Tormentil mining bee *Andrena tarsata*

and nomad *Nomada roberjeotiana*

Surveys and update report 2024

In terms of survey work and records for this species 2024 was a much more challenging year compared to 2023, as the weather was wet in July making surveying challenging, plus the stronghold site Allerthorpe received an erroneous cut. This meant that the annual transect on Allerthorpe resulted in 0 bees recorded, however the species was present on site and was recorded as such with a total of 9 individuals recorded with 5 in the highest record. The species was found again on Pampledale Moor with 2 individuals recorded. The species was not recorded at Strensall Common this year and seems unlikely to be rediscovered on this site, however efforts to improve habitat means this site could be considered for a reintroduction in the future. There was a sighting of an Andrena bee at Hole Horcum, but it couldn't be caught to be verified. In addition, it was not recorded at Jugger Howe, this site will continue to be surveyed to attempt to re-record the species. Further attempts were made to use listening devices as novel way to record this species, however further work is needed to limit the impact of background noise, and this will be researched in 2025. It is obvious that work needs to focus on getting this species on to well-managed heath and moorland sites to be secure, this will be the focus of future work. Additionally, there were still no records of the Tormentil mining bee's associated nomad bee *Nomada roberjeotiana*, it is possible that this species has been lost from the county.

Andrena tarsata female
(c) Ian Andrews

Acknowledgements

This project is a Species Recovery Trust project and was possible due to funding and generous support from Biodiversity UK Ltd and Hyne Trust. With thanks to all the landowners and managers for access and their cooperation during this work.

Background

The project is in its fifth year since 2019 (2020 fieldwork was limited). The project continues to examine the state of Tormentil mining *Andrena tarsata*, a recognised UK threatened species and conservation priority (as with all other Hymenoptera this species still has to be red listed), and its associated nomad bee *Nomada roberjeotiana* a nest parasite ('cuckoo bee') in its Yorkshire stronghold.

Project objectives remain the same, except for the addition of reintroduction consideration, 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.

- Assess opportunities to re/introduce this species to sites

Female Andrena tarsata (c) Paddy Saunders

Species' status and description

A Section 41 species Andrena tarsata is a small dark solitary bee (6-10mm) restricted to heath and moorland sites. For a full description of both species please see the 'SRT Yorkshire Andrena tarsata and nomad progress report 2019'.

Survey update

The 5 core sites in Yorkshire were surveyed in 2024, all are historic sites for the species, although Pampledale moor and Jugger Howe were first recorded in 2010/11. The weather during the main survey season of July in 2024 was again very wet, also the weather was much warmer in mid to late June and this is when the numbers appeared to be highest. We have modified the timing of surveys to start in mid to late June, depending on weather conditions.

Unfortunately, the species hasn't been re-found at the Hole of Horecum nor Strensall Military Training Ground and it couldn't be re-found this year at Jugger Howe but survey efforts will still continue on these sites next year. For Allerthorpe Common, where numbers are usually high, we have a defined survey method, which is a timed transect surveying the North and South sides of the bee track (over 1 hour). Although a cutting error in 2024 meant that no bees were found on the transect due to its foodplant being absent in a key area. 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	Record 2023	Record 2024
Jugger Howe	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 bee female (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)	1 bee female (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	1 bee female (found on bee mounds)	None found	None found

			found there)			
Allerthorpe Common	Extensive historic records for Andrena tarsata in 1925, 1927, 1928, 1929, 1932, 1973, 1974, 1976, 1979, 1980, 1981, 1983, 1984, 2004, 2005, 2006, 2007, 2008	10 bees (mainly females)	28 bees 2021 (recorded in 1 hour doing a 30min transect each side of the bee track)	8 bees (recorded in 1 hour)	69 bees (south of track 48 females and 13 males, north of track 6 females and 2 males, 1 hour transect of track)	9 bees (due to cutting error transect recorded 0 bees)
Strensall Military Training Ground	Extensive historic records for *Andrena tarsata* in 1971,1981, 2005, 2006, 2008	None found searched once in good weather	None found	1 possible bee female (recorded in firing zone)	None found (but access to firing zone was limited on good weather days)	None found
Pampledale Moor	First recorded in 2011, possible that the site was overlooked previously	5 bees females (recorded on taller tormentil found further into the site)	3 bees 2021 (2 females and 1 male)	None found	5 (4 females and 1 male)	2 bees
Hole of Horcum	Two records in 1937 and then 2005, again in 2011	None found	None found	None found	None found	None found (but an Andrena sp seen)

Efforts were made in 2024 to look using the listening devices to monitor the species (see photo to right), it was concluded that the species could be heard in the laboratory by the devices but not in the field, due to background noise. Therefore, efforts will be made in 2025 to reduce the background noise by modifying the devices to see if this will allow them to pick up the bees' buzz.

Ecology update

The floweriness and high growth of the Tormentil still proves to be key for high quality habitat, this was much improved on Allerthorpe and this was evident in late June and early July, however the error cutting of key areas in late July limited this attribute and our understanding of it in 2024. This has also occurred on Jugger Howe where sheep hurdles are allowing higher levels of growth in an enclosure on the site, where the bee was previously recorded. The low numbers of bees on this site make it hard to judge success of this management but it is recommended to continue to apply this management, to see if the species is rediscovered. The species remains at Pampledale Moor in low numbers, but the landowner is not interested in engaging, although we still send them reports.

The creation of more nesting habitat in the YWT reserve at Allerthorpe Common is being used by other bee species, such as Hyleus sp. This type of creation is being repeated on YWT part of Strensall Common and we are hoping to create Tormentil in similar areas. Next year is hoped that listening devices modified to reduce background noise, will allow a more detailed overview of the species distribution.

Threats update

This bee species relies on heath and moor habitats that are more disturbed and open, but without too much grazing particularly from sheep, to allow to high growing flowery Tormentil at edges, such as track. Even very low levels of grazing are still too much, as the sheep focus on edge areas and graze the Tormentil right down. It also needs open sandy areas for nesting, these often have to be artificially created as natural disturbance no longer occurs. Key threats are grazing limiting the floweriness and growth, as sheep prefer the grassy areas where Tormentil grows to heather. When grazing isn't present this is threatened by scrubbing by shrub species, such as Gorse or tree saplings, which can easily take over these areas. Without some kind of artificial disturbance to create open sandy areas there are also very limited nesting locations. The ideal management would be winter grazing but on these sites in Yorkshire this is not commonly used.

Management

Each site needs tailored management depending on the threats that are present, depending if it scrub clearance or grazing restrictions are need to improve Tormentil provision, or a mix of the two approaches may be needed for different parts of the same site. All sites will need some level of sandy bare ground creation, although a small amount of sandy bare ground is created at the edge of paths by human disturbance on the sites, this is often not enough to provide nesting provision for a healthy population. We are also starting to think about looking at sites for potential re/introduction work. To this end extensive nesting area creation was undertaken on Strensall (see photo above) and as an historic site where the species can't be re-found in would be perfect for a re-introduction. This species needs to be on well managed sites with ability to create certain conditions, and so these sites need to be the focus for either long-term maintenance of the species or potential sites for introduction.

Conclusion

Annual monitoring continues to provide important understanding of this species, its distribution, abundance and ecology. It is hoped that the listening devices can be modified in 2025 to reduce background noise and allow data to be collected to give both better temporal and spatial understanding of this species. Management of sites for the species will continue, providing tailored advice based on monitoring results. In addition, in 2025 we will further explore using Strensall Common as a possible source site for future reintroduction work, and also by starting to improve nesting and forage on potential re/introduction sites.

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