



## Summary of the EPPO (European and Mediterranean Plant Protection Organisation) PRA report and the Irish Express PRA on *Toumeyella parvicornis* (Hemiptera: Coccidae) and their implications for Great Britain in preparation for new GB legislation.



*Toumeyella parvicornis* (TOUMPA) - <https://gd.eppo.int>

Fig 1. A colony of females of *Toumeyella parvicornis* with mobile juvenile (nymphs).

Courtesy: Eric Chapin – EPPO Global Database (EPPO Code: TOUMPA)

## Background

*Toumeyella parvicornis* is a scale insect pest of pine that is thought to originate in North America. In 2005 it was detected in the Turks and Caicos Islands on an endemic pine species, *Pinus caribaea* var. *bahamensi*, and in 2009 in Puerto Rico on another endemic pine, *P. caribaea* var. *hondurensis*. In 2014, *T. parvicornis* was detected in Europe for the first time in Naples, Italy and neighbouring municipalities where it was infesting stone pine, *Pinus pinea*. In 2018, the pest was detected in Rome where stone pines are an iconic part of the urban environment. In 2021, *T. parvicornis* was confirmed as present in France, in

St. Tropez and it has subsequently been found in a wider area close to St. Tropez. In 2023, *T. parvicornis* was reported from Qerret on the coast of Albania, and this finding was reported to EPPO in August 2024.

*Toumeyella parvicornis* has been recorded on a range of *Pinus* species including Scots pine, *Pinus sylvestris*, lodgepole pine, *Pinus contorta* and Corsican pine, *Pinus nigra*. The lifecycle is linked to temperature. *T. parvicornis* is reported to have one generation per year in Colorado and Nebraska, two in Maryland, Virginia and North Carolina, four generations in southern Georgia and up to five generations per year on the Caribbean islands.

In North America, the most common impacts of the pest are reduced growth resulting from the feeding plus sooty moulds which can lead to the death of branches or trees. Heavy infestations can kill trees. Young trees are the most susceptible and Christmas trees can suffer dieback or branch deformities. However, it is not considered to present a considerable threat to natural pine forests in its native range.

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

## Trees considered most at risk in Great Britain

All species of *Pinus* trees growing in the UK are potential hosts of *T. parvicornis*. *Pinus sylvestris* (Scots pine) is one of the primary hosts in North America and is the most common pine tree in the UK. Other recorded hosts include *P. contorta* (lodgepole pine) and *P. nigra* (Corsican pine). These three pine species are three of the most commonly planted conifer species in GB (see table 1). A number of other pines are known hosts, some of which will also be grown commercially or as ornamentals in the UK such as *P. pinaster* (Maritime pine) and *P. strobus* (Weymouth pine).

**Table 1: Total growing stock by conifer species in Great Britain in 2021 in thousands of hectares**

Principal species	England	Wales	Scotland	Great Britain
Sitka spruce	79	74	515	668
Scots pine	55	3	150	208
Larches	30	13	57	100
Lodgepole pine	8	4	73	84
Norway spruce	24	8	24	57
Douglas fir	23	10	13	46
Other conifers	26	5	12	44
Corsican pine	32	2	2	36
<b>All conifers</b>	<b>278</b>	<b>119</b>	<b>848</b>	<b>1,245</b>

## Summary and conclusions of the EPPO PRA report

### Risk of entry

In the EPPO PRA report, the risk of entry is divided up into entry from North America and entry from infested countries in the EPPO region (currently Albania, France and Italy). The probability of entry on plants for planting from North America is considered to be very low because plants for planting of *Pinus* from countries outside the EU are considered high risk and are prohibited from entry to GB subject to a risk assessment. The probability of entry and related uncertainty as determined by EPPO are shown in Table 2.

**Table 2: Probability of *Toumeyella parvicornis* entering uninfested EPPO countries along the pathways considered of some significance**

Pathway	Entry from North America	Entry from infested countries in EPPO region
Plants for planting	<b><u>If prohibited</u></b> : Very low (low uncertainty) <b><u>If not prohibited</u></b> : Moderate (moderate uncertainty)	Moderate (moderate uncertainty)
Cut branches (including Christmas trees)	<b><u>If prohibited</u></b> : Very low (low uncertainty) <b><u>If not prohibited</u></b> : Moderate (moderate uncertainty)	Moderate (low uncertainty)
Round wood, sawn wood with bar, bark, wood chips with bark	Low (low uncertainty)	Low (low uncertainty)
Sawn wood without bark	Very low (low uncertainty)	Very low (low uncertainty)
Cones	Low (moderate uncertainty)	Low (moderate uncertainty)
Natural spread	Very low (low uncertainty)	Low (low uncertainty)

**Significance to GB:** As plants for planting of *Pinus* are currently prohibited from countries outside of Europe (2019/2072<sup>1</sup>, Annex 6A, entry 1), the most significant current threats relate to plants for planting and cut branches from infested countries in Europe (Albania, France and Italy). GB legislation (2019/2072, Annex 7A, entry 57) has requirements in relation to *Thaumetopoea pityocampa* (pine processionary moth). This pest is present across southern Europe including the areas where *T. parvicornis* has been recorded. The requirements are that plants of *Pinus* species (which would include cut branches) should come from either a pest free country, a pest free area or grown under complete physical protection. These requirements for *T. pityocampa* provide a good level of protection against *T. parvicornis* being introduced into GB from infested locations in Europe. However, if *T. parvicornis* were to spread from the currently infested areas into parts of Europe where *T. pityocampa* is absent, pines could be traded without the need for physical protection and there would be an associated risk with *T. parvicornis*.

## Risk of establishment and spread

*Pinus* trees are present across GB and many of them such as *P. sylvestris*, *P. contorta* and *P. nigra* are known hosts of *T. parvicornis*. It is likely that there are additional *Pinus* spp. that are present in GB, such as ornamental species, that are currently not known to be hosts of *T. parvicornis* but turn out to be hosts. Therefore, the distribution of hosts in GB is likely to be sufficient to allow the establishment of this pest.

There have not been any published studies of the temperatures required for the development of *T. parvicornis* populations and there are only a limited number of records of the pest in North America. However, *T. parvicornis* is established from Canada to the Caribbean islands, showing that it can tolerate a broad range of conditions. In the northern part of its range including Colorado and Nebraska it is reported to have one generation a year, it has two generations a year in Maryland, four generations in southern Georgia and five in the Caribbean islands. In the Irish PRA, *T. parvicornis* is considered highly likely to be able to establish in Ireland.

The crawlers, the first instar larval stage of *T. parvicornis*, can spread naturally on the wind. This is most likely to be to neighbouring plants, but there are reports of the pest

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<sup>1</sup> [Commission Implementing Regulation \(EU\) 2019/2072 of 28 November 2019 establishing uniform conditions for the implementation of Regulation \(EU\) 2016/2031 of the European Parliament and the Council, as regards protective measures against pests of plants, and repealing Commission Regulation \(EC\) No 690/2008 and amending Commission Implementing Regulation \(EU\) 2018/2019](#)

spreading several kilometres. The pest could also be spread by the movement of infested plants such as cut Christmas trees or *Pinus* plants for planting.

**Significance to GB:** The native range of *T. parvicornis* includes regions with a lot colder winters than GB, such as Nebraska. Therefore, it is unlikely that the winter cold would prevent establishment in GB. The summers in the warmest parts of England are similar to those in the most northerly locations that *T. parvicornis* is known from in North America. This suggests that the pest is likely to be able to establish in the south of GB, but it would have one generation a year. With only a single generation, the rate of natural spread would be expected to be limited.

## Economic, environmental and social impact

In the USA and Canada, the most common impact of *T. parvicornis* is caused by the sooty moulds which form on the honeydew exuded by the scale insects. These sooty moulds decrease the photosynthetic activity of the needles. Heavy infestations can kill branches or trees. The damage is most significant in Christmas tree plantations. In Canada, infestations of the pest are generally localized, but can be severe. In the Turks and Caicos, *T. parvicornis* killed most of the native Caicos pine, *P. caribaea* var. *bahamensis* over the course of a decade.

Stone pine, *P. pinea*, is the host that has been most impacted by *T. parvicornis* in Italy and Albania to date. *Pinus pinea* has been the species that has been most susceptible to the pest. It has caused severe decline in health and some mortality to pines, especially in Naples, Rome and surrounding areas. *P. pinea* is described as the symbolic tree of Rome and so the damage or death of trees could have a significant cultural impact.

*Pinus pinaster*, maritime pine, is able to withstand infestation better and *P. halepensis* (Aleppo pine) show negligible damage.

**Significance to GB:** Stone pine, the species most impacted by *T. parvicornis* to date in Europe is a Mediterranean species and not native to GB. It is not a forestry species in GB but is grown, although not widely, as an ornamental species. However, other hosts of the pest include *P. sylvestris*, the second most widely planted conifer in GB after Sitka spruce, as well as other important forestry species, *P. contorta* and *P. nigra*. *P. sylvestris* is one of the most important hosts of *T. parvicornis* in North America. The severity of damage that *T. parvicornis* would be able to cause in GB is likely to be restricted as a result of its longer development times due to our summers being much cooler than those in southern Italy,

the southern states of the USA and the Caribbean. A lack of natural enemies in GB might mean that larger populations could develop than in areas with a similar climate in North America, however, this is very uncertain.

## Risk management recommendations

The following is a summarised version of the EPPO Panel on Phytosanitary Measures recommendations for this pest. The recommendations relate to plants for planting and cut branches including cut Christmas trees. No management measures are proposed for other pathways because the risk was judged to be low. The measures are recommended for commodities in the genus *Pinus* and are listed in Table 3 below.

**Table 3: Phytosanitary measures recommended to reduce the risk of entry of *Toumeyella parvicornis***

Pathway	Measures identified for the exporting country
Plants for planting of <i>Pinus</i> spp. (except seeds, tissue culture and pollen)	<p>Pest free area (PFA) (ISPM 4, ISPM 29) (see requirements below)</p> <p><b>OR</b></p> <p>Plants should be produced in a pest-free place of production / pest-free production site for <i>Toumeyella parvicornis</i>, established according to EPPO Standard PM 5/8 Guidelines on the phytosanitary measure 'Plants grown under physical isolation'</p> <p><b>OR</b></p> <p>Systems approach combining all three of the following measures:</p> <ul style="list-style-type: none"> <li>• Absence of <i>Toumeyella parvicornis</i> after visual inspection of the consignment,</li> <li>• Dipping the whole plant in horticultural oils (summer oils or botanical oils) or insecticidal soap,</li> <li>• Storage and transportation in conditions preventing new infestation, i.e. outside the crawler active period, or not in/through areas infested with the pest, or with a suitable packaging (i.e. solid material, not a net)</li> </ul>
Cut branches of <i>Pinus</i> spp. (including Christmas trees)	PFA (ISPM 4, ISPM 29) (see requirements below)



Pathway	Measures identified for the exporting country
	<p><b>OR</b></p> <p>Systems approach combining all three of the following measures:</p> <ul style="list-style-type: none"> <li>• Absence of <i>Toumeyella parvicornis</i> after visual inspection of the consignment,</li> <li>• Dipping the whole plant in horticultural oils (summer oils or botanical oils) or insecticidal soap,</li> <li>• Storage and transportation in conditions preventing new infestation, i.e. outside the crawler active period, or not in/through areas infested with the pest, or with a suitable packaging (i.e. solid material, not a net)</li> </ul>

## PFA recommendations

The EPPO PRA report includes the following information and recommendations in relation to pest free areas:

- Wind dispersal of *T. parvicornis* has been recorded up to a distance of 4.8km in North America. The outbreak area has expanded by 7-15km a year in parts of Italy.
- General surveillance should be carried out in the area should be carried out for two years prior to the establishment of a PFA and should be continued every year. There should be specific surveys in the zone between the PFA and the known infestation to demonstrate pest freedom.
- There should be specific measures to prevent the movement of host material from the areas where the pest is present to the PFA and surrounding areas.

**Significance to GB:** Within the current phytosanitary regulations, all plants for planting, and a specific range of wood commodities require a phytosanitary certificate and must meet specific phytosanitary requirements to be imported into Great Britain, and as such may be subject to inspection. Wood packaging material must meet ISPM 15 requirements to enter Great Britain. Defra would like to further reduce the risk of host plants infested by *Toumeyella parvicornis* entering Great Britain. Using the EPPO recommendations, new GB regulations have been drafted with the aim of further mitigating the risk of introducing this pest on plants for planting or cut branches (including cut Christmas trees):

[Legislation for Autumn 2025 - UK Plant Health Information Portal](#)

This summary of the EPPO PRA has been undertaken taking into account the environmental principles laid out in the Environment Act 2021. Of particular relevance are:

**The prevention principle**, which means that any policy or action taken, or not taken should aim to prevent environmental harm.

**The precautionary principle**, which assists the decision-making process where there is a lack of scientific certainty.