integrated management of forest pests addressing climate trends

Pest profile – Large Pine weevil

Scientific name: ***Hylobius abietis (L)***
Taxonomic position: Coleoptera, Curculionidae
Common name: Large Pine weevil

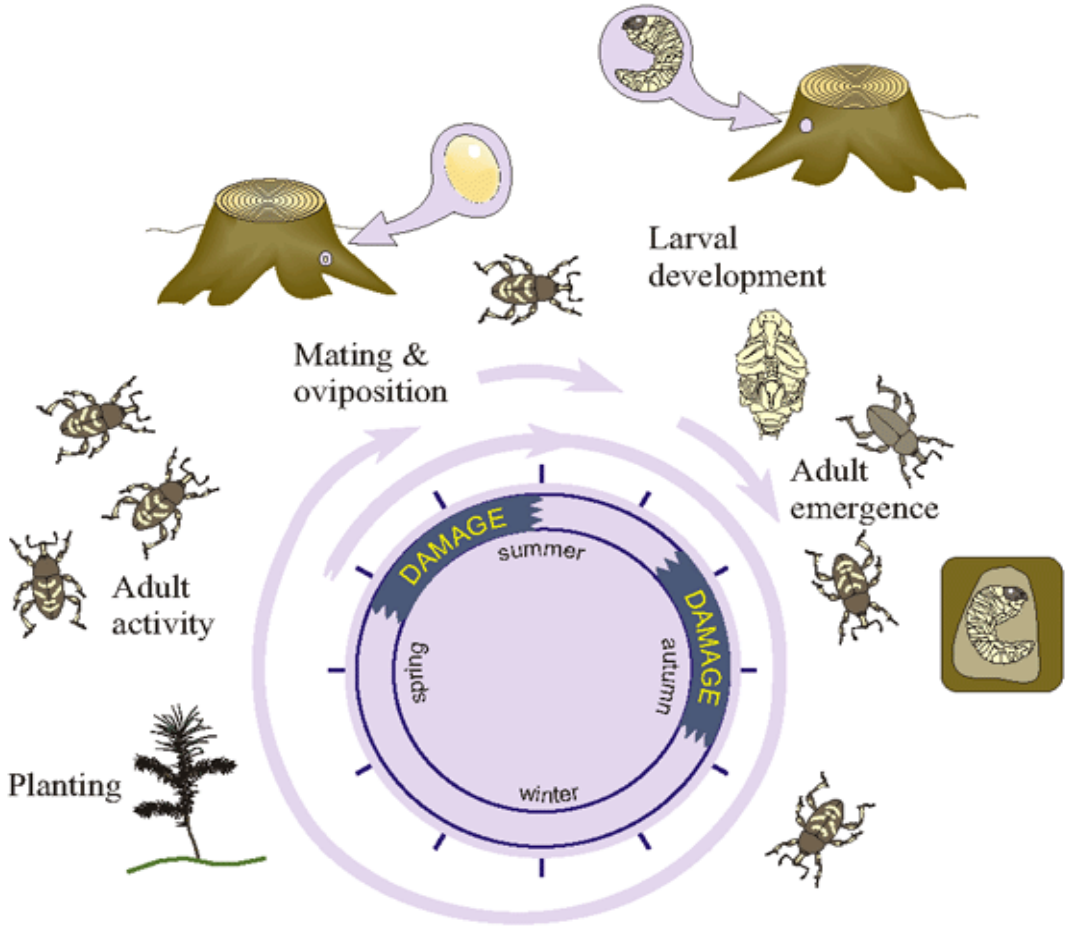
Hosts: Wide range of conifer species such as: Sitka spruce (*Picea sitchensis);* Douglas fir *(Pseudotsuga menziesii)* and Scots pine *(Pinus sylvestris)* are more suitable than Norway spruce *(Picea abies).* Breed principally in stumps and roots of felled trees and adult *Large Pine weevils* feed on the living bark of most woody shrubs or trees.

Threats: Felling a coniferous crop produces a large increase in breeding material for the larvae, whilst plant material suitable for adult feeding is reduced. Young trees used for restocking are liable to be heavily attacked by adult pine weevils feeding on the stem from the root collar upwards. Heavy damage can completely girdle stems and cause plant death.

Distribution and spread: Widely distributed throughout UK especially Wales, Scotland and Ireland, and is the most serious pest of conifer reforestation in the UK and Ireland. It has been possible to verify that the time of year as well as the time of felling of a commercial stand of Sitka spruce (Picea sitchensis) both influences the spatial distribution and development of the Large Pine weevil. In early summer the adult pine weevil are capable of long distance migration to colonise new areas. It has been recorded in Sweden that they can travel up to 80km in extreme circumstances, but 10km is more common and will only fly when wind speeds are less than 4 m/s and temperatures above 18°C.

Climate change: Warmer, drier summers would favour the insect (earlier dates of appearance in spring; number of broods reared, and the rate of development of the broods). However where stumps and roots dry out quicker they will rarely serve as breeding grounds for more than 3 years.

Monitoring: Forest Research has developed the Hylobius Management Support System (MSS) which is a user-friendly on-line decision support system that has been developed to help the UK forest industry reduce restocking costs and the amount of insecticide used to control *the Large Pine weevil*. The Hylobius MSS uses estimates of Hylobius population size, obtained from on-site billet trapping, to provide predictions of transplant losses in advance of replanting. This information is then used to compare the effectiveness of different control methods and to indicate the best management strategy. The other method used is the direct counting of stump sampling when the bark is hacked away and the larvae counted.



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 on this European Regional Development Fund (ERDF) through the Ireland Wales Programme (INTERREG 4A) project, co-funded by COFORD and Forestry Commission Wales log on to:

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