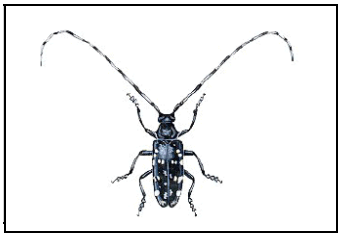
integrated management of forest pests addressing climate trends

Pest profile – Asian longhorn beetle



Scientific name: ***Anoplophora glabripennis*** (Motschulsky) 1853
Taxonomic position: Coleoptera, Cerambycidae
Common name: Asian longhorn beetle; Starry sky beetle

Hosts: A wide range of broad-leaved trees and shrubs, including fruit, forest, ornamental and amenity trees, e.g. apple, citrus, elm, horse chestnut, maple, pear, poplar and willow.

Threats: An exotic wood-borer beetle pest that attacks healthy hardwood trees which has recently become established in areas of the USA. It is a native of SE Asia (China, Korea and Japan) where it is a major problem on broadleaved trees. It has been intercepted at many locations in North America dealing with imported material, and also at several locations in the UK. In the event of any finds immediate notification should be given, please see box below.

Distribution and spread: A major pest in China; Korea and Japan and recent outbreaks have been found in areas of North America, as well as several European countries.

Climate change: Analysis of climate data by scientists at the Central Science Laboratory suggests that most of England and Wales and some warmer coastal areas of Scotland and Ireland could be suitable for beetle establishment and breeding. As temperature has a profound effect on insect life, suitable climatic conditions would increase the possibility of further overlapping generations per year.

Control: In New York and Chicago, damage to street trees is high and a policy of sanitation felling and quarantine is being exercised as the only viable management option. No chemical or biological control methods are currently known so the only way known to combat the Asian Longhorn Beetle is to destroy the infested trees by means of containment and eradication measures rather than allowing it to spread.

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Monitoring: Forestry Commission plant health inspectors inspect imported wood and wooden packaging, dunnage on a wide range of materials from China. The practice of Phytosanitary restrictions for wooden packing material from infested countries is essential to prevent infestations.

BIOLOGY OF THE ASIAN LONGHORN BEETLE

Depending on geographic location and average temperatures the beetle develops through a full cycle in either one or two years.

The Adult

Adult emergence generally takes place from May to August, but may extend to October at lower temperatures. Signs of emergence are masses of wood shavings at the entrance to the round exit hole (9-11 mm diameter) and on the ground below the tree. Beetles fly to feed in the crowns of trees and to mate. Females lay eggs singly in slits which they cut in the bark of branches, usually where they join the trunk. The symptoms of which include some resin bleeding. Females live up to 66 days and lay around 30 eggs.

Eggs

Egg will hatch within 7 to 17 days depending on the time of year and are temperature dependant and it occurs in June/July during a one year cycle or September/October during a two year cycle.

Larvae

The newly hatched larvae feed under the bark, where they pass through two moults, eventually boring into the wood in the late third or fourth instar. Feeding continues under the bark for one more instar, by which time the larvae have grown to approximately 50 mm long. Damage to the wood increases as the larvae grow, leading to galleries within the heartwood that might be up to 10 mm in diameter and several cm long. Larvae may be present at any time, and the insect may overwinter as a larva.

Pupae

When fully mature, the larvae moult to the pupal stage within a well-defined pupal chamber, packed at one end with distinctive wood "shavings" which usually takes place in the spring.

Anyone who suspects they have seen an adult ALB or evidence of its presence must contact the Fera Plant Health Helpline on:

Tel: 0844 2480071 or email: planthealth.info@fera.gsi.gov.uk

Further information on the ALB can be found at:

http://www.forestry.gov.uk/forestry/HCOU-4U4J45

The IMPACT project, with partners Forest Research in Wales, Swansea University and the National University of Ireland, Maynooth is looking at improved pest control measures. Top of the agenda for the *Integrated Management of forest Pests Addressing Climate Trends (IMPACT)* team is assessing how changing climate will influence the damage caused by pests and pathogens. The project is part funded by the European Regional Development Fund through the Ireland – Wales Programme (INTERREG IVA) and Forestry Commission Wales. For more information log on to:

www.impactproject.eu

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