Species Action Plan

Stag Beetle

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"Stag-nation! We've all got to help save this endangered species" Front-page headline, *Bexley Mercury*, June 1997

1. Aims

- To protect, conserve and enhance where appropriate the nationally significant populations of stag beetle in London and their distribution.
- To ascertain the reasons for the uneven distribution of stag beetle populations across London.
- To maintain the stag beetle as a valued London species.

2. Introduction

The vernacular names of billywitches, oak-ox, thunder-beetle and horse pincher give an indication of the mythology that has evolved around the stag beetle (*Lucanus cervus*). Ancient associations with storms and magical powers led to the beetles being both feared and revered.

The stag beetle is Britain's largest terrestrial (ground-living) beetle, reaching 8cm in length. Featuring shiny chestnut-violet wing-cases, the stag beetle is characterised by possessing large mandibles (jaws) which are antler-shaped in the male, giving them their common name. These 'antlers' are used for fighting other males, whereas the female's mandibles, being smaller, are more powerful.

The stag beetle requires dead wood to complete its lifecycle. The eggs are laid underground in the soil next to logs, or stumps of dead trees and the larva (or grub) will spend up to seven years in the wood, slowly growing in size. 'Artificial' wood is also utilised, especially sunken fence posts. Perhaps surprisingly, London is nationally significant for the stag beetle populations it supports – over 3000 (c30%) of the 1998 national records were from the capital.

Adults emerge 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.

3. Current Status

The stag beetle has been recorded from most of London but the key boroughs are Croydon, Lewisham, Bromley, Greenwich, Southwark, Lambeth, Bexley, Ealing, Hounslow, Richmond, Kingston and Wandsworth. The beetle is significantly more common in the South and West of London in areas such as Beckenham, Dulwich, Wandsworth, and Richmond. It is rarely found in central London, through lack of appropriate habitats, and is 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. The reasons for this uneven distribution are the subject of current research.

Gardens appear to be the most important habitat for the beetle in London – most recent data has not originated from the woods and parks – although this is, of course, where most have been seen by the public. The role of members of the general public and their gardens is probably crucial to the conservation of the stag beetle in the capital.

The UK stag beetle distribution is concentrated in 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 North Yorkshire and the Wash. But recent surveys suggest that this has significantly contracted, with a predominant distribution pattern in a broad

swathe from Dorset, Hampshire, West Sussex, Surrey, Berkshire, Greater 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.

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, lime and hornbeam. They are not found in coniferous forests, but are found in gardens in certain areas.

4. Specific Factors Affecting the Species

4.1 Reduction of dead wood

In earlier centuries dead wood would have been reduced through the intensive management or loss of woodlands. Although some 'tidying up' still continues in woodlands and parks, managers are now much more aware of the need to retain dead wood as part of the woodland ecosystem and this will have benefitted stag beetles at a local level. Similarly, changes in parks management in some places has led to the retention of dead wood.

4.2 Loss of habitat to urban development

Habitat was lost in London through suburban expansion in the inter-war years. Although the introduction of the Green Belt led to the restriction of suburban expansion, many of London's surviving open spaces were developed, including woodland. Development will continue to result in the loss of stag beetle habitat, especially as there is a lack of awareness of the beetle's presence on sites (the adults are only visible for a few weeks a year).

4.3 Direct human impact

Adult stag beetles are attracted to the warm surfaces of tarmac and pavements, making them particularly vulnerable to being crushed by traffic or human feet.

4.4 Predation

Predators such as cats, foxes, crows, kestrels and others may have an adverse impact at the most vulnerable stage in the beetle's life cycle, when adults are seeking to mate and lay eggs. Indeed, it has been suggested that the rise in magpie and carrion crow in the last decade may be having a significant impact on stag beetle populations.

5 Current Action

5.1 Legal status

The stag beetle is listed on Schedule 5 of the Wildlife and Countryside Act (1981, as amended) but only to prevent trade. A major threat to stag beetles, especially in Europe, has been from private collectors and the legislation aims to stop the species from being collected for sale at entomological fairs. It is also listed on Appendix III of the Bern Convention on the Conservation of European Wildlife and Natural Habitats, 1979 and Appendix 2 of the Habitats Directive. The latter requires the UK to designate Special Areas of Conservation (SAC) specifically to protect the stag beetle. Wimbledon Common and Richmond Park are candidate SACs.

5.2 Mechanisms targeting the species

These current actions are ongoing. They need to be supported and continued in addition to the new action listed under Section 7.

5.2.1 Stag Beetle Focus Group

The London-based People's Trust for Endangered Species (PTES), Lead Partner for the UK stag beetle Action Plan, established the national Stag Beetle Focus Group (SBFG) in 1997 to co-ordinate, develop and implement the national SAP. This is a partnership of a range of organisations and individuals, including English Nature (Lead Contact), The Wildlife Trusts, Natural History Museum, London Borough of Bromley, Corporation of London, Royal Parks Agency, Forestry Commission, and Suffolk Naturalists Trust.

5.2.2 Survey and research

As a large insect, the stag beetle has always attracted the interest of entomologists and has been the subject of various papers and surveys over the past century. Data collected by individuals and societies has contributed to the knowledge of the species, although most of this contribution was made before the 1940s. Since the publication of the UK Biodiversity Action Plan there has been significant work on the stag beetle, with a number of local surveys (e.g. Colchester, 1996, south London 1997).

In 1998 the Stag Beetle Focus Group conducted a national survey, collecting over 10,000 new records for the species and providing an updated and considerably more accurate picture of the UK distribution. Further research was also undertaken on the beetle's ecology. Subsequently, the Group's work has concentrated on further survey, monitoring methodology, and research into the beetle's ecology.

London Wildlife Trust piloted a survey in south London in 1997, contributed to the 1998 national survey and has continued surveying in key areas in 1999 and 2000. It has also actively promoted the species to the media, and has stimulated a interest in the beetle from newspapers, radio, TV and the general public. A survey was carried out in Bromley in 1997 and Sutton in 1999.

The London Wildlife Trust website features a stag beetle recording form and a garden wildlife survey form for several species including this beetle. Other borough-based surveys have been undertaken in Wandsworth, Bromley, Croydon and Sutton since 1997 and these may continue in future years.

5.2.2 Advice

In 1998 PTES produced '*Stags in Stumps'*, a leaflet aimed at land managers. Managers have since begun to take account of the species in site management plans, and it is likely this will develop further. In addition, wildlife gardening campaigns by London Wildlife Trust, local authorities and others have promoted stag beetles and dead wood conservation. In 2000 PTES published another leaflet, '*Stag Beetle Friendly Gardening',* to promote these aspects, and London Wildlife Trust produced '*Stag Beetle; an advice note for its conservation in London'* specifically for the capital, which also covered survey and planning issues.

5.2.3 Habitat creation

The creation of specific stag beetle 'loggeries' began in Epping Forest, Sydenham Hill Wood, Southwark and Bromley in 2000. In addition, trials of 'nest-boxes' are being conducted in these areas to see whether they attract female stag beetles and if so can be used at the edge of the beetle's range as a monitoring tool.

6. Objectives, Actions and Targets

Most of these actions are specific to this species. However, there are other, broader actions that apply generically to a number of habitats and species. These are located in a separate 'Generic Action' section which should be read in conjunction with this document. There are generic actions for Site Management, Habitat Protection, Species Protection, Ecological Monitoring, Biological Records, Communications and Funding.

Please note that the partners identified in the tables are those that have been involved in the process of forming the plan. It is not an exclusive list and new partners are both welcomed and needed. The leads identified are responsible for co-ordinating the actions – but are not necessarily implementers.

Objective 1 To significantly increase populations of stag beetle in London.

Target: Increase the number of sites within its known current range by 2005

Action	Target Date	Lead	Other Partners
Establish London Stag Beetle Working Group to facilitate implementation, promotion and monitoring	2001	LWT	EN, LA, PTES, W&PCC, Landowners
Send advice note to all managers and owners of parks, woodlands, nature reserves and major formal gardens to encourage retention of dead wood	2001	Working Group	
Provide information to arboriculturalists, planning and tree officers to promote retention of stag beetle habitat	2001	Working Group	LTOA, BTCV
Identify 50 key sites and install loggeries	2002	Working Group	Site managers

Objective 2 To monitor existing stag beetle populations, and further the research on the reasons for their uneven distribution in London.

Target: Conduct repeat survey by 2005

Action	Target Date	Lead	Other Partners
Pilot a number of loggery monitoring schemes	2002	Working Group	LNHS
Undertake repeat of 1997-2000 public-led survey targeted at apparent gaps, to establish current distribution more precisely and complement national survey	2005	LWT	Working Group, LNHS

Objective 3 To raise the awareness of the stag beetle and its needs to all Londoners.

Target: To incorporate information on stag beetle's needs into 2005 public survey

Action	Target Date	Lead	Other Partners
Prepare a mobile display unit that can be temporarily installed at a range of venues	2001	Working Group	LWT, PTES, EN
Conduct repeat public survey which includes information on stag beetle conservation	2005	LWT	PTES

Relevant Action Plans

London Plans

Woodland; Open Landscapes with Ancient/Old Trees; Private Gardens; Railway linesides; Churchyards and Cemeteries; Hedgerows

National Plans

Stag Beetle

Key References

DETR (1995). *Stag Beetle Species Action Plan*. London, HMSO.

London Wildlife Trust (2000). *Stag Beetle: an advice note on its conservation in London*. London Wildlife Trust.

PTES (2000). *Stag Beetle Friendly Gardening*. Leaflet, PTES.

Abbreviations

EN - English Nature
LB – London Borough
LTOA – London Tree Officers Association
LWT - London Wildlife Trust
PTES - People's Trust for Endangered Species
W&PCC – Wimbledon and Putney Commons Conservators

LNHS – London Natural History Society

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