

11.3 INVERTEBRATES

Application (all invertebrate guidelines)

The determination of the boundaries for a site designated under invertebrate guidelines should take account of the requirements of invertebrate species for habitat and structural diversity both at the macro and micro scales. The requirement of invertebrates for different habitats reflects their complex lifecycles that often involve one or more larval and adult phases. Invertebrates generally have annual life cycles, and their survival on a site depends on the continued availability of the right mixture of habitats at the right time of year – every year. In addition many invertebrates tend to have very narrow habitat or ecological niches.

Invertebrate habitats can include small scale features such as a patch of bare ground or length of deadwood and these habitats can be transient in space and time shifting around within a larger habitat e.g. wetland or woodland, on which the invertebrates also depend. In addition some invertebrates may be dependent on both small-scale habitats such as ditches and a larger habitat such as a river or stream. In these instances the associate habitats, although possibly isolated, should be considered within the context of a larger designation.

At the present time supplements to the invertebrate section of the Derbyshire Red Data Book are being prepared and it is anticipated that lists of species relating to different selection criteria will be available for use soon. For the time being therefore no species lists are included.

Justification

In Derbyshire, as elsewhere, there are more species of invertebrate animals than of all the plants and other animals combined. Many invertebrate groups and species have declined dramatically in recent decades and their conservation is a matter of widespread concern in Europe. Invertebrates' tendency to have narrow ecological niches coupled with poor powers of dispersal, means that they can be the most vulnerable taxa in the context of habitat fragmentation and increasing isolation, and are prone to local extinction. Until recently it was thought that if sites were selected (and managed) on the basis of the botanical interest, the invertebrates would automatically be catered for too. This is not so: it is important that due regard is paid to the contribution that invertebrates make to biodiversity, and of their habitat needs as far as available information allows.

With such a large number of invertebrate groups and the relative lack of information about many of these, it is impossible to develop individual sets of guidelines for every species-group at the present time. However, the process of selecting sites for individual groups of invertebrates will be kept under review and as a more comprehensive database of sites and invertebrate species is collated it is hoped that more specific guidelines may be added to complement the guidelines described here.

Invertebrate Selection Guidelines

Sites that meet one or more of the following guidelines will be eligible for designation as a Wildlife Site.

Inv 1 Any site that regularly supports a population of an invertebrate species, which is listed in any of the following:

- a) Schedule 5 of the Wildlife and Countryside Act 1981 as revised and amended
- b) British Red Data Books: 2. Insects or British Red Data Books: 3 Invertebrates other than insects or appropriate updates.
- c) a nationally scarce species list

or

d) occurs at 3 or fewer localities in Derbyshire

Application

Any site identified in one of the above categories may be considered for selection. Species should have been recorded in at least two of the last three preceding years or four years over the last 10 years. Experienced invertebrate field surveyors should be consulted prior to designation.

A full list of species falling into all of these categories has not been compiled. However, work is underway to compile an up to date list for Derbyshire.

Justification

The species included in the above categories have been identified as being rare or threatened at a national or European scale, or rare within the County.

Inv 2 Any site that regularly supports a significant proportion of the Derbyshire population, or contributes significantly to the range in Derbyshire, of an invertebrate species which is recorded from more than three localities in the County, but which could be at risk because of very small populations, recent rapid decline or habitat loss or change, and which is not included under any other guideline.

Application

This guideline can be applied for species belonging to any invertebrate group. However in practice sufficient information should be available on the abundance and distribution of species within Derbyshire or it should be demonstrated that the species or the habitat it occurs in is regionally rare or uncommon.

Inv3 Any site supporting a characteristic or significant assemblage of invertebrates including those associated with the following microhabitats: -

- ❖ Deadwood
- ❖ Veteran trees
- ❖ Scrub
- ❖ Woodland edge habitat
- ❖ Rough grassland displaying structural heterogeneity e.g. tussocks, light and shaded areas, damp hollows
- ❖ Bare soil and or rock including both natural geological strata and imported material
- ❖ Open vegetation
- ❖ Brownfield sites
- ❖ Wetlands including microhabitats associated with running and still water and seasonal and temporary pools
- ❖ Hill slope and rock-face seepages and flushes

Application

An assemblage can be composed of a diversity of species within one or more families or orders. The guideline can be used for any assemblage of invertebrates associated with any of the habitat types covered elsewhere in the guidelines or for any microhabitats as listed above. For the majority of families or orders of invertebrates we have insufficient information to allow meaningful threshold values for site selection to be agreed upon. For the present a flexible approach is to be adopted in determining how characteristic or significant an invertebrate assemblage is based on consultation with both national and local invertebrate specialists.

This guideline will be subject to re-assessment as additional information on invertebrate species, populations and assemblages within Derbyshire is collated. Thresholds may be added in due course for selected groups.

Sites being looked at under this guideline should include the following information to assist in the selection process: -

- ❖ A list of invertebrate species present on the site where possible linked to habitats and microhabitats
- ❖ A list of survey events and recorders (to provide an indication of search effort)

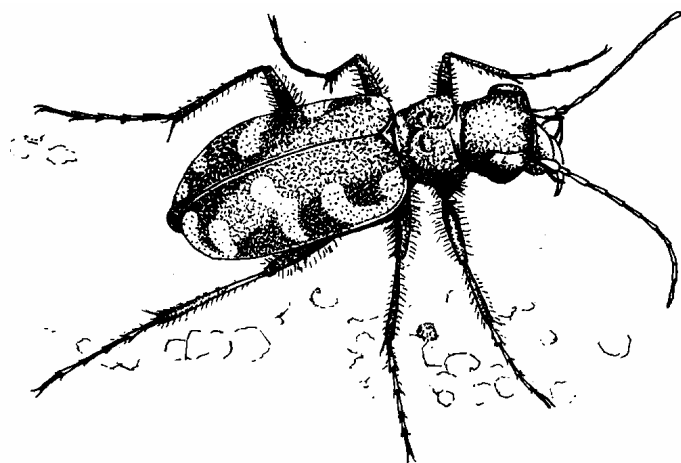
- ❖ Invertebrate species considered to be associated with or significant within the Natural Area that the site lies in should be highlighted (according to Drake et al, 1998).
- ❖ A score derived from the invertebrate site index below (provisional adaptation from English Nature)

Category	Points
RDB1, 2	100
RDB 3, Notable A (Na)	50
Notable B (Nb)	40
Notable (Region) (Nr)	20
Derbyshire Red Data Book	10

The boundaries of the site should reflect, as far as possible all the key physical and biological features required for the invertebrate species present.

Justification

Invertebrates are the most diverse and abundant animal group and play an essential role in maintaining functional ecosystems. Their diversity often reflects the variety of ecological niches available within different habitats and microhabitats. Identifying and protecting these habitats is essential if we are to protect the full range of invertebrate biodiversity present in Derbyshire and surrounding areas.



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