

Longhorn Beetles – species of concern

Status

- Worldwide more than 30,000 species of longhorn beetles have been described. In Britain 69 species are considered native or naturalised while many other species are recorded as occasional imports.
- The life cycle begins with eggs being laid under the bark of dead or dying trees, although some species feed on other plant material and fungi. After hatching the larvae feed upon their surrounding food source (for months to years depending upon species and environmental conditions). This is followed by pupation and emergence. Many species are important as part of the recycling process in ecosystems. <http://www.coleoptera.org.uk/cerambycidae/about-longhorn-beetles>
- A few are considered threats – including the House longhorn *Hylotrupes bajulus* in houses (larvae consuming structural timbers) or where introduced species encounter naïve hosts (i.e. plants unadapted to the longhorn and lacking defence mechanisms) and larval feeding can result in tree decline and death.
- Two exotic longhorn beetles have been considered a particular threat to UK trees – namely the Asian longhorn beetle (*Anoplophora glabripennis*) (ALB) and the Citrus longhorn beetle (*Anoplophora chinensis*) (CLB).
- ALB is a native of Asia. It has become established, and caused significant damage, in parts of N America since accidental introduction in the 1990s. Since 2000, there have also been outbreaks in several European countries, some of which are still subject to eradication action. A wide range of broadleaved trees, including fruit trees, are considered susceptible. CLB also originates from Asia and a breeding population is established in Italy but there are no other known outbreaks in Europe. Individual beetles of both species are frequently intercepted in the UK.
- An outbreak of ALB near Paddock Wood in Kent in 2012 was subject to rapid action (felling of all possible host trees in the vicinity) and has now been declared eradicated. The introduction was likely linked to untreated packaging imported with stone/slate from China. <https://www.forestresearch.gov.uk/tools-and-resources/pest-and-disease-resources/asian-longhorn-beetle/>
- Two other longhorn species merit attention. The red-necked longhorn beetle (*Aromia bungii*) (RNLB) is a highly damaging pest of trees in the *Prunus* genus such as apricot, cherry, peach, plum and some ornamental *Prunus* species. It is native to much of Asia, being recorded from China, Korea, Taiwan and Vietnam. It has been introduced to Japan and there have been outbreaks (establishment of breeding populations) in Germany and Italy, with at least one interception in UK <https://www.forestresearch.gov.uk/tools-and-resources/pest-and-disease-resources/red-necked-longhorn-beetle/>.

- Another species, the brown spruce longhorn beetle *Tetropium fuscum* is perceived to be a threat to spruce based on experiences of this European species being introduced to eastern North America. It is not considered as significant a threat as the Far Eastern species featured above. See <https://planthealthportal.defra.gov.uk/assets/pras/Tetropium-fuscum-PRA-v13-Jan2018.pdf>



Scottish-specific issues

- Climate data suggests some warmer coastal areas of Scotland (and most of England and Wales) are suitable for ALB establishment. In central and southern parts of Europe, ALB completes its life cycle in one to two years but in cooler regions the lifecycle can take up to three or four years.
- The wide range of tree species susceptible to ALB is of concern. In the Paddock Wood outbreak, sycamore was the most common tree host. This is an important landscape tree in Scotland and is seen as an ecological surrogate for ash that is being lost through ash dieback.
- CLB and RNLB also affect shrub species and therefore represent a threat to the horticultural industry as well as forestry and natural environment sectors. Plant imports are a potential pathway, e.g., CLB interceptions in the UK have been associated with Japanese maple trees (*Acer palmatum*) imported from China.

Knowledge Gaps

- Pathways of arrival and extent of current and future trade involving untreated wood and plant imports (including bonsai) from the Far East or infested areas of N America and Europe.
- Likely survival and breeding in Scottish conditions (especially those located near timber and plant import facilities).
- Applicability of biological and chemical control developed elsewhere given domestic legislation / regulation.
- Spread potential once established - adult ALB can fly up to 2km but secondary movement of infested material can facilitate long-distance dispersal.

PHC Perspective

Early detection and robust follow up has the potential for successful eradication. Longer-distance spread can result from larvae surviving in, and the adults emerging from, untreated wood packaging material such crates, boxes and pallets.

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Key Priorities and Recommendations

- Maintain awareness and vigilance – especially amongst timber and packaging industries - and members of the public (esp. with respect to those of horticultural concern).
- Keep up to date with developments in outbreak management in Europe and North America.
- Monitor trade with the Far East likely to increase volumes of untreated wood arriving in Scotland.
- Engagement with Coleopterist community to broaden monitoring and encourage reporting.

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