

Cosnard's net-winged beetle

Erotides cosnardi (syn. *Platycis cosnardi*)



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A male in characteristic pose on the temporary 'lek' site on Little Doward, Wye Valley

Cosnard's net-winged beetle is about 7-8mm long, the female distinctly larger than the male, and of a matt reddish coloration dorsally, with black head and undersides. It is one of our rarest and most threatened invertebrates and has been assessed as Endangered in Britain and a NERC Act Section 41 Priority Species in England. It has not yet been assessed for the European Red List of Saproxyllic Beetles.

Distribution

Currently reliably known in Britain from just two areas: the Wye Gorge (Monmouthshire, Herefordshire and Gloucestershire) and the South Downs (West Sussex and Hampshire). The focus of its global range is Central Europe, and it appears

to be rare or at least very localised throughout this range and confined to areas of old growth forest.



Distribution of the Cosnard's net-winged beetle in the United Kingdom

Black: post -1990 Yellow: pre -1990

Habitat

This beetle is associated mainly with ancient Beech trees. The larvae are believed to develop in

white-rotten heartwood of old Beech hulks. White-rotten wood develops during natural heartwood decay through the actions of wood decay fungi. In France, adult beetles have been captured at a basal cavity in Beech and an aerial rot hole in Ash trees. Ash forms similar white-rotten heartwood to Beech and so an Ash record is not inconsistent with Beech old growth. It is assumed to be essentially an ancient wood pasture species, although only one of the sites where it has been found is currently open to grazing other than by wild deer and Wild boar (Little Doward). This is possibly a key reason for its current rarity.



A typical view across Little Doward, Herefordshire, showing old growth Beech habitat.

Life cycle

Larvae are still unknown in the wild in Britain and studies so far have failed to clarify the type of decaying wood being exploited by the beetle in the Wye Gorge. It has been suggested that the larvae are either carnivorous or omnivorous and food is digested externally by means of enzymes secreted via the mouthparts and they only ingest liquid food. Lycidae larvae have also been said to feed on decomposing woody material and associated fungi, yeasts and slime moulds.

Adult activity takes place over a 5 to 6 week period which may vary from year to year, according to local weather conditions, and may be

shorter in any one season. It seems likely that males emerge first, enabling some population mixing to take place prior to the emergence of the females. The adults are short-lived and have been reported from May and June; they fly in hot sunshine, especially in late afternoon, and have been observed resting amongst the field layer in shady woodland – mosaics of sun and shade may be important for this species.



Mating pair on the mossy flanks of the stump.

Observations made in the Wye Gorge during 2017 and 2018 have suggested that the male beetles tend to accumulate at particular deadwood features such as cut stumps and wait for flying females to come to them for mating – a lek type of behaviour not previously described for Coleoptera other than the Timberman longhorn (*Acanthocinus aedilis*). The males are presumably releasing pheromones into the air to attract the females. Observations at Little Doward suggest that flight is weak and low. One male was seen to fly from a short-term lek stump into nearby nettles. It seemed poorly directed, poorly powered and low. However, a French flight trap record came from a

high rot-hole and so females at least may fly at a few metres' height.

Cosnard's net-winged beetle has very rarely been reported from blossom in Britain i.e. one record on Ramsons (*Allium ursinum*).

Reasons for decline

- The species requires the continuous presence of sufficient old Beech trees in the landscape. The natural or deliberate loss of decaying Beech trees, trunks and stumps is the greatest threat the beetle faces, particularly the potential loss of habitat continuity if replacement trees are not available close by.
- It is assumed to be essentially a wood pasture species. The cessation of traditional grazing practices in wood pastures has led to the conversion to closed canopy high forest, often as a result of misguided 'minimum intervention'. The trees die relatively young, even shade-tolerant species like Beech, as natural retrenchment with age effectively leads to the death of the tree under closed canopy conditions. The loss of sunlight across the site removes an essential habitat requirement for the adult beetles as well as space for the development of replacement trees of a suitable form.
- Old trees are under threat from a wide range of factors including failure to understand the land management implications, but also tree diseases and climate change.
- The beetle is likely to have poor dispersal abilities, which may prevent it colonising suitable habitat away from its current strongholds.

Habitat management

The aim of the following management advice is to ensure the long-term continuity and connectivity of Beech trees across a landscape through the provision and protection of old trees.

- Maintain longevity of existing old trees (both dead and alive).
- Resist urge to tidy away pieces of fallen decaying wood or to remove old standing dead trees. Recognise that deadwood features such as stumps may be important in courtship.
- Allow natural regeneration/ plant Beech trees in places where they can be allowed to persist for hundreds of years to provide the next generation of old trees.
- Consider veteranising younger trees to accelerate development of decay and help plug existing age gaps.
- Wood pasture or pasture woodland – ensure grazing management maintains the open conditions and varied stand structure favoured by the beetle. Ensure sensitive management to allow pulses of tree regeneration whilst maintaining generally open conditions.

Survey methods

In the past specimens have been encountered casually through observation and sweeping netting. The discovery of stumps being used for lekking type behaviour has been a major advance and the recruitment of volunteers to monitor known lekking sites may prove to be a successful form of monitoring in the future. Beetles have only rarely been found through flight interception trapping and the probability of capture appears notably low. Hopefully research into pheromones will make finding this beetle on demand much easier in future. Research is required to understand the ecology of the species.

The Back from the Brink Ancients of the Future project is led by Buglife in partnership with Plantlife and the Bat Conservation Trust.

