted population			
Either:			
D1. Number of mature individuals	< 50	< 250	**D1.** < 1,000
D2. *Only applies to the VU category*. Restricted area of occupancy or number of locations with a plausible future threat that could drive the taxon to CR or EX in a very short time.			**D2.** typically: AOO < 20 km² or number of locations ≤ 5
E. Quantitative Analysis			
Indicating the probability of extinction in the wild to be:	≥ 50% in 10 years or 3 generations, whichever is longer (100 years max.)	≥ 20% in 20 years or 5 generations, whichever is longer (100 years max.)	≥ 10% in 100 years

Appendix 3. Moderating criteria for NR/NS rarity status

Rather than a strict reliance of determing national rarity based on hectad counts, the following criteria have been derived to allow for audited deviation based on expert opinion.
The categories available are:

1. **Geographical**- it lives in an area where no one goes, so no-one encounters it, yet it is within its known range;
2. **Ecological**- it, for example, lives in caves, or tussocks, so is rarely encountered unless specifically looked for.
3. **Temporal**- it only comes out at night, or in early Spring, and so is missed by most diurnal summer collectors
4. **Artifactual**- it was widely trapped before when you put out 100's of water traps, but unless you repeat that level of effort it will be missed
5. **Nomenclatural**- it was part of a group that is now split, so we have no idea which parts of the group are where anymore
6. **Contextual**- it is part of a taxon unit that is poorly worked and/or taxonomically uncertain, so the context of the records is often unclear, or is too recently discovered.
7. **Boundary**- it is described as widespread or is apparently widespread, and the hectad count is close to a category boundary.
8.. **Re-scaling** – within this family the level of recording effort is such that the threshold for accepting NR/NS status may requires fewer records for some taxa than is required in better recorded groups. As such the consensus is that although there are relatively few records it is actually fairly widespread.