

IMPACT

integrated management of forest
pests addressing climate trends



[Pest profile – Oak processionary moth](#)

Scientific name: *Thaumetopoea processionea* (Linnaeus, 1758)

Taxonomic position: Lepidoptera; *Notodontoidea*; *Thaumetopoeidae*

Common name: Oak processionary moth - OPM

Hosts: The larvae (caterpillars) feed on the foliage of many species of oak including English (*Quercus robur*), Sessile (*Quercus petraea*) and Turkey oaks (*Quercus cerris*). It has also been reported to attack hornbeam, hazel, beech, sweet chestnut and birch although mainly when growing next to severely defoliated oaks.

Threats: The oak processionary caterpillar preferably establishes on urban trees, along forest edges and in amenity woodlands. It is a major defoliator of oak in Europe. Damage to their principal host, is mainly visible during June and July. The trees will however recover and leaf the following year. OPM also poses a serious public health issues. The caterpillars have urticating (irritating) hairs that carry a toxin which can be blown in the wind and cause serious irritation to the skin, eyes and bronchial tubes of humans and animals. They are considered a significant human health problem when populations reach outbreak proportions, such as in The Netherlands and Belgium recently.

Distribution and spread: OPM is widely distributed in western, central and southern Europe and was accidentally introduced into west London in 2006 on young oak trees imported from Europe. As with many moth species, population levels tend to vary from year to year, peaking from time to time.

Climate change: It is widely distributed, but its range has been expanding northwards, presumably in response to climate change and is now firmly established in Northern Europe.



Life Cycle

The larvae hatch out in April from egg plaques laid on the twigs of oak trees and develop through six instars (growth stages of the caterpillar), each stage becoming bigger and covered in more numerous and longer hairs than the previous stage. The caterpillars mainly feed at night in the outer canopy of the tree, sheltering during the day in gregarious groups. At the 6th instar they prepare to pupate (turn in to the adult moth) and retreat into larger, creamier coloured, heavily webbed nests, usually found lower down the tree, from which the adult moths emerge in July.



larvae aggregating on trunk of an oak

Control: If OPM does establish in Britain it will pose a new and difficult management problem for arboriculturalists, local authorities, contractors and tree owners. Chemical and biological insecticides approved for use against brown tail moth, *Euproctis chrysorrhoea*, frequently the subject of control measures because its larvae also have easily detached, extremely irritating hairs, are likely to be effective against oak processionary. However larvae concealed inside nests will be well protected from chemical sprays and consequently the timing of spraying in relation to the moths' life cycle and behaviour will be critical. Nests can also be destroyed, after they have been stabilised. These and other control options are currently being reviewed. Biological control is also undertaken, spraying *Bacillus thuringiensis* whose action is based on the ingestion of a toxin that causes punching of the digestive tract of the caterpillar. It needs to be sprayed in a limited window of time, after oak budburst and while the caterpillars are actively feeding and is recommended against second and third instar caterpillars which are considered as the more sensitive to the bio pesticide application.

Click on hyper-link below for images of the life cycle of the OPM

<http://impactproject.eu/uploads/opmlifecyclecontrolsmar10fr.pdf>

Monitoring: Forest Research has been monitoring the spread of OPM since its introduction into the UK, using ground surveys to locate nests and a network of pheromone traps to catch male moths. Improving the trapping technique for OPM is presently under further research as the type of trap being used, its position in the tree canopy and the source and the chemical composition of the pheromone lure are all important in determining the number of moths caught.

You must not attempt to handle the larvae caterpillars yourself, or disturb their nests. If you find nests or caterpillars please contact Forest Research on 01420 22255 or Email christine.tilbury@fnaturalresourceswales.gov.uk

For up to date information please visit:

<http://www.naturalresourceswales.gov.uk/forestresearch>

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 Natural Resources Wales. For more information log on to:

www.impactproject.eu

