Noble Chafer
Gnorimus nobilis
Species Action Plan

1. Introduction
The noble chafer is classed as Nationally Scare in Great Britain and has an IUCN status of Vulnerable. It was selected as a priority UK BAP species and subsequently listed in Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

2. Current Status
2.1 Ecology and habitat requirements
In Worcestershire the known noble chafer breeding sites are all in old, traditional orchards. In other countries it has been found breeding in open woodlands and pasture woodland as well as orchards. A lack of research within the UK makes it unclear how important non-fruit species are here to the larval stage. Our current understanding is that the larvae develop in decaying wood and wood mould in old fruit trees: the highest numbers of records come from plum, damson and cherry orchards with apple and pear also used.

Plum and damson trees tend to begin their decay process earlier than other fruit species and also tend to be easier to search for evidence of the beetle as they develop open cavities much more readily. It is suspected that this strongly influences the predominance of records from *prunus* species and may not be a reflection of true fruit-type preference on behalf of the beetle. There is one national record from oak. The normal larval development period seems to be around two years in fruit trees.

Flying adult beetles have been found during the daytime visiting flower heads, especially hogweed *(Heracleum sphondylium)*, meadowsweet (*Filipendula ulmaria)* and elder *(Sambucus nigra)*, and also visiting the canopy of nearby broadleaved woodland (although the purpose of such visits remains unclear). The main adult flight period is mid-June to late July and it is thought that if the adults mate within the tree they may not emerge at all.

2.2 Population and distribution
In parallel with the loss of traditional orchards the noble chafer is likely to have undergone a considerable decline in range within Britain. Distribution of the species before 1970 is evidenced in records from North Devon, South Hampshire, West Sussex, East Kent, West Kent, Surrey, South Essex, Middlesex, Oxfordshire, Buckinghamshire, East Norfolk, West Gloucestershire, Herefordshire, Worcestershire and Cumbria. The main national distribution today is in Gloucestershire, Worcestershire and east Herefordshire, with populations also recently reconfirmed in Kent and Buckinghamshire. It is probably more widespread in Worcestershire than anywhere else. Survey work to date has found the highest concentrations of evidence of the beetle in orchards both near and in the Wyre Forest, the Teme valley, the area around Suckley and Alfrick and in the Vale of Evesham (figure 1).

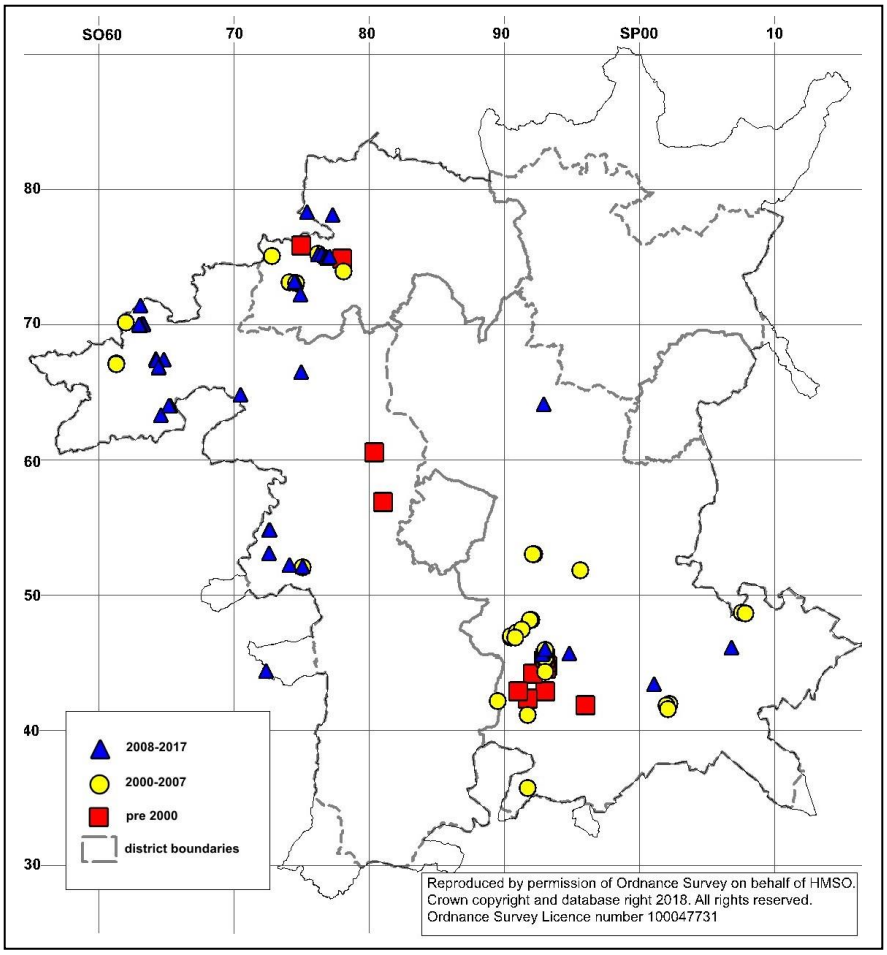

Figure 1. Records of noble chafer in Worcestershire. Data supplied and map prepared by Worcestershire Biological Records Centre.

2.3 Legislation

The noble chafer is listed in Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

2.4 Summary of important sites

The following sites are considered to be the most important locations within Worcestershire for noble chafer:

- Tiddesley Wood plum orchard near Pershore falls within an 80 hectare (ha) woodland nature reserve owned and managed by Worcestershire Wildlife Trust. Evidence of noble chafer has been found in a large number of the old fruit trees.
- The Vale Landscape Heritage Trust and the Cleeve Prior Heritage Trust between them own or manage seven orchards in the Vale of Evesham area ranging in size from 0.2 to 28 ha and consisting of a variety of fruit species including plum, pear, damson, apple and cherry. Several of these sites support noble chafer.
- Apple and plum orchards to the west of Worcester.
- A number of cherry orchards within and to the south of Wyre Forest.
- Apple and cherry orchards scattered along the Teme valley.

3. Current factors affecting the species

- The economic decline of traditional orchards means there is little commercial incentive to maintain ageing trees or replace dead ones. Many

such orchards are grubbed out or left to fall derelict with no replacement of habitat.

- The felling of ancient trees, removal of dead wood from living trees and the destruction or removal of standing and fallen dead wood for reasons such as aesthetic tidiness, public safety or for use as fire wood.

- Many surviving small orchards situated within or on the edge of settlements are threatened by housing development.

- Loss of nectar and pollen sources through inappropriate management of orchard grassland and nearby rough grassland.

- Use of chemical pesticides in orchards.

- Lack of awareness of the cultural value of traditional orchards and their importance as a vital wildlife habitat.

4. Current Action

4.1 Local protection

Most orchards in which noble chafer have so far been found are privately owned and have no specific protection. Worcestershire's Traditional Orchard Local Wildlife Site (LWS) criteria give high priority to sites where evidence of the beetle has been found and 30 orchards in the county are currently listed as LWS.

Both Tiddesley Wood plum orchard and the old apple orchard at the Knapp and Papermill Reserve are owned by Worcestershire Wildlife Trust: the Knapp orchard falls within the Leigh Brook Valley Site of Special Scientific Interest (SSSI) boundary and Tiddesley orchard is a LWS. Some orchards on the southern margin of the Wyre Forest are within the Wyre Forest SSSI. Several of the orchards owned or managed by Vale Landscape Heritage Trust are listed as LWS.

4.2 Site management and programmes of action

In 2013-14 Natural England and Worcestershire County Council collaborated to offer a small grant scheme for the restoration of traditional orchard habitat. 97 sites totalling 110 ha received funding towards new planting, pruning and tree guard construction. Many of these sites were known to support noble chafer.

In 2014 the 'Conserving Worcestershire's Flagship Orchards' project, run by Worcestershire Biological Records Centre (WBRC), developed a set of county LWS criteria for traditional orchards. 19 sites were listed during the project and other sites continue to be assessed and listed as appropriate. The presence of noble chafer is a key criterion for traditional orchard LWS selection and owners are provided with advice on maintaining the suitability of habitat for the species.

The Three Counties Traditional Orchard Project (TCTOP), begun in 2014 and managed by the Malvern Hills AONB Partnership, has given advice to orchard owners and supported the production of site management plans.

A number of county-based conservation or community groups own and or manage orchards for their biodiversity and landscape value, including:

- Worcestershire Wildlife Trust
- Vale Landscape Heritage Trust
- Kemerton Conservation Trust
- Wyre Community Land Trust
- Cleeve Prior Heritage Trust
- The Lenches Community Orchard trustees

Agri-environment funding scheme options have included those for the creation, restoration and management of traditional orchard. Management of many of Worcestershire's high value traditional orchard sites is supported by agri-environment payments.

Traditional orchard management and restoration advice is available from Natural England.

4.3 Survey, research and monitoring

University dissertations completed in 2012 by Jenni Schenke and Anna Bunney researched the habitat preferences of the noble chafer within Worcestershire orchards. The outcomes of the projects were reported in the Worcestershire Record, the journal of WBRC and the Worcestershire Recorders.

WBRC's 'Conserving Worcestershire's Flagship Orchards' project added a number of new noble chafer sites to the list of those known within the county. WBRC is currently running a 2-year 'Finding Rare Species on the Malverns' project (2017-2019). This aims to increase our knowledge of the distribution and abundance of rare species in and around the Suckley Hills area of the Malvern Hills AONB. Noble chafer is one of the flagship species for which survey work is taking place.

The Three Counties Traditional Orchard Project (TCTOP) has undertaken wildlife surveys within a number of orchards and added several new noble chafer records to the database.

In October 2012 the University of Birmingham, in partnership with Aberystwyth University, Royal Holloway University of London and the People's Trust for Endangered Species (PTES), was awarded a 3-year Leverhulme Trust grant for a project entitled 'Integrating ecology and social science in conservation: Orchards, beetles, and agroecology'. This focused on the genetics, ecology and use of pheromones by the Noble Chafer and the management of the traditional orchards with which it is associated. The ecological fieldwork was focused on the old plum orchard at Tiddesley Wood and frass for DNA extraction was contributed from a large number of other Worcestershire orchards.

5. Associated Plans

Traditional Orchards, Grassland, Woodland, Ancient and Veteran Trees.

6. Conservation Aim

All known noble chafer sites are under management appropriate to maintaining both the integrity and longevity of the habitat and the noble chafer populations within them.

7. Conservation Objectives

- Raise the profile of the noble chafer and its ecology amongst orchard owners
- Continue survey work to reinforce our understanding of the noble chafer's population and distribution within the county
- Expand survey effort to include where practicable the investigation of non-fruit tree species for evidence of the noble chafer
- All sites in conservation ownership to be managed to create, maintain or otherwise provide suitable habitat for noble chafer
- Support and encourage the creation of new orchards (or the creation/provision of suitable deadwood habitat) in locations that will form habitat stepping stones between known or likely noble chafer orchards
- Promote the planting of fruit trees generally, including within hedgerows, in particular where trees can function as habitat stepping stones between known or likely noble chafer orchards

References and further information

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People's Trust for Endangered Species (the national species champion for noble chafer beetle conservation) https://ptes.org/noble-chafer-beetles/

Worcestershire Biological Records Centre projects
http://www.wbrc.org.uk/WBRC/projects.html