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Narrow-bordered Bee Hawk-moth Hemaris tityus

Conservation status Priority Species in UK Biodiversity Action Plan.

ldeal damp grassland habitat

In flight the adult of this species resembles a large bumblebee. It has clear wings with darker borders that are narrower than the similar but more widespread Broad-bordered Bee Hawk-moth *H. fuciformis*. The latter species is also distinguished by a reddish or maroon band on the abdomen, which is black on the Narrow-bordered Bee Hawk-moth. The name *Hemaris* comes from the Greek hemera, meaning 'the day', referring to the day-flying behaviour of the moth. *Tityus* was a giant in Roman mythology, perhaps testament to the relatively large size of this species. The species was formerly widely recorded in the UK but has undergone a substantial decline. Most recent records are from southern and south-west England, but it has been reported elsewhere including East Anglia, parts of Wales and the Scottish Highlands.

Foodplants

The larvae feed most often on Devil's-bit Scabious *Succisa pratensis*, but also on Small Scabious *Scabiosa columbaria* and Field Scabious *Knautia arvensis*.

Habitat

The moth is a species of open grassland and open areas in and adjacent to woodland. It is particularly associated with the damp 'culm' grasslands of south-west England, damp moorland, marshland and wet heaths, as well as chalk downland in parts of southern England. Recent work on damp grassland habitats indicated that larvae are typically found in rather short turf (<12cm in height), often on the edge of open 'lawns' rich in Devil's-bit Scabious within a taller sward.

Life cycle

The species is single-brooded. The eggs are laid singly on the undersides of scabious leaves, usually under the lower leaves. The larvae develop from July to August. The species overwinters as a pupa in a loose cocoon just below the soil surface. Adults fly from mid May to mid June. They are powerful fliers and cover large distances at speed, hovering at flowers to feed on nectar.



Larval record 1999 to 2004
Adult record 1999 to 2004

Habitat management for the Narrow-bordered Bee Hawk-moth

The overall aim is to maintain abundant foodplants in a mosaic sward with a range of turf heights and a good supply of nectar sources in sunny situations.

- The type of damp meadows in which the species occurs are also known to support a range of other scarce insects, including the Marsh Fritillary butterfly Euphydryas aurinia and the Double Line moth Mythimna turca, and any management should also take these species into consideration.
- On damp grassland, areas of shorter (4-12cm) vegetation appear to be needed for the Narrow-bordered Bee Hawk-moth, whilst Marsh Fritillary larvae are typically found in longer (8-25cm) sward, emphasising the need for a mosaic of sward heights.
- On chalk grassland the requirements of both species appear to be for slightly shorter (<15cm) vegetation.
- On wetter sites, low intensity widespread grazing by cattle or ponies in spring and summer is ideal, although low intensity autumn/winter grazing or all-year grazing can also be suitable.
- Sheep grazing may be less suitable because they can remove larger foodplants, although light sheep grazing can be suitable on larger sites.
- Some scrub cutting may be necessary to keep sites open. It is best to cut a little each year, between October and February. Avoid clearing all the scrub as other insects and birds use it for shelter and breeding.

How to survey/monitor

Despite its large size this species is particularly difficult to survey and can prove elusive. Adults fly in sunshine and are most often seen well when hovering to take nectar at flowers. Unlike bumblebees, this species does not alight to feed, and it is rather larger than the bee-flies Bombylius spp., with which it is sometimes confused. Adults can reportedly be lured to cut Lilac blossom.





The larvae may be found by careful searching of the foodplant, although this can be rather labour-intensive. Typical feeding damage and an accumulation of frass (droppings) caught on the hairs of the foodplant can help to identify plants likely to support larvae and reduce searching time. Small larvae tend to leave a peppering of small holes across a leaf while larger larvae take half-moon shaped bites from the edge of the leaf, both of which are different from the more extensive damage typically left by molluscs. As many species feed on scabious, however, it is necessary to find the larvae to confirm its presence.



top Narrow-bordered Bee Hawk-moth larva middle Ideal chalk downland habitat bottom Devil's-bit Scabious. one of the larval foodplants



Saving butterflies, moths and their habitats

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