

# Tormentil mining bee *Andrena tarsata* and nomad *Nomada roberjeotiana*

## Surveys and update report 2022



In 2022 SRT's ongoing survey work has confirmed the ongoing presence of the Tormentil mining bee is at Allerthorpe Common and Jugger Howe. It was recorded on Pampledale Moor in 2021 but not in 2022. The bee still hasn't been re-found at Strensall Military Training Ground and the Hole of Horcum. Again, 2022 appeared to be a poor year for species and hot temperatures led to limited Tormentil flowering during the normal flight period of the species.

### Acknowledgements

This project is a Species Recovery Trust project and was possible due to funding and generous support from Natural England and the Seven Pillars Trust. With thanks to all the landowners and managers for access and their cooperation during this work.

### Background

This project is in its third full year, some work was done in 2020 but limited to due maternity leave and COVID-19. The project continues to examine the state of *Andrena tarsata*, a recognised UK threatened species and conservation priority, and its associated nomad bee *Nomada roberjeotiana* a nest parasite ('cuckoo bee') in its Yorkshire stronghold.

Project objectives remain the same to work with key volunteers and site users to explore the York heathlands and the North Yorkshire moors to better understand the distribution of the two bees

- Mapping of nest sites and its foodplant Tormentil to better understand the bees' requirements in Yorkshire, as well as assess wider habitat opportunities
- Define next steps for habitat improvements by identifying potential areas to create new habitat and restore existing sites
- Engage landowners, managers and wider volunteers in discussions around the species and opportunities to embed habitat improvements within existing management practice.



Female *Andrena tarsata* (c)  
Paddy Saunders

### Species' status and description

At a national level the species remains a Section 41 species. *Andrena tarsata* is a small dark solitary bee (6-10mm). A combination of the distinctive translucent orange hind tibiae and tarsi in contrast to the dark femur and a partially black-haired thorax with a fringe of grey hairs in the females; and a combination of a pale clypeus, partly orange tarsi and black hairs on the thorax in male bees. For a full description of both species please see the 'SRT Yorkshire *Andrena tarsata* and nomad progress report 2019'.

### Survey update

Survey work is still focused on 5 core sites in Yorkshire where the species is (or was) known to occur, to better understand its needs and status on these sites. During the peak survey month of July the

weather was very hot and reached some of the highest temperatures ever seen in the UK. However, every site was surveyed in good weather conditions but with mixed results. Early and late surveys were in both June and August, and a couple of males were recorded on Allerthorpe at the end of June in 2022 but no records in August. See table below and 'Andrena tarsata Site Register' excel spreadsheet for more information on these records.

Unfortunately, the species hasn't been re-found at the Hole of Horecum and Strensall Military Training Ground but survey efforts will still continue on these sites next year. Also note, there has still been no success in recording the nomad bee of this species *Nomada roberjeotiana*, which was historically recorded from both Strensall (2009) and Allerthorpe Common (1983).

Site Name	Historic Records	Record 2019	Record 2020 and 2021	Record 2022
<b>Jugger Howe</b>	First recorded from this site in 2010 were on the main site, it is possible that before 2010 this species was present but overlooked.	1 female <i>Andrena tarsata</i> found on tall Tormentil on outside of main site next to carpark on the bee mounds, 1 female identified although a number of individuals were seen	In 2020 a single female on the bee mounds in the car park, but unfortunately not in 2021. The main site was surveyed both years, but no bees were found there.	1 female found on bee mounds
<b>Allerthorpe Common</b>	Extensive historic records for <i>Andrena tarsata</i> in 1925, 1927, 1928, 1929, 1932, 1973, 1974, 1976, 1979, 1980, 1981, 1983, 1984, 2004, 2005, 2006, 2007, 2008	About 10 individuals recorded mainly females	28 individuals recorded in 1 hour doing a 30min transect each side of the bee track	8 individuals recorded in 1 hour
<b>Strensall Military Training Ground</b>	Extensive historic records for <i>Andrena tarsata</i> in 1971,1981, 2005, 2006, 2008	None found searched once in good weather	None found	Possible record of a female in firing zone
<b>Pampledale Moor</b>	First recorded in 2011, possible that the site was overlooked previously	5 females recorded on taller tormentil found further into the site	2 females were recorded plus 1 male, the numbers weren't as high on the site in 2021	No records
<b>Hole of Horcum</b>	Two records in 1937 and then 2005, again in 2011	None found	None found	None found

## Ecology update

With numbers not so high this year it was hard to glean much ecological information from the surveys. It does appear that the species likes to move around the site at Allerthorpe, moving up and down the sandy areas on the bee track – possibly dependent on the distribution of Tormentil. As an area previously well used stopped being used once it became more encroached with Gorse and so the Tormentil present became more limited. On Jugger Howe it was found in exactly the same area (the bee mounds in the carpark) that it was found in previously, but this area seemed to have consistent level of Tormentil between years. As already mentioned a couple of males were recorded on Allerthorpe Common in late June 2022 and so it may be that males emerge slightly earlier than females but this will be investigated again in future years.

## Threats update

Again, as above the limited amount of data collected means not much additional information on threats could be gleaned in 2022. However, the movement of the species in terms of the species again shows the importance of access to its foodplant Tormentil and the impact of scrub encroachment in relation to this access. Both Allerthorpe Common and Jugger Howe are carrying out scrub management and both are using slightly different techniques (very low level removal on Jugger Howe compared to large scale extensive removal on Allerthorpe Common), and so it will be interesting to see how these two approaches compare.

## Management

Maintain food sources through achieving tall and bushy Tormentil plants covering 30% of key areas in July by:

- Maximise the abundance of tall and flowering Tormentil between 1<sup>st</sup> June and end of August by avoiding cutting and only minimal grazing
- Type of stock needs to be considered as sheep, ponies and cattle graze differently. In this case sheep's close and targeted edge grazing can lose the tormentil and its associated-rich herbaceous grassland. Ponies and cattle should generally be preferred, but winter sheep are also quite good for this bee (Saunders *pers comms* 2019).
- On heathland and other habitats, keep a varied vegetation structure (for example heather on heathland) so that Tormentil can grow in grassy clearings and maintain Tormentil-rich verges and along tracks and manage scrub when encroaching on key bit of grassland; and rotational management to avoid tussocky grass and other competitors
- Controlled burning (swaling) of heathlands with heavy scrub or Purple moor grass may benefit Tormentil growth. If this is applied, burn plots in a rotation of 3 years or more.
- In Tormentil-rich acid grassland, avoid applying fertilisers or pesticides and remove arisings that result from any cutting



Bushy tormentil on Jugger Howe bee mounds

Retain open bare-ground nesting sites by:

- Known or potential nesting areas should be kept free of encroaching vegetation such as scrub (gorse, heather, young trees) and coarse grasses
- Artificial bee banks can be created, both areas were roughly south facing. With areas of both sloping and vertical bare ground. Small parabolic 'dips' can be created to boost diversity of micro-climate and niches. In addition, a trench about 4-5m long with spoil banked above. height about 2.5m. Can be created using a natural slope feature, and a range of loamy and peat soils were exposed (Saunders 2016). These new areas will be quickly colonised by a range of invertebrates including solitary bees, plus the target species (in about 2 years).



Possible nesting site at Allerthorpe Common

## Conclusion

Ongoing survey work and management is needed to continue to understand this species, its populations, ecology and distribution in Yorkshire. Working closely with land managers and key volunteers to highlight the importance of this bee-rich habitat particularly 'flower-rich and sandy edges' and improve site the Tormentil miming bee and its nomad.

## References

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