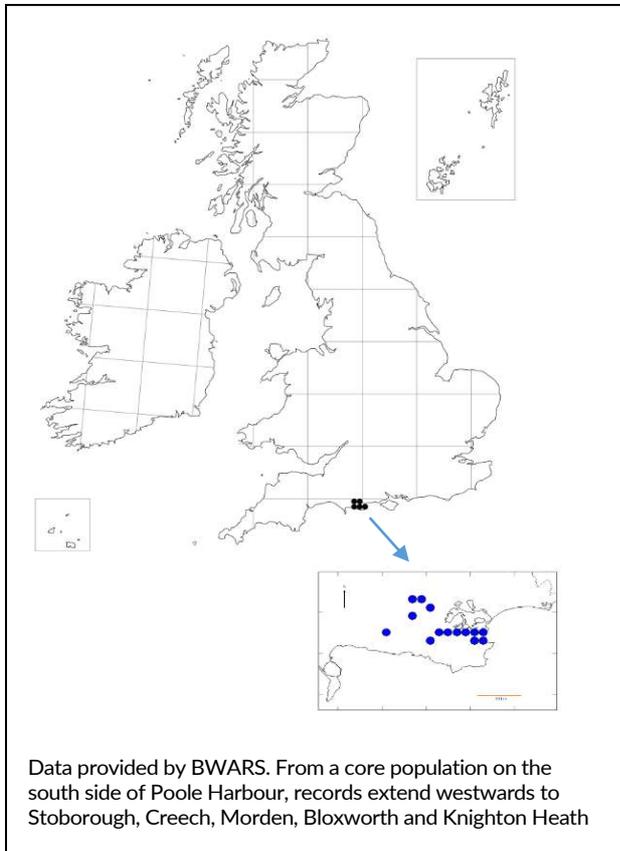


# Purbeck Mason Wasp

## *Pseudepipona herrichii*



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The Purbeck Mason Wasp is a striking solitary wasp of between 9 and 11 mm in length. It is black with ivory stripes and two distinctive orange patches on the abdomen. The legs are mostly orange and there are four white spots on the thorax.

During the flight period from mid-June to mid-July, adults can be seen in areas of suitable habitat, excavating nest burrows and foraging for nectar or the larvae of the Heath Button Moth *Acleris hyemana*, upon which the wasp larvae feed and develop.

The nest burrows are distinctive with a circular entrance and a characteristic granular spoil heap of excavated soil deposited nearby. The Purbeck Mason Wasp tends to nest in aggregations at suitable sites - up to 200 burrows have been recorded the largest aggregations.

As the wasp has a short tongue, in order to feed on nectar from Bell Heather *Erica cinerea*, the adult wasp needs to bite a hole in the base of the flower. This is a tactic used by several insect species but can also be a sign of active populations of the Purbeck Mason Wasp.

### Lifecycle

The lifecycle is similar to many solitary wasps. In early summer, the males emerge from their winter diapause, followed a few days later by the females. Mating occurs on, or near, the nest sites, and once mated, the females begin excavating a shallow nest burrow in areas of bare ground. Starting at the bottom of the burrow, stocks the cell with a dozen or more larvae of the heath button moth before laying an egg, sealing the brood cell with clay and creating the next cell. Each burrow can have 1-3 brood chambers within it. The males die after about 10 days, leaving all the work of excavating and provisioning to the females. There may be a small, partial second brood in favourable conditions.

## Habitat

A heathland species, the Purbeck Mason Wasp has complex and specific habitat requirements. Exposed ground with a clay content is required for suitable nesting sites, and the wasp needs access to open water to assist in nest building.

The heathland needs to be rich in early- to mid-succession Bell Heather (70-200 mm in height), both to provide a nectar resource for the adults and as the food plant of Heath Button Moth caterpillars (which can also use Cross-leaved Heath, *Erica tetralix*, and Heather, *Calluna vulgaris*).

## Distribution

This species has always been very localised in Britain and is rare in Western Europe as a whole. In Britain, it is restricted to heathland sites in and around Purbeck, Dorset, but can be abundant where it occurs.

## GB status and rarity

Endangered.

## Protection under the law

This insect is included as a species “of principal importance for the purpose of conserving biodiversity” under Section 41 (England) of the Natural Environment and Rural Communities Act 2006.

## Survey method

Targeted surveys should search areas of bare ground nesting habitat for the distinctive nest burrows and for active adults engaged in nest excavation and foraging. Bell Heather flowers can be examined for signs of nectar raiding by inspecting the base of the flowers and the larval webs of the Heath Button Moth can also be searched for, as prey abundance may be a limiting factor for the wasp.

## Reasons for decline

Declines are linked to a reduction in the area of lowland heathland. In addition, land-use changes on the remaining heathland has resulted in a reduction in the number of suitable bare areas for nesting and appropriate heather swards for the moth caterpillars.



(a) Purbeck Mason Wasp nest burrows with distinctive, granular spoil heaps (burrows from which adults emerge in the early summer do not have the spoil heaps) (b) the Heath Button Moth and (c) its larval web in Bell Heather

Surveys should ideally take place in warm, sunny and calm conditions, ideally not following a period of heavy rain, which may affect the appearance of nest sites.

## Habitat management

The creation of bare ground in areas of suitable substrate in close proximity to water plus heather management nearby to ensure suitable age structure for the prey are recommended. Although the Heath Button Moth is relatively common in Britain, its presence and density can vary significantly at a local level - there is a strong relationship between larval density and heather stage with an apparent preference shown by the moth for shorter and younger heather in mid-succession heathland.

Ensuring appropriate timing and intensity of livestock grazing is important, as there is evidence that grazing between April and August may result in the removal of eggs or larvae or prevent the heather shoots from growing (livestock tend to favour the young heather shoots on which the moth lays its eggs). Prescribed burning and cutting can be used to introduce more heterogeneity into the age structure of the heather.

Management of both nesting sites and foraging areas on a rotational system will ensure that a continuous supply of appropriate habitat is available.

## Sources and further information

[Pseudepipona herachii](#) species profile, BWARS

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