

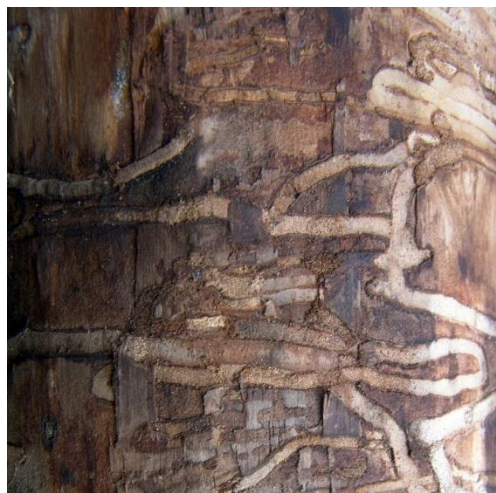


Summary of the EPPO (European and Mediterranean Plant Protection Organisation) PRA on *Agrilus fleischeri* (Coleoptera: Buprestidae) and its implications for Great Britain in preparation for new GB legislation



Agrilus fleischeri adult © E. Jendek

<https://gd.eppo.int/taxon/AGRLFL/photos>



Agrilus fleischeri larval galleries © Mr Zang Kai.

<https://gd.eppo.int/taxon/AGRLFL/photos>

Background

Agrilus fleischeri is a wood boring beetle in the Buprestidae. It is a pest of poplar (*Populus* spp.) and willow (*Salix* spp.) and native to Asia, being found in China, Japan, Kazakhstan, Mongolia, North Korea, South Korea and Russia. It was added to the UK Plant Health Risk Register in July 2017, and to the EPPO (European and Mediterranean Plant Protection Organisation) Alert List in 2018 following reports of significant damage to *P. nigra* var. *italica* in Liaoning, China. In 2019 it was moved to the EPPO A2 list, due to presence in Russia and following the EPPO PRA.

The highest risk pathways identified by the EPPO PRA were plants for planting, round wood of hosts (with bark) and deciduous wood chips, hogwood and processing wood residues. The beetle is likely to establish where poplars and willows are grown in the EPPO region and the beetle is unlikely to be limited by climatic conditions. Whilst the significant damage reported is limited to two species of poplar it is considered that damage in other areas will be dependent on the poplar or willow hosts in the area, and whether the pest can attack healthy trees, as the reported damage in China indicates the pest prefers stressed trees.

A link to the EPPO PRA can be found at the following webpage:

<https://gd.eppo.int/taxon/AGRLFL/documents>

A summary of the main findings of the EPPO PRA and their significance to GB are given below.

Crop/sector considered most at risk in the UK

In its native range, *A. fleischeri* attacks poplar and willow, both of which are widely spread in GB. In China the pest has been recorded causing tree mortality in plantations of Lombardy poplar (*Populus nigra* var. *italica*) as well as damage on Korean aspen (*P. tremula* var. *daurica*) in the same region. Other reported hosts are Eurasian aspen (*Populus tremula*), laurel-leaf poplar (*Populus laurifolia*) and narrow-leaf willow (*Salix schwerinii*). As it is not known whether the beetle can attack other poplar or willow species, the EPPO PRA considers all species in the genera to be potential hosts.

Summary and conclusions of the EPPO PRA

Risk of entry

This pest is already present in the EPPO region, in Russia (Eastern Siberia, Far East Russia and Western Siberia) and Kazakhstan. The probability of further entry was considered **moderate** (with high uncertainty). The highest ratings were for host plants for planting, round wood with bark, wood chips (> 2.5 cm in two dimensions), hogwood and processing wood residues, and wood packaging material (if ISPM 15 is not applied).

Significance to GB: *Populus* spp. and *Salix* spp. are both high risk hosts under existing EU regulations (which came into effect after the EPPO PRA) and the new EU exit regulations coming into force. This means that plants for planting, other than seed, in vitro material, or naturally or artificially dwarfed plants, are prohibited from all non-EU countries until a risk assessment has been carried out. No risk assessment has yet been carried out, and thus *Populus* spp. and *Salix* spp. plants for planting, other than bonsais, are prohibited.

If a risk assessment was carried out and the prohibition lifted, there would still be a prohibition on plants of *Populus* spp. with leaves entering the UK. However these prohibitions are restricted to Canada, Mexico and the USA where there are no known populations of *A. fleischeri* so this prohibition does not mitigate the risk. Even if populations were discovered in these regions, *A. fleischeri* could still move with dormant trees. There is a further prohibition on isolated bark of *Populus* spp. from the Americas but again this provides no mitigation against the beetle from its current range. There are also requirements for certain products of *Populus* spp. and *Salix* spp. to be imported with phytosanitary certificates.

Risk of establishment and spread

It was concluded that the likelihood of establishment of *A. fleischeri* in the EPPO region would be **high** (with moderate uncertainty) as the susceptible species (all species of poplar and willow) are widespread and the climate was not considered a limiting factor. Although, there were uncertainties

surrounding establishment in western parts of Europe, the Mediterranean area and the warm arid areas of North Africa, the Near East and Central Asia. The magnitude of spread was rated **moderate** (mean of 1-10 km per year) (with moderate uncertainty). Longer ‘jumps’ may occur via infested non-compliant wood packaging material (WPM) or plants for planting, which may in turn lead to multiple outbreaks, increasing the rate of spread.

Significance to GB: Although there are some climatic similarities between the UK and the northern parts of the current distribution of *A. fleischeri*, GB does not share a Köppen-Geiger climate classification with that of the beetle’s current range. The EPPO PRA discusses this and concludes that as the pest’s current range is limited to areas with dry but extremely cold winters there is unlikely to be climatic limitations to establishment in the EPPO region, even within those areas which experience low temperatures. As winters in GB are milder than the current distribution it is not envisaged this would be an inhibitive factor to establishment. However, there is some uncertainty about the climatic suitability of the temperate parts of the EPPO region, as developmental threshold data are scarce. Warmer summers seen in the current distribution allow the pest to accrue sufficient day degrees, but with the temperature accumulation of day degrees being lower in GB, this may result in an extended lifecycle. The augmentation of the life cycle in this way could impede survival and establishment of the beetle in GB. Despite this uncertainty, establishment of *A. fleischeri* in GB cannot be ruled out, particularly given that the main hosts of poplar and willow (considered as complete genera for the purposes of the PRA) are widely grown in the UK and are therefore unlikely to be a limiting factor.

Economic, environmental and social impact

The potential impact in the EPPO region was rated as **low** (with high uncertainty) as limited data was available on the impact seen in the native range of the beetle. The damage seen on Lombardy poplar in China is restricted to an area where this species is grown commercially in Northern China. The PRA suggests that the impacts seen would depend on the availability of susceptible hosts in any introduced areas, and the pest’s ability to attack healthy trees.

Significance to GB: It was noted in the PRA that the impacts are likely to be comparable to those reported in the current distribution. Significant impacts have only been reported in one stand of the Liaoning province in China on *Populus nigra* var. *italica*, but there remain uncertainties as to whether the pest would attack the many other species of poplar and willow present in GB. Damage is more likely in trees already stressed by other pests, diseases and abiotic factors, the level of which could increase in the future due to increased extreme weather events leaving host species vulnerable to attack. This could result in losses of yield and quality of host plants including timber depreciation. Other impacts in the event of establishment could include felling costs and chemical treatment costs.

Risk management recommendations

The EPPO expert working group (EWG) considered that given the impacts seen in China, the importance of susceptible hosts in the EPPO region and the high uncertainty of potential impacts within this region that phytosanitary measures should be considered to reduce the likelihood of entry.

The EWG recommend these measures should extend to all species within the host genera (*Populus* spp. and *Salix* spp.) due to uncertainties in host range, and measures should apply to the highest risk pathways - host plants for planting, round wood and sawn wood, wood chips, hogwood and processing residues, bark, cut branches and WPM (if ISPM 15 is not applied) (see EPPO PRA stage 3 for details).

Populus spp. and *Salix* spp. are both listed as High Risk Host and as such are provisionally prohibited pending risk assessment. The measures proposed below are for consignments originating in China, Japan, Kazakhstan, Mongolia, North Korea, Russia and South Korea and would provide long-term mitigations against *A. fleischeri*.

The EWG recommended that plants for planting (except seeds, tissue cultures and pollen) of *Populus* spp. and *Salix* spp. should have a Phytosanitary Certificate and;

have come from a PFA (Pest Free Area) (with general surveillance and specific surveys in place) AND be packed in conditions preventing infestation during transport;

OR have come from a pest-free site of production under complete physical isolation AND be packed in conditions preventing infestation during transport (or moved outside the period where adults are present).

The EWG also recommended that round wood and sawn wood (>6 mm) of *Populus* spp. and *Salix* spp. should have a Phytosanitary Certificate and;

have come from a PFA;

OR undergo debarking followed by heat treatment (minimum temperature of 56°C for a minimum duration of 30 continuous minutes throughout the entire profile of the wood (including its core));

OR undergo irradiation;

OR undergo fumigation with sulfuryl fluoride (only for debarked wood below 20 cm in cross section);

OR undergo removal of the bark and 2.5 cm of outer xylem.

The EWG also recommended that wood chips, hogwood, processing wood residues, obtained in whole or part from *Populus* spp. and *Salix* spp., bark and cut branches should have a Phytosanitary Certificate and have come from a PFA. Wood packaging material obtained in whole or part from *Populus* spp. or *Salix* spp. should be ISPM 15 treated.

Significance to GB: Within existing EU regulations (which came into effect after the EPPO PRA) and the new EU exit regulations coming into force, all plants for planting, and all but a very short list of plant parts and fruits (none of which have been identified as a pathway) require a Phytosanitary Certificate, and as such may be subject to inspection. Using the EPPO PRA recommendations, new GB regulations will be drafted with the aim of further mitigating the risk of introducing this pest.