Natural England Commissioned Report NECR246

A review of the status of the Lonchopteridae, Platypezidae and Opetiidae flies of Great Britain

Species Status No. 34

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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 part of the 1991 review of the scarce and threatened flies of Great Britain Part 2: Nematocera and Aschiza not dealt with by Falk, edited by Falk and Chandler. This original volume included a range of families, but rather than repeat the rather large and arbitrary grouping, the Lonchopteridae, Platypezidae and Opetiidae flies were abstracted into the current review volume. Many of the remaining families will form subsequent volumes in their own right.

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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.

Suggested Review date: 2025.

2. Introduction to the review

This species status review groups the three fly families Opetiidae, Lonchopteridae and the Platypezidae as part of the Lower Cyclorrhapha, and updates previous status accounts. These three families lack the core popularity of some other Diptera families, despite their small number of species and consequently have smaller datasets. There remain some difficulties in identification.

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 10 species covered in this review, but presented only 1 data sheet.

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
Lonchopteridae	0	1	2	0	0
Platypezidae	0	4	3	0	0
Totals	0	5	5	0	0

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 for 14 species. Table 2 lists the number of species in the families by status category.

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

Family	Category 1 Endangered	Category 2 Vulnerable	Category 3 Rare	Category 5 Endemic	Category K Insufficiently Known (RDBK)	Appendix No post 1900 records	Notable
Lonchopteridae	0	0	0	0	0	0	4
Platypezidae	0	3	2	0	0	0	5
Totals	0	3	2	0	0	0	9

However, a more complete treatment, together with data sheets, was given in Falk and Chandler (2005), and comparable data is given in Table 3. This later review looked more comprehensively at the families, and presented three Lonchopteridae and eleven Platypezidae data sheets.

Table 3. IUCN categories for species covered in Falk & Chandler, 2005					
Family	Endangered	Vulnerable	Near Threatened	Data Deficient	Nationally Scarce
Lonchopteridae	0	0	0	0	3
Platypezidae	0	2	1	1	7
Totals	0	2	1	1	10

Under this current review some 10% of the UK Platypezidae fauna is in a Threat category, with 66% being in Least Concern.

Identification

The small group of Lonchopteridae (only seven UK species) are keyed by Smith (1969), with useful additions by Drake on their biology (1996, 2002); they tend to be recorded either through generalist recording or work on habitats such as exposed riverine shingle.

The Platypezidae and Opetiidae. The 35 species in these small families get a reasonable amount of recording effort. All British species are keyed by Chandler (2001) and by Reemer & de Jong (2016). Chandler (1973), Chandler (1974), Chandler (2002a), Chandler (2002b), Ismay (2002), Halstead (2016) and Chandler (2016) are also worth consulting.

Rotheray *et al* (2004) provide an invaluable larval key for this group, the paper being online http://ecology.nottingham.ac.uk/~plzfg/pdf%20files/2004%20Rotheray%20et%20al_platypezidae.pdf

Taxonomic changes

The current UK Diptera checklist, as of January 2017, included 7 species in the Lonchopteridae and 34 species in the Platypezidae. There have been some changes in taxonomy, nomenclature and number of included species since Falk & Chandler (2005), in some of the families treated here:

A revision by Ståhls *et al*. (2014) restored specific rank to species recently treated as synonyms of *Agathomyia elegantula* (Fallén, 1815) and resulted in a nomenclatural change affecting the British list, restoring the name *Agathomyia boreella* (Zetterstedt, 1838) for the species recently known as *A. elegantula*. This and allied species were reared by them from encrusting bracket fungi of the genus *Antrodiella*, and *A. boreella* was obtained from *Antrodiella pallescens* and *A. faginea*.

Platypezina connexa was added as the 34th Platypezidae species and a new genus to the UK (Halstead 2016).

Opetiidae. The single British species *Opetia nigra* (Opetiidae), formerly included in Platypezidae, was too common to be considered in the previous Review, but is here incorporated in the spreadsheet for Platypezidae.

Lonchopteridae. There has been no change in the composition of this family, which still includes 7 British species.

The new review

JNCC adopted revised IUCN Guidelines (IUCN 1994) in 1995, subsequently adopting the 3.1 (IUCN 2001) and subsequent revisions, making it desirable to revise the status of all species.

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)

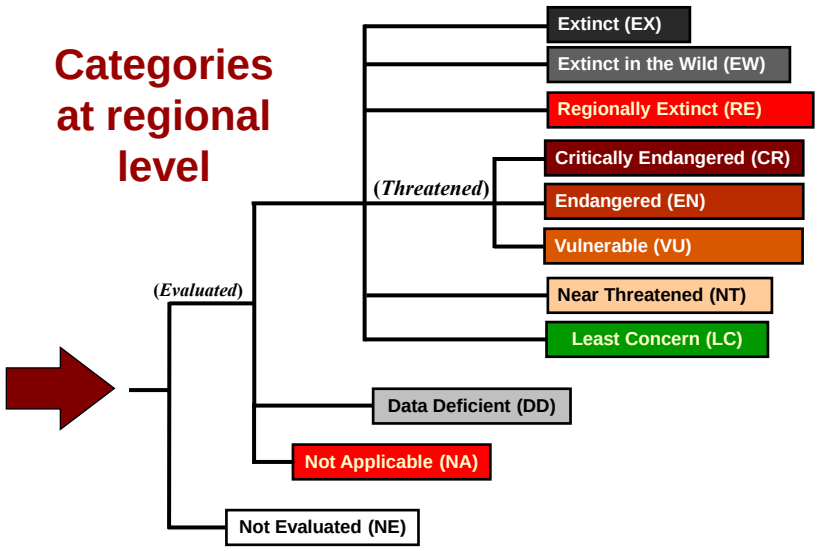

Figure adapted from IUCN (2001)

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: Summary of IUCN Criteria.

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 Evaluated (NE)'.** 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 the Diptera 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 the Diptera 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. Where EOO has been applied, the terms of this use has been defined within the status sheets on a species by species basis.

Area of occupancy (AOO) is another measure that is difficult to apply 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.

3.3 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 the species considered here under threat is not thought to be a significant factor.

3.4 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 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 never used in a published format to assess these three families.

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.

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.

5. Methods and sources of information in this review

Sources of data

Much of the data drawn on by Falk & Chandler (2005) also formed a basis for the present Review. These included the major British entomological journals, a number of museums known to possess significant Diptera collections, Diptera Recording Schemes, and the personal records of a large number of individual dipterists. Wherever possible the information from these sources has been updated.

In addition, records submitted by dipterists who have attended the annual field meetings arranged in connection with the Diptera Recording Schemes and more recently by Dipterists Forum have contributed. These records, now held by Dipterists Forum, cover many parts of Great Britain and are predominantly post-1990.

Other records on the NBN originate from various local records centres and the reliability of these is easiest to check where full data is provided. Often the source of the data is not clear and it can be a laborious process seeking verification of these data. This has therefore only been attempted in relation to unexpected records of certain critical species, as indicated in species accounts where relevant. Otherwise NBN data has been utilised where it was in accord with the known extent of occurrence of the species concerned.

The following species from the two families under Review are viewed as Least Concern and are not dealt with further:

Lonchoptera bifurcata
Lonchoptera lutea
Lonchoptera meijerei
Lonchoptera nigrociliata
Lonchoptera nitidifrons
Lonchoptera scutellata
Lonchoptera tristis

Agathomyia antennata
Agathomyia boreella
Agathomyia falleni
Agathomyia unicolor
Agathomyia viduella
Agathomyia woodella
Bolopus furcatus
Callomyia amoena
Callomyia speciosa
Lindneromyia dorsalis
Microsania pectipennis
Opetia nigra (Family Opetiidae)
Paraplatypeza atra
Platypeza aterrima
Platypeza consobrina
Platypeza fasciata
Polyporivora ornata

Polyporivora picta
Protoclythia modesta
Protoclythia rufa
Seri obscuripennis

Three platypezid species are Not Evaluated:

Agathomyia cinerea
Agathomyia wankowiczii
Paraplatypeza bicincta

Platypezidae. The author revised the European species (Chandler 2001) and he has assembled records over many years. To assist in the gathering of more records a recording scheme for the family was initiated in 2016, and this has already significantly enhanced the proportion of recent records for a number of species. The previous assessment by Falk & Chandler (2005) was based on more than 2000 site records for the family, and benefited from examination by the author of most of the major museum and private collections. This accounts for the larger number of pre-1990 hectads reported for 20 of the species, with only a few of these demonstrating a recent decline. The present review is based on a little over 4500 records.

Opetiidae. Nearly 600 records from 401 hectads (258 from 1990 onwards) are available for the single British species, again reflecting the relatively low level of recording as this species is probably ubiquitous.

Lonchopteridae. A large proportion of the data originates from the database assembled by Martin Drake, and comprises just over 3700 records. This includes a comparable or greater number of post-1990 records for all species except *L. nitidifrons* (for reasons stated below in Section 6. *Status*). It was not practicable to take into account post-2011 records for this family.

The spreadsheet

Data from the disparate sources were amalgamated into a single 'archive' sheet in Excel.

An indication of decline was given by the percentage that 'old' hectads formed of all occupied hectads. This was compared with the IUCN criteria for rates of decline since 1990. Dual hectads were not usually found to be a useful measure since, on average, only around 10% of hectads had both old and new records. However, high proportions of dual values for uncommon species were interpreted as indicating that the populations were moderately stable but had not expanded their range far, since recorders were clearly finding them at previously known sites but not at many new sites. For most species here accorded Threatened status there were no or only one dual hectads.

6. Species listed by IUCN status category

Critically Endangered

Callomyia elegans

Endangered

Agathomyia collini

Vulnerable

Agathomyia lundbecki

Data Deficient

Agathomyia sexmaculata

Callomyia dives

Microsania collarti

Microsania pallipes

Microsania straeleni

Platypeza hirticeps

Not Evaluated

Microsania vrydaghi

Platypezina connexa

7. Species listed by GB Rarity Status Category

Nationally Rare

Platypezidae	*Agathomyia collini*
	Agathomyia lundbecki
	Agathomyia sexmaculata
	Callomyia dives
	Callomyia elegans
	Microsania collarti
	Microsania pallipes
	Microsania straeleni
	Microsania vrydaghi
	Platypeza hirticeps

Nationally Scarce

Lonchopteridae	*Lonchoptera meijerei*
	Lonchoptera scutellata

Platypezidae	*Agathomyia boreella*
	Agathomyia cinerea
	Agathomyia wankowiczii
	Agathomyia woodella
	Paraplatypeza bicincta
	Seri obscuripennis

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

Species	Category	Criteria applied
Agathomyia collini	EN	B2a, B2b ii & iv
Callomyia elegans	CR	B2a, B2b ii & iv
Agathomyia lundbecki	VU	B2a, B2b iii & iv

9. Format of the species accounts

The species name

Nomenclature follows the most recent Diptera check list (Chandler 1998) and the updated 2017 version of this given in the Dipterists Forum website (www.dipteristsforum.org.uk).

Identification

All species included here may be identified using Chandler (2001) who keyed the European Platypezidae and Opetiidae, and Smith (1969) who keyed the British Lonchopteridae. Reemer & de Jong (2016) include all British and other western European species in their keys to the Platypezidae of the Netherlands.

Distribution

Distributions were based on hectads (10km squares), often with Watsonian Vice-counties (Dandy 1969) where this was given or could be accurately judged from the grid reference. The records were plotted on maps to give a broad overview of the national distribution and these formed the basis of the statements giving the overall pattern of distributions.

Habitat and Ecology

The habitats of Lonchopteridae are diverse as their larvae are mainly saprophagous. Most Platypezidae are found in woodland, and are fungus feeders. Chandler (2010b) discussed the associations of Diptera with fungi and provided a list of known fungus hosts for British species where this was then known; some additional host associations of British species have since been discovered in Finland or the Netherlands (Ståhls *et al*. 2014, Reemer *et al*. 2014, Reemer 2015, Reemer & de Jong 2016). The more common or widespread species may be found in any type of woodland, but are usually monophagous or oligophagous in respect of their fungus hosts. For the more restricted species that are accorded conservation status, it is often not clear what habitat factors are responsible for this restriction. There remain considerable gaps in knowledge of biology, particularly of the more infrequently recorded species. It is hoped that drawing attention to these gaps will encourage recorders to note habitat details when recording Diptera in future.

The ecology of all *Microsania* species is problematic because they are rarely recorded away from bonfire smoke and their larval biology remains unknown.

Status

This statement gives the current IUCN status category for the described taxon. 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.

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.

Chandler (2016) provided a map showing the distribution of records then known to him of Platypezidae in the British Isles; data was available for 738 hectads, of which 711 were in Great Britain, i.e. 25% of the 2845 hectads including land. Of those 711 hectads, 522 had records up to 1989 while 377 had records from 1990 onwards, with just 188 in common between the two periods.

The commencement of the national recording scheme saw a dozen recorders provide new records which have particularly enhanced the post-1990 records for the more widespread species. The data on which the present review is based includes records from 769 hectads in Great Britain, distributed in time as shown in the table below. The number of hectads for both periods has increased, but more substantially for the post-1990 period and there are now 238 hectads with records from both periods. Although not all British hectads include woodland within which most platypezids are found, this still indicates a relatively low level of recording nationally and many hectads are represented by single records.

Number of hectads in Great Britain with platypezid records

	Number of hectads	Percentage of all hectads with land
Recent hectads, since 1990	466	16.5
Old hectads, to 1989	540	19.0
All hectads with records	769	27.0
All hectads with land	2845	

The map provided (Figure 3) here thus updates that in Chandler (2016) and also differs in omission of some hectads that were then included erroneously or were based on records that have not been verified.

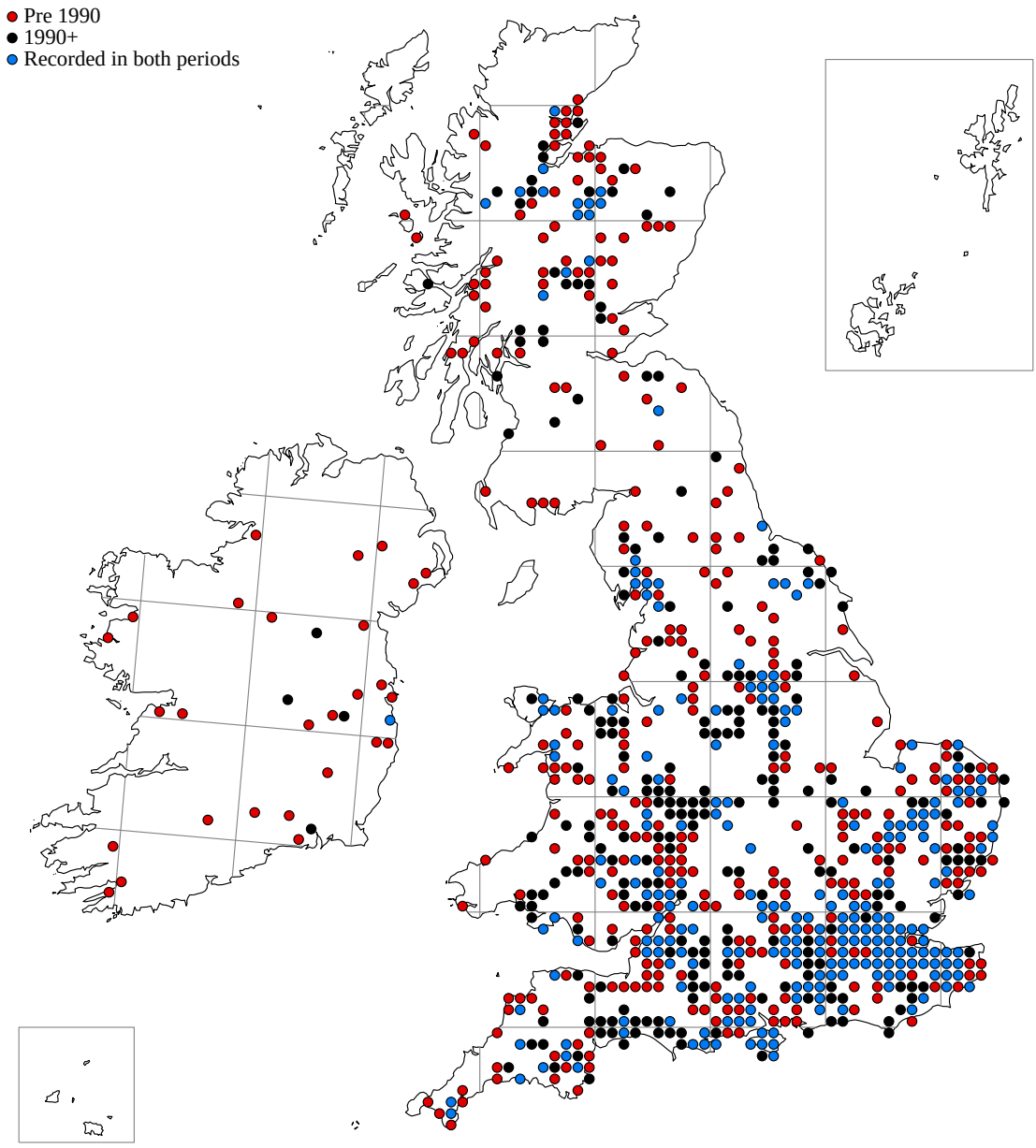

Figure 3. Distribution of all British Isles Platypezidae records (showing date classes to 1989, 1990-2016 and records from both periods); only those in Great Britain were used in the analysis.

Data Deficient or Not Evaluated status is appropriate for most *Microsania* species due to the relatively low level of recording resulting from the rarity of finds away from bonfire smoke. However, their rapid arrival at available smoke whenever this is investigated suggests that at least *M. pectipennis* and *M. pallipes* are very widespread, and the less common species are easily overlooked because two or more species often occur together; data sheets are therefore provided only for the two most rarely recorded species of the genus.

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 that 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.

Most Platypezidae are dependent on saproxylic fungi, so are affected by the treatment of standing or fallen dead trees or timber on the ground. Many sites did suffer from excessive tidiness during management and even in sites managed for conservation there was frequently a failure over many years to recognise the importance of decaying wood for insects and fungi. The clearance and replanting (often where natural regeneration would have been more effective) that took place on many sites affected by storm damage in the 1980s and 1990s was particularly deleterious. Even where dead wood was left it was often in exposed positions where it becomes too dry for fungal growth to take place. This situation has improved to some extent. Increases in decaying wood volumes at many sites in recent years has shown increases in saproxylic species as a result, including the rapid spread of some new arrivals.

A reduction in naturally occurring fires may have had an impact on *Microsania* species. There has apparently been a decrease in recent records for this genus, probably because of lower availability of accessible fires.

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.

10. Data sheets

LONCHOPTERIDAE- The pointed-wing flies

All of the seven UK *Lonchoptera* species are **Least Concern** and so do not warrant data sheets.

PLATYPEZIDAE – the Flat-footed Flies

Apart from the smoke flies of the genus *Microsania*, whose larval biology remains unknown, all of the flat-footed flies are considered to be fungal feeders as larvae and host fungi are known for 24 out of the 34 British species. All larvae develop in living fungal tissue and most are oligophagous. Adults are most often found around their host fungi or running about erratically on surfaces of broad leaves, where they feed on honeydew. They are not well recorded by trapping methods, probably because they have relatively low population levels and are localised by habitat requirements. Many species also have short vernal or autumnal flight periods, so may be overlooked by general recorders.

The biology is much better known for the Platypezinae, which include those flies associated with gill fungi (*Lindneromyia*, *Paraplatypeza*, *Platypeza*, *Protoclythia*) as well as three fly genera (*Bolopus*, *Polyporivora*, *Seri*) which feed on the softer textured polypores.

The Callomyiinae include some flies on encrusting fungi (*Callomyia*) and others on the tougher textured polypores (*Agathomyia*), with one species, *A. wankowiczii*, forming conspicuous galls on the tough perennial brackets of the Artist's fungus *Ganoderma applanatum*. The biology of the recently added genus *Platypezina* is unconfirmed but it has been recorded in an emergence trap over a rotten trunk of Norway spruce, *Picea abies*, in Finland.

With the exception of *Lindneromyia* that develops in terrestrial gill **f**ungi (including field and parasol mushrooms), all known fungal hosts are saproxylic.

AGATHOMYIA COLLINI **ENDANGERED**
B2a, B2b ii & iv

A flat-footed fly
Order DIPTERA Family PLATYPEZIDAE

Agathomyia collini Verrall, 1901

Identification Keyed by Chandler (2001).

Distribution Recorded from twelve localities in southern England: Torcross, Devon (1903); Gray's Chalk Pit, Essex (1977); Lewisham, Kent (in garden, 15 July 2012, D.G. Notton); Monk Soham (22 August 1915 on house window, and frequent in orchard, June to August 1917) and Bradfield Wood (near to a garden, 22 May 2007, I. Perry), Suffolk; Kirtling (1896, 1897), Whittlesford (1904), Chippenham Fen NNR (1943) and Cambridge (frequent in garden, 1901 to 1906), Cambridgeshire; Blaise Woods (1952) and Newent (1979), Gloucestershire;

Stoke Edith, Herefordshire (in garden, 1912). On the NBN, the Monk Soham record has been misinterpreted as the Soham in Cambridgeshire.

Habitat Associations are unclear; records include fens, woods, gardens and orchards. The presence of trees of the family Rosaceae seems to be the overriding factor.

Ecology Biology unknown, but the larvae probably develop in bracket fungi such as Cushion Bracket *Phellinus pomaceus*, which grows on old fruit trees of the family Rosaceae. Adults recorded from April to October and males have been observed swarming about 0.6m above grass in an orchard (Morley 1918).

Status Formerly widespread in the south in the pre and inter-war years, but with only two post 1990 records, a single male swept in woodland (but near to a garden) and a female found in a garden adjoining an urban nature reserve that includes an old plum tree. It is possible that it may be more widespread but overlooked in garden or orchard situations.

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

It satisfies Endangered B2a in having only 2 hectads in the recent period, and B2b ii & iv with records falling from 10 hectads to only two in the second time period, with attendant declines in both area of occupancy and number of locations. Under D2 it satisfies Vulnerable for locations (each record clearly is a separate location in IUCN terms) but it is impossible to understand what the plausible future threat driving it to CR or EX would be. Subsequent reviews should help clarify whether this decline is real or an artefact of recording effort, though the species has, historically, seemingly only ever been rare although with a wide geographic range.

Threats The destruction of sites containing old rosaceous trees such as apples and cherries; the loss of old orchards (which has increased in recent years) www.bulmerfoundation.org.**uk**/download/stephen-parrett-lit-review.
The removal of old trees from gardens could also be significant. The shading out of rides and clearings in woods that may be required for adult swarming.

Management and conservation Retain any old or decayed rosaceous trees. Maintain open rides and clearings within woods.

Published sources Aston (1957); Chandler (2001); Collin (1904, 1938); Jenkinson (1903); Morley (1918); Verrall (1901).

AGATHOMYIA LUNDBECKI **VULNERABLE**
B2, B2a, biii, iv.

A flat-footed fly
Order DIPTERA Family PLATYPEZIDAE

Agathomyia lundbecki Chandler, 1985

Identification Keyed by Chandler (2001). Falk (1991) listed it as *Agathomyia* sp. 1. It was recorded under the name *Agathomyia biseta* Oldenberg by Chandler (1974); only the female had then been examined and the male described by Oldenberg was identified as *A. sexmaculata* (von Roser).

Distribution Scattered records throughout Britain: Devil's Punchbowl, Surrey (13 October 1989, P.J. Chandler); Park Wood, Witherslack, Cumbria (10 October 1992), C.M. Drake; Out Wood, Leicestershire (19 October 2007, P.J. Chandler); Upper Wye Gorge SSSI, Herefordshire (7 October 2010, C.M. Drake); Preston Montford, Shropshire (2 October 2016, N.P. Jones); Pencelli Mire (8 October 1977) and Afon Bran (6 October 1978), Breconshire (P.J. Chandler); Mallwyd, Merionethshire (12 October 1975, A.E. Stubbs); Logie, Elgin (16 September 1904, F. Jenkinson); Migdale Wood, East Sutherland (15 September 1989, P.J. Chandler; 17 September 1995, P.F. Entwistle); Linn of Tummel (in Pass of Killiecrankie NR), Perthshire (9 September 2014, I. Perry). All records are of females except Mallwyd and Out Wood.

Habitat Marshes, river and stream margins with old or decayed alder (*Alnus*).

Ecology The larvae develop in the common alder bracket fungus *Inonotus radiatus*. At Afon Bran females were found at rest under fresh brackets of this fungus and larvae probably of this species were found there in the following year, although not successfully reared. At Migdale and Devil's Punchbowl, females were in the vicinity of alders infected with the fungus. Development in *I. radiatus* was confirmed in Finland by Ståhls & Kahanpää (2006). While recorded associations are with *I. radiatus* on alder, this fungus may also occur on other trees, including birch and beech. All adult records in September or October.

Status This species was widespread throughout Britain, but very local. Until found at the Surrey site (a wooded stream in a deep gulley) it was thought to be a northern and western species, but as its host fungus is frequent it may be under-recorded because of the localisation of its habitat. However, the only post 1990 records are from Migdale Wood, Sutherland (1995, previously recorded there in 1989), Park Wood, Witherslack, Cumbria (1992), Out Wood, Leicestershire (2007), Upper Wye Gorge SSSI, Herefordshire (7 October 2010), the Linn of Tummel, Perthshire (2014) and Preston Montford, Shropshire (2016).

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

It does not satisfy D2 as Vulnerable because of the number of recent locations (six), nor could it be considered to have a restricted population given the spread of the sites. The active pathogen threat in the form of *Phytophthora alni* attacking the tree supporting what looks like the principal larval food resource might operate as a plausible threat but this impact is, in itself, now restricted and of lesser concern than was formerly the case. Under B2a is satisfies both the number of locations and the fragmentation of those populations, and one can infer

declines under B2b iii & iv given the apparently restricted conditions of development in an annual fungus on a relatively short lived tree species with a linkage to streamside habitats across six very widely dispersed locations. Whilst not a clear case, given that the counts in the two period are equal, Vulnerable is suggested. This species would benefit from targeted rearing from alder bracket fungus *Inonotus radiatus*.

Threats The destruction of sites with old alders through drainage, ditching or river improvement schemes. Clearance for agriculture or forestry and removal of decayed trees bearing the host fungus. A very localised threat from *Phytophthora alni* disease of alder may exist but the host fungus is widespread and many alder populations have not succumbed.

Management and conservation Maintain stable water levels and ensure that there is a continuity of Alders able to support the host fungus.

Published sources Chandler (1974, 2001); Perry (2016).

AGATHOMYIA SEXMACULATA **DATA DEFICIENT**

A flat-footed fly
Order DIPTERA Family PLATYPEZIDAE

Agathomyia sexmaculata (von Roser)

Identification Chandler (2001). Reemer *et al*. (2014) describe the larva and include photographs of larvae and adults, including a female on the host fungus.

Distribution First recorded from Britain from a single female found at Thompson Common, Norfolk (13 October 2002, P.J. Chandler). It could not be certain if this was a vagrant or represented an established population, and subsequent searching at the site by I. Perry has failed to locate any further examples. However, the finding of a male at Alwalton, Cambridgeshire on 4 October 2016 (A.E. Stubbs), about 80km due west of the Norfolk site, suggests that there may be an established British population.

Habitat and ecology Larval development is in the bracket fungus *Bjerkandera fumosa*. A female was observed ovipositing on a bracket of this fungus on a *Populus* trunk in the Netherlands; adults were subsequently reared from the same species of fungus from another Dutch locality, and it was also confirmed as a host in Finland by DNA matching with adults of larvae found in *B. fumosa* on a *Salix caprea* trunk (Reemer *et al*. 2014). The British female was swept from low vegetation in a wooded area of Thompson Common, and the male was swept in a willow carr with nettle ground cover. It is scarce but widespread in Europe.

Status. Following 10.3 Red List Guidelines, February 2016, indicates that Data Deficient is appropriate for a taxon where CR and LC are both plausible options because of data uncertainty. If an extant but newly discovered species it may be threatened in terms of number of locations, but may also have established a new British bridgehead and may end up spreading more widely. A species to watch.

Threats. The destruction of old or decayed trees. It is not known whether the known host fungus is present at either of the sites or was available there at the time this species was recorded. A return visit to Alwalton by A. Stubbs did not locate a likely host fungus.

Management and conservation. Retain any old or decayed trees bearing brackets of the host fungus *Bjerkandera fumosa*.

Published sources. Chandler (2002b).

CALLOMYIA DIVES DATA DEFICIENT

A flat-footed fly
Order DIPTERA Family PLATYPEZIDAE

Callomyia dives (Zetterstedt, 1838).

Identification Keyed by Chandler (2001). This species was misidentified as *C. elegantula* Fallén by Wood (1904, 1905).

Distribution Earlier records are from scattered localities in southern England (Somerset, Hampshire, Kent, Surrey, Berkshire, Oxfordshire, Suffolk, Cambridgeshire, Huntingdonshire, Gloucestershire, Herefordshire) but also several records from the 1930s to the 1970s from the central Highlands of Scotland (Perthshire, Elgin, Easterness), as well as Berwickshire (1988).

The post 1989 records are from Eccles Pit, Kent (29 May 1994, L. Clemons); Plymouth Great Wood, Glamorgan (23 June 1996, D. Mann); Glaichbea, Inverness (23 June 1999) and Inversnaid Wood, Stirling (27 June 1999) (both P.J. Chandler), Searles Farm, Reading, Berkshire (6 August 2003, P.J. Chandler), Ullswater, Cumbria (6 June 2003, J. Parker & S. Hewitt); Bushy Park, Middlesex (22 August 2012, E. McAlister) and the Warburg Reserve, Oxfordshire (26 July 2014, I. Perry).

The last mentioned record is of interest in that it was also found at this site by the author on 9 July 1972 and was not found there in the intervening period despite intensive surveys of the site in recent years by I. Perry. The Bushy Park record was unexpected given the frequent recording there by the author in recent years, with results including 14 species of Platypezidae but not *C. dives* (Chandler 2015). These findings tend to confirm that a species with low population numbers can be readily overlooked even in well-worked sites.

Habitat Broadleaved woodland, usually in the vicinity of moist shaded dead or rotting wood.

Ecology Biology unknown, but other species of the genus have larvae feeding on the surface of encrusting fungi on dead wood. Adults recorded from May to August.

Status This species was recorded in 28 hectads before 1990, but in the second recording period had fallen dramatically to only 8, or an apparent 72% decline in records, but the earlier records are from a period of more than a century (since the first time period is

effectively open-ended). Looking at time period that are of equal length shows that there were 16 records in the first period and 8 in the second, but that there was practically no commonality to the sites and little in the counties where it was recorded. This does not, of course, mean that the old sites were not revisited, but with the records almost all being of singletons this does suggest an intrinsic rarity of the species and a real difficulty in finding it.

As such, it is more than plausible to consider that the reduction in records may not be significant, and may not demonstrate a real and substantial decline in hectad locations. Under B2a is would meet Vulnerable, but the uncertainty of the data quality questions the extent of the declines needed for the B2b sub-criteria to be applied, and under D2 it exceeds both the category for Vulnerable or any consideration of the population being restricted. Neither Criteria A, C or E can be applied here. Given this level of uncertainty in the record coverage, Data Deficient seems appropriate pending more targeted survey effort to, at the very least, try to revisit the old sites.

This species was treated as Nationally Scarce by Falk & Chandler (2005), revised from RDB 3 in Shirt (1987), on the basis that it is widespread but localised and that of the 32 then known sites 20 were post 1960. Most records relate to single individuals, suggesting that populations occur at low levels and may easily be overlooked. The post 1989 records indicate that it remained very widespread.

Threats The clearance of broad-leaved woodland for intensive forestry or agriculture and the removal of dead wood or dramatic reductions in shading.

Management and conservation Retain any dead wood, especially in moist shaded situations, together with associated fungi and ensure continuity of these in the future.

Published sources. Chandler (1974, 2001); Clemons (1984); Wood (1904, 1905).

CALLOMYIA ELEGANS **CRITICALLY ENDANGERED**
B2a; B2b ii & iv

A flat-footed fly
Order DIPTERA Family PLATYPEZIDAE

Callomyia elegans Meigen, 1804

Identification Keyed by Chandler (2001).

Distribution Relatively few records, all old and widely scattered: Glanville's Wootton (1861, 1890) and Holt (1956), Dorset; Lyndhurst, Hampshire (1901, 1934); Stoke Wood, Herefordshire (1912); Orford, Suffolk (1906); Porthcawl (1903, 1906) and Pyle (1908), Glamorgan; Llangammarch, Breconshire (1913); Llandre, Cardiganshire (1943); Gretna, Dumfriesshire (1940).

Though outside the geographical scope of this review, for the sake of completeness it is recorded here that there are four widely separated Irish records, of which two are more recent than the latest British record: Galway (19th century, undated); Tramore, Waterford (1918); Lough Rask, a turlough at Ballyvaughan, County Clare (1960); Ahenny, Tipperary (1975).

Habitat Mixed deciduous woodland, particularly woodland edge with a probable requirement for dead wood.

Ecology Biology unknown, but other species of the genus have larvae feeding on the surface of encrusting fungi on decaying wood. Adults recorded from June to September. The two latest Irish records were of single males hovering: at Lough Rask near the tips of sycamore branches in a gale, and at Ahenny in a ride near the edge of a small wood.

Status Most British records are from the period 1861 to 1913, with only three records, Gretna (1940), Llandre (1943) and Holt (1956) being more recent. Its present British status is thus rather unclear, although the absence of recent records during a period of more intensive recording suggests that there has been a significant decline.

The species does not qualify as Threatened under Criteria A, C, or E.
Critically Endangered is satisfied under B2a in having zero locations in the second time period, whilst B2b ii & iv are met through clear declines in both area of occupancy and number of locations. Lack of understanding of the larval host does not allow any projection or inference to be made under B2biii. It would satisfy Vulnerable under D2 but although the population is small or restricted, it is less clear what the plausible future threat is here. The lack of any records from Britain within the past 50 years may be moving it towards Regionally Extinct category, although not in the British Isles as it has been found in Ireland within that time period.

It was included as RDB 2 in Shirt (1987) and Falk (1991). Although widespread in Europe it is generally scarce and appears to have declined recently in central Europe (Michal Tkoč *pers. comm.*). Reemer & de Jong (2016) only knew of a single record (from 1923) for the Netherlands.

Threats The clearance of old woodland for agriculture or intensive forestry; removal of dead wood and old or decayed trees.

Management and conservation Retain any dead wood, together with its associated fungi, ensuring continuity of these habitats in the future.

Published sources Chandler (1974, 2001); Murray (1941); Verrall (1912).

MICROSANIA STRAELENI DATA DEFICIENT

A flat-footed fly
Order DIPTERA Family PLATYPEZIDAE

Microsania straeleni Collart

Identification Chandler (2001)

Distribution Known in Britain only from 1 site in Sussex and 2 in Scotland: Chelwood Gate, East Sussex (10 October 1976, I.F.G. McLean and P.J. Chandler); Culzean Castle Park,

Ayrshire (4 July 1995, J. Mousley, A. Godfrey & M.A. Howe); Muirhead, near Dundee, Angus (8 July 1977, I.F.G. McLean).

Habitat and ecology The Angus site was described as a rather unprepossessing rubbish dump, producing a pungent pall of smoke. The English site was around a garden bonfire of turves in a wooded area, while that in Ayrshire was around brushwood fires in an area of wooded parkland, together with *M. pectipennis* and *M. collarti*. Adults of this genus are usually found in association with smoke from fires of wood and other plant material, and the males will form aerial swarms in the smoke column, where they may be numerous, and females are attracted to these epigamic swarms. The larval biology of the genus is unknown and there is at present no reason to believe that *Microsania* are fungus feeders; the frequent presence of clusters of pink mites on the abdominal membranes may be a clue to their larval habitat. Two or more of the five British species may occur together at one fire, the smoke from burning wood being the most frequent attraction although the significance of this to the insects (other than as swarm markers) is not known.

Status. As the largest species of the genus it should be less easily overlooked among swarms than other species. The status of all *Microsania* species is, however, unclear because of lack of records other than at smoke. It was also treated as Data Deficient by Falk & Chandler (2005), where the status was revised from RDB 3 in Shirt (1987) and Falk (1991). With only 2 records in the first time period, and one in the second, it is it not possible to meaningfully state much about this species. The issue is compounded by the attraction to smoke, and the lack of targeted survey of that "habitat", and whilst the fly's size might make it a little more obvious, there is still a strong recording bias operating here. It could equally as well be more widespread but un-sampled, as very rare. Following 10.3 Red List Guidelines, February 2016, indicates that Data Deficient is appropriate for a taxon where CR and LC are both plausible options.
Threats. None understood.

Management and conservation. Not currently available given the scarcity of ecological information on the species

Published sources Chandler (2001)

MICROSANIA VRYDAGHI **NOT EVALUATED**

A flat-footed fly
Order DIPTERA Family PLATYPEZIDAE

Microsania vrydaghi Collart

Identification Chandler (2001)

Distribution Only three records widely scattered in England (Wytham Wood, Oxfordshire, 2 August 2001, J.W. Ismay; Kinver Edge, Staffordshire, 7 September 2004, A. Godfrey; Bath University campus, Somerset, 30 September 2006, P.J. Chandler), but probably overlooked among other species at bonfire smoke.

Habitat and ecology At Wytham Wood one male was caught with eight *M. pectipennis* in a sample from a large hot bonfire of a felled *Cupressus*, and at Bath University it was also in bonfire smoke with a large number of *M. pectipennis*. Adults of this genus are usually found in association with smoke from fires of wood and other plant material, and the males form aerial swarms in the smoke. The larval biology of the genus is unknown and there is at present no reason to believe that *Microsania* are fungus feeders; the frequent presence of clusters of pink mites on the abdominal membranes may be a clue to their larval habitat.

Status The status of all *Microsania* species is unclear because of lack of records other than at smoke. This species was first recorded in Britain in 2001 (Ismay 2002), too recent for any status to be proposed by Falk & Chandler (2005), but it is more likely to have been overlooked previously than to be a recent arrival like the three platypezid species treated as adventives or the two species known from one or two records. Following 10.2 Red List Guidelines February 2016, Not Evaluated is indicated as no attempt can be made to place the taxon in a category.

Threats None understood.

Management and conservation Not currently available given the scarcity of ecological information on the species

Published sources Chandler (2001), Ismay (2002).

PLATYPEZA HIRTICEPS **DATA DEFICIENT**

A flat-footed fly
Order DIPTERA Family PLATYPEZIDAE

Platypeza hirticeps Verrall

Identification Chandler (2001)

Distribution A northern and western species, found in the west of England and in Wales, with one record from Scotland (Perry 2016), occurring in low numbers so probably overlooked; hectad numbers are based on males as females are not satisfactorily distinguished from *P. aterrima*. Some of the literature records relate only to females or to misidentifications of the latter species, which is more common and widely distributed and was not recognised as distinct until 1974. Males confirmed as *P. hirticeps* are recorded from the following localities: Cusop Dingle (numerous between 1898 and 1902), Credenhill Park Wood (1998), and Haugh Wood NNR (1998), Herefordshire; Haye Park Wood, Worcestershire (1984); Caynham Dingle and Lydham, Shropshire (1987); Whalley, Lancashire (1960); Grange-over-Sands, Westmorland (1946); Long Wood, Cardiganshire (1974); Llanymawddwy, Merionethshire (1975); Drefor Dingle, Montgomeryshire (1987); Birks of Aberfeldy, Perthshire (2000).

Habitat and ecology The records are mainly from broad-leaved woods. This species was reared together with *P. fasciata* from an unnamed fungus (from the Lancashire site, Brindle

1961), which is likely to have been Honey fungus (*Armillaria* species), from which it has now been reared in the Netherlands (Reemer & de Jong 2016). Adults run about actively on leaves of trees and shrubs and are presumed to be honey-dew feeders. Adult records are from August to October.

Status It was treated as Nationally Scarce by Falk & Chandler (2005), revised from RDB 3 in Shirt (1987). This species has suffered an apparent decline in records between the two recording periods of 9 hectads down to three, so it has always been rare and has seemingly declined. However, there is a risk of this decline being strongly attributable to recorder bias, especially given the taxonomic issues associated with confusion with *aterrima*, and the inability to clearly separate out females. If the linkage with *Armillaria* species is correct, then the larval host fungi are widespread so one might infer that the fly may not be resource-limited. There has been no concerted and targeted survey effort specifically towards this species, so the records within the second recording period are random encounters of a rare species. Data Deficient is suggested here, rather than Not Evaluated. Hopefully more targeted recording will allow a better understanding of the conservation status.

Threats The clearance of woods and hedgerows for agriculture or intensive forestry, and the removal of stumps or old trees on which the fungus food plants are likely to form fruiting bodies. Given the horticultural views on Honey fungus and the desire to eradicate it where it occurs, there might be some localised declines in larval resource, though it remains unclear how tied *Platypeza hirticeps* is to this fungal group; it should be noted that some of the commonest and most widespread platypezids are associated with *Armillaria*, so its availability is unlikely to be a factor affecting the less common associates. Fungal control is also more centred in gardens and urban parks than in woodlands.

Management and conservation Retain late successional wood decay processes.

Published sources Brindle (1961); Chandler (1974, 2001); McLean (1999); Perry (2016); Verrall (1901).

PLATYPEZINA CONNEXA **NOT EVALUATED**

A flat-footed fly
Order DIPTERA Family PLATYPEZIDAE

Platypezina connexa (Boheman)

Identification Chandler (2001).

Distribution First recorded in Britain in Burley New Inclosure New Forest, Hampshire (2 females, 17 October 2015, A.J. Halstead) (Halstead 2016).

Habitat and ecology It was collected by sweeping vegetation at the New Forest site, which is mixed deciduous and conifer woodland with open rides. Little is known about the larval biology of *P. connexa*, except that four males were found in an emergence trap set up over a moss-covered soft rotten trunk of Norway spruce, *Picea abies*, in Finland during the period

27 July to 26 August 2005 (Ståhls & Kahanpää 2006). In the Netherlands it has been recorded mostly from mixed or coniferous woodland, especially with Spruce present.

Status The finding of two females is indicative of an established population but it cannot be certain if this is a recent coloniser or a relict of a previously overlooked native, though if spruce is a requirement the former is more likely. It is widespread in central and northern Europe, but was first recorded in the Netherlands in 1995, where there are now a good number of records from a wide area of the country (Reemer & de Jong 2016), and it was also recorded from Denmark for the first time in 2015, so a recent spread may be responsible for this occurrence. Following 10.2 Red List Guidelines February 2016, Not Evaluated is indicated as no attempt can be made to place the taxon in a category.

Threats None identifiable other than clearance of old woodland for agriculture or intensive forestry; removal of dead wood and old or decayed trees.

Management and conservation Retain any dead wood, together with its associated fungi, ensuring continuity of these habitats in the future.

Published sources. Halstead (2016).

11. Acknowledgements

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12. References and Further Reading

Review References

ASTON, A. 1958. The Diptera of Suffolk. *Transactions of the Suffolk Naturalists' Society* 10: 223-230.

BRINDLE, A. 1961. Taxonomic notes on the larvae of British Diptera. 5. The Clythiidae (Platypezidae). *Entomologist* **94**: 274-278.

CHANDLER, P.J. 1973. The flat-footed flies (Diptera, Aschiza-Platypezidae) known to occur in Kent with a key to the genera and species so far recorded from the British Isles. *Transactions of the Kent Field Club* **5**: 15-44.

CHANDLER, P.J. 1974. Additions and corrections to the British list of Platypezidae (Diptera), incorporating a revision of the Palaearctic species of *Callomyia* Meigen. *Proceedings and Transactions of the British Entomological and Natural History Society* **7**: 1-32. *Keys to British species.*

CHANDLER, P.J. 1979. Associations with Plants. Fungi. *In*: *A Dipterist's Handbook*, A.E. Stubbs & P.J. Chandler (Eds). London, Amateur Entomological Society. (*The Amateur Entomologist* **15**).

CHANDLER, P.J. 2001C. The Flat-footed Flies (Diptera: Opetiidae and Playpezidae) of Europe. *Fauna Entomologica Scandinavica* **36**: 1-276.

CHANDLER, P.J. 2002A. *Paraplatypeza bicincta* Szilády, 1941) (Diptera, Platypezidae) new to Britain. *Dipterists Digest* (second series) **9**: 23-24.

CHANDLER, P.J. 2002B. *Agathomyia sexmaculata* (von Roser) (Diptera, Platypezidae) new to Britain and some other recent records of Platypezidae. *Dipterists Digest* (second series) **9**: 161-163.

CHANDLER, P.J. 2010A. Woodland. pp 235-256. *In*: Chandler, P.J. (Ed.) A Dipterist's Handbook (2nd Edition). The Amateur Entomologist Volume 15. 525 pp. *The Amateur Entomologists' Society, Orpington*.

CHANDLER, P.J. 2010b. Associations with Fungi and Mycetozoa pp 417-441. *In*: CHANDLER, P.J. (Ed.) *A Dipterist's Handbook* (2nd Edition). The Amateur Entomologist Volume 15. 525 pp. The Amateur Entomologists' Society, Orpington.

CHANDLER, P.J. 2015. Diptera recording at Bushy Park, Middlesex. *Dipterists Digest* (second series) **23**: 69-110.

CHANDLER, P.J. 2016. Flat-footed Fly Recording Scheme. Newsletter 1. 10pp. *Bulletin of the Dipterists Forum* No 82.

COLLIN, J.E. 1938. Diptera. *In*: *Victoria County History of Cambridgeshire and the Isle of Ely*, Imms, A.D. (Ed.), pp. 189-205. London, Oxford University Press.

DANDY, J.E. 1969. *Watsonian vice-counties of Great Britain*. London, Ray Society.

DRAKE, C.M. 1996. The larva and habitat of *Lonchoptera nigrociliata* (Diptera: Lonchopteridae). *Dipterists Digest* (second series) **3**: 28-31.

DRAKE, C.M. 2002. The distribution and habitat preferences of British Lonchopteridae (Diptera). *Entomologist's monthly magazine* **138**: 121-132.

FALK, S. 1991. *A review of the scarce and threatened flies of Great Britain (Part 1)*. Research and survey in nature conservation No. 39. Peterborough, Nature Conservancy Council.

FALK, S.J. & CHANDLER, P.J. 2005. *A review of the scarce and threatened flies of Great Britain. Part 2: Nematocera and Aschiza not dealt with by Falk (1991)*. Species Status No. 2. Peterborough, Joint Nature Conservation Committee.

FRY, R. & LONSDALE, D. (Eds) 1991. *Habitat conservation for insects - a neglected green issue*. Middlesex, Amateur Entomologists' Society.

HALSTEAD, A.J. 2016. A flat-footed fly, *Platypezina connexa* (Boheman) (Diptera, Platypezidae), new to Britain. *Dipterists Digest* (second series) **22**(2015): 145-146.

Ismay, J.W. 2002. *Microsania vrydaghi* Collart, 1954 (Diptera, Platypezidae) new to Britain. *Dipterists Digest* (second series) **9**: 22.

JENKINSON, F. 1903. Platypezidae at Cambridge. *Entomologist's Record and Journal of Variation* **39**: 173

KIRBY, P. 2001. *Habitat management for invertebrates: a practical handbook*. Sandy, Royal Society for the Protection of Birds and the Joint Nature Conservation Committee.

MORLEY, C. 1918. On *Agathomyia collini* Verrall and other platypezid Diptera. *Entomologist* **51**: 88-90.

MURRAY, J. 1941. Diptera in Dumfriesshire. *Entomologist* **74**: 214-215.

PERRY, I. 2004. [*Agathomyia cinerea* (Zetterstedt), *A. wankowiczii* (Schnabl)] Diptera section of the BENHS Annual Exhibition, held 8 November 2003. *British Journal of Entomology and Natural History* **17**: 172.

PERRY, I. 2016. *Platypeza hirticeps* Verrall and *Agathomyia lundbecki* Chandler in Shatalkin (Diptera, Platypezidae) in Perthshire. *Dipterists Digest* (second series) **22**(2015): 179.

REEMER, M. 2015. *Ischnoderma benzoinum*, a host fungus of *Agathomyia cinerea* (Zetterstedt) (Diptera: Platypezidae). *Studia dipterologica* **21**(2014): 291-292

REEMER, M., STÅHLS, G. & RÄTTEL, E. 2014 Host fungus of *Agathomyia sexmaculata* (Diptera: Platypezidae) and notes on breeding biology. *Sahlbergia* **20**: 36-41.

REEMER, M. & DE JONG, H. 2016. *De Nederlandse breedvoetvliegen en basterdbreedvoetvliegen (Platypezidae & Opetiidae).* Entomologische tabellen 10. Supplement bij Nederlandse Faunistische Mededelingen. 134 pp

SHIRT, D.B. (Ed.) 1987. *British Red Data Books: 2. Insects*. Peterborough, Nature Conservancy Council.

SMITH, K.G.V. 1969a. Diptera Lonchopteridae. *Handbooks for the identification of British insects* **10**(2ai): 1-9.

STÅHLS, G., MIETTINEN, O. & RÄTTEL, E. 2014. mtDNA COI in efficient use: clarifying taxonomy, linking morphologically discordant sexes and identifying the immature stages of *Agathomyia* Verrall flat-footed flies (Diptera: Platypezidae). *Journal of Zoological Systematics and Evolutionary Research* (2015) **53**(3): 219-238.

STÅHLS, G. & KAHANPÄÄ, J. 2006. New data on Platypezidae and Opetiidae (Diptera) of Finland. *Sahlbergia* **11**: 1–6.

STÅHLS, G., RÄTTEL, E. & MUONA, J. 2012. *Bolopus furcatus* (Fallén, 1826) (Diptera, Platypezidae) rediscovered in Finland. *Sahlbergia* **18**: 29-32.

VERRALL, G.H. 1901. *British Flies* **8**: *Platypezidae, Pipunculidae and Syrphidae of Great Britain*. London, Gurney & Jackson.

WOOD, J.H. 1904. Herefordshire Diptera, the Platypezidae, Pipunculidae and Syrphidae. *Transactions of the Woolhope Naturalists' Field Club* **1904**: 3-15.
WOOD, J.H. 1905. The occurrence in Herefordshire of *Callimyia elegantula* Fln and *Agathomyia boreella* Zett. *Entomologist's monthly Magazine* **41**: 5-7.

Further reading list

AINSWORTH, A.M., SMITH, J.H., BODDY, L., DENTINGER, B.T.M., JORDAN, M., PARFITT, D., ROGERS, H.J. & SKEATES, S.J. 2013. Red List of Fungi for Great Britain: Boletaceae. A pilot conservation assessment based on national database records, fruit body morphology and DNA barcoding. *Species Status Assessment* No 14, ISSN 1473-0154, Joint Nature Conservation Committee, Peterborough.
ALEXANDER, K.N.A, DODD, S. & DENTON, J.S. 2015. *A review of the scarce and threatened beetles of Britain. The darkling beetles and their allies. Aderidae, Anthicidae, Colydiidae, Melandryidae, Meloidae, Mordellidae, Mycetophagidae, Mycteridae, Oedemeridae, Pyrochroidae, Pythidae, Ripiphoridae, Salpingidae, Scraptiidae, Tenebrionidae & Tetratomidae (Tenebrionoidea less Ciidae).* Species Status No 18. Natural England Commissioned Reports, Number 148.
CHEFFINGS, C. & FARRELL, L. (eds). 2005. The Vascular Plant Red Data List for Great Britain. *Species Status Assessment* No **7**, ISSN 1473-0154, Joint Nature Conservation Committee, Peterborough.
DAGUET, C., FRENCH, G. & TAYLOR, P. (eds.) 2008. The Odonata Red Data List for Great Britain. *Species Status Assessment* No 11, ISSN 1470-0154, Joint Nature Conservation Committee, Peterborough
EDWARDS, M. & HODGE, P.J. 1980. The Recorder's Report for Entomology 1978-1979. *The Reading Naturalist* **32**.
FALK, S.J. & CHANDLER, P.J. 2005. A review of the scarce and threatened flies of Great Britain. Part 2: Nematocera and Aschiza not dealt with by Falk (1991). *Species Status Assessment* No 2, ISSN 1473-0154, Joint Nature Conservation Committee, Peterborough.
FALK, S.J. & CROSSLEY, R. 2005. A review of the scarce and threatened flies of Great Britain. Part 3: Empidoidea. *Species Status Assessment* No 3, ISSN 1473-0154, Joint Nature Conservation Committee, Peterborough.

FOSTER, G.N. 2010 A review of the scarce and threatened Coleoptera of Great Britain Part (3): Water beetles of Great Britain. *Species Status* 1. Joint Nature Conservation Committee, Peterborough.

FOX, R., WARREN, M.S. AND BRERETON, T.M. 2010 A new Red List of British Butterflies, *Species Status* 12; 1-32. Joint Nature Conservation Committee, Peterborough.

PERRING, F.H. & FARRELL, L. 1977. *British Red Data Books: 1. Vascular Plants*. Society for Nature Conservation, Lincoln.

PERRING, F.H. & FARRELL, L. 1983. *British Red Data Books: 1. Vascular Plants, edn 2*. Royal Society for Nature Conservation, Lincoln.

STEWART, N.F. & CHURCH, J.M. 1992. *Red Data Books of Britain and Ireland: Stoneworts*. Joint Nature Conservation Committee, Peterborough.

WIGGINTON, M.J. (ed.). 1999, *British Red Data Books.* 1. Vascular Plants. 3rd edition. Joint Nature Conservation Committee, Peterborough.

WOODS, R.G. & COPPINS, B.J. 2012. A Conservation Evaluation of British Lichens and Lichenicolous Fungi. *Species Status Assessment* No 13, ISSN 1473-0154, Joint Nature Conservation Committee, Peterborough.

APPENDIX 1. ALL SPECIES REVIEWED IN THE LONCHOPTERIDAE & PLATYPEZIDAE.
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LONCHOPTERIDAE

Species Name	**IUCN Status**	**Qualifying Criteria**	GB Rarity Status	**Rationale**	**Presence in England**	**Presence in Scotland**	**Presence in Wales**	**AoO(hectads) <1989**	**AoO(hectads) 1990-2011**	**Dual Hectads**
Lonchoptera meijerei	LC		NS	Found widely, mainly by streams and rivers in upland areas of south-west England, Wales, N. England and Scotland, with most records post 1980	E	S	W	25	27	4
Lonchoptera scutellata	LC		NS	Widely distributed in England and Wales, with most records from the south-east and East Anglia, but very localised by its habitat requirements.	E		W	33	27	8
Lonchoptera nigrociliata	LC			Occurs mainly in the north and west, from south-west England to Scotland, with some isolated records from Surrey and Berks. Moved beyond NS under Criteria 2 & 8.	E	S	W	36	41	7

Lonchoptera nitidifrons	LC			Occurs widely in wetlands in England and Wales, though not often found by general recording, possibly due to close association with sedges or other emergent plants, The greater number of pre-1990 hectads is largely from the extensive wetland surveys, using various trapping methods, in Wales and East Anglia in the late 1980s, so does not indicate any recent decline. Moved beyond NS under Criteria 2, 4 & 8.	E		W	59	17	4
Lonchoptera tristis	LC			Widely distributed and locally abundant in woodland throughout Britain.	E	S	W	108	123	23
Lonchoptera bifurcata	LC			Widespread throughout Britain, with more post 1990 records due to increased recording	E	S	W	146	292	35
Lonchoptera lutea	LC			Very common throughout Britain, with more post 1990 records due to increased recording.	E	S	W	215	618	80

PLATYPEZIDAE

Species Name	**IUCN Status**	**Qualifying Criteria**	**GB Rarity Status**	**Rationale**	**Presence in England**	**Presence in Scotland**	**Presence in Wales**	**AoO(hectads) <1989**	**AoO(hectads) 1990-2016**	**Dual Hectads**
Agathomyia antennata	LC			Widespread throughout Britain, but usually found in low numbers and the slightly smaller number of recent hectads is not considered evidence of a decline. Larvae develop in the common Smoky bracket fungus *Bjerkandera*	E	S	W	76	69	13

				adusta. Moved beyond NS under Criteria 2 & 8.						
Agathomyia boreella [=*elegantula* of 1998 checklist]	LC		NS	Widespread in England and Wales, but usually found in low numbers and easily overlooked. Currently just on the cusp of Near Threatened. It has been reared in Finland from the uncommon bracket fungi *Antrodiella pallescens* and *A. faginea* (Ståhls *et al*. 2014). Moved beyond NR under Criteria 2 & 7.	E		W	20	14	2
Agathomyia cinerea	NE		NS	A recent addition to the British list, first found in Surrey in 1992 and since recorded from 21 counties north to Nottinghamshire (by 2007) and west to Herefordshire (by 1998); in 2012 it was found in Anglesey and in 2015 in South Yorkshire. Possibly a recent arrival in this country but this cannot be confirmed, and is Not Evaluated. It has recently been reared in the Netherlands from the bracket fungus *Ischnoderma benzoinum* on Pine stumps (Reemer 2015).	E		W	0	32	0
Agathomyia collini	EN	B2a, B2b (ii & iv)	NR	Known from 12 localities scattered across southern England, but most records are old and there were none from 1979 until it was found in Suffolk in 2007, indicating a significant decline, but the 2012 record from a garden in London suggests that it may be more widespread than apparent from present information.	E			10	2	0
Agathomyia falleni	LC			Until recently restricted to SE England, mostly south of the Thames, but its range now extended to Wiltshire (2003), East Anglia	E			10	31	4

				(2004) and Nottinghamshire (2007); an apparent recent increase, but may have been overlooked previously because of its late flight period. Larvae develop in the common bracket fungus *Bjerkandera adusta*. Moved beyond NS under Criteria 3 & 8.						
Agathomyia lundbecki	VU	B2, B2a, biii, iv.	NR	A widespread species, but apparently very localised by association with its host fungus *Inonotus radiatus* on alder by woodland streams.	E	S	W	6	6	1
Agathomyia sexmaculata	DD		NR	Only known in Britain from a female found at Thompson Common, Norfolk in 2002, and a male found at Alwalton, Cambridgeshire in 2016. The second find suggests that there may be an established population.	E			0	2	0
Agathomyia unicolor	LC			Common throughout Britain, most records being of females found by sweeping low vegetation in woodland. Larvae develop in the common bracket fungus *Bjerkandera adusta*.	E	S	W	85	109	20
Agathomyia viduella	LC			Widespread in the British Isles, but usually found in low numbers and possibly overlooked because of its spring flight period. Moved beyond NS under Criteria 3 & 8.	E	S	W	54	44	10
Agathomyia wankowiczii	NE		NS	First recorded in Britain in 1990 and probably a recent arrival here because its galls on Artist's Fungus (*Ganoderma applanatum*) are conspicuous; most records are based on galls and their occurrence is noted by mycologists, but there has been some confusion with activity by larvae of the Tineidae moth *Morophaga choragella*, so some records	E			0	51	0

				require confirmation. Most records are from SE England, but its sporadic occurrence in East Anglia and the Midlands suggest that more than one introduction may have taken place. Status is revised since it is evidently not native and its range is increasing.						
Agathomyia woodella	LC		NS	Widespread in England north to Yorkshire, usually found in low numbers amongst low vegetation in woodland and easily overlooked.	E		W	12	23	1
Bolopus furcatus	LC			Widespread throughout Britain, but rarely found away from its host Dryad's Saddle fungus *Polyporus squamosus.* The wide scatter of recent records suggests that this species is under-recorded and would be expected to turn up in more sites. Moved beyond NS under Criteria 2 & 8, in recognition of the ubiquity of the fungal species host, which attacks various species of broadleaved trees including *Ulmus, Acer* esp. *S*ycamore, *Fagus, Fraxinus, Tilia* and *Aesculus*	E	S	W	57	25 (+1 in 2017 outside of the review period)	2
Callomyia amoena	LC			Widespread throughout Britain; it has recently been recognised that another species (of which males have a darker abdomen and dark stem to the halteres) has been confused with it and also occurs in Britain, but has so far been seen in small numbers from N England. The apparent decline in recent records is not considered significant. Larvae feed at the surface of encrusting fungi on rotten wood.	E	S	W	159	105	28
Callomyia dives	DD		NR	Widespread in Britain, but most records are of single individuals, so it apparently has low	E	S	W	27	8	2

				population levels that are easily overlooked. Its present status is therefore unclear and it cannot be certain if a significant decline has taken place.						
Callomyia elegans	CR	B2a, B2b ii & iv	NR	Although records are scattered throughout Britain, most are from the period up to 1913 and only three records from 1940, 1943 and 1956 are later. The lack of any records in a period of increased recording suggests a substantial decline and it may now be regionally extinct.	E	S	W	9	0	0
Callomyia speciosa	LC			Widespread in Britain, but with an apparently greater decline in recent records compared to *C. amoena*, which has similar habitat associations: larvae feed at the surface of encrusting fungi on rotten wood. It is still very widespread, so is moved beyond NS under criterion 8.	E	S	W	121	56	18
Lindneromyia dorsalis	LC			Widespread in S England and Wales north to Yorkshire. Larvae develop in terrestrial fungi, especially species of the genus *Agaricus*, including field mushrooms, and *Macrolepiota* species (parasol mushrooms), with occasional records from *Calvatia*, *Boletus* and *Russula* species. Due to its association with field mushrooms, it will have suffered from grassland habitat loss, collection, and sward mowing, but will also have been under-recorded because of its different habitat from other Platypezidae. Moved beyond NS under Criteria 2, 7 & 8.	E		W	77	80	26

Microsania collarti	DD		NR	Widespread in S England and one record from Scotland, probably overlooked due to its occurrence in lower numbers at bonfire smoke than some other *Microsania* species. The status of all *Microsania* species is unclear because of lack of records other than at smoke.	E	S		8	2	0
Microsania pallipes	DD		NR	Widespread in S England, of less frequent occurrence at bonfire smoke than *M. pectipennis*. The status of all *Microsania* species is unclear because of lack of records other than at smoke.	E			11	2	0
Microsania pectipennis	LC	.		Widespread in Britain, and the commonest species of the genus in swarms at bonfire smoke. The status of all *Microsania* species is unclear because of lack of records other than at smoke, but *M. pectipennis* is almost invariably present where smoke from wood fires is available, so it is moved beyond any status level under criteria 2 & 8.	E	S	W	38	15	1
Microsania straeleni	DD		NR	Known in Britain only from 1 site in Sussex and 2 in Scotland; as the largest species of the genus it should be less easily overlooked among swarms than other species. The status of all *Microsania* species is unclear because of lack of records other than at smoke.	E	S		2	1	0
Microsania vrydaghi	NE		NR	Only three records widely scattered in England, but probably overlooked among other species at bonfire smoke. The status of all *Microsania* species is unclear because of lack of records other than at smoke.	E			0	3	0

Opetia nigra (Family Opetiidae)	LC			Common throughout Britain.	E	S	W	204	258	61
Paraplatypeza atra	LC			Widespread throughout Britain, but localised by the occurrence of its host fungus *Pluteus cervinus*; it is seen in small numbers as adults but readily obtained by rearing so it is unclear if the smaller number of recent records is both real and significant. It is clearly very widespread, so it is moved beyond NS under criterion 8.	E	S	W	132	70	23
Paraplatypeza bicincta	NE		NS	First found in Britain in Surrey in 2001 and has since been recorded widely in S England, north to Norfolk and Shropshire (records from 16 counties), suggesting an active recent spread, and it is likely to be a recent arrival here. It has the same host fungus *Pluteus cervinus* as *P. atra*, and has been reared from it in Oxfordshire.	E			0	25	0
Platypeza aterrima	LC			Widespread in England based on males, and hectad numbers stated here relate only to males; females, also seen from Wales and Scotland, are not satisfactorily distinguished from *P. hirticeps*. Also may be overlooked among other *Platypeza* species. Moved beyond NS on criteria 5 & 8.	E			22 (48 including probable females)	13 (26 including probable females)	1
Platypeza consobrina	LC			Widespread in England and Wales, and the most frequent species of the genus, commonly found in association with *Armillaria* Honey fungus, often together with other platypezids	E		W	83	65	13

				(*Protoclythia* and *Platypeza* species). Moved beyond NS under Criteria 2 & 8.						
Platypeza fasciata	LC			Widespread throughout Britain, most records from England and Wales, few records from Scotland but found as far north as Sutherland (Migdale Wood). Moved beyond NS under Criteria 2 & 8.	E	S	W	58	28	3
Platypeza hirticeps	DD		NR	A northern and western species, found from SW England and Wales to Scotland (Birks of Aberfeldy, Perthshire, 2000), occurring in low numbers so probably overlooked; hectad numbers are based on males as females are not satisfactorily distinguished from *P. aterrima*.	E	S	W	9	3	0
Platypezina connexa	NE			17.10.2015, two females of *Platypezina connexa* were collected by sweeping the vegetation in Burley New Inclosure, New Forest, Hants, SU229043. Under Criterion 6 it is inappropriate to assign a status.	E			0	1	0
Polyporivora ornata	LC			Widespread throughout Britain. Both this and *P. picta* develop in the common bracket fungus *Trametes versicolor* and are readily obtained by rearing. The lower number of recent records is not considered significant. Moved beyond NS under Criteria 2 & 8.	E	S	W	114	57	16
Polyporivora picta	LC			Widespread throughout Britain; it has usually been found in lower numbers than *P. ornata*, which has similar habitat requirements. Like *P. ornata* it develops in the common bracket fungus *Trametes versicolor*. It is unclear if the relatively greater number of recent records	E	S	W	68	56	11

				compared to *P. ornata* has any significance. Moved beyond NS under Criteria 2 & 8.						
Protoclythia modesta	LC			Common throughout Britain, most often found in association with *Armillaria* Honey fungus.	E	S	W	143	154	32
Protoclythia rufa	LC			Widespread in England (north to Cumbria) and Wales, usually found together with *P. modesta* in association with *Armillaria* Honey fungus, but in lower numbers. Moved beyond NS under Criteria 2 & 8 in recognition of the ubiquity of the fungal species host.	E		W	69	76	8
Seri obscuripennis	LC		NS	Widespread in S England and first recorded in 1970; it was poorly known and considered scarce until the association with its host fungi was recognised). Larvae develop in the relatively soft-textured bracket fungi *Polyporus badius*, *P. melanopus* and *P. varius* on dead wood. There has been a recent increase in records and extension of its distribution to Norfolk (2002) and Shropshire (reared 2008 & 2009, adult 2015).	E			4	20	0

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:			
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 determining 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.