

Noble Chafer Monitoring near Tiddesley Wood, Worcestershire June and July 2022

Sue Chandler, Janet Morris & Val Layfield. (diagram of movements by Bob Millinship)

Editor's note

Over the last few years we have run trials using a pheromone (lure) (Harvet *et al* 2018) to attract noble chafer *Gnorimus nobilis* beetles to traps in two orchards adjacent to Tiddesley Wood near Pershore. The trapped beetles were marked as individuals with small white dots at different places on the upper parts so each beetle caught or seen again could be identified. One aim of these studies is to discover how far a beetle may fly to find a mate or a tree suitable for egg-laying. The larvae feed on naturally decaying wood within the old plum and apple trees. Apart from re-traps the beetles can easily be seen and their white dots checked when they take nectar and pollen from Hogweed or to a lesser extent from Meadow Sweet and Elder flowers.

The project summer 2022

Harry Green set us a project to monitor Noble Chafer sightings and movements in the orchards. From 1st June we put up three traps and regularly topped them up with lure.

The traps were monitored every day by at least one of the team. Sue managed to get out every day despite catching Covid! We stopped monitoring on 7th July as no sightings were made after 17th June. The area around each of the traps was also monitored for marked beetles daily to see local movements.

Daily records were kept of temperature, humidity, cloud cover, wind direction, wind speed and sightings, generally at 5 p.m. each day.

Noble chafers found were marked, photographed and given indent numbers (from 1 to 7 as this was the number we found). We tried to determine the sex of each one, but this was not easy or conclusive. Each sighting was noted with a grid reference.

Frass had been found in the old plum orchard near to Sue's trap. Valerie's trap was near to Sue's but Janet's trap was far away at the other (W) end of the cider apple orchard – see the satellite picture and chart. The sole feed source for the NCs seemed to be hogweed – in full flower at the start, but over by the end.



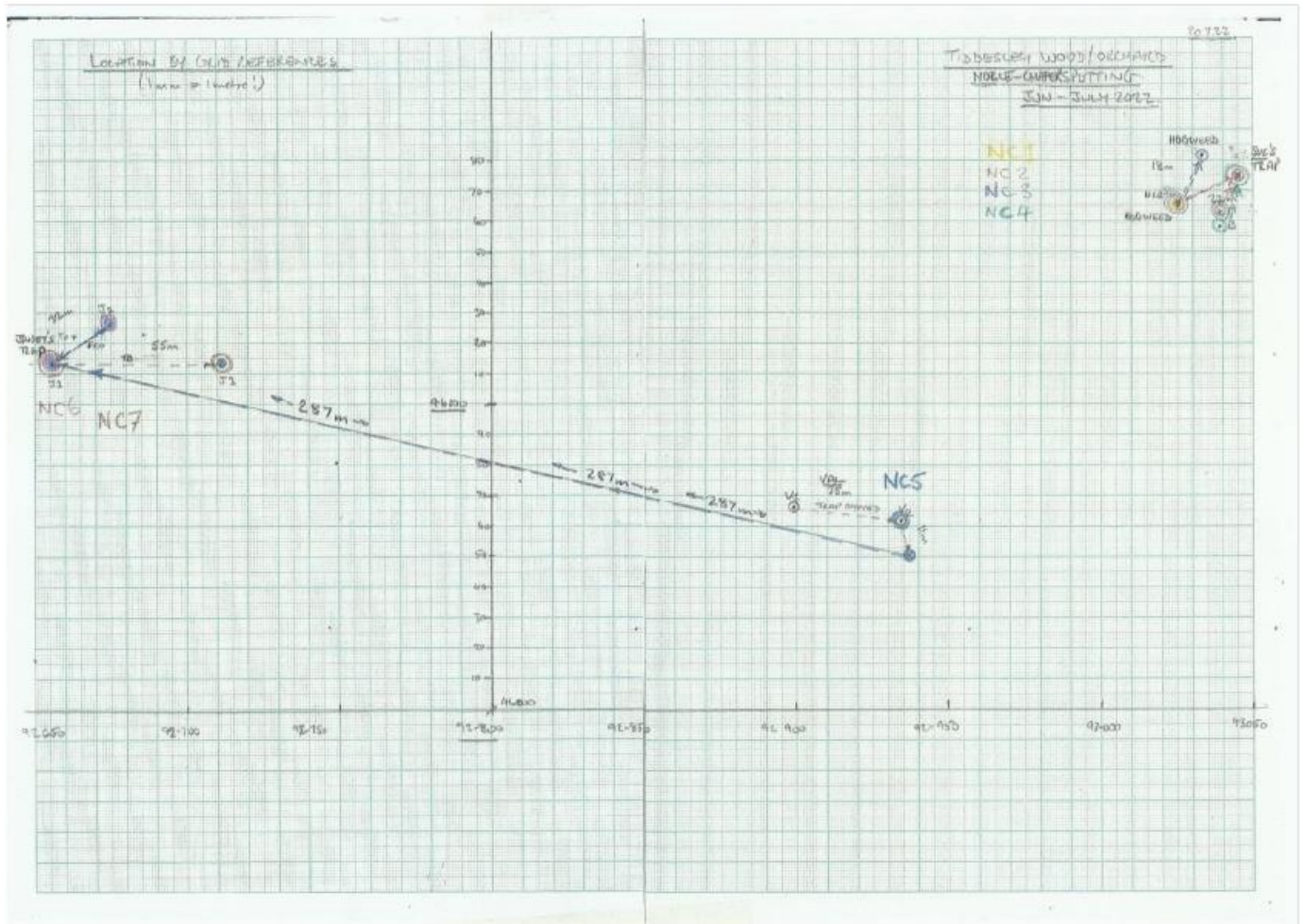
01 Satellite picture of the orchards surveyed. Cider apple orchard to the left (west). Old plum orchard to the right (east).

Data collection and presentation.

the grid references (GR) were noted by a mobile app. These were checked against an online official maps so that we could actually correlate each GR with a picture of the orchard and adjust as necessary to be sure of the actual location of the traps. Plans showing individual chafer movements for each of the three traps were prepared.

A hand-drawn version showing all the movements has been produced to show the distances between the various trap locations and chafer locations. See below

Most of the chafers found did appear to make local movements around the traps, some going back into the trap more than once. The most significant movement recorded was a distance of 278 metres in one day for one chafer going from Val's trap to Janet's trap. This movement was also against the prevailing breeze.



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Diagram showing movements and distance recorded for several beetles

Summary

This note is the first to record measured distances travelled by individually marked noble chafers.

Comments

In future years a study should start earlier in the year – possibly mid-May with more Hogweed available.

We need more lure to be available.

Determination of the sex of each Noble Chafer was difficult. How can we improve?

Acknowledgement

We are very grateful to Deborah Harvey for providing pheromone. This is specially manufactured and in short supply.

Reference

Harvey, D. J., Vuts, J., Hooper, A., Finch, P., Woodcock, C. M., Caulfield, J. C., Kadej, M., Smolis, A., Withall, D. M., Henshall, S., Pickett, J. A., Gange, A. C. & Birkett, M.A. 2018. Environmentally vulnerable noble chafers exhibit unusual pheromone-mediated behaviour. PLOS ONE | <https://doi.org/10.1371/journal.pone.0206526> November 1, 2018