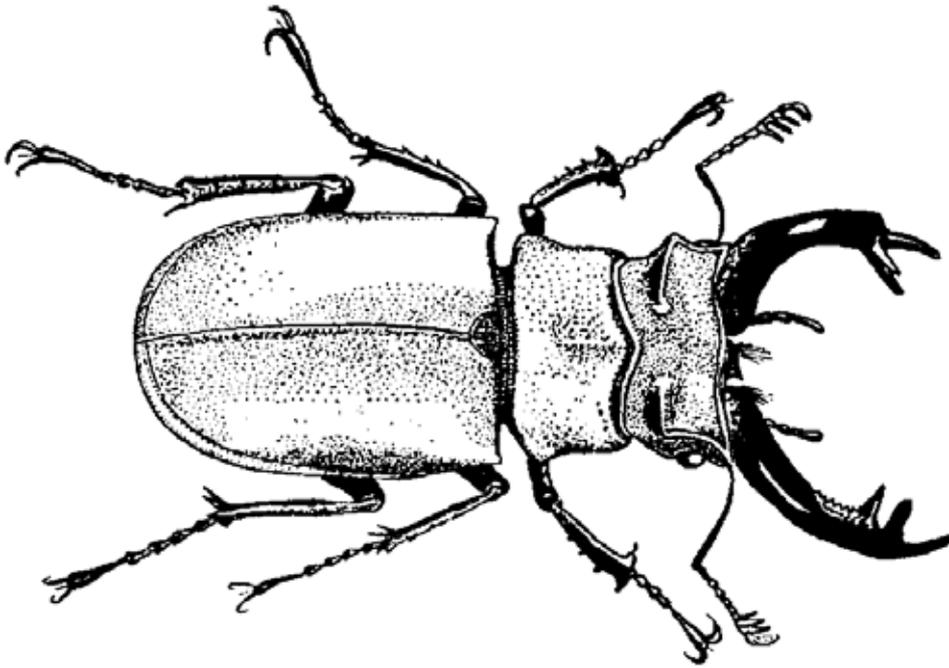


stag beetle

an advice note for its conservation in London



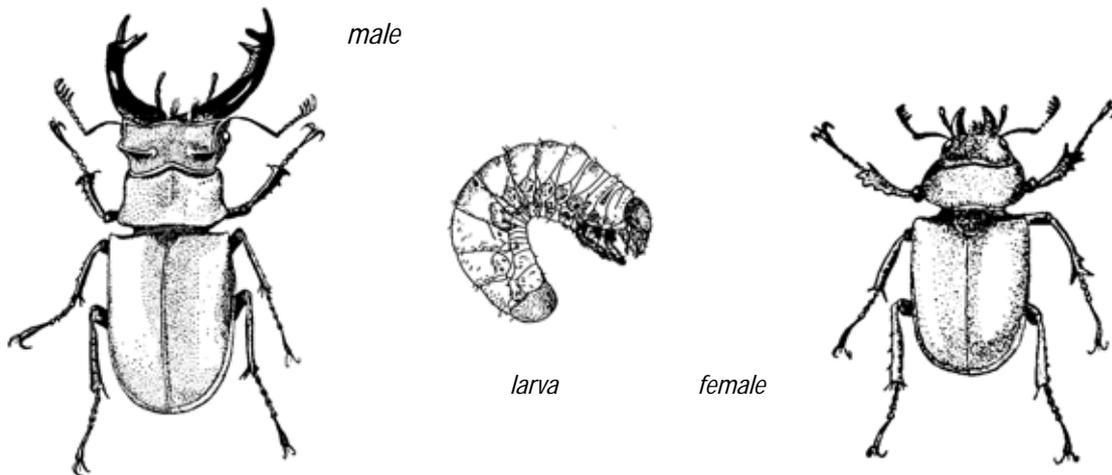
The stag beetle is a globally threatened species, protected under the Wildlife and Countryside Act 1981, as amended, and listed as a priority species for the UK and London Biodiversity Action Plans.

Its distribution has contracted in the last 40 years, although it is still locally common in a number of 'hotspots' such as the New Forest, the Thames Valley, around north-east Essex and London. It is believed that the destruction of its key habitat – dead wood – through the 'tidying-up' of woodlands and parks is the prime reason for its decline, although in urban areas the impacts of traffic, feet, cats and other predators will also be significant.

This note draws attention to gardeners, arboriculturalists, park and woodland managers, landscape architects, planners and others of the presence of this magnificent beetle in London. It also provides advice on how action can help to ensure that stag beetles may be conserved in the capital for the future.

What is a stag beetle?

The stag beetle (*Lucanus cervus*) is Britain's largest terrestrial (ground-living) beetle, between 5 and 8cm in length, and is one of three British species of a family of beetles, the Lucanidae, that numbers some 1000 species found mainly in the tropics. They are characterised by possessing large mandibles (jaws) which are often antler shaped, giving them their common name. The male stag beetle has very large mandibles; the female's are smaller but more powerful.



Why is it important?

The stag beetle is a globally threatened species, for which the UK supports a significant number. Protected in many parts of Europe, it receives limited protection under the Wildlife and Countryside Act 1981 (as amended). **Annex 1** provides a summary of the stag beetle's conservation status within Europe, the UK and London, as well as the factors which are believed to affect its decline.

There is a need to alert the public, local authority parks and planning departments, landscape architects, gardeners and others to the conservation requirements of the stag beetle. This provides advice in advance of the biodiversity action plan for the species currently being prepared by the London Biodiversity Partnership.

The need for dead wood

The stag beetle requires dead wood to complete its lifecycle. The eggs are laid underground by logs, or stumps of dead trees, and the larva (or grub) will spend up to seven years inside slowly growing in size. A wide range of woods are used, especially oak, but also ash, elm, sycamore, lime, hornbeam, apple, cherry and even some garden tree varieties. An exception, however, is coniferous species such as fir, pine and cypress, which they usually avoid. The larvae do not eat the wood of live trees and shrubs, and are thus not a pest. Instead they are an important decay agent, helping to return the minerals of dead plant material to the soil.

Adults emerge from the soil beneath logs or stumps from mid-May until late July. Males emerge earlier and appear to be more active as they search for females to mate, and can often be seen flying on sultry summer evenings an hour or two before dusk. As adults they are short-lived and generally die after mating, although occasionally some may over-winter in places such as compost heaps.

Where are London's stag beetles?

The stag beetle has recently been recorded from most London boroughs, but it appears to be significantly more common in the south and west of London, in areas such as Beckenham, Dulwich, Wandsworth, and Richmond (see map on page 8). Rarely found in central London, through lack of appropriate habitats, it is also surprisingly very uncommon or absent in the north-west and parts of north-east London although there are clusters of records in places such as Winchmore Hill and Hornchurch.¹ The reasons for this uneven distribution are the subject of current research.

Why the need for action?

The numbers of stag beetles have declined since the 1940s; their UK distribution has contracted from a large swathe of southern England and Wales. Recent surveys suggest that they are now more restricted to the south-east, with concentrations along the Thames Valley, in north-east Essex/Suffolk, and the New Forest. Perhaps surprisingly London is one such 'hot-spot', and is nationally significant for the stag beetle populations it supports.

Their decline has been attributed to a number of factors, the primary one being the reduction of appropriate habitat – dead wood. The tidying up of woodlands, parks and gardens has led to the burning or chipping of dead wood, and stump-grinding of felled trees removes another vital source for the beetle. In urban areas especially, stag beetles also face the assaults of traffic, feet, cats, foxes and other predators which may have an adverse impact at the most vulnerable stage in their life cycle – as adults seeking to mate and lay eggs for the next generation.

This advice note is to help ensure that gardeners, parks and woodland managers, local planning authorities, developers and landscape architects are alert to the possible presence of this beetle and to help secure its future within London.

Advice is provided in four ways:

- survey and monitoring populations;
- land management guidance, including habitat protection and creation;
- compliance with the Wildlife and Countryside Act 1981 (as amended);
- as a set of conditions to be used when determining planning applications under the Town & Country Planning Act (TCPA) 1990.

Telling us where the beetles are

It is important to hold an up-to-date and accurate assessment of where stag beetles are in London. London Wildlife Trust is maintaining a database of stag beetle records in the capital. This not only helps to ensure that we keep an updated record of their distribution, but will also help us in the research to ascertain why they are present in some parts of London and not others.

The easiest way of providing data of stag beetles to us is via our web-page on <http://www.wildlifetrust.org.uk/london/> or you can request a paper survey form from our

¹ From data collected in surveys by London Wildlife Trust, 1997-2000, Peoples Trust for Endangered Species, 1998, London Borough of Bromley 1997-99, Association of Croydon Conservation Societies, 1997, London Borough of Sutton, 1999, London Natural History Society and others.

Central Office on 020 7261 0447. For records outside of Greater London please contact the People's Trust for Endangered Species.

Management for the beetle

Managing for stag beetles is easy; it's more a case of 'leave alone', than doing something special (although in some cases this may be required). It is all to do with providing dead wood. Retention of existing dead wood is ideal, as are measures to inhibit the unnecessary destruction of dead wood during management operations. In addition, creating habitat by installing 'new' dead wood can also be useful. The following parameters should serve as a guide:

Site management

- Retain as much dead wood - logs and stumps - as possible on site - the larger the better (which helps prevent burning, vandalism or removal). If possible some of this needs to be in the shade to avoid desiccation.
- Leave windblown trees *in situ*, except where they pose a safety problem.
- Make sure that most of the dead wood is lying on or close to the ground.
- Ensure that a buffer zone is managed around large dead wood so that the soils and vegetation are protected as much as possible from disturbance. Ideally this should not be cut between May and September.
- Avoid stump-grinding tree stumps wherever possible.
- Identify the needs of stag beetle in site management plans, and provide particular prescriptions for management of dead wood.

Habitat creation

- If there is no dead wood on site, seek to provide this by building 'loggeries' or breeding boxes from preferably natural wood (do not use softwoods (conifers) or treated timber). These need to be on woodland edges where some degree of shade can be guaranteed (see page 6).

Site protection

- Seek to declare Local Nature Reserves on sites that hold significant stag beetle populations.

Gardens

- Retain dead wood or install a loggery at the end of the garden (see page 6).
- Check the pond or water-butt during the adult flying season (May to July); they often fall in and cannot swim.
- Try and prevent cats (or other predators) from attacking the adults during the flying season.

The following are common enquiries regarding stag beetles, and their suggested solutions.

In digging up or removing a log a number of larvae are found. What does one do?

Try and carefully remove the larvae, and place them into some dead wood close by, making sure they are covered and in a cool, moist (but not wet) place.

What do adult stag beetles feed on?

They have been seen feeding on sap-runs from trees, and will feed on honey in captivity. However, many probably don't feed at all – despite their large jaws they are not carnivorous

Does one try and help a stag beetle on its back upright itself?

In roads and pavements there is little to help beetles to right themselves; they will be vulnerable to predation or crushing. If one can (using fingers, a twig, or paper) help a beetle up, and put it in a safe place.

Compliance with the legislation

The stag beetle is a 'protected species.' Listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), it protects the beetle from being sold in the UK. A major threat to the species, especially in Europe, has been through private collectors (who trade in them for collections), and in certain parts of the world, such as Japan, this trade is still thriving where the beetles are kept for pets and as status symbols.

Therefore if an individual offers a beetle for sale, or removes a beetle from its habitat with the intent of sale, it may therefore be controlled by the Act. If stag beetles are found to be offered for sale, collected for sale, or a sale is witnessed, consult English Nature immediately. English Nature are the agency responsible for the interpretation of the Act, whilst the Metropolitan Police are responsible for enforcing it. There are exemptions to the implementation of the Act, and these will be spelt out by English Nature.

Planning implications

The presence of stag beetles is not an obstacle to development, but as a priority Biodiversity Action Plan species (for both the UK and London) we urge that sympathetic measures are taken to accommodate the beetle's needs wherever possible. If a planning proposal is likely to threaten a known site where stag beetles are found, we suggest that conditions are imposed on any permission granted. We suggest the following:

Condition 1

Prior to the commencement of the development, a survey of the application site shall be carried out to establish the presence or otherwise of any protected or rare species. For stag beetle adults this should be undertaken between mid-May and early August. Records for the site's locality and the presence of dead wood may give an indication of the beetle's presence (but logs or tree stumps should not be broken up to search for larvae). Details of the methodology, findings and conclusions of the survey shall be submitted to the local planning authority within one month of the completion of the survey. This should include a data search with relevant organisations.

Condition 2

Should the results of the survey referred to in Condition 1 above indicate that stag beetles are present within the application site, then details of the following shall be submitted to and approved in writing by the local planning authority prior to the commencement of the development:

- a: a scheme of mitigation or enhancement works to minimise the adverse effects of the development on protected species; and
- b: a programme of timings for the works referred to in (a) above.

Condition 3

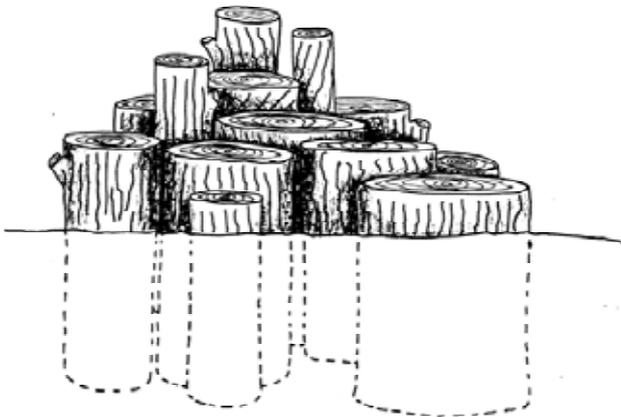
Mitigation and/or enhancement works shall be carried out in accordance with the scheme and programme approved in accordance with Condition 2 above.

Note to applicant

The stag beetle is considered to be globally threatened, and listed as a priority species in the UK Biodiversity Action Plan. It is protected through its listing in Schedule 5 of the Wildlife and

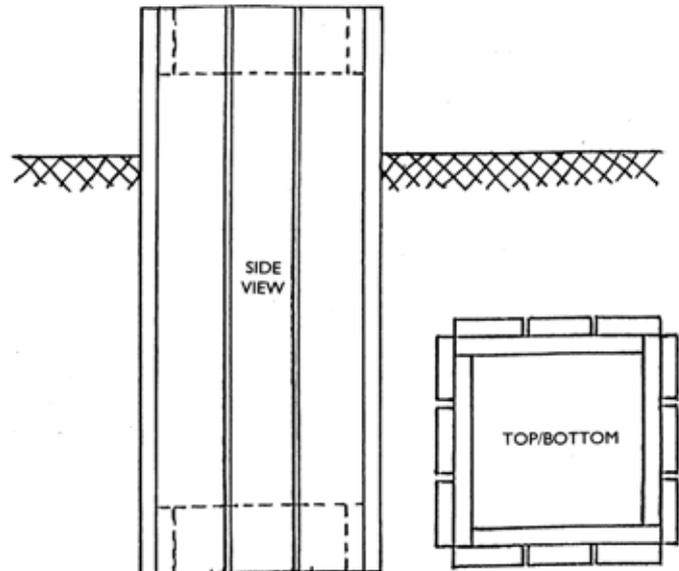
Countryside Act 1981 (as amended). Guidance states that the habitat of a protected species may be a material consideration in planning.

Loggeries and boxes



Loggerie

Large logs (10-50cm diameter) of hardwood (e.g. oak, beech, sycamore, ash) with bark still attached sunk c60cm into the ground, in partially shaded areas.



Artificial breeding box

Made of hardwood timber, 2cm thick, a box 49 X 21.5 X 21.5cm open at each end, covered on the four sides with 61 X 7 X 2cm slats, leaving <1cm gaps between (to allow access to beetles and larvae) to make total length of 61cm.

One end covered with fine wire mesh to enable drainage, the other open. Filled with damp hardwood sawdust and fine woodchips, sunk 45cm into the ground with open end standing c7cm above soil level.

As developed by Colin Hawes of the Suffolk Naturalists' Society.

Further action?

This guidance adopts a precautionary position given the current knowledge of the stag beetle in London and its particular requirements. Any issue that arises may need to be addressed on an individual basis, and we suggest further advice should be sought from the relevant organisations. Further work is needed in monitoring the beetles to assess trends of populations, and how they are affected by the possible changes to their neighbourhoods through development or management.

Stag beetles are not just important in their own right, they serve as a 'flagship' for a whole range of animals, plants and fungi that are dependent on dead wood. Many of these are rare for the same reasons that stag beetles are declining – the destruction of dead wood and the tidying-up of parks and woods. Very many of these are agents of decay; they help transform dead wood into soil and nutrients for new growth, and as such are vital components of woodland and parkland ecosystems. Taking measures to conserve stag beetles in London should help to ensure that this more elusive biodiversity is conserved too and the health of our green spaces is maintained.

With this in mind any information that may be of assistance to our work in understanding further the requirements of the stag beetle in London will be gratefully received.

Annex 1: Stag beetle conservation status within EC, UK and London and the factors affecting its decline

Conservation status within EC, UK and London

The stag beetle is listed on Appendix III of the Bern Convention, on Appendix 2 of the Habitat Directive, on Schedule 5 of Wildlife & Countryside Act 1981 (as amended), and as a Priority Species on the UK Biodiversity Action Plan (1995). It is also receives protection in a number of European countries such as Germany, Hungary, and Switzerland.

Although locally common in certain areas, the stag beetle's European range has probably contracted for many centuries as woodlands have been converted to agricultural landscapes, conifer plantations and urban development – it is now extinct or very endangered in a number of countries such as Latvia and eastern Germany. In Europe it is associated with old forests and woodlands which predominantly consist of broadleaf trees such as oak, elm, lime, etc., but is also found in gardens in certain areas.

The UK stag beetle distribution is concentrated to the south-east of Britain – its absence in the north may be climate related. In the 1940s this extended to southern Wales, the Dee, Cumbria, and across to the north Yorkshire and the Wash. Recent surveys suggest that this has significantly contracted, with the predominant distribution over a broad swathe from Dorset, Hampshire, West Sussex, Surrey, Berkshire, London, north-east Essex, eastern Suffolk and northern Kent. Outlying clusters are found in bordering counties to the west, but it appears to be absent from all its former northern sites, apart from the Dee.

Greater London is one the most important areas for this species in the UK, with its range concentrated in the southern and western boroughs (see over). Although there are clustered populations in parts of north and east London, it is curiously absent or very rare in north-west London, as well as most of the central core. Gardens appear to be the most important habitat for the beetle in the capital; this is where most have been seen by the public and where most recent data has originated from. However, Richmond Park and Wimbledon Common have recently been recommended to government by English Nature as possible Special Areas of Conservation (SACs) for stag beetles. SACs are designated under the Habitats Directive, a European law which provides for the creation of a network of protected wildlife areas across the European Union to be known as 'Natura 2000'.

The People's Trust for Endangered Species (Lead Partner) and English Nature (Lead Contact) are implementing the UK Biodiversity Action Plan for the stag beetle through the Stag Beetle Focus Group, a consortium of Government agencies, biodiversity conservation organisations, local authorities, museums, and entomologists. This organised the national survey of 1998, and is currently co-ordinating research and other work furthering the conservation of the stag beetle.

Factors contributing to the decline of stag beetle

2. Loss of habitat through re-development, agriculture and plantation forestry.
3. Tidying-up of parks, woodlands and gardens, through the removal of dead wood (by stump-grinding, uprooting, burning, chipping or tipping).
4. Lack of awareness of the beetle's presence on sites.
5. Unintentional crushing on pavements and roads – the beetles appear to be attracted to the warm surfaces that these provide.
6. High predation pressure on the adults from cat, fox, crow, and magpie, especially in urban areas.
7. Perceptions as a 'creepy-crawly' or potential pest leading to persecution or intentional destruction.



The following organisations in London are able to provide further advice:

London Wildlife Trust

Harling House
47-51 Great Suffolk Street
London SE1 0BS

Tel: 020 7261 0447
Fax: 020 7261 0538

**People's Trust for Endangered
Species**

15 Cloisters House
8 Battersea Park Road
London SW8 4BG

Tel: 020 7498 4533
Fax: 020 7498 4459

English Nature

Ormond House
26-27 Boswell Street
London WC1N 3JZ

Tel: 020 7831 6922
Fax: 020 7404 3369

Text and design by Mathew Frith with assistance from Nigel Errington and Mandy Rudd in preparing the map. We are grateful to Dr. Valerie Keeble (People's Trust for Endangered Species), Nick Radford (English Nature), James Farrell (London Biodiversity Partnership) and Tony Drakeford for their input and advice. Line drawings: adults – Sandars (1946); larva – Klausnitzer (1995); nest-box – Hawes (1999).

This advice note has been prepared from information that is currently available as a result of the work of the Stag Beetle Focus Group, of which London Wildlife Trust is a member. The Trust cannot be held responsible for changes that may occur subsequent to new information being made available, or of the action taken by others based on the contents of this advice note. Legal advice on stag beetles should always be sought from English Nature in relation to specific cases.

London Wildlife Trust would like to thank English Nature for their grateful contribution to the publication of this guidance.

