

Noble Chafer Survey 2009

Brockhampton Estate, Herefordshire



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people's trust for
**endangered
species**

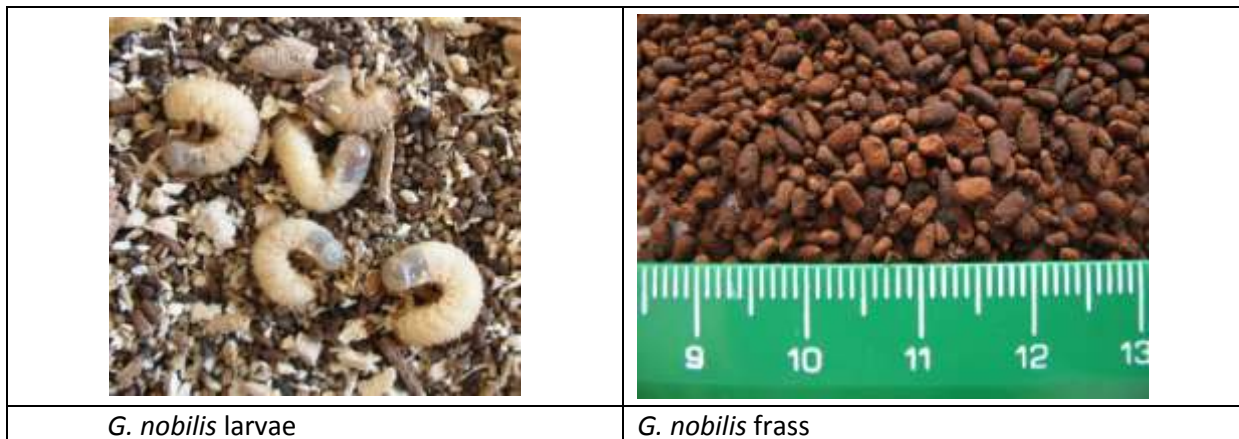


Background

Noble chafer (*Gnorimus nobilis*)

The larval habitat for noble chafer is cavities within old trees, caused by heartwood decay, which are filled with the products of wood decay, ie wood mould and remain moist but relatively warm. In Herefordshire noble chafer evidence has been recorded in a wide range of different fruit trees in traditional orchards. The nearest recent *G. nobilis* record to the Brockhampton Estate is approx 3km away in Knighton. There frass (faecal pellets) was recorded in old apple trees.

Frass provides an extremely useful means of determining presence, or at least recent presence, of feeding larvae, since it persists in the cavities and remains in the more accessible areas after the larvae have moved into moister conditions deeper into the cavity, and even after a particular tree is no longer suitable for the beetle and it has moved on. The faecal pellets of a large beetle like noble chafer are quite distinctive given that no beetle of equivalent size and feeding habits is known to occur in these trees. It should be noted that the limitation with using this methodology is that there is currently no conclusive evidence of how long frass can persist in situ. It has been suggested that it could persist in host-trees for an extended period of time and thus the beetle may no longer be present despite positive records of larval droppings.



Methodology

The National Trust provided maps showing the locations of 13 orchards to be surveyed. Nine of these were prioritised by entomologist Andy Foster. Each orchard was visited and assessed by Laura Hurt and Anita Burrough from People's Trust for Endangered Species using the Traditional Orchard Survey methodology for preliminary and on-site survey.

The preliminary survey records the orchard type and its visibility from a road or footpath. It goes on to record any evidence of management such as grazing, mowing and tree planting. Presence and number of old trees is then noted. The site is then given a grade in relation to its suitability as habitat for the noble chafer and the likelihood of finding it.

- Grade 1: orchard trees of a suitable age and condition, with decay accessible for surveying
- Grade 2: orchard trees of a suitable age and condition but the site had been cleared of most or all fallen trees and boughs, as well as trunks with accessible rot cavities; surveying for noble chafer not therefore normally considered;
- Grade 3: orchard trees appear to be of medium age and probably not yet suitable for colonisation.

The on site survey gives a more detailed account of the orchard, including the presence of veteran tree features and signs of the noble chafer. An overall condition assessment value is also assigned in accordance with the traditional orchard habitat action plan condition assessment document developed by PTES in collaboration with The National trust and Natural England.

In each of the first two orchards visited, every tree was systematically searched for evidence of noble chafer activity. This took over two hours so it was decided that once positive evidence was found in future orchards, it would be recorded and surveyors would move onto the next one, in order to cover more orchards. 12 of the 13 orchards were visited on the list. The Firs Orchard was not visited.

Results

Noble chafer faecal pellets were found at the following 9 sites:

Lower Brockhampton Main Orchard - in damson (*Gnorimus* larvae was also recorded here)



Photograph 1.
Damson tree with positive evidence of noble chafer



Photograph 2.
Noble chafer larval frass



Photograph 3.
Damson tree with positive evidence of noble chafer



Photograph 4.
Noble chafer larval frass



Photograph 5.
Noble chafer larval frass at base of damson tree



Photograph 6.
Noble chafer larva with frass



Photograph 7.
Spot weeding in Lower Brockhampton Orchard



Photograph 8.
Spot weeding in Lower Brockhampton Orchard

Old Mill Mixed Orchard – in damson



Photograph 9.
Damson tree with positive evidence of noble chafer



Photograph 10.
Old Mill Mixed Orchard

Home House Cherry Orchard - in damson and cherry



Photograph 11.
Home House Cherry Orchard



Photograph 12.
Damson tree with positive evidence of noble chafer

Old Linceter Hole Coppice Orchard – in small live and dead damsons



Photograph 13.
Dead damson tree with positive evidence of noble chafer



Photograph 14.
Live damson tree with positive evidence of noble chafer

Old Linceter Damson Orchard – in damson



Photograph 15.
Dead damson tree with positive evidence of noble chafer



Photograph 16.
Damson tree with positive evidence of noble chafer

Old Linceter Mixed Orchard – in cherry



Photograph 17.
Old Linceter Mixed Orchard



Photograph 18.
Old cherry tree with positive evidence of noble chafer

Old Linceter Apple Orchard – in damson



Photograph 19.
Old Linceter Apple Orchard

Park Cottage Orchard – in cherry



Photograph 20.
Park Cottage Orchard



Photograph 21.
Cherry tree with positive evidence of noble chafer

Orchards where no evidence of noble chafer was found:

- Home House Cider Orchard
- Old Mill Cider Orchard
- Lower Brockhampton House Orchard

This is due to the fact that there were either no old trees or the trees weren't sufficiently decayed that they had accessible rot holes or cracks.

Recommendations

General

- Take care when pruning and leave thick branches alone as these may contain noble chafer larvae.
- Encroaching scrub should be controlled around trees that are known, or suspected, to have noble chafer within them as increased shading may cool the trunk which in turn may affect the development of the larvae.
- Fallen trees should be left undisturbed as they may contain developing noble chafer larvae. Where they need to be moved for access, move them to the side of the orchard where they can continue to support deadwood invertebrates and fungi.
- Aim for an organic approach to the management of your orchard. Pesticides may poison noble chafer and fertilisers may compromise tree health through impacts on fungal mycorrhizae which have many benefits to trees.
- Keeping orchards well-stocked with trees will maintain a diverse age structure and ensure the continued presence of wood-decay habitats and future habitat for the noble chafer.
- An active management programme is beneficial to orchard wildlife in maintaining the open structure which favours noble chafer and other key species.

Specific

- **Old Mill Mixed Orchard:** this orchard is mainly old damsons in a suitable condition for noble chafer but is being replanted with Worcester Pearmain apples. It would be beneficial if some damsons could be planted so that there are damsons available when the current ones have died off. Apples take a lot longer to mature and develop the features of decay that support noble chafer populations.
- **Lower Brockhampton Orchard:** try to void spot spraying the bottom of the mature trees, this will be better in general for orchard invertebrates in particular the noble chafer. In this orchard noble chafer larvae were found feeding underground but outside of the main stem (see photograph 6) and spraying herbicide in this area is likely to adversely affect the population.

It was good to see that many of the orchards we visited had newly planted trees. It would be beneficial if the remaining orchards were gapped up too.

Table 1 Orchard Data

Orchard Name	PTES code	Date surveyed	Fruit type	Grazed	Old trees	new planting?	HAP condition assessment grade	Grade for noble chafer	Evidence found?
Lower Brockhampton Main Orchard	HERE1954	20/07/2009	damson	y	y	y	Excellent	1	frass, larvae
Lower Brockhampton House Orchard	HERE1955	20/07/2009	damson	y		n	Excellent	2	none
Old Mill Mixed Orchard	HERE1971	20/07/2009	apple, damson	y	y	y	Excellent	1	frass
Old Mill Cider Orchard	HERE1970	21/07/2009	apple, pear	y	n	y	Good	2	none
Home House Cider Orchard	HERE1969	21/07/2009	apple	y	y	n	Poor	1	none
Home House Cherry Orchard	HERE1967 & HERE1966	21/07/2009	cherry	y	y	n	Poor	1	frass
Home House Relict Cherry Orchard	HERE1968	21/07/2009	cherry	y	y	n	Poor	1	frass
Old Linceter Hole Coppice Orchard	HERE1990	21/07/2009	damson, apple	y	y	y	Excellent	1	frass
Old Linceter Damson Orchard	HERE1983	21/07/2009	damson, apple	y	y	y	Excellent	1	frass
Old Linceter Mixed Orchard	HERE1984	21/07/2009	apple, cherry	y	y	y	Excellent	2	frass
Old Linceter Apple Orchard	HERE1985	21/07/2009	apple, plum, damson	y	y	y	Excellent	1	frass
Park Cottage Orchard	HERE3362	21/07/2009	cherry, damson, pear	y	y	y	Excellent	1	frass
Abandoned orchard	HERE3520	21/07/2009	cherry	n	y	n	Poor	1	not surveyed

