



Stag Beetle

Lucanus cervus

Species Action Plan

1. Introduction

This beetle is considered Nationally Scarce in Great Britain. 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

Stag beetles are Britain's largest terrestrial beetle: males can be up to 70mm long; females are smaller, without the characteristic male 'antlers', designed to ward off other male stag beetles. Both sexes have a shiny black head and thorax and their wing cases are chestnut brown. The larvae spend between three and a half and five years as white grubs underground in the decaying roots and stumps of deciduous trees before emerging as fully-grown adult insects. The majority of adults live for only a few weeks in the summer in order to mate, although a few may survive the winter until the following year. Males are most likely to be seen in flight on warm summer evenings between May and August while they look for a mate.

Habitats used by the stag beetle include urban areas such as parks, allotments and gardens and old landscapes with networks of hedgerows, as well as broadleaved woodland and pasture woodland. Stag beetles seem to use many types of wood; they have been reported on *Quercus* sp. oak, *Fraxinus excelsior* ash and *Fagus sylvatica* beech and also fruit trees including *Pyrus* sp. pear, *Malus* sp. apple and *Prunus* sp. cherry. They prefer the warmer areas of Britain, and light soils into which they can dig and move about more easily, and they sometimes follow river courses where old oaks often survive.

2.2 Population and distribution

The stag beetle is still widespread in southern England, especially the Thames valley, north Essex, south Hampshire and West Sussex. It also occurs fairly frequently in parts of the Severn valley and coastal areas of the south-west.

Worcestershire is close to the northern edge of the present British range. The only extant, confirmed population in Worcestershire is now centered in and around Upton-upon-Severn (figure 1) where suitable quantities of decaying wood, especially tree stumps, can be found.

3. Current factors affecting the species

Removal of deadwood

This is the main threat as dead wood (in a variety of forms) provides the larval habitat, without which the population cannot survive. The beetles are especially associated with tree stumps or the bases and root systems of old, partially decayed trees and hedges. A more significant long-term threat is therefore likely to be the lack of suitable trees / hedges to take the place of the existing stock of large rotting timber.

Treatment of deadwood

Cavalli, R. & Mason, F (2003). *Techniques for re establishment of dead wood for saproxylic fauna conservation.*

Conservazione della Biodiversità Forestale di Verona Bosco della Fontana, pp. 1 112.

http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.showFile&rep=file&fil=BOSCO_FONTANA_deadwood.pdf

Chiari, S., Zauli, A., Audisio, P. A., Campanaro, A., Donzelli, P. F., Romiti, F., Svensson, G. P., Tini, M and Carpaneto, G. M (2014). *Monitoring presence, abundance and survival probability of the stag beetle, *Lucanus cervus*, using visual and odour based capture methods: implications for conservation.* Journal of Insect Conservation, **18**, 99 109.

Fremlin, M (2009). *Stag beetle (*Lucanus cervus*, (L., 1758), *Lucanidae*) urban behaviour. In *Saproxylic beetles. Their role and diversity in European woodland and tree habitats.* Proceedings of the 5th Symposium and Workshop on the Conservation of Saproxylic Beetles, 89, 161 176.*

Fremlin, M (2009). *Stag beetle (*Lucanus cervus*, (L., 1758), *Lucanidae*) urban behaviour. In: *Saproxylic beetles Their role and diversity in European woodland and tree habitats.* Proceedings of the 5th Symposium and Workshop on the Conservation of Saproxylic Beetles, Lüneburg (Germany) (2008). Buse J., Alexander K. N. A., Ranius T and Assmann T (eds). Pensoft, Sofia- Moscow: 161-176.*

Fremlin, M (2010a). *Observation of female stag beetle on a freshly cut stump.* Nature in North-East Essex, 2010: 36-39.

Fremlin, M (2010b). *Weather-dependence of *Lucanus cervus* L. (Coleoptera: Scarabaeoidea: *Lucanidae*) activity in a Colchester urban area.* Essex Naturalist (New Series), **27**: 214-230.

Harvey, D. J and Gange, A. C (2003). *The private life of the stag beetle.* The Bulletin , 62, 240 244.

Harvey, D. J., Hawes, C. J., Gange, A. C., Finch, P., Chesmore, E. D and Farr, I (2011). *Development of non-invasive monitoring methods for larvae and adults of the stag beetle, *Lucanus cervus*.* Insect Conservation & Diversity **4**, 4-14.
<https://ptes.org/wp-content/uploads/2014/06/stag->

Harvey, D. J and Gange, A. C (2011). *The stag beetle: a collaborative conservation study across Europe*. Insect Conservation and Diversity, **4**, 2-3 <https://ptes.org/wp-content/uploads/2014/06/stag-beetle-collaborative-conservation.pdf>

London wildlife Trust advice note:
<http://www.wildlondon.org.uk/sites/default/files/files/Full%20stag%20beetle%20advice%20note.pdf>

PTES stag beetle survey (Great Stag Hunt) <https://ptes.org/get-involved/surveys/garden/great-stag-hunt/stag-hunt-survey/>

Rink, M and Sinsch, U (2007). *Radio-telemetric monitoring of dispersing stag beetles: Implications for conservation*. Journal of Zoology. **272**: 235 - 243.

Smith, M. N (2003). *National Stag Beetle Survey 2002* r
Endangered Species, London.

Stokland, J. N., Siitonen, J and Gunnar Jonsson, B (2012). *Biodiversity in Dead Wood*. Cambridge University Press.

Tini, M., Bardiani, M., Chiari S., Campanaro, A., Maurizi, E., Ilaria, T., Franco, M., Audisio, P and Carpaneto, G. M (2017). .