

Necklace ground beetle

(*Carabus monilis*)



The Necklace ground beetle is a large, colourful species associated with open landscapes. Both its Latin and common name derives from the sculptured pattern on the wing cases that resembles a beaded necklace. This is a largely predatory and scavenging beetle, the adults forage at ground level while the larvae live on or just under the soil surface.

Formerly widespread this is now a very scarce species and is declining faster than any other ground beetle in Britain. Due to this severe decline this beetle has been included in the UK Biodiversity Action Plan.

Life cycle

The Necklace ground beetle is believed to have an annual life cycle in Britain, but some adults may live for two years as they do in mainland Europe. The adults can be found from April to September with a peak of activity mid-summer. The larvae live on the

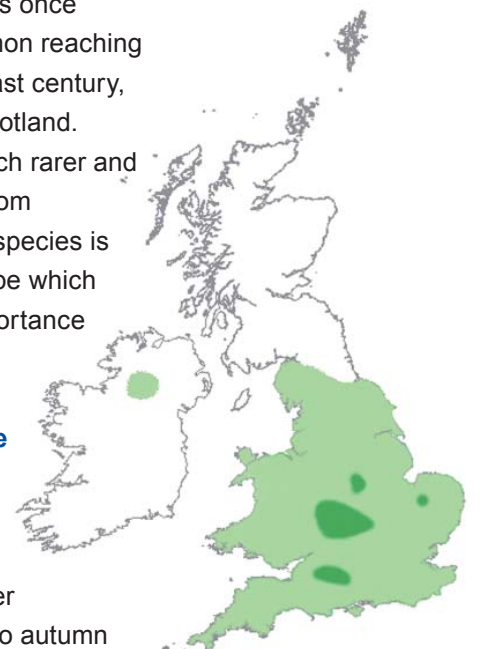
soil surface, in the litter layer or in the soil, where they prey on other invertebrates.

Distribution map

The Necklace ground beetle was once widespread and relatively common reaching as far north as Cumbria in the last century, with even older records from Scotland. During the 1900s it became much rarer and it seems to have disappeared from Northern Ireland. Globally this species is limited to northern-central Europe which places greater international importance on the British population.

Threats and causes of decline

Agricultural intensification, particularly the widespread use of pesticides, the loss of hedgerows and other field border refuges, and shifts from spring to autumn cultivation, are the most likely causes of this beetle's decline. The resulting fragmentation and isolation of suitable habitat will have compounded this problem by restricting the recolonisation of lost habitat, particularly as this beetle does not fly and must disperse by walking.



Dark green = recent records (after 1995)
Light green = historic records (before 1995)



Habitat

Although it has been recorded from a range of open habitats this beetle is frequently associated with cultivated land and field margins. A variety of crop types are likely to benefit this beetle providing that pesticide use is restricted and winter tilling is avoided. Pesticide restriction is not only important for the beetle itself but also to ensure a viable supply of prey items. The Necklace ground beetle has also been recorded from sandy heaths, willow carr, old woodland, thick scrub, secondary woodland, limestone dales, cultivated field margins, hay meadows and river shingle. It is thought to prefer well-drained soils, although it is occasionally found on wetter ground.

Habitat management

Pursue more traditional farming practices, avoiding winter tilling and pesticide use. Avoid soil disturbance that may damage the larvae. Create and manage field margins and headlands in a manner that will provide refuges and hibernation areas for the ground beetles and encourage populations of other

invertebrates that they can prey on. A continuity of appropriately managed fields and field margins across the landscape will facilitate the spread of this species back across its former range.

Environmental stewardship options

HLS options

HE10 Floristically enhanced grass buffer strips (non-rotational)

HF14 Unharvested, fertiliser-free conservation headland

HF20 Cultivated fallow plots or margins for arable plants (rotational or non-rotational)

HG6 Fodder crop management to retain or recreate an arable mosaic

HE11 Enhanced strips for target species on intensive grassland

ELS options

EB12-13 Earth bank management

EE1-3 Buffer strips on cultivated land

EE4-6 Buffer strips on intensive grassland

EF1 Management of field corners

EF7 Beetle banks

EF10 Unharvested cereal headlands

EF13 Uncropped cultivated areas for ground-nesting birds on arable land

EK1 Take field corners out of management

References

This sheet can be accessed on the web at www.buglife.org.uk

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