

RATIONALE FOR THE INCLUSION OF SEVEN SPECIES OF MILLIPEDES ON THE UK BIODIVERSITY ACTION PLAN

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When the UK government became a signatory of the Rio Convention on Biodiversity, a process was set in train which has led to the selection of habitats and species that are considered to be 'Globally Threatened or Declining' in the UK. Seven species of millipedes have been included in these lists as the result of analyses undertaken at the Biological Records Centre (Harding, Palmer *et al.* 1995). This paper explores the reasoning behind the selection of these seven species of millipedes.

THE UK BIODIVERSITY ACTION PLAN PROCESS

Following the Rio Earth Summit in 1992, the UK government ratified its signature of the Rio Convention on Biodiversity and published *Biodiversity: the UK Action Plan* (UK BAP) in January 1994. However, the government was somewhat pre-empted by a consortium of non-governmental organisations (NGOs) such as the Royal Society for the Protection of Birds, the Wildlife Trusts and the World Wide Fund for Nature, which published *Biodiversity Challenge* a month or two earlier. *Biodiversity Challenge* and its follow-up, *Biodiversity Challenge 2nd edition* published in 1995, introduced the concept of targets for the UK BAP, to encourage the UK government to take positive action on species and habitats. The government produced its UK BAP Steering Group report (Anon. 1995) which listed more than 1200 'Globally Threatened or Declining Species'.

CRITERIA FOR SELECTION OF SPECIES UNDER THE UK BAP

Species were selected according to the following five primary criteria as established by the NGOs of the *Biodiversity Challenge* consortium and subsequently adopted by the UK BAP Steering Group (Anon. 1995). Some of the criteria can be applied on an all UK basis, but those on decline and localisation were, for reasons that are not always obvious, applied on a Great Britain only basis.

1. Recognised global or European threatened status (applies mainly to birds and some plants).
2. UK population estimated to be 25% or more of the world population (applies mainly to birds and some plants).
3. Decline in numbers or range in GB estimated to be more than 25% or more in the last 25 years (applies almost exclusively to birds and butterflies).
4. Occurrence in 15 or fewer 10km squares in GB.
5. Protected species listed on relevant schedules of international and national conventions and legislation.

With the exception of a few groups (most notably birds), the inclusion of a species in a published GB Red Data Book was not considered by the NGO consortium to be a valid criterion!

APPLYING THE CRITERIA TO MILLIPEDES

Harding, Suheimat *et al.* (1995) carried out preliminary analyses of data for selected invertebrate groups (butterflies, Carabidae, Orthoptera, Odonata and Diplopoda) based on these criteria. In the case of millipedes, only the following two criteria were considered to be applicable. Very small and probably under-recorded species were excluded from the analyses.

1. Number of 10km squares in GB in which species have been recorded since 1970.
2. Comparison of the GB distribution with the known European distribution (e.g. as summarised by Kime (1990a)) to estimate the global importance of the British fauna.

The analyses of the other four groups included an estimate of decline similar to that described by Thomas and Aberly (1995), but insufficient historical data were available for millipedes for this analysis to be valid.

Nine species of millipede apparently qualified under these criteria for consideration as 'Globally Threatened or Declining Species' (Table 1).

TABLE 1

PRELIMINARY ANALYSIS OF MILLIPEDES UNDER THE U.K. BAP CRITERIA

Species	10km sq (1970+)	European range*
<i>Chordeuma proximum</i>	58	France only - 12
<i>C. sylvestre</i>	2	Benelux, France, Germany to Italy - 84
<i>Cylindroiulus britannicus</i>	98	Widespread - 27
<i>Melogona scutellare</i>	41	France, Switzerland, Italy - 6 **
<i>Metaiulus pratensis</i>	5	France only - 3 **
<i>Nanogona polydesmoides</i>	384	France & Belgium only - 29
<i>Ophiulus pilosus</i>	362	Central Europe - 85 **
<i>Polydesmus coriaceus</i>	116	France, Belgium, Spain, Portugal - 39
<i>Thalassiosobates littoralis</i>	4	France & Italy only - 6

* Countries and number of 50km squares (Kime 1990a)

** European populations probably different subspecies to that in the UK

This initial list was scrutinised by advisors to the UK Biodiversity Steering Group. As a result, the list was reduced to seven species in the 'Long List' (q.v.) of the UK BAP Steering Group report (Table 2): three species from the original analysis were omitted and one was added. The interpretation of the original analysis by the UK BAP advisors was

made without further consultation with any of the authors of that analysis. The additional species, *Trachysphaera lobata*, is somewhat anomalous in the British fauna and, despite the comments by Bratton (1991), its status as a native species must be questionable.

TABLE 2

QUALIFYING FACTORS LISTED IN THE U.K. BAP LONG LIST

Species	Status	International		Decline Localisation	
		Threat	Importance		
<i>Chordeuma proximum</i>	Local	?	2	?	0
<i>C. sylvestre</i>		0	0	0	2
<i>Melogona scutellare</i>		?	2	?	+
<i>Metaiulus pratensis</i>		?	2	?	2
<i>Nanogona polydesmoides</i>		?	2	?	0
<i>Polydesmus coriaceus</i>		?	2	?	0
<i>Trachysphaera lobata</i>		0	0	0	2

Key to factors

All factors

?: Not defined

Status

Local: Not defined

International threat

2: Species of global conservation concern

0: Favourable conservation status in Europe

International importance

2: 50-74% of the world population in the UK

0: 0-24% of the world population in the UK

Decline

0: 0-24% increase in numbers/range in GB in the last 25 years (in fact, this factor was not analysed by Harding, Suheimat *et al.*(1995))

Localisation

2: Currently occurs in 1-5 10km squares in GB

+: Currently occurs in 16-100 10km squares in GB

0: Currently occurs in 101+ 10km squares in GB

MAKING SENSE OF THE LIST

The seven species of millipedes selected for inclusion in the UK BAP 'Long List' of 'Globally Threatened or Declining Species' are representative of a mainly western or north-western group of species in Europe which are often associated with moist woodlands on neutral or acidic soils. Their distribution in continental Europe varies from being very rare (*Metaiulus pratensis*) to being clearly restricted (*Chordeuma sylvestre*); *Cylindroiulus britannicus* is mainly synanthropic in continental Europe.

With its wide range of soil types and generally oceanic climate, Britain (and Ireland) could

be expected to contain species of soil and litter fauna associated with moist woodlands and wet soils. These habitats, where they occur in the rest of Europe, have almost certainly been colonised by a greater range of species (Kime 1990b). Four of the species also occur in Ireland (Doogue *et al.* 1993), suggesting a strong affinity with the Atlantic biome.

IMPLICATIONS OF THE INCLUSION OF MILLIPEDES IN THE UK BAP

An interesting precedent has been established in the UK BAP list in that species which are comparatively common or widespread in the UK can, nevertheless, be regarded as being threatened at a global scale and therefore of concern in the UK. Hitherto, almost all UK lists of threatened species have been based on perceived threatenedness (often only rarity) within the UK or Great Britain.

The UK has few endemic species, but it does have good populations of species that are characteristic of the Atlantic biome. Many of these species are marine (e.g. grey seal), mountain (e.g. red grouse) or associated with high rainfall, temperate climatic conditions (e.g. many bryophytes and lichens). The recognition and definition of a similarly distinctive element in the European soil fauna, which is particularly well represented in the UK, is very preliminary. However, six of the seven species on millipedes on the UK BAP list are almost certainly components of this element, with large, widespread and sustainable populations in the UK.

All seven species (Table 2) appeared on the 'Long List' in the 1995 UK BAP Steering Group report. None were selected for inclusion in the 'Short List' or 'Middle List'; species on these two lists were to be the subject of individual Species Action Plans under the U.K. BAP process. These three confusingly named and defined lists have been reviewed in a recent report of the U.K. Biodiversity Group (Anon. 1998). Species listed in the 1995 report are now defined as either *Species of conservation concern* or *Priority species*, but it is not stated in the 1998 report how the species in the *Species of conservation concern* category will be treated!

The 1998 report lists only the redefined *Priority species* (mainly those included in the original 'Short' and 'Middle' lists). The revised criteria for *Species of conservation concern* suggest that most or all of the seven millipede species listed in Table 2 would qualify for inclusion in this category. As none of the seven species has been considered by the U.K. Biodiversity Group to be globally threatened, or to be rapidly declining in the U.K., none have been upgraded to *Priority species* status. Given the extremely restricted range and peculiar habitat of *Metaiulus pratensis*, its status in the U.K. is clearly less favourable than that of the other six species and it may deserve consideration as a *Priority species*.

CONCLUSIONS

The inclusion of seven millipedes on the UK BAP list may seem an irrelevance to both mainstream conservationists and millipede recorders. Few people are able reliably to find or identify the species, little is known about their ecological requirements or what measures could be taken to safeguard them in the UK. However, two important principles have been established with the inclusion of these species on the UK BAP list:

1. Even comparatively obscure invertebrates should qualify under national obligations stemming from the Rio Convention on biodiversity;
2. The UK has an obligation, in its priority setting for nature conservation, to take into consideration the importance of the UK flora and fauna in a wider European and global context.

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