Invasive oak processionary moth caterpillars cause concern for England's trees

June 9 2023, by James Ashworth

Credit: AI-generated image (disclaimer)

An insect that can be hazardous to human health is spreading across southeast England.

Caterpillars of the oak processionary moth are becoming more common as rising temperatures help them to spread to new areas.

New rules have been introduced to combat an invasive moth that's damaging the UK's oak trees.

The oak processionary moth was accidentally introduced to London in imported oak trees in around 2006, and has since spread around the southeast. As well as being a pest of oaks, its caterpillars can cause irritation and, in serious cases, allergic reactions for people and animals.

With the caterpillar now widespread across the capital, the government has introduced new legislation on the movement of oak trees around the country to try and stop the species' spread.

A buffer zone set up across the heart of England has been expanded, while a new demarcated area around the buffer and established zones has been created to allow limited movement of trees.

Professor Nicola Spence, the UK's Chief Plant Health Officer, says, "Healthy oak trees are a vital component of a biodiverse and thriving environmental landscape. They are Great Britain's most important tree for species biodiversity, supporting over 2000 species of bird, fungi, mammal, invertebrate, bryophyte and lichen."

"This is why it is essential that to protect the health of our oak trees, we have regulations in place for the movement of large oak trees within the zones and boundaries designed to manage oak processionary moth."

What is the oak processionary moth?

The oak processionary moth, Thaumetopoea processionea, is a small brown moth native to southern Europe. The adults are short-lived grayish-brown insects which don't feed, and are hard to come by in the wild.

Most concerns, however, focus on their distinctive black and white hairy

caterpillars, whose behavior gives the species their name. They move in groups, following chemical and tactile signals on oak trees or the ground to find and consume leaves.

This gives them safety in numbers, and their defense is boosted further by their covering of fine hairs. Known as setae, they contain a toxic protein known as thaumetopoein which can cause rashes, irritation and breathing difficulties in humans and animals.

For this reason, it's recommended to avoid getting close to the caterpillars, and in particular their nests.

Alessandro Giusti, Senior Curator of Lepidoptera at the Museum, says, "While the caterpillars are a hazard themselves, the nests are worse. This is because they contain not only the caterpillars, but also their sheddings, which means that if the nest is disturbed, then it can cause a more serious reaction."

Oak processionary moths in the UK

The oak processionary moth first reached the UK in the early 2000s, becoming established in 2005 and 2006. It is believed that the caterpillars were imported as part of the plant trade, probably being carried on oak trees brought to the UK from southern Europe.

After first arriving in London, the caterpillars have spread to the surrounding regions of Surrey, Essex and Kent. Some have now spread even further, reaching areas near Colchester, Reading and Milton Keynes.

In big enough numbers, the caterpillars are capable of consuming a large amount of leaves, in extreme cases defoliating an entire oak tree. This limits the tree's ability to photosynthesise, making it weaker and more

vulnerable to other threats, such as the diseases acute oak decline and sudden oak death.

Adult oak processionary moths are spreading southwest from London. Credit: Gyorgy Csoka, Hungary Forest Research Institute, Bugwood.org, licensed under CC BY-SA 3.0 US via Wikimedia Commons

Their spread is also being accelerated by climate change, which is helping them to expand their range into suitable areas.

"The fact that it's getting warmer will help the moth feel more at home here, as they're used to the climate of the Mediterranean," Alessandro says. "The movement of plants and humans, in combination with climate change, is aiding their spread."

Rising temperatures in the south of England are thought to be one reason why the insects are spreading through Surrey and into Hampshire, where there is currently an isolated population near Romsey. A lack of predators, meanwhile, is another.

"While their hairs give them good protection, there are still animals which feed on the oak processionary moth," Alessandro says. 'Parasitic wasps and flies, for instance, are not deterred by their hairs, and neither are certain birds. Cuckoos are known to regularly feed on them, as are hoopoes."

"As the oak processionary moth is a relatively recent arrival to the UK, any potential predators haven't had much time to familiarize themselves with it. This means the caterpillars are able to spread faster than they would otherwise."

What can be done about oak processionary moths?

The main way to target oak processionary moths is to find them early in their life cycle. They begin to emerge from their eggs in April and May, and this is when they are at their most vulnerable.

Generally, infected trees are treated by being sprayed with insecticides. These are applied in a targeted way so that they don't affect other wildlife in the nearby area.

The insecticide treatment is backed up by removing the nests from the trees to limit the potential for reinfection in the future. These can be difficult to find, however, and so other methods are used to track down the elusive caterpillars.

"Oak processionary moth nests are easier to find when they're fresh, as the white silk with which they are built stands out against the branches

and foliage," Alessandro explains. "However, they quickly become darker which makes them harder to spot."

"Pheromone traps can help with this, as they draw in adults from the nearby area and narrow down the location of nests. This can also help to disrupt the moth's reproductive cycle."

How to identify oak processionary moths

While the treatment of infestations should be left to professionals because of the health risks involved, members of the public can help tackle their spread by identifying oak processionary moths in their area.

Before making a report, it's important to be aware that there are many species aside from the oak processionary moth that have hairy caterpillars. Species such as the buff-tip moth and the brown-tail moth are often mistakenly reported.

Oak processionary moths can be identified by their black heads and bodies, which are covered in long white hairs. They are almost exclusively found in oak trees, and only venture onto other trees if there is a lack of oak.

Their nests can be a range of different shapes and sizes, but tend to be dome or teardrop-shaped and about the size of a tennis ball. These tend to be built on the trunks and branches of the trees, and aren't located among the oak leaves.

Similar-looking species might cluster together only rarely, be found on trees other than oak, or don't build nests at all. A comprehensive I.D guide to lookalikes of the oak processionary moth can be found on the Forest Research website.

If suspected oak processionary moth is identified, it should be reported to Forest Research through their TreeAlert service. Alternatively, members of the public can email opm@forestrycommission.gov.uk or call 0300 067 4442.

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