



European and Mediterranean Plant Protection Organisation

EPPO Perspective on Emerald Ash Borer and Bronze Birch Borer

Event: OECD / PREPSYS conference

Preparing Europe for invasion by emerald ash borer and bronze
birch borer

Date: 2018-10-1/4, BFW Vienna

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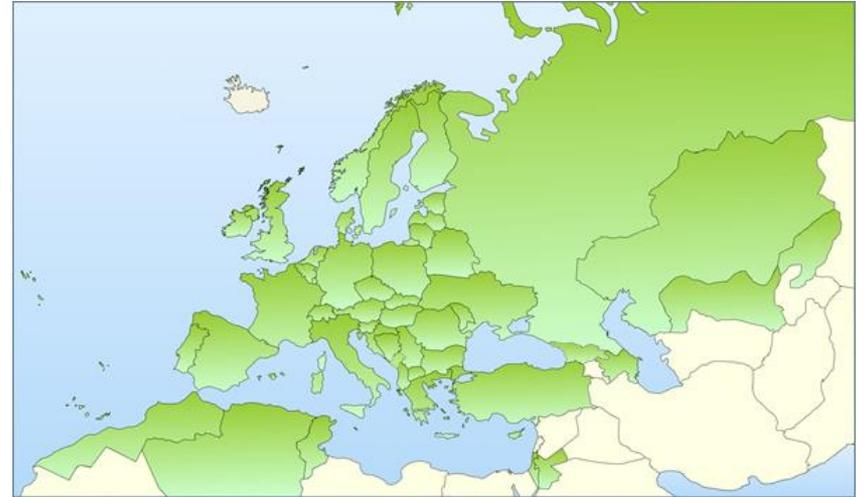




European and Mediterranean Plant Protection Organization

one of the 10 regional plant protection organizations recognised under the International Plant Protection Convention

- EPPO is an intergovernmental organization
- Created in 1951 by 15 countries
- It has now 52 member countries
- Two Permanent Observers (EEC and EC)
- International cooperation in plant protection: plant quarantine and pest control



extends to the far east of Russia

Work with National Plant Protection Organizations - NPPOs (Plant Protection Services)



EPPO also hosts:

Euphresco network
for phytosanitary
research



**US and Canada are
members of Euphresco**

**2 topics involving *Agrilus
planipennis* & *A. anxius***

EU Minor Uses Co-
ordination Facility



PREPSYS

EPPO's missions in plant quarantine

Prevent entry and spread of harmful organisms (crops, forests, natural environments)

- Early warning/horizon scanning
- Risk Analysis to recommend pests for regulation as quarantine pests (EPPO A1 and A2 Lists)
- Prepare standards (e.g. phytosanitary measures, diagnostic protocols)

Provide information to EPPO members on pests

- Regulated pests
- Pests which may present a risk to the EPPO region

Sharing information and expertise through networks

EPPO technical groups in the plant quarantine area

Panels & EWG

Panels are composed of **experts nominated by EPPO member countries**

Meet once a year (or twice)

Prepare draft recommendations most of which in the form of Standards



**Working Party on
Phytosanitary Regulations
(composed of representative
of NPPOs)**



Active Panels

Plant Protection Products

- General Standards
- Herbicides
- Insecticides and Fungicides
- Resistance
- Harmonisation of Data Requirements

Phytosanitary Regulations

- Global Phytosanitary Affairs
- Phytosanitary Measures
- Forestry
- Potatoes
- Inspection Procedures
- Information
- Diagnostics (General) +
 - Entomology
 - Nematodes
 - Bacteria
 - Fungi
 - Virology
- Invasive Alien Plants
- Biological Control Agents

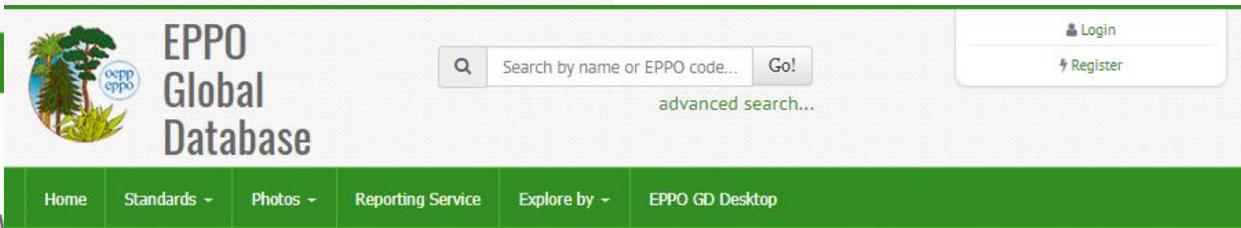
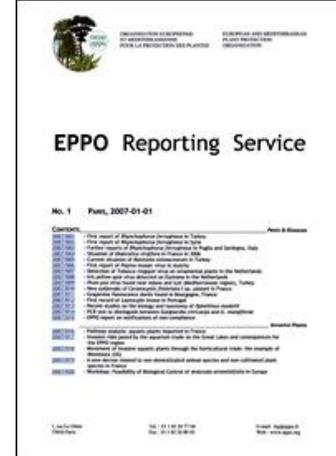


Activities conducted for EAB and BBB



Emerald Ash Borer

2003 First mentioned in EPPO Reporting Service
addition to the Alert List



Introduction of *Agrilus planipennis* (Emerald Ash Borer) to the EPPO Alert List



First report of *Agrilus planipennis* in the region of Moscow, Russia

Originally from Far East Asia
Findings in N America in 2002
Findings in Moscow Region in 2005



36 news items in EPPO RS since 2003
(mostly about spread in N America)

Emerald Ash Borer

2004

2013

- 2004 Recommendation for regulation based on PRA prepared by the EPPO Forestry Panel
- PRA updated and extended in 2013
 - Expert Working Group convened in January 2013 for 4 days
 - Experts:



Robert Haack US



Taylor Scarr CA



Oleg Kulinitch RU



Hans Peter Ravn DK



Yuri Baranchikov RU



Gerardo Sanchez Pena ES



Neil Giltrap GB



Dirk van der Gaag NL

EPPO Secretariat
Fabienne Grousset
Muriel Suffert
Andrei Orlinski

Endangered area

Entire EPPO region
(but *Fraxinus* spp. more
widespread in the north,
central and eastern parts of
the EPPO region)



Impact: high (low uncertainty): death of trees
in few years; attack healthy trees; social and
environmental impact

Eradication unlikely



Risk management

Measures recommended for *Fraxinus* species also be applied to *Juglans mandshurica*, *Pterocarya rhoifolia*, *Ulmus davidiana* from Japan, the Republic of Korea, and the Democratic Republic of Korea

Plants for planting

Pest Free Area (specific conditions defined)

Growing under insect proof conditions (officially controlled facilities, equivalent to quarantine facilities)

Wood, firewood

Pest Free Area or

Treatment (ionizing radiation) or

Removal of bark+ 2.5 cm of outer sapwood in authorized facilities

Furniture and other objects made of untreated wood: wood should comply with options above

Wood chips and wood waste: Pest Free Area + storage and transport to prevent contamination by adults under the control of the NPPO

**Measures implemented in the EU
Pest included in the EU survey programmes**

Key points on EAB

- Difficult to detect, difficult to control so very difficult to eradicate ***better detection tools?***
- **Natural spread westward occurs likely to continue**
- Much work on ***biological control*** in the USA
- ***May be useful in Europe, but regulatory processes are not well harmonised for such releases: will we be ready?***

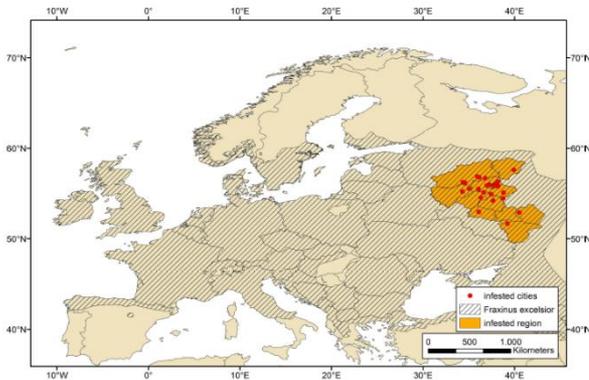


Figure 2. European range of *Agrilus planipennis*, showing infested regions of Russia (orange) and cities (red) where the beetle has been detected together with the distribution of *Fraxinus excelsior* [11]. Based on [6.12].

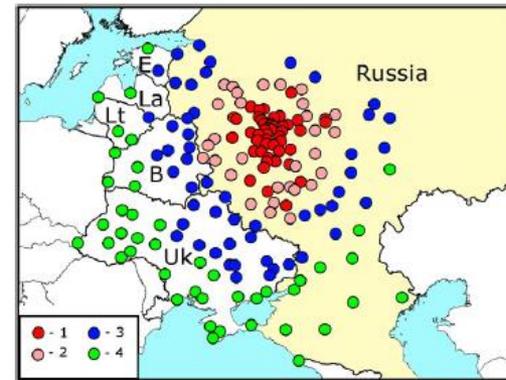


FIGURE 4 Prognosis of spread of *Agrilus planipennis* by 2022 by C-model. 1—cities and transport hubs, where probability of detection is >85%. 2—probability is 40%–85%. 3—probability is 15–40%. 4—probability is <15%. B, Belarus; E, Estonia; La, Latvia; Lt, Lithuania; Uk, Ukraine

Emerald Ash Borer



PM9/14 *Agrilus planipennis*: procedures for official control

- Standard approved in 2013.
- Sets out measures for eradication (*feasible ??????*) and containment of outbreaks
- Provides guidance on surveys and measures to be implemented in this context.
- Translated into Russian

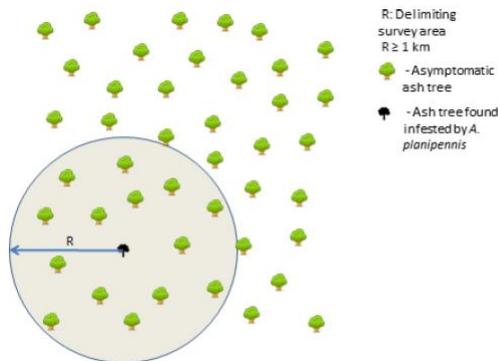


Fig. 2 Delimiting survey in at least 1 km radius around first finding of *A. planipennis* in order to delimit the infested area should be conducted as soon as possible after the detection of the infestation.

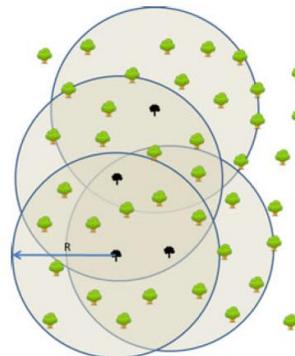


Fig. 4 The process shown in Figs 2 and 3 should be continued until no further trees infested with *A. planipennis* are detected.

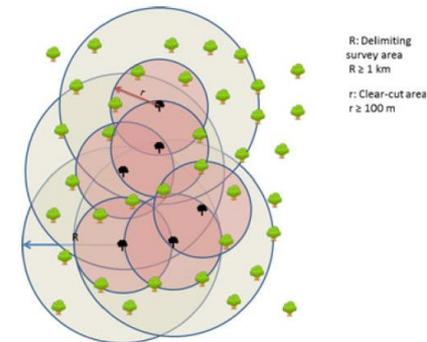


Fig. 6 Since new infested felled trees are detected after removing the bark, the process shown on Fig. 5 is continuing until no more infested ash trees are found.

PM8 Commodity Standard for *Fraxinus* in preparation
(standard summarizing measures for consignments)

Bronze Birch Borer

2010 First mentioned in EPPO Reporting Service
addition to the Alert List



EPPO
Global
Database

Search by name or EPPO code... Go!

advanced search...

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EPPO GD Desktop



EPPO Reporting Service no. 02 - 2010 Num. article: [2010/030](#)

Agrilus anxius (bronze birch borer): addition to the EPPO Alert List

3 news items in EPPO RS since 2010



EPPO Reporting Service

No. 1 Paris, 2007-01-01

CONTENTS	Page 8/2008
020101	First report of <i>Agrilus anxius</i> in Turkey
020102	First report of <i>Agrilus anxius</i> in Bulgaria
020103	First report of <i>Agrilus anxius</i> in Hungary
020104	First report of <i>Agrilus anxius</i> in Romania
020105	First report of <i>Agrilus anxius</i> in Serbia
020106	First report of <i>Agrilus anxius</i> in Ukraine
020107	First report of <i>Agrilus anxius</i> in Azerbaijan
020108	First report of <i>Agrilus anxius</i> in Georgia
020109	First report of <i>Agrilus anxius</i> in Armenia
020110	First report of <i>Agrilus anxius</i> in Kazakhstan
020111	First report of <i>Agrilus anxius</i> in Kyrgyzstan
020112	First report of <i>Agrilus anxius</i> in Uzbekistan
020113	First report of <i>Agrilus anxius</i> in Tajikistan
020114	First report of <i>Agrilus anxius</i> in Turkmenistan
020115	First report of <i>Agrilus anxius</i> in Uzbekistan
020116	First report of <i>Agrilus anxius</i> in Uzbekistan
020117	First report of <i>Agrilus anxius</i> in Uzbekistan
020118	First report of <i>Agrilus anxius</i> in Uzbekistan
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020128	First report of <i>Agrilus anxius</i> in Uzbekistan
020129	First report of <i>Agrilus anxius</i> in Uzbekistan
020130	First report of <i>Agrilus anxius</i> in Uzbekistan

Bronze Birch Borer

- PRA 2010
 - Expert Working Group convened for 4 days
 - Experts from BE, CA, GB, US



Dan Herms US



Robert Haack US



Daegan Inward GB



Claire Sansford GB

Christianne
Fassotte (BE)

EPPO Secretariat
Fabienne Grousset
Muriel Suffert
Andrei Orlinski

BBB recommended for regulation in 2011

Measures similar to EAB

PM8/6 Commodity Standard for *Betula* adopted in 2017

Measures implemented in the EU
Pest included in the EU survey programmes

Key points on BBB

- Absent from the EPPO region
- New pathways are difficult to measure and control e.g.
 - wood chips
 - rustic furniture
 - firewood
- North American species attacked when stressed
- **European species are susceptible even if not stressed ("sentinel tree" information)**
- High risk, low uncertainty
- Difficult to detect, difficult to control
- Natural enemies do not protect European birch trees growing in North America

Information on these species

- EPPO Global Database

[more photos...](#)

Taxonomy

- › Kingdom Animalia (1ANIMK)
- › Phylum Arthropoda (1ARTHP)
- › Subphylum Hexapoda (1HEXAQ)
- › Class Insecta (1INSEC)
- › Order Coleoptera (1COLEO)
- › Family Buprestidae (1BUPRF)
- › Genus Agrilus (1AGRILG)
- › Species Agrilus :

- EPPO Codes

- EPPO Reporting Service

- EPPO Alert List

EPPO Reporting Service 2018 no. 3 – Pests

Panel review date - Entry date 2018-03

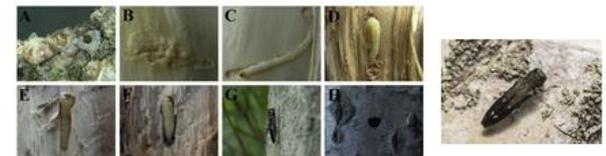
Additional key words: Alert List Computer codes: AGRLEF

2018/052 *Agrilus planipennis* found in Manitoba (CA)

In December 2017, the Canadian Food Inspection Agency confirmed the presence of *Agrilus planipennis* (Coleoptera: Buprestidae - EPPO A2 List) in the city of Winnipeg in Manitoba. This is the first time that *A. planipennis* is reported from Manitoba. The finding was made outside the regulated area which includes several municipalities in Canada, mainly in Southwestern Quebec and Southern Ontario. Phytosanitary measures have immediately been taken to prevent any further spread of the pest. Movements of firewood of all species, as well as of ash trees, ash nursery packaging or dunnage) out of the regulated area. The situation of *Agrilus planipennis* in Canada in some areas of Ontario, Quebec and Manitoba.

***Agrilus fleischeri* (Coleoptera: Buprestidae)**
2018-03

Asian wood borer of poplars (*Populus* spp.) proposed by the UK NPPO.
Emerging pest in parts of China. Tree mortality has been reported.
Lombardy poplar (*P. nigra* var. *italica*) is a susceptible host.
Data lacking on willows (*Salix* spp.)
Could be moved on wood packaging material (e.g. pallets)





Other EPPO activities relevant to EAB/BBB



Standards or guidance under development on

- sentinel plants
- raising public awareness
- **how to set buffer zones**

Platform being built to share information on national PRAs

Contingency exercise workshop on a forest pest outbreak Zlatibor, Serbia 27-29 November 2018

Toolkits for countries to use in awareness campaigns - *Agrilus planipennis* was one of the pilot examples

Work to harmonise regulation of Biological Control Agents

Raising awareness: Don't Risk It

to reduce flow of uncertified plants and plant material



Portuguese



Polish



Romanian



Raising awareness: Poster templates

HELP US STOP THIS PEST!

Emerald ash borer
A threat to ash trees



What is it?

The emerald ash borer (*Pristiphora jeffersii* - *Coleoptera: Buprestidae*) originates from Asia but has been inadvertently introduced into other parts of the world (e.g. Canada and USA) where it has killed millions of ash trees. In the mid 2000s, it was discovered in the European part of Russia near Moscow. As it spreads to other parts of our forests and urban environments, it is important to detect it as early as possible.

Damage



Contact us!

Your contact details, logos, links, QR codes ...



Learn more about the emerald ash borer: www.your.website

This poster has been prepared in collaboration with EPPO (www.eppo.org)

CAN YOU HELP US?

Popillia japonica
A threat to lawns, woods and crops



What is it?

Popillia japonica is a beetle (*Coleoptera: Rutelidae*) originating from Japan which has been inadvertently introduced into other parts of the world (e.g. America, Canada and UK). In summer 2014, it was found for the first time in continental Europe, near Bologna in Italy. *Popillia japonica* attacks many plants (around 400 species). Its larvae feed on plant roots and are particularly damaging in lawns and meadows. Adult beetles are associated with seedlings.

How to recognise it?



Adult beetles are 20-32 mm long with iridescent copper coloured elytra and metallic green thorax and head. They can be identified by the presence of 32 tufts of white hair on their body (5 along each side of the abdomen and 3 larger ones near the bottom end). Other life stages (eggs, larvae, pupae) live in the soil and are difficult to see.

Contact us!

Your contact details, logos, links, QR codes ...



Learn more about *Popillia japonica*: www.your.website

This poster has been prepared in collaboration with EPPO (www.eppo.org)

BE AWARE!

Huanglongbing
A threat to citrus



What is it?

Huanglongbing (also called greening) is a severe bacterial disease of citrus (associated with *Candidatus Liberibacter spp.*). Affected trees are stunted, with sparse yellow foliage, and fruit fall prematurely. As these symptoms can be confused with other diseases or nutrient deficiencies, laboratory analysis might be required for confirm diagnosis. Bacteria associated with Huanglongbing do not affect humans but cause serious losses to citrus production. Two insect species are known to transmit Huanglongbing to citrus plants: *Diosaphis citri* and *Toxoptera citricida*.

Disease vectors



Adult and eggs of *Diosaphis citri*.

These symptoms resemble the disease and also occur in citrus trees when feeding.



Contact us!

Your contact details, logos, links, QR codes ...



Learn more about Huanglongbing: www.your.website

This poster has been prepared in collaboration with EPPO (www.eppo.org)

HELP US STOP THIS PEST!

Emerald ash borer

A threat to ash trees



All Images: Daniel A. Harris, The Ohio State University (US), EPPO Global Database, <https://gd.eppo.int>

What is it?

The emerald ash borer (*Agrilus planipennis* - Coleoptera: Buprestidae) originates from Asia but has been inadvertently introduced into other parts of the world (e.g. Canada and USA) where it has killed millions of ash trees. In the mid-2000s, it was discovered in the European part of Russia, near Moscow. As its spread is threatening ash trees in our forests and urban environments, it is important to detect it as early as possible.

Damage



Before



After



Contact us!

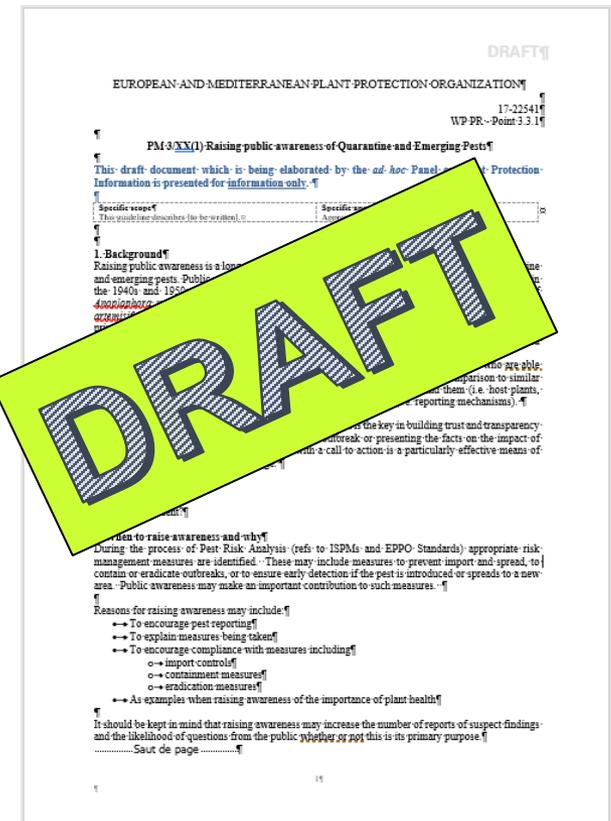
Your contact details, logos, links, QR codes ...



Learn more about the emerald ash borer: www.your.website

DRAFT PM 3 Standard - Raising public awareness

Work continuing with Information Panel
(next meeting October 4-5 2018)



Other Agrilus ...

Agrilus fleischeri recently added to EPPO Alert List

Expert Working Group to be held on 2018-12-4/7

Agrilus bilineatus also of concern and will be evaluated at the same time as *A. fleischeri*

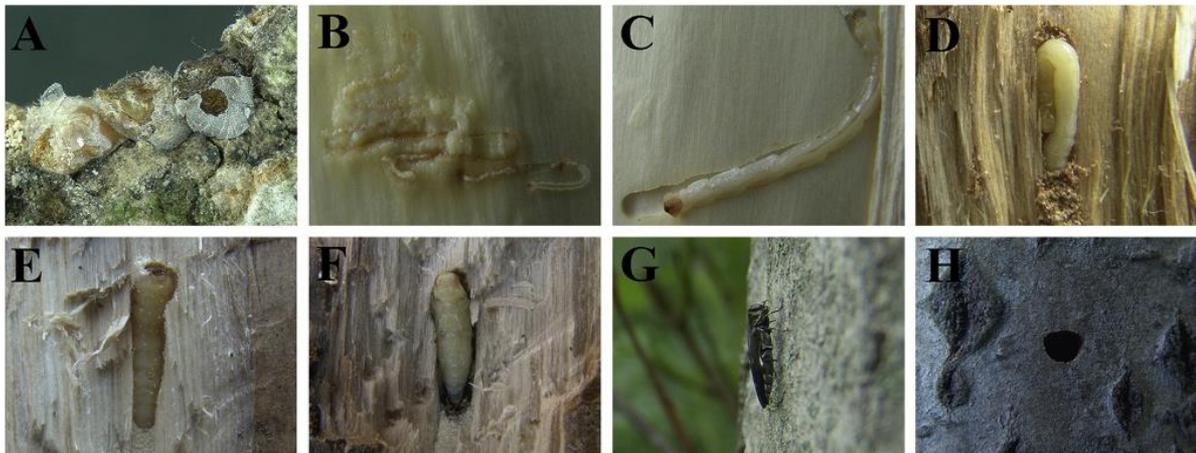
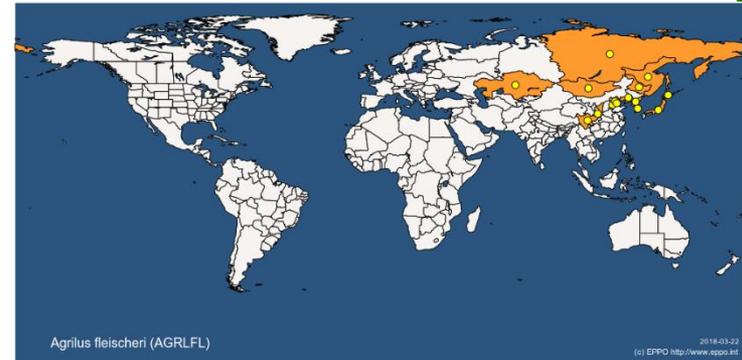
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Emerging pest in parts of China. Tree mortality has been reported.

Lombardy poplar (*P. nigra* var. *italica*) is a susceptible host.

Data lacking on willows (*Salix* spp.)

Could be moved on wood packaging material (e.g. pallets)



Standards are not set in stone! Uncertainty

In 2013 the following uncertainties were identified

- Heat treatment schedules for ash logs and wood products
- Natural enemies of *Agrilus* beetles within the EPPO region?
- Surveys for buprestid-hunting wasps,
- Development of improved detection methods or tools
- Efficacy of wood chipping and grinding under operational conditions
- Susceptibility and vulnerability of ash species native to the EPPO region.
- Elucidating the tolerances of *A. planipennis* to the high air temperatures it may encounter in the southern parts of the EPPO region, and to the low air temperatures in the northern parts of the EPPO region.

Early detection/ Inspection
/containment

Biological control:
can we be better prepared?

PM7 Diagnostic protocols

Author for a
diagnostic protocol for
Agrilus planipennis,
Agrilus anxius....
wanted!



EPPO's achievements are based on contributions from and collaboration between EPPO and also non EPPO experts
Many thanks to their NPPOs for making this possible



THANK YOU
FOR YOUR
ATTENTION

