

Osmia pilicornis surveys in southern England, 2014



Female *Osmia pilicornis* at Forestry Commission's Denge Wood, Kent

Rosie Earwaker

The Lodge
Potton Road
Sandy
Bedfordshire
SG19 2DL

rosie.earwaker@rspb.org.uk

November 2014

Introduction

The survey work described in this report was carried out in spring 2014 as a continuation of survey work in 2013 (Earwaker, 2013) and of 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). Similarly to previous efforts, the main purposes of the work this year 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.
- Work with the High Weald Unit to run two bee training events for the general public.

Methodology

The initial stage of this year's work was to select the sites to visit. This was done in much the same way as in 2013 (see Earwaker, 2013), but was also influenced by opportunities that arose to visit sites with recent records of the bee that I had not visited before and therefore provided useful opportunities to look at differences in habitat. A total of seven sites were visited in late April and May.

26-04-14: Rewell Wood, Sussex (Private land) ^

27-04-14: Fore Wood, Sussex (RSPB) *^

06-05-14 – 07-05-14: Garston Wood, Dorset (RSPB) ^

09-05-14: Fore Wood, Sussex (RSPB) *^

09-05-14: Crowhurst Farm, Sussex (Private land) *^

10-05-14: Tudeley Woods, Kent (RSPB) * ^

12-05-14: Denge Wood, Kent (Forestry Commission) ^

12-05-14: Denge and Pennypot Woods, Kent (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)

Surveys to look for the bee were carried out at most of these sites and the habitat suitability of sites that had not been visited in previous years was assessed (using similar methods as outlined in Earwaker, 2012). A bee training morning was carried out at Fore Wood on 9 May 2014 for members of the public and some High Weald Unit staff. A further training morning scheduled for Tudeley Woods on 10 May 2014 was cancelled due to poor weather, but was conducted nonetheless when one member of the public decided to show up despite the rain.

Results

All of the seven sites have previous records of *O. pilicornis* (or records very close by), but during the surveys outlined above the bee was only recorded at one of these sites, despite suitable habitat being present at six of the sites. This could partly be due to suboptimal weather conditions on a large number of the visits, which unfortunately occurred despite efforts to conduct visits on dry, warmer days.

The first site visited was Rewell Wood, which is one of the few sites where the species has been regularly recorded in recent years. This was visited with George Else, who has carried out many surveys at the site over the years. The recently coppiced areas contained plenty of potential forage in the form of Bugle and plenty of dead wood as potential nesting sites. However, despite the suitable habitat and the fact that George had recorded the bee the previous year at the site, we had no luck finding it. He stated that the population of *O. pilicornis* at Rewell Wood is “both small and vulnerable”, which is quite worrying, especially when considering that more than one individual has regularly been recorded there in recent years, whereas at other sites it is commonly just a single individual recorded!

Fore Wood was visited on two occasions, the second of which was for a training morning so it was more of a general bee survey than one specifically for *O. pilicornis*. On both days there were various bee species around, but no sign of *O. pilicornis*; most of them were bumblebees as they are generally more tolerant of cooler, wetter weather than some of the solitary species. It was a similar story for the visit to Tudeley Woods, where the second training morning was held and the weather was even less favourable. Steven Falk visited both of these sites in late April in ideal weather conditions, but also had no luck finding the bee, despite plenty of patches of suitable forage to search. However, Ian Beavis recorded a single male *O. pilicornis* on two occasions at Tudeley Woods, once in April and once in May.

A two day excursion to Garston Wood yielded no records of *O. pilicornis*. It is not a species that has been recorded at the site before, but is close to another site with a previous record, so was worthwhile investigating. Plenty of suitable habitat was present and there were many other interesting species recorded. Crowhurst Farm was another new site visited this year, which had a single record of the bee in 1983. The site had plenty of open areas, but there was little Bugle or other suitable forage plants so it was deemed unsuitable for the bee.

The final sites visited in 2014 form part of the same woodland complex: Denge Wood and Denge and Pennypot Woods. There are four previous records of *O. pilicornis* from this area, from 1978-1999, but none since then. It was therefore very exciting news when Alfie Gay got in touch with photos of the bee from the Forestry Commission part of the site on 27 April 2014. He saw at least one male and one female, including a mating pair, which is a very rare sight. The site was visited with Alfie and Ian a couple of weeks later, after Alfie mentioned that there were areas of similar habitat in surrounding woodland, including at Denge and Pennypot Woods. There were plenty of open areas present with a wealth of ground flora at Bonsai Bank in Denge Wood, where most of the day was spent searching the Bugle and other flowers. Denge and Pennypot Woods was visited in the middle of the day, but the habitat did not appear quite as suitable there because there was much less Bugle and general flowering ground flora. In the afternoon, Alfie found a bee on the same patch of Bugle where he had

seen them in April. There were at least two females there and one probable male flying rapidly between the flowers. When the sun disappeared behind a cloud, so did the bees, which shows how important suitable weather conditions are when conducting surveys for this species.

Grant Hazlehurst visited Denge Wood on 15 May and found one female *O. pilicornis*. He said that he visits the site every year, but that this was the first sighting he has had at the site, which suggests that it is not common there. Interestingly, there was little suitable dead wood observed at both sites in the Denge woodland complex. At Denge Wood, there was mulched wood all over the ground, but the fragments would probably be too small for *O. pilicornis* to use as a nesting site. There were a few log piles around, but these were fairly recent and did not have many, if any, existing holes in, which the bee would normally use. It was therefore suggested to the site manager that more dead wood should be provided in the future and that holes should be drilled in the logs, which would also provide more nesting opportunities for other bees and wasps. At Denge and Pennypot Woods there was a similar situation, with little dead wood available in open areas and similar suggestions were also given to the site manager there. Denge Wood is managed with input from Butterfly Conservation because there is a



Suitable habitat at Forestry Commission's Denge Wood

population of Duke of Burgundy butterflies there and also some scarce moths. The presence of the butterfly will help to keep the habitat in suitable condition for *O. pilicornis*, however, as with the Pearl-bordered Fritillary, the Duke of Burgundy does not require dead wood, so it is important that this valuable resource is still provided.

David Baldock made three visits to Holmen's Grove in Surrey in May, where the last record of the bee was in 2000, but despite an abundance of Bugle, there was no sign of any females. He did see two suspected males on the first visit and one on the second visit, but, although a promising sign, unfortunately these records cannot be confirmed as there are other *Osmia* males that it could be confused with and the bees were seen flying, so could not be closely examined. On the third visit he was accompanied by Steven, Jeremy Early and Tom Wood, but it was unsuccessful despite good weather conditions. A visit to the Oaken Wood-Tugley Wood complex in Surrey the day after was made

by David, Jeremy and Steven, where *O. pilicornis* had last been recorded in 2001. There was no sign of the bee though, even with ideal weather conditions and plenty of suitable habitat. While it is good news that suitable habitat remains at these sites, it is concerning that there have been no recent records.

Osmia pilicornis was recorded at just two sites in the UK in 2014: Denge Wood and Tudeley Woods. It is positive news that it has been consistently found at Tudeley Woods in recent years and that it has been rediscovered at Denge Wood, but the lack of records from other sites highlights the need for continued survey work and further research on the species.

Further research

There remain many sites with previous records of *O. pilicornis*, which have not been re-surveyed for presence of the bee in recent years. In light of the rediscovery of the species at Denge Wood after an absence of 15 years, it would be worthwhile revisiting other sites with a lack of recent records to look for the bee itself and also to assess the habitat suitability. Alfie visited various woodland sites near and including the Denge woodland complex and has very helpfully suggested those that would be worth targeting in future years. One site that both him and Geoff Allen suggested would be worth visiting is Blean Woods in Kent where there is ample suitable habitat due to management for the Heath Fritillary.

Given the elusiveness of the species, it would be interesting to put up nesting tubes at sites with known populations to ascertain whether such a method could be used to monitor the species. This could also help to provide further details about its nesting habits, of which there is little available information.

Acknowledgements

I would like to thank the High Weald Unit for their continued interest and financial support with the project. I am very grateful to Ian Beavis, Bex Cartwright, George Else, Alfie Gay and Stuart Roberts, who accompanied me on site visits and to the following for their various contributions to the work: Geoff Allen, Kate Harris, Grant Hazlehurst, Dan Hoare, David Baldock, Mike Edwards, Steven Falk, Duncan McIntyre, Tom Pinches, Clive Steward and Steve Wheatley.

References

Earwaker, R. (2012). Habitat assessment for the conservation of *Osmia pilicornis* Smith. Unpublished report to the RSPB. Available on the High Weald Unit website: <http://www.highweald.org/downloads/publications/land-management-guidance/woodland-guidance/1147-osmia-pilicornis-survey-report-2012/file.html>

Earwaker, R. (2013). *Osmia pilicornis* surveys in South-east England, 2013. Report available on the High Weald Unit website: <http://www.highweald.org/downloads/publications/1148-osmia-pilicornis-survey-report-2013/file.html>