

Osmia pilicornis surveys in South-east England, 2013



Woodland clearing at RSPB's Fore Wood – typical *Osmia pilicornis* habitat

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Introduction

The survey work described in this report was carried out in spring 2013 as a follow on from a research project in 2012 for the Royal Society for the Protection of Birds (RSPB) on the Fringe-horned Mason Bee *Osmia pilicornis* (Earwaker, 2012). The main purposes of the work were to:

- Identify sites to visit, which either had previous records of the bee or had potential for the bee to be present.
- Visit as many of these sites as possible in order to assess their habitat suitability, and where suitable, look for the bee itself.
- Liaise with site staff to raise awareness of the bee and its habitat requirements.

Methodology

The first part of the work in 2013 involved identifying sites to target for survey work. This was completed following a meeting in March with the Pearl-bordered Fritillary Steering Group for South-east England, where there was the opportunity to give a presentation on *O. pilicornis* to people involved in the conservation of this butterfly. This included staff from Butterfly Conservation, Forestry Commission, Natural England, RSPB and Sussex Wildlife Trust. The Pearl-bordered Fritillary *Boloria euphrosyne* has suffered significant declines in recent decades, much the same as *O. pilicornis* and these two species have very similar habitat requirements. It was therefore very useful to inform the Steering Group about *O. pilicornis* and encourage them to consider the specific habitat requirements of the bee in management plans for their sites and to keep an eye out for it when they carry out *B. euphrosyne* surveys.

To select sites to target for survey work, maps with past records of *O. pilicornis* and current records of *B. euphrosyne* were compared. There was a certain degree of overlap between the two, but, equally, there were many sites where only one of the two species had been recorded. Sites with *B. euphrosyne* present were identified as key targets because if the habitat is suitable enough for this butterfly to be present, it would indicate that it could be suitable for the bee too, even if it has never been recorded there before. Most of the records of *O. pilicornis* are pre-2000 and, given that woodland management has changed significantly over the last few decades, these were obvious sites to target as well so that the current habitat suitability could be assessed.

A total of eight sites were visited during the months of May and June, which was a later start than anticipated because of the late spring, which unfortunately hampered some of the survey work. These sites were as follows:

02-05-13: Brenchley Wood, Kent (Kent Wildlife Trust) *

03-05-13: Abbot's Wood, Sussex (Forestry Commission)

05-05-13: Hothfield Common, Kent (Kent Wildlife Trust) ^

05-05-13: Dering Wood, Kent (Woodland Trust) ^

06-05-13: Fore Wood, Sussex (RSPB) *

31-05-13: Tudeley Wood, Kent (RSPB) * ^

01-06-13: Oaken Wood, Kent (Private land) ^

02-06-13: Brede High Woods, Sussex (Woodland Trust) * ^

* denotes woodland in the High Weald Area of Outstanding Natural Beauty (AONB)

^ denotes a site with previous records of *O. pilicornis* (or of records very close to the site)

The habitat suitability of the above sites was assessed using criteria developed during survey work in 2012 (see Earwaker, 2012). Where these sites were deemed suitable for the bee, surveys were carried out to look for the bee itself and to identify areas of the site where survey effort could be focussed in following years.

Results

Of the eight sites visited, only three had suitable habitat for *O. pilicornis*: Abbot's Wood, Fore Wood and Tudeley Wood. The other five sites were deemed unsuitable for a number of reasons, including: a lack of (suitable) ground flora; few open areas; and a lack of suitable nesting sites. It was interesting to find out how the habitat management practices had changed over the years at some of these sites, such that they were no longer suitable for the species. This was especially evident at Oaken Wood, which was visited with Geoff Allen, the Kent County Recorder for aculeates. The last record of the bee at the site was made by Geoff in 2001 and he was surprised by how much the site had changed in just the last decade. This was a particularly disheartening visit, which was mirrored in a number of sites in Surrey, which the County Recorder, David Baldock, revisited in spring 2013 only to find that these sites, also with records from the early 2000's, were no longer suitable for the bee.

One of the first visits of the year was to Abbot's Wood, a site where *B. euphrosyne* has been doing very well in recent years. The site looked very promising for *O. pilicornis*, with wide rides and large clearings, although it had never been recorded there before. The late flowering times of plants in the spring meant that the favoured forage plants of the bee: Bugle *Ajuga reptans* and Ground Ivy *Glechoma hederæ*, were not in flower at the time of the visit and there were no *O. pilicornis* individuals found. It would, therefore, be a good site to target survey effort in future years.

Tudeley Wood was visited later in May when *A. reptans* and *G. hederæ* were in full flower. The bee was recorded at this site in 2012, but there was no sign of it in 2013, despite plenty of suitable habitat to search. However, the big find came from Fore Wood, where a male *O. pilicornis* was found nectaring on Common Dog-violet *Viola riviniana* in a recently coppiced south-west facing clearing. This was a new site for the species, which takes the total number of

sites in Britain with records since 2005 up to three. The other site where it is known to still occur is Rewell Wood in Sussex, where George Else and Paul Brock confirmed its presence in 2013.

These findings, although partly positive, highlight the importance of appropriate woodland management and the need to inform site managers/landowners about *O. pilicornis* and other threatened open-woodland specialists, so that they can be conserved for future generations to observe and enjoy.



Male *Osmia pilicornis* at Fore Wood

Further research

It is encouraging to find a new site for the species, which might suggest that there are further sites to discover. The work this year aimed to inform further work on the species, so that particular sites could be targeted in future years. The most productive future work would be to visit sites with extant populations of *B. euphrosyne* and sites with records of *O. pilicornis*, particularly from recent decades. Any visits to sites with previous records would be useful, even if these result in the site being ruled out as having suitable habitat for the bee. Site visits to assess habitat suitability could be carried out at any time of year, although these are best conducted in the spring (Earwaker, 2012). Site visits to look for the bee itself should be carried out on warm, sunny days from April-June, with May being the best time for focussing effort.

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References

Earwaker, R. (2012). Habitat assessment for the conservation of *Osmia pilicornis* Smith. Unpublished report to the RSPB.