List of non-EU Scolytinae of coniferous hosts

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Abstract

Following a request from the European Commission, the EFSA Panel on Plant Health prepared a list of
non-EU Scolytinae spp. (Coleoptera: Curculionidae) affecting coniferous hosts. A literature review and
search of databases, conducted up to January 2019, identified 804 Scolytinae species and subspecies
of coniferous hosts. These Scolytinae were assigned to two categories (a) 705 non-EU species and
subspecies, known to occur only outside the EU or having only limited presence in the EU, and (b) 99
species and subspecies with substantial presence in the EU (i.e. they are only reported so far from the
EU or known to occur or be widespread in some Member States or reported in more than three EU
MS). Scolytinae of category (b) will be excluded from further categorisation efforts. The main
knowledge gaps and uncertainties of this listing concern (i) the status of species that are present in
only a few MS and (ii) the status of the species that are present only at boundaries of the EU territory.
The non-EU Scolytinae will be categorised by the Panel in a separate opinion.

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1. Introduction

1.1. Background and Terms of Reference as provided by the requestor

1.1.1. Background

Council Directive 2000/29/EC\(^1\) on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community establishes the present European Union plant health regime. The Directive lays down the phytosanitary provisions and the control checks to be carried out at the place of origin on plants and plant products destined for the Union or to be moved within the Union. In the Directive's 2000/29/EC annexes, the list of harmful organisms (pests) whose introduction into or spread within the Union is prohibited, is detailed together with specific requirements for import or internal movement.

Following the evaluation of the plant health regime, the new basic plant health law, Regulation (EU) 2016/2031\(^2\) on protective measures against pests of plants, was adopted on 26 October 2016 and will apply from 14 December 2019 onwards, repealing Directive 2000/29/EC. In line with the principles of the above mentioned legislation and the follow-up work of the secondary legislation for the listing of EU regulated pests, EFSA is requested to provide pest categorizations of the harmful organisms included in the annexes of Directive 2000/29/EC, in the cases where recent pest risk assessment/pest categorisation is not available.

1.1.2. Terms of Reference

EFSA is requested, pursuant to Article 22(5.b) and Article 29(1) of Regulation (EC) No 178/2002\(^3\), to provide scientific opinion in the field of plant health.

EFSA is requested to prepare and deliver a pest categorisation (step 1 analysis) for each of the regulated pests included in the appendices of the annex to this mandate. The methodology and template of pest categorisation have already been developed in past mandates for the organisms listed in Annex II Part A Section II of Directive 2000/29/EC. The same methodology and outcome is expected for this work as well.

The list of the harmful organisms included in the annex to this mandate comprises 133 harmful organisms or groups. A pest categorisation is expected for these 133 pests or groups and the delivery of the work would be stepwise at regular intervals through the year as detailed below. First priority covers the harmful organisms included in Appendix 1, comprising pests from Annex II Part A Section I and Annex II Part B of Directive 2000/29/EC. The delivery of all pest categorisations for the pests included in Appendix 1 is June 2018. The second priority is the pests included in Appendix 2, comprising the group of Cicadellidae (non-EU) known to be vector of Pierce's disease (caused by Xylella fastidiosa), the group of Tephritidae (non-EU), the group of potato viruses and virus-like organisms, the group of viruses and virus-like organisms of Cydonia Mill., Fragaria L., Malus Mill., Prunus L., Pyrus L., Ribes L., Rubus L. and Vitis L. and the group of Margarodes (non-EU species). The delivery of all pest categorisations for the pests included in Appendix 2 is end 2019. The pests included in Appendix 3 cover pests of Annex I part A section I and all pests categorisations should be delivered by end 2020.

For the above mentioned groups, each covering a large number of pests, the pest categorisation will be performed for the group and not the individual harmful organisms listed under “such as” notation in the Annexes of the Directive 2000/29/EC. The criteria to be taken particularly under consideration for these cases, is the analysis of host pest combination, investigation of pathways, the damages occurring and the relevant impact.

Finally, as indicated in the text above, all references to ‘non-European’ should be avoided and replaced by ‘non-EU’ and refer to all territories with exception of the Union territories as defined in Article 1 point 3 of Regulation (EU) 2016/2031.

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\(^1\) Council Directive 2000/29/EC of 8 May 2000 on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community. OJ L 169/1, 10.7.2000, p. 1-112.

\(^2\) Regulation (EU) 2016/2031 of the European Parliament of the Council of 26 October 2016 on protective measures against pests of plants. OJ L 317, 23.11.2016, p. 4-104.

\(^3\) Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety. OJ L 31/1, 1.2.2002, p. 1-24.
### List of harmful organisms for which pest categorisation is requested

The list below follows the annexes of Directive 2000/29/EC.

#### Annex IIAI

**(a) Insects, mites and nematodes, at all stages of their development**

| Organism                                      | Source                                      |
|-----------------------------------------------|---------------------------------------------|
| Aleurocanthus spp.                           | Numonia pyrivorella (Matsumura)             |
| Anthonomus bisignifer (Schenkling)            | Oligonychus perditus Pritchard and Baker    |
| Anthonomus signatus (Say)                     | Pissodes spp. (non-EU)                     |
| Aschistonyx eppoi Inouye                      | Scirtothrips auranti Faure                  |
| Carposina niponensis Walsingham               | Scolytidae spp. (non-EU)                    |
| Enamorina packardi (Zeller)                   | Scolytidae spp. (non-EU)                    |
| Enamorina prunivora Walsh                    | Scirtothrips citri (Moultex)                |
| Grapholitha inopinata Heinrich                | Tachypterellus quadrigibbus Say             |
| Hisromonous phycitis                          | Toxoptera citricida Kirk.                   |
| Leucaspis japonica Ckl.                      | Unaspis citri Comstock                      |
| Listronotus bonariensis (Kuschel)             |                                             |

**(b) Bacteria**

| Organism                                      | Source                                      |
|-----------------------------------------------|---------------------------------------------|
| Citrus variegated chlorosis                   | Xanthomonas campestris pv. oryzae (Ishiyama) |
| Erwinia stewartii (Smith) Dye                  | Dye and pv. oryzicola (Fang. et al.) Dye    |

**(c) Fungi**

| Organism                                      | Source                                      |
|-----------------------------------------------|---------------------------------------------|
| Alternaria alternata (Fr.) Keissler (non-EU pathogenic isolates) | Elsinoe spp. Bitanc. and Jenk. Mendes |
| Anisogromma anomala (Peck) E. Müller          | Fusarium oxysporum f. sp. albedinis (Kilian and Maire) Gordon |
| Apiosporina morbosa (Schwein.) v. Arx         | Guignardia piricola (Nosa) Yamamoto         |
| Ceratocystis virescens (Davidson) Moreau      | Puccinia pittieriana Hennings               |
| Cercoseptoria pini-densiflorae (Hori and Nambu) Deighton | Stegophora ulmea (Schweinitz: Fries) Sydow & Sydow |
| Cercospora angolensis Carv. and Mendes        | Venturia nashicola Tanaka and Yamamoto     |

**(d) Virus and virus-like organisms**

| Organism                                      | Source                                      |
|-----------------------------------------------|---------------------------------------------|
| Beet curly top virus (non-EU isolates)        | Little cherry pathogen (non-EU isolates)    |
| Black raspberry latent virus                  | Naturally spreading psorosis                 |
| Blight and blight-like                        | Palm lethal yellowing mycoplasma            |
| Cadang-Cadang viroid                         | Satsuma dwarf virus                         |
| Citrus tristeza virus (non-EU isolates)       | Tatter leaf virus                           |
| Leprosis                                      | Witches’ broom (MLO)                        |

#### Annex II B

**(a) Insect mites and nematodes, at all stages of their development**

| Organism                                      | Source                                      |
|-----------------------------------------------|---------------------------------------------|
| Anthonomus grandis (Boh.)                     | Ips cembrae Heer                            |
| Cephalcia lariciphila (Klug)                   | Ips duplicatus Sahlberg                     |
| Dendroctonus micans Kugelan                   | Ips sexdentatus Börner                      |
| Gilphinia hercyniae (Hartig)                   | Ips typographus Heer                        |
| Gonipterus scutellatus Gyll.                  | Sternochetus mangiferae Fabricius           |
| Ips amitinus Eichhof                          |                                             |
(b) Bacteria

Curtobacterium flaccumfaciens pv. flaccumfaciens (Hedges) Collins and Jones

(c) Fungi

Glomerella gossypii Edgerton Hypoxylon mammatum (Wahl.) J. Miller
Gremmeniella abietina (Lag.) Morelet

1.1.2.2. Terms of Reference: Appendix 2

List of harmful organisms for which pest categorisation is requested per group. The list below follows the categorisation included in the annexes of Directive 2000/29/EC.

Annex I.A.I

(a) Insects, mites and nematodes, at all stages of their development

Group of Cicadellidae (non-EU) known to be vector of Pierce's disease (caused by Xylella fastidiosa), such as:

1) Carneocephala fulgida Nottingham 3) Graphocephala atropunctata (Signoret)
2) Draeculacephala minerva Ball

Group of Tephritidae (non-EU) such as:

1) Anastrepha fraterculus (Wiedemann) 12) Pardalaspis cyanescens Bezzi
2) Anastrepha ludens (Loew) 13) Pardalaspis quinaria Bezzi
3) Anastrepha obliqua Macquart 14) Pterandrus rosa (Karsch)
4) Anastrepha suspensa (Loew) 15) Rhacochlaena japonica Ito
5) Dacus ciliatus Loew 16) Rhagoletis completa Cresson
6) Dacus curcurbitae Coquillet 17) Rhagoletis fausta (Osten-Sacken)
7) Dacus dorsalis Hendel 18) Rhagoletis indifferens Curran
8) Dacus tryoni (Froggatt) 19) Rhagoletis mendax Curran
9) Dacus tsuneonis Miyake 20) Rhagoletis pomonella Walsh
10) Dacus zonatus Saund. 21) Rhagoletis suavis (Loew)
11) Epochra canadensis (Loew)

(c) Viruses and virus-like organisms

Group of potato viruses and virus-like organisms such as:

1) Andean potato latent virus 5) Potato virus T
2) Andean potato mottle virus 6) non-EU isolates of potato viruses A, M, S, V, X and Y (including Yo, Yh and Yc) and Potato leafroll virus
3) Arracacha virus B, oca strain
4) Potato black ringspot virus

Group of viruses and virus-like organisms of Cydonia Mill., Fragaria L., Malus Mill., Prunus L., Pyrus L., Ribes L., Rubus L. and Vitis L., such as:

1) Blueberry leaf mottle virus 8) Peach yellows mycoplasm
2) Cherry rasp leaf virus (American) 9) Plum line pattern virus (American)
3) Peach mosaic virus (American) 10) Raspberry leaf curl virus (American)
4) Peach phony rickettsia 11) Strawberry witches’ broom mycoplasma
5) Peach rosette mosaic virus 12) Non-EU viruses and virus-like organisms of Cydonia Mill., Fragaria L., Malus Mill., Prunus L., Pyrus L., Ribes L., Rubus L. and Vitis L.
Annex IIAI

(a) Insects, mites and nematodes, at all stages of their development

Group of Margarodes (non-EU species) such as:

1) Margarodes vitis (Phillipi)
2) Margarodes vredendalensis de Klerk
3) Margarodes prieskaensis Jakubski

1.1.2.3. Terms of Reference: Appendix 3

List of harmful organisms for which pest categorisation is requested. The list below follows the annexes of Directive 2000/29/EC.

Annex IIAI

(a) Insects, mites and nematodes, at all stages of their development

Acleris spp. (non-EU)

Amauromyza maculosa (Malloch)

Anomala orientalis Waterhouse

Arrhenodes minutus Drury

Choristoneura spp. (non-EU)

Conotrachelus nenuphar (Herbst)

Dendrolimus sibiricus Tscherkez

Diabrotica barberi Smith and Lawrence

Diabrotica undecimpunctata howardi Barber

Diabrotica undecimpunctata undecimpunctata Mannerheim

Diabrotica virgifera zeae Krysan & Smith

Diaphorina citri Kuway

Helfiothis zeae (Boddie)

Hirschmanniella spp., other than Hirschmanniella gracilis (de Man) Luc and Goodey

Liriomyza sativae Blanchard

(b) Fungi

Ceratocystis fagacearum (Bretz) Hunt

Chrysomyxa arctostaphyli Dietel

Cronartium spp. (non-EU)

Endocronartium spp. (non-EU)

Guignardia laricina (Saw.) Yamamoto and Ito

Gymnosporangium spp. (non-EU)

Inonotus weirii (Murril) Kotlaba and Pouzar

Melampsora farlowii (Arthur) Davis

(c) Viruses and virus-like organisms

Tobacco ringspot virus

Tomato ringspot virus

Bean golden mosaic virus

Cowpea mild mottle virus

Lettuce infectious yellows virus

(d) Parasitic plants

Arceuthobium spp. (non-EU)
Annex I AII

(a) Insects, mites and nematodes, at all stages of their development

Meloidogyne fallax Karssen
Popillia japonica Newman

(b) Bacteria

Clavibacter michiganensis (Smith) Davis et al.
Ralstonia solanacearum (Smith) Yabuuchi et al.
ssp. sepedonicus (Spieckermann and Kotthoff)
Davis et al.

(c) Fungi

Melampsora medusae Thümen
Synchytrium endobioticum (Schilbersky) Percival

Annex I B

(a) Insects, mites and nematodes, at all stages of their development

Leptinotarsa decemlineata Say
Liriomyza bryonieae (Kaltenbach)

(b) Viruses and virus-like organisms

Beet necrotic yellow vein virus

1.2. Interpretation of the Terms of Reference

This scientific opinion presents the list of non-EU Scolytinae spp. on coniferous host plants. They are listed as Scolytidae4 (non-EU) in the Appendices to the Terms of Reference (ToR) to be subject to pest categorisation to determine whether they fulfill the criteria of quarantine pests or those of regulated non-quarantine pests for the area of the EU excluding Ceuta, Melilla and the outermost regions of Member States (MS) referred to in Article 355(1) of the Treaty on the Functioning of the European Union (TFEU), other than Madeira and the Azores.

As a first step toward this goal, the Panel prepared a list of Scolytinae species on coniferous host plants. The list is based on information collected from various literature sources and databases up to January 2019.

In the process, two groups of Scolytinae were distinguished:

(a) non-EU Scolytinae of coniferous hosts and

(b) Scolytinae with significant presence in the EU (known to occur in several MS, frequently reported in the EU, widespread in some MS) or so far reported only from the EU.

A non-EU Scolytinae is defined by its geographical distribution outside of the EU territory. As such, Scolytinae not reported from the EU and occurring only outside of the EU territory are considered as non-EU Scolytinae. Furthermore, Scolytinae occurring outside the EU and having only a limited presence in the EU (reported from only a few MS, with restricted distribution) are also considered as non-EU. The status of each species occupying 1, 2 or 3 MSs was then further examined. The panel identified three different groups: (i) species endemic only in the EU, (ii) species known for a long time to be established in MSs at the border of the EU, obviously at the margin of their distribution area outside of the EU, and (iii) species apparently distributed at random within the EU, suggesting recent and distinct introductions. The first two groups were excluded from further categorisation while the species in the last group were included as ‘non-EU species’.

This opinion provides the methodology and results for this classification which prepares but does not preclude the actual pest categorisation linked to the present mandate. This means that the Panel will then perform a pest categorisation for the non-EU Scolytinae of coniferous hosts.

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4 Although the leading taxonomists in the 2000s (Wood, 1982; Bright and Skidmore, 2002) still considered the Scolytidae to be a family distinct from the Curculionidae according to morphological criteria, modern phylogenetics supports the position of scolytine beetles (Scolytinae) within the family Curculionidae (Knižek and Beaver, 2004; Hulcr et al., 2015). This is reflected by the growing number of citations in Scopus referring to Scolytinae (18 in 1990 vs. 210 in 2018), as opposed to citations referring to Scolytidae (50 in 1990 vs. 16 in 2018). The Scolytinae includes two subcategories, the ‘bark beetles’ which live in the phloem, and the ‘ambrosia beetles’ which live in the sapwood.
2. **Data and methodologies**

The preparatory work (literature review and data collection) for the current opinion was outsourced to the University of Padova (Department of Agronomy, Food, Natural Resources, Animals and Environment). The raw data can be downloaded under supporting documents (Annex A, Full list non-EU Scolytinae and Annex B, Short list non-EU Scolytinae). A comprehensive worldwide list of Scolytinae species living on conifers was generated by screening the databases of the European and Mediterranean Plant Protection Organisation (EPPO) and the Centre for Agriculture and Biosciences International (CABI), as well as available comprehensive and updated species lists and catalogues specific literature concerning all Scolytinae species in the world (Wood and Bright, 1992; Bright and Skidmore, 1997; Bright and Skidmore, 2002; Bright, 2014), or occurring in geographical areas hosting native conifers, such as North, Central and South America (Wood, 1982, 2007), Europe and North Africa (Pfeffer 1995, Knizek, 2011; Alonso-Zarazaga et al., 2017), Australia (www.padil.gov.au), New Zealand (Brockerhoff et al., 2003) and Asia (Stark, 1952, Knizek, 2011; Alonso-Zarazaga et al., 2017).

Information on host(s) and distribution of Scolytinae in the first instance were retrieved from the EPPO Global Database (EPPO, 2019), the Centre for Agriculture and Biosciences International (CABI) and relevant publications.

From the above-mentioned sources, information was collected about

- species taxonomy (tribe);
- geographic distribution at continental level, considering the following macroregions: North America, Central America, South America, Europe, Asia, Oceania, North Africa, sub-Saharan Africa. For all the species reported in the EU the geographic distribution was provided both at EU-member states and at non-EU European country levels in order to understand their distribution in Europe;
- feeding habits (herbiphagy, spermatophagy, mycophagy, myelophagy, phloeophagy, xylomycetophagy, xylophagy);
- list of host trees (at genus level) considering the most common conifer genera that are hosts of bark beetles: *Abies* spp., *Cupressus* spp., *Larix* spp., *Picea* spp., *Pinus* spp., *Taxus* spp., *Juniperus* spp., *Cedrus* spp., *Chamaecyparis* spp., *Pseudotsuga* spp., *Tsuga* spp., *Thuja* spp.; other possible hosts will be included in the category ‘other conifers’;
- potential for introduction: dispersal by trade reflected by the total number of interceptions of a given non-EU Scolytinae species or genus recorded in the past years in the international ports and airports of North America, Europe, Australia and New Zealand. This information was obtained in the databases of USDA APHIS – Agriculture Quarantine Inspection, Australian Quarantine and Inspection Service, New Zealand Ministry of Primary Industries, Canadian Food Inspection Agency and Canadian Border Service Agency, EUROPHYT, and in specific literature and reviews such as, for instance, Brockerhoff et al. (2006) or Haack and Rabaglia (2013). Natural dispersal capacities by flight are rarely described and therefore were not investigated when building this list.

Further references and information were obtained from experts and from citations within primary references. Data collected from National Plant Protection Organisations of the MS were also considered.

The collected information was used to fill an extraction table (Annex A) that presents all raw data obtained.

Only the non-EU Scolytinae on conifers will be subject of further categorisation efforts in the frame of the present mandate. The Scolytinae excluded from this group are therefore referred to in the present opinion as Scolytinae excluded from further categorisation in the frame of the present mandate.

3. **Listing of non-EU Scolytinae**

All Scolytinae species and subspecies identified in the literature and database searches have been listed and subsequently organised into the two groups specified below.

3.1. **Scolytinae considered as non-EU**

The Scolytinae considered as non-EU (Appendix A) belong to two subcategories:

- Scolytinae not known to be present in the EU,
- Scolytinae known to be present outside the EU and with only limited presence (i.e. reported in up to three MS, known to have restricted distribution) in the EU.
3.2. Scolytinae excluded from further categorisation in the frame of the present mandate

The Scolytinae species excluded from further categorisation in the frame of the present mandate are listed in Appendix B. They belong to two subcategories:

- Scolytinae species reported only from the EU,
- Scolytinae species known to be present outside the EU, but with a substantial presence also in the EU (known to occur in several MS, frequently reported in the EU, widespread in some MSs)

4. Uncertainties

- When a species is present in only a few MS, its status (widely or locally established; transient) is often unclear from the literature.
- It is sometimes unclear whether species that are only present at the boundaries of the EU as well as in contiguous non-EU countries are in the process of moving into the EU or have been established in these EU MS for a long time.
- Limited efforts on surveillance and therefore incomplete distribution data are an additional uncertainty that might be included. Non-English (local) literature reports may have been overlooked.

5. Conclusions

The Panel was requested by the European Commission to produce a pest categorisation of 133 harmful organisms or groups listed in annexes of Directive 2000/29/EC. One of the groups for which the categorisation will be prepared is non-EU Scolytinae spp. As a first step, a systematic approach identified 804 species and subspecies of Scolytinae species feeding on conifers.

Among these Scolytinae species and subspecies, based on information on distribution and prevalence both inside and outside the EU, the Panel identified 705 non-EU species and subspecies, known to occur only outside the EU or having only a limited presence in the EU (Appendix A). These Scolytinae will be further categorised in a separate opinion.

The remaining 99 Scolytinae species and subspecies which have a substantial presence in the EU or are so far reported from the EU only (Appendix B), will not be categorised within the current mandate. However, the Commission may, at any time, request EFSA to categorise some or all the Scolytinae excluded from the present exercise.

The main knowledge gaps and uncertainties of this listing concern (i) the status of species that are present in only a few MS, and (ii) and the status of the species present only at the boundaries of the EU.

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Abbreviations

CABI Centre for Agriculture and Bioscience International
EPPO European and Mediterranean Plant Protection Organization
FAO Food and Agriculture Organization
IPPC International Plant Protection Convention
MS Member State
NCBI National Center for Biotechnology Information
PLH EFSA Panel on Plant Health
TFEU Treaty on the Functioning of the European Union
ToR Terms of Reference
## Appendix A – Scolytinae species considered as non-EU

The appendix lists the Scolytinae species considered as non-EU, their geographic occurrence in the EU (at MS level) and outside the EU (at continent level, or at country level for those species that are present also in the EU), the associated uncertainties or comments, as well as the main references from which the information was extracted.

| ID | Species | Presence in EU MS | Presence outside EU | Comments/ Uncertainties | Reference |
|----|---------|------------------|---------------------|-------------------------|-----------|
| 1. | *Acanthotomicus curvidens* | | Sub-Saharan Africa | | Wood and Bright (1992) |
| 2. | *Ambrosiodmus eichhoffi* | | Sub-Saharan Africa | | Wood and Bright (1992) |
| 3. | *Ambrosiodmus funebris* | | South America | | Atkinson (2018) |
| 4. | *Ambrosiodmus hagedorni* | | North America, Central America, South America | | Atkinson (2018) |
| 5. | *Ambrosiodmus innominatus* | | Oceania | | Wood and Bright (1992) |
| 6. | *Ambrosiodmus lecontei* | | North America, Central America | | Atkinson (2018) |
| 7. | *Ambrosiodmus lewisi* | | North America, Asia | | Atkinson (2018) |
| 8. | *Ambrosiodmus rusticus* | | North America, Central America, South America | | Atkinson (2018) |
| 9. | *Araptus andinus* | | South America | | Atkinson (2018) |
| 10. | *Araptus araucariae* | | South America | | Atkinson (2018) |
| 11. | *Araptus impensus* | | South America | | Atkinson (2018) |
| 12. | *Araptus sobrinus* | | Central America | | Atkinson (2018) |
| 13. | *Cactopinus koebelei* | | North America | | Atkinson (2018) |
| 14. | *Cactopinus pini* | | North America | | Atkinson (2018) |
| 15. | *Carphobius arizonicus* | | North America | | Atkinson (2018) |
| 16. | *Carphobius cupressi* | | Central America | | Atkinson (2018) |
| 17. | *Carphobius pilifer* | | North America | | Atkinson (2018) |
| 18. | *Carphoborus andersoni* | | North America | | Atkinson (2018) |
| 19. | *Carphoborus bicornis* | | North America | | Atkinson (2018) |
| 20. | *Carphoborus bifurcus* | | North America, Central America | | Atkinson (2018) |
| 21. | *Carphoborus blaisdelli* | | North America | | Atkinson (2018) |
| 22. | *Carphoborus bonnairei* | | Asia, North Africa | | Alonso-Zarazaga et al. (2017) |
| 23. | *Carphoborus brevisetosus* | | North America | | Atkinson (2018) |
| 24. | *Carphoborus carri* | | North America | | Atkinson (2018) |
| 25. | *Carphoborus convexifrons* | | North America | | Atkinson (2018) |
| ID  | Species                | Presence in EU MS | Presence outside EU | Comments/Uncertainties                                                                 | Reference                                      |
|-----|------------------------|-------------------|---------------------|---------------------------------------------------------------------------------------|------------------------------------------------|
| 26  | Carphoborus costatus   | Asia              |                     |                                                                                      | Alonso-Zarazaga et al. (2017)                 |
| 27  | Carphoborus declivis   | North America     |                     |                                                                                      | Atkinson (2018)                                |
| 28  | Carphoborus dunni      | North America     |                     |                                                                                      | Atkinson (2018)                                |
| 29  | Carphoborus frontalis  | North America     |                     |                                                                                      | Atkinson (2018)                                |
| 30  | Carphoborus henscheli  | Cyprus            | Georgia, Turkey, Israel, Syria |                                                                                      | Alonso-Zarazaga et al. (2017) and de Jong et al. (2014) |
| 31  | Carphoborus intermedius| North America     |                     |                                                                                      | Atkinson (2018)                                |
| 32  | Carphoborus jurinskii  | Asia              |                     |                                                                                      | Alonso-Zarazaga et al. (2017)                 |
| 33  | Carphoborus marani     | Greece, Hungary   | European Russia     | Presence in Hungary only mentioned once and never confirmed later (Milos Knizek, pers. comm.) | Alonso-Zarazaga et al. (2017) and de Jong et al. (2014) |
| 34  | Carphoborus mexicanus  | North America     |                     |                                                                                      | Atkinson (2018)                                |
| 35  | Carphoborus perplexus  | North America     |                     |                                                                                      | Atkinson (2018)                                |
| 36  | Carphoborus piceae     | North America     |                     |                                                                                      | Atkinson (2018)                                |
| 37  | Carphoborus pinicolaens| North America     |                     |                                                                                      | Atkinson (2018)                                |
| 38  | Carphoborus ponderosae | North America     |                     |                                                                                      | Atkinson (2018)                                |
| 39  | Carphoborus pseudotsugae| North America    |                     |                                                                                      | Atkinson (2018)                                |
| 40  | Carphoborus radiatae   | North America     |                     |                                                                                      | Atkinson (2018)                                |
| 41  | Carphoborus sansoni    | North America     |                     |                                                                                      | Atkinson (2018)                                |
| 42  | Carphoborus simplex    | North America     |                     |                                                                                      | Atkinson (2018)                                |
| 43  | Carphoborus tareiensis | Asia              |                     |                                                                                      | Alonso-Zarazaga et al. (2017)                 |
| 44  | Carphoborus vandykei   | North America     |                     |                                                                                      | Alonso-Zarazaga et al. (2017)                 |
| 45  | Carphoborus zhobi      | Asia              |                     |                                                                                      | Alonso-Zarazaga et al. (2017)                 |
| 46  | Chramesus spinosus     | South America     |                     |                                                                                      | Atkinson (2018)                                |
| 47  | Cnestus mutilatus      | North America, Asia, Oceania |                     |                                                                                      | Alonso-Zarazaga et al. (2017) and Atkinson (2018) |
| 48  | Coccotrypes advena     | North America, Central America, Asia, Oceania |                     |                                                                                      | Wood and Bright (1992)                        |
| 49  | Coccotrypes cinnamoni  | Asia              |                     |                                                                                      | Wood and Bright (1992)                        |
| 50  | Coccotrypes fijianus   | Oceania           |                     |                                                                                      | Wood and Bright (1992)                        |
| 51  | Coccotrypes leveri     | Oceania           |                     |                                                                                      | Wood and Bright (1992)                        |
| ID | Species                        | Presence in EU MS | Presence outside EU               | Comments/Uncertainties | Reference                      |
|----|--------------------------------|-------------------|-----------------------------------|-------------------------|--------------------------------|
| 52 | Coccotrypes medius             | Asia              |                                   |                         | Wood and Bright (1992)         |
| 53 | Coccotrypes norimasanus        | Asia              |                                   |                         | Alonso-Zarazaga et al. (2017)  |
| 54 | Coccotrypes nubilus            | Asia, Sub-Saharan Africa |                          |                         | Alonso-Zarazaga et al. (2017)  |
| 55 | Coccotrypes recticollis        | Asia              |                                   |                         | Wood and Bright (1992)         |
| 56 | Conophthorus apacheae          | North America     |                                   |                         | Atkinson (2018)                |
| 57 | Conophthorus conicolenos       | North America     |                                   |                         | Atkinson (2018)                |
| 58 | Conophthorus coniperda         | North America     |                                   |                         | Atkinson (2018)                |
| 59 | Conophthorus echinatiae        | North America     |                                   |                         | Atkinson (2018)                |
| 60 | Conophthorus edulis            | North America     |                                   |                         | Atkinson (2018)                |
| 61 | Conophthorus mexicanus         | North America, Central America |                    |                         | Atkinson (2018)                |
| 62 | Conophthorus michoacanae       | North America     |                                   |                         | Atkinson (2018)                |
| 63 | Conophthorus monophyllae       | North America     |                                   |                         | Atkinson (2018)                |
| 64 | Conophthorus ponderosae        | North America     |                                   |                         | Atkinson (2018)                |
| 65 | Conophthorus radiatae          | North America     |                                   |                         | Atkinson (2018)                |
| 66 | Conophthorus resinosa          | North America     |                                   |                         | Atkinson (2018)                |
| 67 | Conophthorus teocotum          | North America     |                                   |                         | Atkinson (2018)                |
| 68 | Conophthorus terminalis        | North America     |                                   |                         | Atkinson (2018)                |
| 69 | Corthylus rufopilosus          | South America     |                                   |                         | Atkinson (2018)                |
| 70 | Corthylus schaufussi           | South America     |                                   |                         | Atkinson (2018)                |
| 71 | Corthylus simplex              | Central America   |                                   |                         | Atkinson (2018)                |
| 72 | Cryphalus araucariae           | Oceania           |                                   |                         | Wood and Bright (1992)         |
| 73 | Cryphalus brunneus             | Oceania           |                                   |                         | Wood and Bright (1992)         |
| 74 | Cryphalus chamaecipariae       | Asia              |                                   |                         | Alonso-Zarazaga et al. (2017)  |
| 75 | Cryphalus chinlingensis        | Asia              |                                   |                         | Alonso-Zarazaga et al. (2017)  |
| 76 | Cryphalus cryptomeriae         | Asia              |                                   |                         | Alonso-Zarazaga et al. (2017)  |
| 77 | Cryphalus cylindrus            | Oceania           |                                   |                         | Wood and Bright (1992)         |
| 78 | Cryphalus dissimilis           | Asia              |                                   |                         | Alonso-Zarazaga et al. (2017)  |
| 79 | Cryphalus diversicolor         | Oceania           |                                   |                         | Wood and Bright (1992)         |
| 80 | Cryphalus fulvus               | Asia              |                                   |                         | Alonso-Zarazaga et al. (2017)  |
| 81 | Cryphalus jeholensis           | Asia              |                                   |                         | Alonso-Zarazaga et al. (2017)  |
| 82 | Cryphalus jezoensis            | Asia              |                                   |                         | Alonso-Zarazaga et al. (2017)  |
| ID | Species                  | Presence in EU MS | Presence outside EU | Comments/Uncertainties | Reference                     |
|----|--------------------------|-------------------|---------------------|-------------------------|-------------------------------|
| 83 | Cryptalus kurenzovi      | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 84 | Cryptalus laricis        | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 85 | Cryptalus latus          | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 86 | Cryptalus lepocrinus     | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 87 | Cryptalus lipingensis    | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 88 | Cryptalus longisetosus   | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 89 | Cryptalus major          | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 90 | Cryptalus malloti        | Asia              |                     |                         | Wood and Bright (1992)        |
| 91 | Cryptalus markangensis   | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 92 | Cryptalus massonianus    | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 93 | Cryptalus miyalopiceus   | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 94 | Cryptalus montanus       | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 95 | Cryptalus niponensis     | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 96 | Cryptalus piceus         | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 97 | Cryptalus pilosus        | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 98 | Cryptalus pseudochinlingensis | Asia            |                     |                         | Alonso-Zarazaga et al. (2017) |
| 99 | Cryptalus pseudotabulaeformis | Asia          |                     |                         | Alonso-Zarazaga et al. (2017) |
| 100| Cryptalus pubescens      | North America     |                     |                         | Atkinson (2018)               |
| 101| Cryptalus redikorzevi    | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 102| Cryptalus rubentis       | North America     |                     |                         | Atkinson (2018)               |
| 103| Cryptalus ruficollis     | North America     |                     |                         | Atkinson (2018)               |
| 104| Cryptalus sawadai        | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 105| Cryptalus sichotensis    | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 106| Cryptalus sinoabietis    | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 107| Cryptalus strohmeyer     | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 108| Cryptalus sylvicola      | Oceania           |                     |                         | Wood and Bright (1992)        |
| 109| Cryptalus szechuanensis  | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 110| Cryptalus tabulaeformis  | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 111| Cryptalus taiwanus       | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| ID  | Species                        | Presence in EU MS | Presence outside EU | Comments/ Uncertainties                                                                 | Reference                              |
|-----|--------------------------------|-------------------|---------------------|----------------------------------------------------------------------------------------|----------------------------------------|
| 112 | Cryphalus yamaguchii           | Asia              |                     |                                                                                        | Alonso-Zarazaga et al. (2017)          |
| 113 | Cryptoxyleborus gracilior      | Oceania           |                     |                                                                                        | Wood and Bright (1992)                 |
| 114 | Crypturgus alutaceus           | North America, Central America |                     |                                                                                        | Atkinson (2018)                        |
| 115 | Crypturgus beesoni             | Asia              |                     |                                                                                        | Alonso-Zarazaga et al. (2017)          |
| 116 | Crypturgus borealis            | North America     |                     |                                                                                        | Atkinson (2018)                        |
| 117 | Crypturgus cedri               | North Africa      |                     |                                                                                        | Alonso-Zarazaga et al. (2017)          |
| 118 | Crypturgus concolor            | North Africa      |                     |                                                                                        | Alonso-Zarazaga et al. (2017)          |
| 119 | Crypturgus dubius              | France, Spain     | Turkey, Iran        | Presence in France and Spain is doubtful FR NPPO: the alleged presence in France is due to an error in labelling | Alonso-Zarazaga et al. (2017) and de Jong et al. (2014) |
| 120 | Crypturgus tuberosus           | Asia              |                     |                                                                                        | Alonso-Zarazaga et al. (2017)          |
| 121 | Cyrtogenius agathis            | Asia              |                     |                                                                                        | Wood and Bright (1992)                 |
| 122 | Cyrtogenius brevior            | Asia              |                     |                                                                                        | Wood and Bright (1992)                 |
| 123 | Cyrtogenius luteus             | Italy             | China, Japan, South Korea, South America | Introduced species | Atkinson (2018) and Gomez et al. (2012) |
| 124 | Cyrtogenius perakensis         | Asia              |                     |                                                                                        | Alonso-Zarazaga et al. (2017)          |
| 125 | Cyrtogenius philippinensis     | Asia              |                     |                                                                                        | Alonso-Zarazaga et al. (2017)          |
| 126 | Dendroctonus adjunctus         | North America, Central America |                     |                                                                                        | Atkinson (2018)                        |
| 127 | Dendroctonus approximatus      | North America, Central America |                     |                                                                                        | Atkinson (2018)                        |
| 128 | Dendroctonus armandi           | Asia              |                     |                                                                                        | Alonso-Zarazaga et al. (2017)          |
| 129 | Dendroctonus brevicomis        | North America     |                     |                                                                                        | Atkinson (2018)                        |
| 130 | Dendroctonus frontalis         | North America, Central America |                     |                                                                                        | Atkinson (2018)                        |
| 131 | Dendroctonus jeffreyi          | North America     |                     |                                                                                        | Atkinson (2018)                        |
| 132 | Dendroctonus mesoamericanus    | North America, Central America |                     |                                                                                        | Atkinson (2018)                        |
| 133 | Dendroctonus mexicanus         | North America, Central America |                     |                                                                                        | Atkinson (2018)                        |
| 134 | Dendroctonus murrayanae        | North America     |                     |                                                                                        | Atkinson (2018)                        |
| 135 | Dendroctonus parallelocollis   | North America, Central America |                     |                                                                                        | Atkinson (2018)                        |
| 136 | Dendroctonus ponderosae        | North America     |                     |                                                                                        | Atkinson (2018)                        |
| ID | Species | Presence in EU MS | Presence outside EU | Comments/ Uncertainties | Reference |
|----|---------|------------------|--------------------|-------------------------|-----------|
| 137. | *Dendroctonus pseudotsugae* barragani | North America | | | Atkinson (2018) |
| 138. | *Dendroctonus pseudotsugae* pseudotsugae | North America | | | Atkinson (2018) |
| 139. | *Dendroctonus punctatus* | North America | | | Atkinson (2018) |
| 140. | *Dendroctonus rhizophagus* | North America | | | Atkinson (2018) |
| 141. | *Dendroctonus rufipennis* | North America | | | Atkinson (2018) |
| 142. | *Dendroctonus simplex* | North America | | | Atkinson (2018) |
| 143. | *Dendroctonus terebrans* | North America | | | Atkinson (2018) |
| 144. | *Dendroctonus valens* | North America, Central America, Asia | | | Atkinson (2018) |
| 145. | *Dendroctonus vitei* | North America, Central America | | | Atkinson (2018) |
| 146. | *Dolurgus pumilus* | North America | | | Atkinson (2018) |
| 147. | *Dryocoetes affaber* | North America | | | Atkinson (2018) |
| 148. | *Dryocoetes baikalicus* | Asia, European Russia, | | | Alonso-Zarazaga et al. (2017) |
| 149. | *Dryocoetes brevipilosus* | Asia | | | Alonso-Zarazaga et al. (2017) |
| 150. | *Dryocoetes caryi* | North America | | | Atkinson (2018) |
| 151. | *Dryocoetes confusus* | North America | | | Atkinson (2018) |
| 152. | *Dryocoetes cristatus* | Asia | | | Alonso-Zarazaga et al. (2017) |
| 153. | *Dryocoetes granicollis* | North America | | | Atkinson (2018) |
| 154. | *Dryocoetes indicus* | Asia | | | Alonso-Zarazaga et al. (2017) |
| 155. | *Dryocoetes infuscatus* | Asia | | | Alonso-Zarazaga et al. (2017) |
| 156. | *Dryocoetes karamatsu* | Asia | | | Alonso-Zarazaga et al. (2017) |
| 157. | *Dryocoetes niijimai* | Asia | | | Alonso-Zarazaga et al. (2017) |
| 158. | *Dryocoetes pilosus* | Asia | | | Alonso-Zarazaga et al. (2017) |
| 159. | *Dryocoetes pini* | Asia | | | Alonso-Zarazaga et al. (2017) |
| 160. | *Dryocoetes quadrirsulcatus* | Asia | | | Alonso-Zarazaga et al. (2017) |
| 161. | *Dryocoetes rugicollis* | Asia | | | Alonso-Zarazaga et al. (2017) |
| 162. | *Dryocoetes sechelti* | North America | | | Atkinson (2018) |
| 163. | *Dryocoetes striatus* | Asia | | | Alonso-Zarazaga et al. (2017) |
| 164. | *Dryocoetes uniseriatus* | Asia | | | Alonso-Zarazaga et al. (2017) |
| 165. | *Euwallacea barbatus* | Oceania | | | Wood and Bright (1992) |
| ID  | Species                        | Presence in EU MS       | Presence outside EU     | Comments/Uncertainties | Reference               |
|-----|--------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| 166.| *Euwallacea interjectus*       | North America, Asia     |                         |                         | Atkinson (2018)          |
| 167.| *Euwallacea validus*           | North America, Asia     |                         |                         | Atkinson (2018)          |
| 168.| *Glostatus acaciae*            | Sub-Saharan Africa      |                         |                         | Wood and Bright (1992)   |
| 169.| *Gnathotrichus deleoni*        | North America           |                         |                         | Atkinson (2018)          |
| 170.| *Gnathotrichus denticulatus*   | North America           |                         |                         | Atkinson (2018)          |
| 171.| *Gnathotrichus imitans*        | North America           |                         |                         | Atkinson (2018)          |
| 172.| *Gnathotrichus nitidifrons*    | North America, Central America |                         |                         | Atkinson (2018)          |
| 173.| *Gnathotrichus omissus*        | Central America         |                         |                         | Atkinson (2018)          |
| 174.| *Gnathotrichus perniciosus*    | North America, Central America |                         |                         | Atkinson (2018)          |
| 175.| *Gnathotrichus pilosus*        | North America           |                         |                         | Atkinson (2018)          |
| 176.| *Gnathotrichus retusus*        | North America           |                         |                         | Atkinson (2018)          |
| 177.| *Gnathotrichus sulcatus*       | North America, Central America |                         |                         | Atkinson (2018)          |
| 178.| *Hylastes ambiguus*            | Asia                    |                         |                         | Alonso-Zarazaga et al. (2017) |
| 179.| *Hylastes asperatus*           | North America           |                         |                         | Atkinson (2018)          |
| 180.| *Hylastes batnensis batnensis* | Italy                   | Algeria, Morocco        | Introduced species      | Alonso-Zarazaga et al. (2017) and de Jong et al. (2014) |
| 181.| *Hylastes batnensis anatolicus*| Turkey                  |                         |                         | Alonso-Zarazaga et al. (2017) |
| 182.| *Hylastes flohri*              | North America           |                         |                         | Atkinson (2018)          |
| 183.| *Hylastes fulgidus*            | North America, Central America |                         |                         | Atkinson (2018)          |
| 184.| *Hylastes gracilis*            | North America, Central America |                         |                         | Atkinson (2018)          |
| 185.| *Hylastes longicollis*         | North America           |                         |                         | Atkinson (2018)          |
| 186.| *Hylastes lowei*               | North Africa            |                         |                         | Alonso-Zarazaga et al. (2017) |
| 187.| *Hylastes macer*               | North America           |                         |                         | Atkinson (2018)          |
| 188.| *Hylastes mexicanus*           | North America           |                         |                         | Atkinson (2018)          |
| 189.| *Hylastes niger*               | North America           |                         |                         | Atkinson (2018)          |
| 190.| *Hylastes nigricus*            | North America           |                         |                         | Atkinson (2018)          |
| 191.| *Hylastes obscurus*            | Asia                    |                         |                         | Wood and Bright (1992)   |
| 192.| *Hylastes parallelus*          | Asia                    |                         |                         | Alonso-Zarazaga et al. (2017) |
| 193.| *Hylastes porculus*            | North America           |                         |                         | Atkinson (2018)          |
| 194.| *Hylastes retifer*             | North America           |                         |                         | Atkinson (2018)          |
| 195.| *Hylastes ruber*               | North America           |                         |                         | Atkinson (2018)          |
| ID | Species                    | Presence in EU MS | Presence outside EU | Comments/ Uncertainties | Reference                  |
|----|----------------------------|-------------------|---------------------|--------------------------|----------------------------|
| 196. | *Hylastes salebrosus*     |                   | North America       |                          | Atkinson (2018)            |
| 197. | *Hylastes subopacus*      |                   | North America       |                          | Atkinson (2018)            |
| 198. | *Hylastes substratus*     |                   | Asia                |                          | Alonso-Zarazaga et al. (2017) |
| 199. | *Hylastes techangensis*   |                   | Asia                |                          | Alonso-Zarazaga et al. (2017) |
| 200. | *Hylastes tenuis*         |                   | North America, Central America |                          | Atkinson (2018)            |
| 201. | *Hyleius keslyae*         |                   | Asia                |                          | Wood and Bright (1992)     |
| 202. | *Hyleopus glabatus*       |                   | Oceania             |                          | Wood and Bright (1992)     |
| 203. | *Hylocurus beckeri*       |                   | Central America     |                          | Wood and Bright (1992)     |
| 204. | *Hylocurus rivalis*       |                   | North America       |                          | Atkinson (2018)            |
| 205. | *Hy lurductonus araucariae* |                   | Oceania             |                          | Wood and Bright (1992)     |
| 206. | *Hy lur ductonus corticinus* |                 | Oceania             |                          | Wood and Bright (1992)     |
| 207. | *Hy lur ductonus nanus*   |                   | Oceania             |                          | Wood and Bright (1992)     |
| 208. | *Hy lur ductonus pinarius* |                 | Oceania             |                          | Wood and Bright (1992)     |
| 209. | *Hy lur gonotus antipodus* | South America     |                     |                          | Atkinson (2018)            |
| 210. | *Hy lur gonotus armaticeps* | South America     |                     |                          | Atkinson (2018)            |
| 211. | *Hy lur gonotus solidus*  | South America     |                     |                          | Atkinson (2018)            |
| 212. | *Hy lur gonotus tuberculatus* | South America     |                     |                          | Atkinson (2018)            |
| 213. | *Hy lur gops bonvouloiri* | North Africa      |                     |                          | Alonso-Zarazaga et al. (2017) |
| 214. | *Hy lur gops eusulcatus*  | Asia              |                     |                          | Alonso-Zarazaga et al. (2017) |
| 215. | *Hy lur gops incomptus*   | North America, Central America |                     |                          | Atkinson (2018)            |
| 216. | *Hy lur gops inouyei*     | Asia              |                     |                          | Alonso-Zarazaga et al. (2017) |
| 217. | *Hy lur gops interstitialis* | Asia            |                     |                          | Alonso-Zarazaga et al. (2017) |
| 218. | *Hy lur gops junnanicus*  | Asia              |                     |                          | Alonso-Zarazaga et al. (2017) |
| 219. | *Hy lur gops knausi*      | North America     |                     |                          | Atkinson (2018)            |
| 220. | *Hy lur gops longipilus*  | Asia              |                     |                          | Alonso-Zarazaga et al. (2017) |
| 221. | *Hy lur gops major*       | Asia              |                     |                          | Alonso-Zarazaga et al. (2017) |
| 222. | *Hy lur gops pinitex*     | North America     |                     |                          | Atkinson (2018)            |
| 223. | *Hy lur gops planirostris* | North America, Central America |         |                          | Atkinson (2018)            |
| 224. | *Hy lur gops porosus*     | North America     |                     |                          | Atkinson (2018)            |
| 225. | *Hy lur gops reticulatus* | North America     |                     |                          | Atkinson (2018)            |
| 226. | *Hy lur gops rugipennis*  | North America     |                     |                          | Atkinson (2018)            |
| ID | Species | Presence in EU MS | Presence outside EU | Comments/ Uncertainties | Reference |
|----|---------|-------------------|---------------------|-------------------------|-----------|
| 227. | *Hylurgops spessiwzeffi* | Asia | | | Alonso-Zarazaga et al. (2017); |
| 228. | *Hylurgops sulcatus* | Asia | | | Alonso-Zarazaga et al. (2017) |
| 229. | *Hylurgops tuberculatus* | Asia | | | Alonso-Zarazaga et al. (2017) |
| 230. | *Hylurgus indicus* | Asia | | | Alonso-Zarazaga et al. (2017) |
| 231. | *Hypocryphalus caplandicus* | Sub-Saharan Africa | | | Wood and Bright (1992) |
| 232. | *Hypothemenemus crudaiae* | North America, Central America, South America, Sub-Saharan Africa | | | Wood (2007) |
| 233. | *Hypothemenemus interstitialis* | North America, Central America, South America | | | Atkinson (2018) and Wood and Bright (1992) |
| 234. | *Hypothemenemus seriatus* | North America, Central America, South America, Asia, North Africa, Sub-Saharan Africa, Oceania | | | Atkinson (2018) |
| 235. | *Indocryphalus intermedius* | North America, Asia | | | Alonso-Zarazaga et al. (2017) |
| 236. | *Ips apache* | North America, Central America | | | Atkinson (2018) |
| 237. | *Ips avulsus* | North America, Central America | | | Atkinson (2018) |
| 238. | *Ips bonanseai* | North America, Central America | | | Atkinson (2018) |
| 239. | *Ips borealis borealis* | North America | | | Atkinson (2018) |
| 240. | *Ips borealis lanieri* | North America | | | Atkinson (2018) |
| 241. | *Ips borealis swainei* | North America | | | Atkinson (2018) |
| 242. | *Ips borealis thomasi* | North America | | | Atkinson (2018) |
| 243. | *Ips calligraphus* | North America, Central America | | | Atkinson (2018) |
| 244. | *Ips chinensis* | Asia | | | Alonso-Zarazaga et al. (2017) |
| 245. | *Ips confusus* | North America | | | Atkinson (2018) |
| 246. | *Ips cribricollis* | North America, Central America | | | Atkinson (2018) |
| 247. | *Ips emarginatus* | North America | | | Atkinson (2018) |
| 248. | *Ips grandicollis* | North America, Central America | | | Atkinson (2018) |
| 249. | *Ips hauseri* | Asia | | | Alonso-Zarazaga et al. (2017) |
| 250. | *Ips hoppingi* | North America | | | Atkinson (2018) |
| 251. | *Ips hunteri* | North America | | | Atkinson (2018) |
| 252. | *Ips integer* | North America, Central America | | | Atkinson (2018) |
| 253. | *Ips knausi* | North America | | | Atkinson (2018) |
| 254. | *Ips lecontei* | North America, Central America | | | Atkinson (2018) |
## List of non-EU Scolytinae of coniferous hosts

| ID  | Species                        | Presence in EU MS | Presence outside EU | Comments/ Uncertainties                        | Reference                        |
|-----|--------------------------------|-------------------|---------------------|-----------------------------------------------|----------------------------------|
| 255.| *Ips longifolia*              | Asia              | Asia                |                                               | Alonso-Zarazaga et al. (2017)    |
| 256.| *Ips montanus*                | North America     |                     |                                               | Atkinson (2018)                  |
| 257.| *Ips nitidus*                 | Asia              |                     |                                               | Alonso-Zarazaga et al. (2017)    |
| 258.| *Ips paraconfusus*            | North America     |                     |                                               | Atkinson (2018)                  |
| 259.| *Ips perroti*                 | North America     |                     |                                               | Atkinson (2018)                  |
| 260.| *Ips perturbatus*             | North America     |                     |                                               | Atkinson (2018)                  |
| 261.| *Ips pilifrons pilifrons*     | North America     |                     |                                               | Atkinson (2018)                  |
| 262.| *Ips pilifrons sulicfrons*    | North America     |                     |                                               | Atkinson (2018)                  |
| 263.| *Ips pilifrons thatcheri*     | North America     |                     |                                               | Atkinson (2018)                  |
| 264.| *Ips pilifrons utahensis*     | North America     |                     |                                               | Atkinson (2018)                  |
| 265.| *Ips pini*                    | North America     |                     |                                               | Atkinson (2018)                  |
| 266.| *Ips plastographus maritimus*| North America     |                     |                                               | Atkinson (2018)                  |
| 267.| *Ips plastographus plastographus* | North America     |                     |                                               | Atkinson (2018)                  |
| 268.| *Ips schmutzenhoferi*         | Asia              |                     |                                               | Alonso-Zarazaga et al. (2017)    |
| 269.| *Ips shangrila*               | Asia              |                     |                                               | Alonso-Zarazaga et al. (2017)    |
| 270.| *Ips stebbingi*               | Asia              |                     |                                               | Alonso-Zarazaga et al. (2017)    |
| 271.| *Ips subelongatus*            | Asia, European Russia, | Introduced into European Russia from Asia | Alonso-Zarazaga et al. (2017) |
| 272.| *Ips tridens engelmanni*      | North America     |                     |                                               | Atkinson (2018)                  |
| 273.| *Ips tridens tridens*         | North America     |                     |                                               | Atkinson (2018)                  |
| 274.| *Ips woodi*                   | North America     |                     |                                               | Atkinson (2018)                  |
| 275.| *Lanurgus oleaeformis*        | Sub-Saharan Africa|                     |                                               | Wood and Bright (1992)       |
| 276.| *Lanurgus podocarpi*          | Sub-Saharan Africa|                     |                                               | Wood and Bright (1992)       |
| 277.| *Lanurgus spathulatus*        | Sub-Saharan Africa|                     |                                               | Wood and Bright (1992)       |
| 278.| *Laranurgus widdringtoniae*   | Sub-Saharan Africa|                     |                                               | Wood and Bright (1992)       |
| 279.| *Liparthrum longifolia*       | Asia              |                     |                                               | Alonso-Zarazaga et al. (2017)    |
| 280.| *Microperus eucalypticus*     | Oceania           |                     |                                               | Bright (2014)                   |
| 281.| *Microperus intermedius*      | Oceania           |                     |                                               | Bright (2014)                   |
| 282.| *Monarthrum nevermanni*       | Central America   |                     |                                               | Atkinson (2018)                  |
| 283.| *Orthotomicus angulatus*      | Asia, Oceania     |                     |                                               | Alonso-Zarazaga et al. (2017)    |
| ID  | Species                  | Presence in EU MS                      | Presence outside EU                        | Comments/Uncertainties | Reference                                      |
|-----|--------------------------|----------------------------------------|--------------------------------------------|-------------------------|------------------------------------------------|
| 284 | Orthotomicus caelatus    | North America, Central America          |                                            |                         | Atkinson (2018)                                  |
| 285 | Orthotomicus chaokhao    | Asia                                    |                                            |                         | Bright (2014)                                   |
| 286 | Orthotomicus golovjankoi | Asia                                    |                                            |                         | Alonso-Zarazaga et al. (2017)                   |
| 287 | Orthotomicus kuniyoshii  | Asia                                    |                                            |                         | Alonso-Zarazaga et al. (2017)                   |
| 288 | Orthotomicus latidens    | North America                          |                                            |                         | Atkinson (2018)                                  |
| 289 | Orthotomicus multidentatus| Asia                                   |                                            |                         | Alonso-Zarazaga et al. (2017)                   |
| 290 | Orthotomicus nankinensis | Asia                                    |                                            |                         | Alonso-Zarazaga et al. (2017)                   |
| 291 | Orthotomicus nankinensis | North Africa                           |                                            |                         | Alonso-Zarazaga et al. (2017)                   |
| 292 | Orthotomicus pinivorus   | Asia                                    |                                            |                         | Alonso-Zarazaga et al. (2017)                   |
| 293 | Orthotomicus spiniger    | North America                          |                                            |                         | Atkinson (2018)                                  |
| 294 | Orthotomicus tosaensis   | Asia                                    |                                            |                         | Alonso-Zarazaga et al. (2017)                   |
| 295 | Orthotomicus tridentatus | Austria, Turkey                         |                                            |                         | Alonso-Zarazaga et al. (2017) and de Jong et al. (2014) |
| 296 | Pachycotes araucariae    | Oceania                                 |                                            |                         | Wood and Bright (1992)                          |
| 297 | Pachycotes australis     | Oceania                                 |                                            |                         | Wood and Bright (1992)                          |
| 298 | Pachycotes clavatus      | Oceania                                 |                                            |                         | Wood and Bright (1992)                          |
| 299 | Pachycotes englesi       | Oceania                                 |                                            |                         | Bright (2014)                                   |
| 300 | Pachycotes grandis       | Oceania                                 |                                            |                         | Bright (2014)                                   |
| 301 | Pachycotes kuscheli      | Oceania                                 |                                            |                         | Wood and Bright (1992)                          |
| 302 | Pachycotes minor         | Oceania                                 |                                            |                         | Wood and Bright (1992)                          |
| 303 | Pachycotes peregrinus    | Oceania                                 |                                            |                         | Wood and Bright (1992)                          |
| 304 | Pachycotes villosus      | Oceania                                 |                                            |                         | Wood and Bright (1992)                          |
| 305 | Pachysquamus subcostulatus| North America                          |                                            |                         | Mercado-Velez and Negron (2014)                  |
| 306 | Pagiocerus punctatus     | South America                           |                                            |                         | Atkinson (2018)                                  |
| 307 | Phloeosinus abietis      | Asia                                    |                                            |                         | Alonso-Zarazaga et al. (2017)                   |
| 308 | Phloeosinus acatayi      | Asia                                    |                                            |                         | Alonso-Zarazaga et al. (2017)                   |
| 309 | Phloeosinus antennatus   | North America                           |                                            |                         | Atkinson (2018)                                  |
| 310 | Phloeosinus arisanus     | Asia                                    |                                            |                         | Alonso-Zarazaga et al. (2017)                   |
| 311 | Phloeosinus arizonicus   | North America                           |                                            |                         | Atkinson (2018)                                  |
| 312 | Phloeosinus armatus      | Greece, Italy, Cyprus                   | Turkey, Libya, Iran, Israel, Jordan, Lebanon, Syria |                         | Alonso-Zarazaga et al. (2017), de Jong et al. (2014) and Pennachio et al. (2013) |
| ID | Species                          | Presence in EU MS          | Presence outside EU          | Comments/Uncertainties                           | Reference                      |
|----|---------------------------------|-----------------------------|------------------------------|------------------------------------------------|--------------------------------|
| 313 | Phloeosinus baumanni           | North America, Central America |                             |                                                 | Atkinson (2018)                |
| 314 | Phloeosinus canadensis         | North America               |                              |                                                 | Atkinson (2018)                |
| 315 | Phloeosinus cedri              | Spain                       | Turkey, Algeria, Morocco, India | Introduced species                              | Alonso-Zarazaga et al. (2017) and de Jong et al. (2014) |
| 316 | Phloeosinus cristatus           | North America               |                              |                                                 | Atkinson (2018)                |
| 317 | Phloeosinus cupressi           | North America, Central America |                             |                                                 | Atkinson (2018)                |
| 318 | Phloeosinus deleoni            | North America               |                              |                                                 | Atkinson (2018)                |
| 319 | Phloeosinus dentatus           | North America               |                              |                                                 | Atkinson (2018)                |
| 320 | Phloeosinus frontalis          | North America               |                              |                                                 | Atkinson (2018)                |
| 321 | Phloeosinus fulgens            | North America               |                              |                                                 | Wood and Bright (1992)         |
| 322 | Phloeosinus furnissi           | North America               |                              |                                                 | Atkinson (2018)                |
| 323 | Phloeosinus gifuentes           | Asia                        |                              |                                                 | Alonso-Zarazaga et al. (2017)  |
| 324 | Phloeosinus gillerforsii       | Azores (Portugal)           | Canary Islands$^{(a)}$       |                                                 | Alonso-Zarazaga et al. (2017) and de Jong et al. (2014) |
| 325 | Phloeosinus hoferi             | North America, Asia         |                              |                                                 | Atkinson (2018)                |
| 326 | Phloeosinus hopehi             | Asia                        |                              |                                                 | Wood and Bright (1992)         |
| 327 | Phloeosinus hoppingi           | North America               |                              |                                                 | Atkinson (2018)                |
| 328 | Phloeosinus jubatus            | Asia                        |                              |                                                 | Alonso-Zarazaga et al. (2017)  |
| 329 | Phloeosinus keeni              | North America               |                              |                                                 | Alonso-Zarazaga et al. (2017)  |
| 330 | Phloeosinus kinabaluensis      | Asia                        |                              |                                                 | Alonso-Zarazaga et al. (2017)  |
| 331 | Phloeosinus lewisi             | Asia                        |                              |                                                 | Alonso-Zarazaga et al. (2017)  |
| 332 | Phloeosinus osumiensis         | Asia                        |                              |                                                 | Alonso-Zarazaga et al. (2017)  |
| 333 | Phloeosinus palaearis          | North America               |                              |                                                 | Alonso-Zarazaga et al. (2017)  |
| 334 | Phloeosinus perlatus           | Asia                        |                              |                                                 | Alonso-Zarazaga et al. (2017)  |
| 335 | Phloeosinus pertuberculatus    | Asia                        |                              |                                                 | Alonso-Zarazaga et al. (2017)  |
| 336 | Phloeosinus phyllocladus       | Asia                        |                              |                                                 | Alonso-Zarazaga et al. (2017)  |
| 337 | Phloeosinus pini               | North America               |                              |                                                 | Atkinson (2018)                |
| 338 | Phloeosinus podocarpi          | Asia                        |                              |                                                 | Wood and Bright (1992)         |
| 339 | Phloeosinus punctatus          | North America               |                              |                                                 | Atkinson (2018)                |
| 340 | Phloeosinus sannohensis        | Asia                        |                              |                                                 | Alonso-Zarazaga et al. (2017)  |
| 341 | Phloeosinus scopolorum neomexicanus | North America               |                              |                                                 | Atkinson (2018)                |
### List of non-EU Scolytinae of coniferous hosts

| ID  | Species                        | Presence in EU MS | Presence outside EU               | Comments/ Uncertainties          | Reference                          |
|-----|--------------------------------|-------------------|-----------------------------------|---------------------------------|------------------------------------|
| 342 | *Phloeosinus scopulorum scopulorum* |                   | North America                     |                                 | Atkinson (2018)                    |
| 343 | *Phloeosinus sequoiae*          |                   | North America                     |                                 | Atkinson (2018)                    |
| 344 | *Phloeosinus seriatus*          |                   | Asia                              |                                 | Wood and Bright (1992)             |
| 345 | *Phloeosinus serratus*          |                   | North America, Central America    |                                 | Atkinson (2018)                    |
| 346 | *Phloeosinus setosus*           |                   | North America                     |                                 | Atkinson (2018)                    |
| 347 | *Phloeosinus shensi*            |                   | Asia                              |                                 | Alonso-Zarazaga et al. (2017)      |
| 348 | *Phloeosinus sinensis*          |                   | Asia                              |                                 | Bright and Skidmore (2002)         |
| 349 | *Phloeosinus spinosus*          |                   | North America                     |                                 | Atkinson (2018)                    |
| 350 | *Phloeosinus swainei*           |                   | North America                     |                                 | Atkinson (2018)                    |
| 351 | *Phloeosinus tacubayae*         |                   | North America, Central America    |                                 | Atkinson (2018)                    |
| 352 | *Phloeosinus taxodii*           |                   | North America                     |                                 | Atkinson (2018)                    |
| 353 | *Phloeosinus turkestanicus*     |                   | Asia                              |                                 | Alonso-Zarazaga et al. (2017)      |
| 354 | *Phloeosinus variolatus*        |                   | North America                     |                                 | Atkinson (2018)                    |
| 355 | *Phloeotribus argentensis*      |                   | South America                     |                                 | Atkinson (2018)                    |
| 356 | *Phloeotribus atavus*           |                   | Central America                   |                                 | Atkinson (2018)                    |
| 357 | *Phloeotribus cylindricus*      |                   | South America                     |                                 | Atkinson (2018)                    |
| 358 | *Phloeotribus lecontei*         |                   | North America                     |                                 | Atkinson (2018)                    |
| 359 | *Phloeotribus piceae*           |                   | North America                     |                                 | Wood and Bright (1992)             |
| 360 | *Pityoborus comatus*            |                   | North America, Central America    |                                 | Atkinson (2018)                    |
| 361 | *Pityoborus frontalis*          |                   | North America                     |                                 | Atkinson (2018)                    |
| 362 | *Pityoborus hirtellus*          |                   | North America                     |                                 | Atkinson (2018)                    |
| 363 | *Pityoborus hondurensis*        |                   | Central America                   |                                 | Atkinson (2018)                    |
| 364 | *Pityoborus rubentis*           |                   | North America                     |                                 | Atkinson (2018)                    |
| 365 | *Pityoborus secundus*           |                   | North America                     |                                 | Atkinson (2018)                    |
| 366 | *Pityoborus velutinus*          |                   | North America                     |                                 | Atkinson (2018)                    |
| 367 | *Pityogenes carinulatus*        |                   | North America                     |                                 | Atkinson (2018)                    |
| 368 | *Pityogenes fossifrons*         |                   | North America                     |                                 | Atkinson (2018)                    |
| 369 | *Pityogenes foveolatus*         |                   | Asia                              |                                 | Alonso-Zarazaga et al. (2017)      |
| 370 | *Pityogenes hopkinsi*           |                   | North America                     |                                 | Atkinson (2018)                    |
| 371 | *Pityogenes japonicus*          |                   | Asia                              |                                 | Alonso-Zarazaga et al. (2017)      |
| ID  | Species                  | Presence in EU MS | Presence outside EU       | Comments/ Uncertainties                                                                 | Reference                  |
|-----|--------------------------|-------------------|---------------------------|----------------------------------------------------------------------------------------|-----------------------------|
| 372 | Pityogenes knechteli     |                   | North America             | Atkinson (2018)                                                                         |
| 373 | Pityogenes meridianus    |                   | North America             | Atkinson (2018)                                                                         |
| 374 | Pityogenes mexicanus     |                   | North America             | Atkinson (2018)                                                                         |
| 375 | Pityogenes pennidens     | Greece, Cyprus    | Russia, Israel, Syria     | Alonso-Zarazaga et al. (2017) and de Jong et al. (2014)                                |
| 376 | Pityogenes plagiatus     |                   | North America             | Atkinson (2018)                                                                         |
| 377 | Pityogenes rudnevi       |                   | Asia                      | Alonso-Zarazaga et al. (2017)                                                          |
| 378 | Pityogenes scitus        |                   | Asia                      | Alonso-Zarazaga et al. (2017)                                                          |
| 379 | Pityogenes seirindensis  |                   | Asia                      | Alonso-Zarazaga et al. (2017)                                                          |
| 380 | Pityogenes spessivtsevi  |                   | Asia                      | Alonso-Zarazaga et al. (2017)                                                          |
| 381 | Pityokteines elegans     |                   | North America             | Atkinson (2018)                                                                         |
| 382 | Pityokteines lasiocarpi  |                   | North America             | Atkinson (2018)                                                                         |
| 383 | Pityokteines marketae    |                   | Asia                      | Alonso-Zarazaga et al. (2017)                                                          |
| 384 | Pityokteines minutus     |                   | North America             | Atkinson, 2018;                                                                         |
| 385 | Pityokteines mystacinus  |                   | North America             | Atkinson (2018)                                                                         |
| 386 | Pityokteines ornatus     |                   | North America             | Atkinson (2018)                                                                         |
| 387 | Pityokteines sparsus     |                   | North America             | Atkinson (2018)                                                                         |
| 388 | Pityophthorus abiegnus   |                   | North America             | Atkinson (2018)                                                                         |
| 389 | Pityophthorus abietinus  |                   | Asia                      | Alonso-Zarazaga et al. (2017)                                                          |
| 390 | Pityophthorus absonus    |                   | North America             | Atkinson (2018)                                                                         |
| 391 | Pityophthorus abstrusus  |                   | North America             | Atkinson (2018)                                                                         |
| 392 | Pityophthorus aciculatus |                   | North America, Central America | Atkinson (2018)                                                                       |
| 393 | Pityophthorus acuminatus |                   | North America, Central America | Atkinson (2018)                                                                       |
| 394 | Pityophthorus acutus     |                   | North America             | Atkinson (2018)                                                                         |
| 395 | Pityophthorus alpinensis |                   | North America             | Atkinson (2018)                                                                         |
| 396 | Pityophthorus amoenus    |                   | Central America           | Atkinson (2018)                                                                         |
| 397 | Pityophthorus amplus     |                   | North America             | Atkinson (2018)                                                                         |
| 398 | Pityophthorus angustus   |                   | North America             | Atkinson (2018)                                                                         |
| 399 | Pityophthorus annectens  |                   | North America, Central America | Atkinson (2018)                                                                       |
| 400 | Pityophthorus anthracinus|                   | North America             | Atkinson (2018)                                                                         |
| 401 | Pityophthorus anticus    |                   | South America             | Atkinson (2018)                                                                         |
| ID  | Species                    | Presence in EU MS        | Presence outside EU | Comments/Uncertainties | Reference                  |
|-----|----------------------------|--------------------------|---------------------|-------------------------|----------------------------|
| 402 | *Pityophthorus apachae*    |                          | North America       |                         | Atkinson (2018)            |
| 403 | *Pityophthorus aquilus*    |                          | North America       |                         | Atkinson (2018)            |
| 404 | *Pityophthorus arakii*     |                          | Asia                |                         | Alonso-Zarazaga et al. (2017) |
| 405 | *Pityophthorus arcanus*    |                          | North America       |                         | Atkinson (2018)            |
| 406 | *Pityophthorus aztepus*    |                          | North America       |                         | Atkinson (2018)            |
| 407 | *Pityophthorus balsames*   |                          | North America       |                         | Atkinson (2018)            |
| 408 | *Pityophthorus barberi*    |                          | North America       |                         | Atkinson (2018)            |
| 409 | *Pityophthorus bassetti*   |                          | North America       |                         | Atkinson (2018)            |
| 410 | *Pityophthorus biovalis*   |                          | North America       |                         | Atkinson (2018)            |
| 411 | *Pityophthorus blackmani*  |                          | Central America     |                         | Atkinson (2018)            |
| 412 | *Pityophthorus blandulus*  |                          | North America, Central America |       | Atkinson (2018) |
| 413 | *Pityophthorus blandus*    |                          | North America       |                         | Atkinson (2018)            |
| 414 | *Pityophthorus boycei*     |                          | North America       |                         | Atkinson (2018)            |
| 415 | *Pityophthorus bravoi*     |                          | North America       |                         | Atkinson (2018)            |
| 416 | *Pityophthorus brevicomatus* |                      | North America       |                         | Atkinson (2018)            |
| 417 | *Pityophthorus brevis*     |                          | North America       |                         | Atkinson (2018)            |
| 418 | *Pityophthorus brighti*    |                          | North America       |                         | Atkinson (2018)            |
| 419 | *Pityophthorus briscoei*   |                          | North America       |                         | Atkinson (2018)            |
| 420 | *Pityophthorus cacuminatus*|                          | North America, Central America | Atkinson (2018) |            |
| 421 | *Pityophthorus californic*  |                          | North America       |                         | Atkinson (2018)            |
| 422 | *Pityophthorus carinatus*  |                          | North America       |                         | Atkinson (2018)            |
|     | *Pityophthorus carinatus*  |                          | North America       |                         | Atkinson (2018)            |
| 423 | *Pityophthorus carinatus*  | *Pityophthorus carinatus* | North America       |                         | Atkinson (2018)            |
|     | monticolae                 | monticolae               | monticolae          |                         | Atkinson (2018)            |
| 424 | *Pityophthorus cariniceps* |                          | North America       |                         | Atkinson (2018)            |
| 425 | *Pityophthorus carinulatus*|                          | North America       |                         | Atkinson (2018)            |
| 426 | *Pityophthorus carmei*     |                          | North America       |                         | Atkinson (2018)            |
| 427 | *Pityophthorus cascoensis* |                          | North America       |                         | Atkinson (2018)            |
| 428 | *Pityophthorus cavatus*    |                          | North America       |                         | Atkinson (2018)            |
| 429 | *Pityophthorus cedri*      |                          | Asia                |                         | Alonso-Zarazaga et al. (2017) |
| 430 | *Pityophthorus chalcoensis*|                          | North America       |                         | Atkinson (2018)            |
| ID  | Species                  | Presence in EU MS | Presence outside EU | Comments/ Uncertainties | Reference                |
|-----|--------------------------|-------------------|---------------------|-------------------------|--------------------------|
| 431 | *Pityophthorus chilgoza* | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 432 | *Pityophthorus ciliatus* | North America     |                     |                         | Atkinson (2018)           |
| 433 | *Pityophthorus clarius*  | North America     |                     |                         | Atkinson (2018)           |
| 434 | *Pityophthorus clivus*   | North America     |                     |                         | Atkinson (2018)           |
| 435 | *Pityophthorus conosus*  | North America     |                     |                         | Atkinson (2018)           |
| 436 | *Pityophthorus concavus* | North America     |                     |                         | Atkinson (2018)           |
| 437 | *Pityophthorus confertus*| North America     |                     |                         | Atkinson (2018)           |
| 438 | *Pityophthorus confinis* | North America     |                     |                         | Atkinson (2018)           |
| 439 | *Pityophthorus confusus* | North America, Central America | | | Atkinson (2018) |
| 440 | *Pityophthorus consimilis* | North America     |                     |                         | Atkinson (2018)           |
| 441 | *Pityophthorus cortezi*  | North America     |                     |                         | Atkinson (2018)           |
| 442 | *Pityophthorus crassus*  | North America     |                     |                         | Atkinson (2018)           |
| 443 | *Pityophthorus cristatus*| North America     |                     |                         | Atkinson (2018)           |
| 444 | *Pityophthorus culminicola* | North America     |                     |                         | Atkinson (2018)           |
| 445 | *Pityophthorus cuspidatus* | North America     |                     |                         | Atkinson (2018)           |
| 446 | *Pityophthorus declivisetosus* | North America  |                     |                         | Atkinson (2018)           |
| 447 | *Pityophthorus deleoni*  | North America     |                     |                         | Atkinson (2018)           |
| 448 | *Pityophthorus deletus*  | North America     |                     |                         | Atkinson (2018)           |
| 449 | *Pityophthorus delicatus*| North America     | Central America     |                         | Atkinson (2018)           |
| 450 | *Pityophthorus dentifrons* | North America     |                     |                         | Atkinson (2018)           |
| 451 | *Pityophthorus deodara*  | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 452 | *Pityophthorus digestus* | North America     |                     |                         | Atkinson (2018)           |
| 453 | *Pityophthorus diglyphus* | North America, Central America | | | Atkinson (2018) |
| 454 | *Pityophthorus discreetus* | North America     |                     |                         | Atkinson (2018)           |
| 455 | *Pityophthorus dispar*   | North America     |                     |                         | Atkinson (2018)           |
| 456 | *Pityophthorus dolus*    | North America     |                     |                         | Atkinson (2018)           |
| 457 | *Pityophthorus durus*    | North America     |                     |                         | Atkinson (2018)           |
| 458 | *Pityophthorus elatinus* | North America     |                     |                         | Atkinson (2018)           |
| 459 | *Pityophthorus electus*  | North America     |                     |                         | Atkinson (2018)           |
| 460 | *Pityophthorus euterpes* | North America     |                     |                         | Atkinson (2018)           |
| 461 | *Pityophthorus festus*   | North America, Central America | | | Atkinson (2018) |
| ID | Species                     | Presence in EU MS | Presence outside EU                                      | Comments/ Uncertainties                                                                 | Reference                  |
|----|-----------------------------|-------------------|---------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------|
| 462 | Pityophthorus flavimaculatus | Asia              |                                                          |                                                                                        | Alonso-Zarazaga et al. (2017) |
| 463 | Pityophthorus furnissi      | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 464 | Pityophthorus fuscus        | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 465 | Pityophthorus glabratulus   | North America, Central America |                                                          |                                                                                        | Atkinson (2018)              |
| 466 | Pityophthorus grandis       | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 467 | Pityophthorus immanis       | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 468 | Pityophthorus impexus       | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 469 | Pityophthorus indigus       | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 470 | Pityophthorus ineditus      | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 471 | Pityophthorus infulatus     | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 472 | Pityophthorus ingens        | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 473 | Pityophthorus intentus      | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 474 | Pityophthorus intextus      | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 475 | Pityophthorus jeffreyi      | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 476 | Pityophthorus jucundus      | Asia              |                                                          |                                                                                        | Alonso-Zarazaga et al. (2017) |
| 477 | Pityophthorus keeni         | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 478 | Pityophthorus kirgisicus    | Asia              |                                                          |                                                                                        | Alonso-Zarazaga et al. (2017) |
| 479 | Pityophthorus lapponicus    | Asia, Asian Russia|                                                          | NPPO of Finland confirmed that the species does not occur in Finland                  | Alonso-Zarazaga et al. (2017) |
| 480 | Pityophthorus laticeps      | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 481 | Pityophthorus laetus        | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 482 | Pityophthorus lecontei      | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 483 | Pityophthorus leechi        | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 484 | Pityophthorus leioptiphylae | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 485 | Pityophthorus lepidus       | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 486 | Pityophthorus levis         | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 487 | Pityophthorus litois        | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| 488 | Pityophthorus malleatus     | North America     |                                                          |                                                                                        | Atkinson (2018)              |
| ID | Species                                | Presence in EU MS | Presence outside EU | Comments/Uncertainties | Reference                                      |
|----|----------------------------------------|-------------------|---------------------|-------------------------|------------------------------------------------|
| 489| *Pityophthorus mauretanicus*            | France            | Algeria, Egypt, Libya, Morocco, Tunisia | FR NPPO: species from North Africa, mistakenly cited from France in the Catalogue of Palaearctic Coleoptera. Alonso-Zarazaga et al. (2017) and de Jong et al. (2014) |
| 490| *Pityophthorus megas*                   |                   | North America       |                         | Atkinson (2018)                                 |
| 491| *Pityophthorus mesembria*               |                   | Central America     |                         | Atkinson (2018)                                 |
| 492| *Pityophthorus micans*                  |                   | North America       |                         | Atkinson (2018)                                 |
| 493| *Pityophthorus micrographus sibiricus*  |                   | Asia                |                         | Alonso-Zarazaga et al. (2017)                   |
| 494| *Pityophthorus miniatus*                |                   | North America, Central America |                         | Atkinson (2018)                                 |
| 495| *Pityophthorus modicus*                 |                   | North America       |                         | Atkinson (2018)                                 |
| 496| *Pityophthorus montezumae*              |                   | North America       |                         | Atkinson (2018)                                 |
| 497| *Pityophthorus montivagus*              |                   | North America       |                         | Atkinson (2018)                                 |
| 498| *Pityophthorus mormon*                  |                   | North America       |                         | Atkinson (2018)                                 |
| 499| *Pityophthorus murrayanae*              |                   | North America       |                         | Atkinson (2018)                                 |
| 500| *Pityophthorus nigricans*               |                   | North America, Central America |                         | Atkinson (2018)                                 |
| 501| *Pityophthorus ntitidulus*              |                   | North America       |                         | Atkinson (2018)                                 |
| 502| *Pityophthorus ntitidus*                |                   | North America       |                         | Atkinson (2018)                                 |
| 503| *Pityophthorus nocturnus*               |                   | North America, Central America |                         | Atkinson (2018)                                 |
| 504| *Pityophthorus obtusipennis*            |                   | North America, Central America |                         | Atkinson (2018)                                 |
| 505| *Pityophthorus occidentalis*            |                   | North America       |                         | Atkinson (2018)                                 |
| 506| *Pityophthorus occlusus*                |                   | North America, Central America |                         | Atkinson (2018)                                 |
| 507| *Pityophthorus opaculus*                |                   | North America       |                         | Atkinson (2018)                                 |
| 508| *Pityophthorus orarius*                 |                   | North America       |                         | Atkinson (2018)                                 |
| 509| *Pityophthorus oratus*                  |                   | North America       |                         | Atkinson (2018)                                 |
| 510| *Pityophthorus parfentievi*             |                   | Asia                |                         | Alonso-Zarazaga et al. (2017)                   |
| 511| *Pityophthorus pellitus*                |                   | North America, Central America |                         | Atkinson (2018)                                 |
| 512| *Pityophthorus perotei*                 |                   | North America       |                         | Atkinson (2018)                                 |
| 513| *Pityophthorus pinavorus*               |                   | North America, Central America |                         | Atkinson (2018)                                 |
| 514| *Pityophthorus pinguis*                 |                   | North America       |                         | Atkinson (2018)                                 |
| 515| *Pityophthorus pini*                    |                   | Asia                |                         | Alonso-Zarazaga et al. (2017)                   |
| ID  | Species                                      | Presence in EU MS | Presence outside EU | Comments/Uncertainties | Reference                     |
|-----|----------------------------------------------|-------------------|---------------------|-------------------------|-------------------------------|
| 516.| *Pityophthorus pityographus cribatus*        | Greece            | Russia, Turkey      |                         | Alonso-Zarazaga et al. (2017) and de Jong et al. (2014) |
| 517.| *Pityophthorus podocarpi*                    | South America     |                     |                         | Atkinson (2018)               |
| 518.| *Pityophthorus pseudotsugae*                 | North America     |                     |                         | Atkinson (2018)               |
| 519.| *Pityophthorus puberulus*                    | North America     |                     |                         | Atkinson (2018)               |
| 520.| *Pityophthorus pubifrons*                    | North America     |                     |                         | Atkinson (2018)               |
| 521.| *Pityophthorus pulchellus*                   | North America     |                     |                         | Atkinson (2018)               |
| 522.| *Pityophthorus pulciarius*                   | North America, Central America |                     |                         | Atkinson (2018)               |
| 523.| *Pityophthorus pullus*                       | North America     |                     |                         | Atkinson (2018)               |
| 524.| *Pityophthorus punctifrons*                  | North America     |                     |                         | Atkinson (2018)               |
| 525.| *Pityophthorus ramiperda*                    | North America     |                     |                         | Atkinson (2018)               |
| 526.| *Pityophthorus recens*                       | North America     |                     |                         | Atkinson (2018)               |
| 527.| *Pityophthorus rubidus*                      | North America     |                     |                         | Atkinson (2018)               |
| 528.| *Pityophthorus rudis*                        | North America     |                     |                         | Atkinson (2018)               |
| 529.| *Pityophthorus sachalinensis*                | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 530.| *Pityophthorus sapineus*                     | North America     |                     |                         | Atkinson (2018)               |
| 531.| *Pityophthorus scabridus*                    | North America, Central America |                   |                         | Atkinson (2018)               |
| 532.| *Pityophthorus scaptaor*                     | North America     |                     |                         | Atkinson (2018)               |
| 533.| *Pityophthorus scaptaor*                     | North America     |                     |                         | Atkinson (2018)               |
| 534.| *Pityophthorus schwarzi*                     | North America     |                     |                         | Atkinson (2018)               |
| 535.| *Pityophthorus schwerdtfegeri*               | North America, Central America |                   |                         | Atkinson (2018)               |
| 536.| *Pityophthorus segnis*                       | North America     |                     |                         | Atkinson (2018)               |
| 537.| *Pityophthorus seiryuensis*                  | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 538.| *Pityophthorus serratus*                     | North America     |                     |                         | Atkinson (2018)               |
| 539.| *Pityophthorus setosus*                      | North America     |                     |                         | Atkinson (2018)               |
| 540.| *Pityophthorus sichotensis*                  | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 541.| *Pityophthorus sierrensis*                   | North America     |                     |                         | Atkinson (2018)               |
| 542.| *Pityophthorus solatus*                      | North America     |                     |                         | Atkinson (2018)               |
| 543.| *Pityophthorus solers*                       | North America     |                     |                         | Atkinson (2018)               |
| 544.| *Pityophthorus solus*                        | Spain             | North America       | Introduced species       | Alonso-Zarazaga et al. (2017) |
| 545.| *Pityophthorus spadix*                       | North America     |                     |                         | Atkinson (2018)               |
| ID | Species               | Presence in EU MS | Presence outside EU | Comments/Uncertainties | Reference               |
|----|-----------------------|-------------------|---------------------|-------------------------|-------------------------|
| 546 | Pityophthorus speculum |                   | North America       |                         | Atkinson (2018)         |
| 547 | Pityophthorus subopacus |                 | North America       |                         | Atkinson (2018)         |
| 548 | Pityophthorus subsimilis |                 | North America, Central America |                         | Atkinson (2018)         |
| 549 | Pityophthorus thomasi   |                 | North America       |                         | Atkinson (2018)         |
| 550 | Pityophthorus toralis   |                 | North America       |                         | Atkinson (2018)         |
| 551 | Pityophthorus trepidus   |                 | North America       |                         | Atkinson (2018)         |
| 552 | Pityophthorus tuberculatus |             | North America       |                         | Atkinson (2018)         |
| 553 | Pityophthorus tumidus   |                 | North America       |                         | Atkinson (2018)         |
| 554 | Pityophthorus venustus   |                 | North America       |                         | Atkinson (2018)         |
| 555 | Pityophthorus vespertinus |             | North America       |                         | Atkinson (2018)         |
| 556 | Pityophthorus viminalis   |                 | North America       |                         | Atkinson (2018)         |
| 557 | Pityophthorus woodi     |                 | North America       |                         | Atkinson (2018)         |
| 558 | Pityophthorus zonalis    |                 | North America       |                         | Atkinson (2018)         |
| 559 | Pityotrichus barbatus    |                 | North America       |                         | Atkinson (2018)         |
| 560 | Pityotrichus hesperius    |                 | North America       |                         | Atkinson (2018)         |
| 561 | Pityotrichus turkmencicus |               | Asia                |                         | Alonso-Zarazaga et al. (2017) |
| 562 | Polygraphus abietis      |                 | Asia                |                         | Alonso-Zarazaga et al. (2017) |
| 563 | Polygraphus angustus     |                 | Asia                |                         | Alonso-Zarazaga et al. (2017) |
| 564 | Polygraphus aterrimus    |                 | Asia                |                         | Alonso-Zarazaga et al. (2017) |
| 565 | Polygraphus convexifrons |                 | North America       |                         | Atkinson (2018)         |
| 566 | Polygraphus difficilis   |                 | Asia                |                         | Alonso-Zarazaga et al. (2017) |
| 567 | Polygraphus formosanus    |                 | Asia                |                         | Wood and Bright (1992)  |
| 568 | Polygraphus fulvipennis  |                 | Asia                |                         | Alonso-Zarazaga et al. (2017) |
| 569 | Polygraphus gracilis     |                 | Asia                |                         | Alonso-Zarazaga et al. (2017) |
| 570 | Polygraphus hoppingi     |                 | North America       |                         | Atkinson (2018)         |
| 571 | Polygraphus horyurensis  |                 | Asia                |                         | Alonso-Zarazaga et al. (2017) |
| 572 | Polygraphus japonicus    |                 | Asia                |                         | Alonso-Zarazaga et al. (2017) |
| 573 | Polygraphus jezoensis    |                 | Asia                |                         | Alonso-Zarazaga et al. (2017) |
| 574 | Polygraphus junnanicus   |                 | Asia                |                         | Alonso-Zarazaga et al. (2017) |
| 575 | Polygraphus kisoensis    |                 | Asia                |                         | Alonso-Zarazaga et al. (2017) |
| 576 | Polygraphus longifolia   |                 | Asia                |                         | Maiti and Saha (2004)   |
| ID  | Species                  | Presence in EU MS | Presence outside EU | Comments/Uncertainties | Reference                   |
|-----|--------------------------|-------------------|---------------------|-------------------------|-----------------------------|
| 577 | Polygraphus major        | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 578 | Polygraphus meakanensis  | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 579 | Polygraphus nobuchii     | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 580 | Polygraphus pini         | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 581 | Polygraphus proximus     | Russia, Asia      |                     | Introduced species      | Alonso-Zarazaga et al. (2017) |
| 582 | Polygraphus rudis rudis  | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 583 | Polygraphus rudis hexiensis | Asia          |                     |                         | Alonso-Zarazaga et al. (2017) |
| 584 | Polygraphus rufipennis   | North America     |                     |                         | Atkinson (2018)              |
| 585 | Polygraphus setosus      | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 586 | Polygraphus sinensis     | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 587 | Polygraphus squamulatus  | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 588 | Polygraphus sumatranus   | Asia              |                     |                         | Wood and Bright (1992)       |
| 589 | Polygraphus szemaensis   | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 590 | Polygraphus taiwanensis  | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 591 | Polygraphus trenchi      | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 592 | Polygraphus verrucifrons | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 593 | Pseudips concinnus       | North America     |                     |                         | Atkinson (2018)              |
| 594 | Pseudips orientalis(ii)  | Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 595 | Pseudips mexicanus       | North America, Central America |             |                         | Atkinson (2018)              |
| 596 | Pseudohylesinus dispar    | North America     |                     |                         | Atkinson (2018)              |
| 597 | Pseudohylesinus dispar pullatus | North America |                     |                         | Atkinson (2018)              |
| 598 | Pseudohylesinus granulatus | North America  |                     |                         | Atkinson (2018)              |
| 599 | Pseudohylesinus maculosus | North America |                     |                         | Atkinson (2018)              |
| 600 | Pseudohylesinus magnus   | North America     |                     |                         | Atkinson (2018)              |
| 601 | Pseudohylesinus nebulosus | North America |                     |                         | Atkinson (2018)              |
| 602 | Pseudohylesinus nebulosus serratus | North America |                     |                         | Atkinson (2018)              |
| 603 | Pseudohylesinus nobilis  | North America     |                     |                         | Atkinson (2018)              |
| 604 | Pseudohylesinus pini     | North America     |                     |                         | Atkinson (2018)              |
### List of non-EU Scolytinae of coniferous hosts

| ID  | Species                  | Presence in EU MS          | Presence outside EU | Comments/ Uncertainties | Reference                |
|-----|--------------------------|----------------------------|---------------------|-------------------------|--------------------------|
| 605 | *Pseudohylesinus sericeus* | North America, Asia        |                     |                         | Atkinson (2018)           |
| 606 | *Pseudohylesinus sitchensis* | North America              |                     |                         | Atkinson (2018)           |
| 607 | *Pseudohylesinus tsugae*   | North America              |                     |                         | Atkinson (2018)           |
| 608 | *Pseudohylesinus variegatus* | North America              |                     |                         | Atkinson (2018)           |
| 609 | *Pseudothysanoes coniferae* | North America              |                     |                         | Atkinson (2018)           |
| 610 | *Pseudothysanoes pini*     | North America              |                     |                         | Atkinson (2018)           |
| 611 | *Pseudothysanoes piceae*   | Asia                       |                     |                         | Alonso-Zarazaga et al. (2017) |
| 612 | *Scierus annectans*       | North America              |                     |                         | Atkinson (2018)           |
| 613 | *Scierus pubescens*       | North America              |                     |                         | Atkinson (2018)           |
| 614 | *Scolytodes gennaeus*     | South America              |                     |                         | Atkinson (2018)           |
| 615 | *Scolytoplatypus daimio*  | Asia                       |                     |                         | Alonso-Zarazaga et al. (2017) |
| 616 | *Scolytoplatypus kivuensis* | Sub-Saharan Africa         |                     |                         | Wood and Bright (1992)    |
| 617 | *Scolytoplatypus nitidus* | Asia                       |                     |                         | Wood and Bright (1992)    |
| 618 | *Scolytoplatypus pusillus* | Asia                       |                     |                         | Wood and Bright (1992)    |
| 619 | *Scolytoplatypus raja*    | Asia                       |                     |                         | Alonso-Zarazaga et al. (2017) |
| 620 | *Scolytoplatypus shogun*  | Asia                       |                     |                         | Wood and Bright (1992)    |
| 621 | *Scolytoplatypus siomio*  | Asia                       |                     |                         | Maiti and Saha (2004)     |
| 622 | *Scolytoplatypus tycoon*  | Asia                       |                     |                         | Alonso-Zarazaga et al. (2017) |
| 623 | *Scolytus aztecs*         | North America              |                     |                         | Atkinson (2018)           |
| 624 | *Scolytus dentatus*       | North America              |                     |                         | Atkinson (2018)           |
| 625 | *Scolytus fiskei*         | North America              |                     |                         | Atkinson (2018)           |
| 626 | *Scolytus hermosus*       | North America              |                     |                         | Atkinson (2018)           |
| 627 | *Scolytus laricis*        | North America              |                     |                         | Atkinson (2018)           |
| 628 | *Scolytus major*          | Asia                       |                     |                         | Alonso-Zarazaga et al. (2017) |
| 629 | *Scolytus monticolae*     | North America              |                     |                         | Atkinson (2018)           |
| 630 | *Scolytus morawitzi*      | Russia, Asia               |                     |                         | Alonso-Zarazaga et al. (2017) |
| 631 | *Scolytus mundus*         | North America              |                     |                         | Atkinson (2018)           |
| 632 | *Scolytus numidicus*      | North Africa               |                     |                         | Alonso-Zarazaga et al. (2017) |
| 633 | *Scolytus obelus*         | North America              |                     |                         | Atkinson (2018)           |
| 634 | *Scolytus oregoni*        | North America              |                     |                         | Atkinson (2018)           |
| 635 | *Scolytus piceae*         | North America              |                     |                         | Atkinson (2018)           |
| ID  | Species               | Presence in EU MS  | Presence outside EU | Comments/ Uncertainties | Reference                   |
|-----|-----------------------|--------------------|---------------------|-------------------------|-----------------------------|
| 636.| Scolytus praeceps     | North America      |                     |                         | Atkinson (2018)             |
| 637.| Scolytus reflexus     | North America      |                     |                         | Atkinson (2018)             |
| 638.| Scolytus robustus     | North America      |                     |                         | Atkinson (2018)             |
| 639.| Scolytus sinoniceus   | Asia               |                     |                         | Alonso-Zarazaga et al. (2017) |
| 640.| Scolytus subscaber    | North America      |                     |                         | Atkinson (2018)             |
| 641.| Scolytus tsugae       | North America      |                     |                         | Atkinson (2018)             |
| 642.| Scolytus unispinosus  | North America      |                     |                         | Atkinson (2018)             |
| 643.| Scolytus ventralis    | North America      |                     |                         | Atkinson (2018)             |
| 644.| Scolytus virgatus     | North America      |                     |                         | Atkinson (2018)             |
| 645.| Sphaerotrypes magnus  | Asia               |                     |                         | Alonso-Zarazaga et al. (2017) |
| 646.| Sphaerotrypes tsugae  | Asia               |                     |                         | Alonso-Zarazaga et al. (2017) |
| 647.| Sternobothrus costatus| South America      |                     |                         | Atkinson (2018)             |
| 648.| Sternobothrus suturalis| South America     |                     |                         | Atkinson (2018)             |
| 649.| Tomicus armandii      | Asia               |                     |                         | Alonso-Zarazaga et al. (2017) |
| 650.| Tomicus brevipilosus  | Asia               |                     |                         | Alonso-Zarazaga et al. (2017) |
| 651.| Tomicus pilifer       | Asia               |                     |                         | Alonso-Zarazaga et al. (2017) |
| 652.| Tomicus puellus       | Asia               |                     |                         | Alonso-Zarazaga et al. (2017) |
| 653.| Tomicus yunnanensis  | Asia               |                     |                         | Alonso-Zarazaga et al. (2017) |
| 654.| Traglostus brevisetosus| Sub-Saharan Africa|                     |                         | Wood and Bright (1992)      |
| 655.| Trypodendron dorjitenzini| Asia             |                     |                         | Alonso-Zarazaga et al. (2017) |
| 656.| Trypodendron gaimaensis| Asia              |                     |                         | Alonso-Zarazaga et al. (2017) |
| 657.| Trypodendron proximum | Asia               |                     |                         | Alonso-Zarazaga et al. (2017) |
| 658.| Trypodendron ruftarsus| North America      |                     |                         | Atkinson (2018)             |
| 659.| Trypodendron scabricollis| North America  |                     |                         | Atkinson (2018)             |
| 660.| Xyleborinus gracilis  | Azores (Portugal)  | North America, Central America, South America | Introduced species | Atkinson (2018) and Alonso-Zarazaga et al. (2017) |
| 661.| Xyleborinus linearicollis| South America     |                     |                         | Atkinson (2018)             |
| 662.| Xyleborinus sentosus  | South America      |                     |                         | Wood and Bright (1992)      |
| 663.| Xyleborinus sharpae    | Sub-Saharan Africa |                     |                         | Wood and Bright (1992)      |
| 664.| Xyleborinus spinifer   | Sub-Saharan Africa |                     |                         | Wood and Bright (1992)      |
| 665.| Xyleborus adelographus| South America      |                     |                         | Atkinson (2018)             |
### List of non-EU Scolytinae of coniferous hosts

| ID  | Species                  | Presence in EU MS | Presence outside EU                                                                 | Comments/ Uncertainties | Reference                        |
|-----|--------------------------|-------------------|------------------------------------------------------------------------------------|--------------------------|----------------------------------|
| 666 | Xyleborus agathis        | Asia              |                                                                                   |                          | Wood and Bright (1992)           |
| 667 | Xyleborus apertus        | Asia, Oceania     |                                                                                   |                          | Wood and Bright (1992)           |
| 668 | Xyleborus aquilus        | Asia              |                                                                                   |                          | Alonso-Zarazaga et al. (2017)    |
| 669 | Xyleborus bidentatus     | Asia, Sub-Saharan Africa, Oceania |                                                                                   |                          | Wood and Bright (1992)           |
| 670 | Xyleborus catharinensis  | South America     |                                                                                   |                          | Atkinson (2018)                  |
| 671 | Xyleborus compressus     | Oceania           |                                                                                   |                          | Wood and Bright (1992)           |
| 672 | Xyleborus detectus       | Asia              |                                                                                   |                          | Wood and Bright (1992)           |
| 673 | Xyleborus emarginatus    | Asia              |                                                                                   |                          | Alonso-Zarazaga et al. (2017)    |
| 674 | Xyleborus ferrugineus    | North America, Central America, South America, Asia, Sub-Saharan Africa, Oceania |                          |                          | Atkinson (2018)                  |
| 675 | Xyleborus festivus       | Asia              |                                                                                   |                          | Alonso-Zarazaga et al. (2017)    |
| 676 | Xyleborus gratiosus      | Oceania           |                                                                                   |                          | Wood and Bright (1992)           |
| 677 | Xyleborus intrusus       | North America, Central America |                                                                                   |                          | Atkinson (2018)                  |
| 678 | Xyleborus muticus        | Asia              |                                                                                   |                          | Alonso-Zarazaga et al. (2017)    |
| 679 | Xyleborus neivai         | South America     |                                                                                   |                          | Atkinson (2018)                  |
| 680 | Xyleborus perforans      | Azores (Portugal) | North America, Central America, South America, Asia, North Africa, Sub-Saharan Africa, Oceania |                          | Alonso-Zarazaga et al. (2017)    |
| 681 | Xyleborus perplexus      | Oceania           |                                                                                   |                          | Wood and Bright (1992)           |
| 682 | Xyleborus pinicola       | Asia              |                                                                                   |                          | Wood and Bright (1992)           |
| 683 | Xyleborus pubescens      | North America, Central America |                                                                                   |                          | Atkinson (2018)                  |
| 684 | Xyleborus septentrionalis| Asia              |                                                                                   |                          | Alonso-Zarazaga et al. (2017)    |
| 685 | Xyleborus seriatus       | North America, Asia |                                                                                   |                          | Alonso-Zarazaga et al. (2017)    |
| 686 | Xyleborus spinulosus     | North America, Central America, South America |                                                                                   |                          | Atkinson (2018)                  |
| 687 | Xyleborus squamulatus    | North America, Central America, South America |                                                                                   |                          | Atkinson (2018)                  |
| 688 | Xyleborus volvulus       | North America, Central America, South America, Asia, Sub-Saharan Africa, Oceania |                          |                          | Atkinson (2018)                  |
| 689 | Xylechinosomus bicolor   | South America     |                                                                                   |                          | Atkinson (2018)                  |
| ID  | Species                          | Presence in EU MS | Presence outside EU                                           | Comments/Uncertainties | Reference                      |
|-----|----------------------------------|-------------------|---------------------------------------------------------------|-------------------------|--------------------------------|
| 690.| Xylechinosomus brasiliensis      |                   | South America                                                 |                         | Atkinson (2018)                |
| 691.| Xylechinosomus contractus        |                   | South America                                                 |                         | Atkinson (2018)                |
| 692.| Xylechinosomus hirsutus          |                   | South America                                                 |                         | Atkinson (2018)                |
| 693.| Xylechinosomus humilus           |                   | South America                                                 |                         | Atkinson (2018)                |
| 694.| Xylechinosomus lucianae          |                   | South America                                                 |                         | Atkinson (2018)                |
| 695.| Xylechinosomus minimus           |                   | South America                                                 |                         | Atkinson (2018)                |
| 696.| Xylechinosomus paranensis        |                   | South America                                                 |                         | Atkinson (2018)                |
| 697.| Xylechinosomus pilosus           |                   | South America                                                 |                         | Atkinson (2018)                |
| 698.| Xylechinosomus sachtlebeni       |                   | South America                                                 |                         | Atkinson (2018)                |
| 699.| Xylechinosomus valdivianus       |                   | South America                                                 |                         | Atkinson (2018)                |
| 700.| Xylechinus americanus            |                   | South America                                                 |                         | Atkinson (2018)                |
| 701.| Xylechinus araucariae            |                   | Oceania                                                       |                         | Bright (2014)                  |
| 702.| Xylechinus montanus              |                   | North America                                                 |                         | Atkinson (2018)                |
| 703.| Xylosandrus compactus            | Italy, France, Greece | North America, Central America, South America, Asia, Sub-Saharan Africa |                         | Wood and Bright (1992), Wood (2007), Garonna et al. (2012), Anses (2017) and Spanou et al. (2019) |
| 704.| Xylosandrus pseudosolidus        |                   | Oceania                                                       |                         | Wood and Bright (1992)         |
| 705.| Xyloterinus politus              |                   | North America                                                 |                         | Wood and Bright (1992)         |

(a): In the sense of phytosanitary terms, in line with Article 1 point 3 of Regulation (EU) 2016/2031, the Canary Islands are considered as Third Countries though they are part of Spain.
(b): Cognato A.I., 2000. Phylogenetic reveals new genus of Ipini bark beetle (Scolytidae). Annals of the Entomological Society of America 93: (362-366.) and the species Ips (=Orthotomicus) orientalis Wood & Yin, 1986 was moved under Pseudips orientalis (Wood & Yin, 1986). The recent catalog of the palaeartic species of Alonso-Zarazaga et al. (2017) adopts this new classification.
Appendix B – Scolytinae species excluded from further categorisation in the frame of the present mandate

The appendix lists the Scolytinae species present in the EU, their geographic occurrence in the EU MS and in non-EU European countries, as well as outside the EU (at continent level), the associated uncertainties or comments, and the main references from which the information was extracted.

| IID | Species                  | List of EU MS where species is present | List of non-EU European countries where pest is present | Presence outside EU (continents) | Comments/Uncertainties | Reference                                                                 |
|-----|--------------------------|----------------------------------------|-------------------------------------------------------|---------------------------------|--------------------------|--------------------------------------------------------------------------|
| 1.  | *Carphoborus cholodkovskyi* | Estonia, Finland, Poland, Sweden        | Norway, Russia                                       | Asia                            |                          | Alonso-Zarazaga et al. (2017)                                           |
| 2.  | *Carphoborus minimus*     | Austria, Bulgaria, Croatia, Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Netherlands, Poland, Romania, Slovakia, Slovenia, Spain | Albania, Belarus, Bosnia-Herzegovina, North Macedonia, Montenegro, Russia, Switzerland, Ukraine | Asia, North Africa |                          | Alonso-Zarazaga et al. (2017)                                           |
| 3.  | *Carphoborus pini*        | Croatia, Cyprus, France, Greece, Italy, Spain | Bosnia-Herzegovina                                   | Asia, North Africa |                          | Alonso-Zarazaga et al. (2017)                                           |
| 4.  | *Carphoborus rossicus*    | Austria, Finland, Sweden                | Russia                                                | FI NPPO: occurred in Finland before 1960. Endemic EU species SE NPPO: first observed in Sweden already around 1920. Listed as vulnerable on Swedish red-list. Should be on EU list |                          | Alonso-Zarazaga et al. (2017), de Jong et al. (2014), Hyyrinen et al. (2019), ArtDatabanken (2015), ArtDatabanken SLU (2019a), and Voolma et al. (2004) |
| 5.  | *Carphoborus teplouchovi* | Sweden                                  | Russia                                                | China, Mongolia                 | FI NPPO: the species has not been reported in Finland, though it may occur SE NPPO: first observed in Sweden before 1960. Red-listed in Sweden. | Alonso-Zarazaga et al. (2017), de Jong et al. (2014), ArtDatabanken (2015), ArtDatabanken SLU (2019b) and Voolma et al. (2004) |
| IID | Species             | List of EU MS where species is present                                                                 | List of non-EU European countries where pest is present | Presence outside EU (continents) | Comments/Uncertainties | Reference                  |
|-----|---------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------|--------------------------------|--------------------------|----------------------------|
| 6.  | *Cryphalus asperatus* | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, UK | Belarus, Bosnia-Herzegovina, North Macedonia, Montenegro, Norway, Russia, Switzerland | Asia, North Africa | | Alonso-Zarazaga et al. (2017) and Wood and Bright (1992) |
| 7.  | *Cryphalus intermedius* | Austria, Czech Republic, France, Germany, Hungary, Italy, Poland, Romania, Slovakia, Slovenia | Switzerland, Ukraine | | | Alonso-Zarazaga et al. (2017) |
| 8.  | *Cryphalus numidicus* | Bulgaria, France, Greece, Italy, Spain | Switzerland | Asia, North Africa | | Alonso-Zarazaga et al. (2017) |
| 9.  | *Cryphalus piceae* | Austria, Bulgaria, Croatia, Czech Republic, Denmark, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia, Spain | Belarus, Bosnia-Herzegovina, North Macedonia, Montenegro, Russia, Switzerland, Ukraine | Asia, North Africa | | Alonso-Zarazaga et al. (2017) and Hansen (1996) |
| 10. | *Cryphalus saltuarius* | Austria, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Italy, Poland, Slovakia, Sweden | Belarus, Montenegro, Norway, Russia, Switzerland | Asia | | Alonso-Zarazaga et al. (2017) |
| 11. | *Crypturgus cinereus* | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Poland, Romania, Slovakia, Slovenia, Spain, Sweden | Belarus, North Macedonia, Montenegro, Norway, Russia, Switzerland, Ukraine | Asia | | Alonso-Zarazaga et al. (2017) |
| 12. | *Crypturgus cribrellus* | Bulgaria, Croatia, France, Italy, Portugal, Slovenia, Spain | North Macedonia, Montenegro, Ukraine | | | Alonso-Zarazaga et al. (2017) |
| IID | Species                  | List of EU MS where species is present                                                                 | List of non-EU European countries where pest is present | Presence outside EU (continents) | Comments/Uncertainties                      | Reference                                                                 |
|-----|--------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------|---------------------------------------------|----------------------------------------------------------------------------|
| 13. | Crypturgus cylindricollis | Bulgaria, Croatia, Greece, Malta                                                                       | Bosnia-Herzegovina                                                                                      | Asia                             |                               | Alonso-Zarazaga et al. (2017)                 |
| 14. | Crypturgus hispidulus     | Austria, Bulgaria, Czech Republic, Denmark, Estonia, Finland, Germany, Hungary, Italy, Latvia, Lithuania, Netherlands, Poland, Slovakia, Sweden | Belarus, Norway, Russia, Switzerland                                                                  | Asia                             |                               | Alonso-Zarazaga et al. (2017), Vorst et al. (2008) and Vorst (2010)       |
| 15. | Crypturgus mediterraneus  | Croatia, Cyprus, France, Greece, Italy, Portugal                                                     | Russia, Ukraine                                                                                         | Asia, North Africa               |                               | Alonso-Zarazaga et al. (2017)                 |
| 16. | Crypturgus numidicus      | Bulgaria, Croatia, France, Greece, Italy, Malta, Spain                                                | Bosnia-Herzegovina, Montenegro                                                                        | Asia, North Africa               |                               | Alonso-Zarazaga et al. (2017)                 |
| 17. | Crypturgus parallelocollis| Greece                                                                                                 | Turkey                                                                                                  |                                  |                               | Alonso-Zarazaga et al. (2017) and de Jong et al. (2014)                   |
| 18. | Crypturgus pusillus       | Austria, Belgium, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Italy, Latvia, Lithuania, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden | Belarus, Bosnia-Herzegovina, North Macedonia, Montenegro, Norway, Russia, Switzerland, Ukraine          | North America, Asia, North Africa |                               | Alonso-Zarazaga et al. (2017)                 |
| 19. | Crypturgus subcribrosus   | Austria, Czech Republic, Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Netherlands, Poland, Slovakia, Slovenia, Sweden | Belarus, Bosnia-Herzegovina, Norway, Russia, Ukraine                                                   | Asia                             |                               | Alonso-Zarazaga et al. (2017), Vorst (2010) and Heijerman and Noordijk (2016) |
| 20. | Dendroctonus micans       | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Slovakia, Slovenia, Spain, Sweden, UK | Belarus, Montenegro, Norway, Russia, Switzerland, Ukraine                                                | Asia                             |                               | Alonso-Zarazaga et al. (2017)                 |
| IID | Species                  | List of EU MS where species is present                                                                 | List of non-EU European countries where pest is present | Presence outside EU (continents) | Comments/Uncertainties                                                                 | Reference                  |
|-----|--------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------|-----------------------------|
| 21. | *Dryocoetes autographus* | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, UK | Belarus, Bosnia-Herzegovina, Moldova, Montenegro, Norway, Russia, Switzerland, Ukraine | North America, South America, Asia, North Africa                                      | Atkinson (2018)                                                         |
| 22. | *Dryocoetes hectographus*| Belgium, Bulgaria, Czech Republic, Finland, France, Germany, Hungary, Italy, Latvia, Lithuania, Poland, Slovakia, Slovenia, Sweden | Belarus, Montenegro, Norway, Russia, Switzerland        | Asia                                                                          | Alonso-Zarazaga et al. (2017)                                                  |
| 23. | *Gnathotrichus materiarius* | Belgium, Czech Republic, Finland, France, Germany, Italy, Netherlands, Poland, Slovenia, Spain, Sweden | Switzerland                                              | North America, Central America                                                   | Atkinson (2018), Geister (2004) and Kirkendall and Faccoli (2010)               |
| 24. | *Hylastes angustatus*    | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, UK | Belarus, North Macedonia, Montenegro, Russia, Switzerland, Ukraine | Asia, Sub-Saharan Africa                                                        | Alonso-Zarazaga et al. (2017)                                                  |
| 25. | *Hylastes ater*          | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Netherlands, Poland, Slovakia, Slovenia, Spain, Sweden, UK | Belarus, Bosnia-Herzegovina, North Macedonia, Montenegro, Russia, Switzerland, Ukraine | South America, Asia, North Africa, Oceania                                         | FI NPPO: the species does not occur in Finland                                 | Atkinson (2018)                                                      |
| IID | Species          | List of EU MS where species is present                                                                 | List of non-EU European countries where pest is present | Presence outside EU (continents) | Comments/Uncertainties | Reference                                                                 |
|-----|------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------|---------------------------------|------------------------|---------------------------------------------------------------------------|
| 26. | *Hylastes attenuatus* | Austria, Belgium, Croatia, Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, UK | Belarus, Bosnia-Herzegovina, North Macedonia, Norway, Russia, Switzerland, Ukraine | Asia, North Africa |                                                     | Alonso-Zarazaga et al. (2017), Heijerman and Noordijk, 2017, 2018, 2019 and Vorst (2010) |
| 27. | *Hylastes brunneus* | Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Ireland, Italy, Latvia, Netherlands, Poland, Slovakia, Slovenia, Sweden, UK | North Macedonia, Norway, Russia, Switzerland          | Asia                            |                                                     | Alonso-Zarazaga et al. (2017) and Vorst (2010)                           |
| 28. | *Hylastes cunicularius* | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Poland, Portugal, Slovakia, Slovenia, Sweden, UK | Belarus, Bosnia-Herzegovina, North Macedonia, Montenegro, Norway, Russia, Switzerland, Ukraine | Asia, North Africa |                                                     | Alonso-Zarazaga et al. (2017) and Vorst (2010)                           |
| 29. | *Hylastes fallax* | Austria, Czech Republic, Italy, Romania, Slovakia                                                    |                                                       |                                  |                                                     | Alonso-Zarazaga et al. (2017)                                            |
| 30. | *Hylastes linearis* | Croatia, Cyprus, Czech Republic, France, Germany, Greece, Hungary, Italy, Netherlands, Poland, Portugal, Slovakia, Spain, UK | North Macedonia, Montenegro, Switzerland              | South America, Asia, North Africa, Sub-Saharan Africa |                                                     | Atkinson (2018) and Vorst (2010)                                         |
| 31. | *Hylastes opacus* | Austria, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Poland, Slovakia, Slovenia, Sweden, UK | Belarus, North Macedonia, Montenegro, Norway, Russia, Switzerland | North America, Asia |                                                     | Atkinson (2018) and Vorst (2010)                                         |
| IID | Species                  | List of EU MS where species is present                                                                 | List of non-EU European countries where pest is present | Presence outside EU (continents) | Comments/Uncertainties          | Reference                  |
|-----|--------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------|---------------------------------|----------------------------------|-----------------------------|
| 32. | *Hylurgops glabratus*    | Austria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Poland, Slovakia, Slovenia, Sweden | Belarus, Bosnia-Herzegovina, Norway, Russia, Switzerland | Asia                            |                                  | Alonso-Zarazaga et al. (2017) |
| 33. | *Hylurgops palliatus*    | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Poland, Slovakia, Slovenia, Spain, Sweden, UK | Belarus, North Macedonia, Montenegro, Norway, Russia, Switzerland, Ukraine | North America, Asia, North Africa |                                  | Atkinson (2018)             |
| 34. | *Hylurgus ligniperda*     | Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Italy, Latvia, Lithuania, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden | Bosnia-Herzegovina, North Macedonia, Moldova, Montenegro, Russia, Serbia, Switzerland, Ukraine | North America, South America, Asia, North Africa, Sub-Saharan Africa, Oceania |                                  | Atkinson (2018)             |
| 35. | *Hylurgus micklitzi*      | Croatia, France, Germany, Hungary, Italy, Malta, Spain                                                  | Russia                                                  | Asia, North Africa              |                                  | Alonso-Zarazaga et al. (2017) |
| 36. | *Hypothenemus eruditus*   | Croatia, France, Italy, Malta, Spain                                                                    | North America, Central America, South America, Asia, North Africa, Sub-Saharan Africa, Oceania |                                  |                                  | Atkinson (2018)             |
| IID | Species | List of EU MS where species is present | List of non-EU European countries where pest is present | Presence outside EU (continents) | Comments/Uncertainties | Reference |
|-----|---------|---------------------------------------|------------------------------------------------------|---------------------------------|-------------------------|------------|
| 37. | *Ips acuminatus* | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, UK | Belarus, Bosnia-Herzegovina, North Macedonia, Moldova, Montenegro, Norway, Russia, Switzerland, Ukraine | Asia | NL NPPO: the reported presence of *I. acuminatus* in NL is questionable. All historical findings are associated with wood imports and it is, thus, questionable whether a viable population has established (Heijerman, 2010). | Alonso-Zarazaga et al. (2017) |
| 38. | *Ips amitinus* | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia, Sweden | Bosnia-Herzegovina, North Macedonia, Montenegro, Russia, Switzerland, Ukraine | Asia | NL NPPO: No valid records of the species exist in the Netherlands | Alonso-Zarazaga et al. (2017) and Jurc and Bojović (2004) |
| 39. | *Ips cembrae* | Austria, Belgium, Czech Republic, Denmark, France, Germany, Greece, Hungary, Italy, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Sweden | Russia, Switzerland | Asia | | Alonso-Zarazaga et al. (2017) and ArtDatabanken SLU (2019e) |
| 40. | *Ips duplicatus* | Austria, Czech Republic, Estonia, Finland, France, Germany, Hungary, Latvia, Lithuania, Poland, Slovakia, Sweden | Belarus, Norway, Russia | Asia | | Alonso-Zarazaga et al. (2017) |
| 41. | *Ips sexdentatus* | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, UK | Belarus, Bosnia-Herzegovina, North Macedonia, Moldova, Montenegro, Norway, Russia, Switzerland, Ukraine | Asia | | Alonso-Zarazaga et al. (2017) |
| IID | Species                      | List of EU MS where species is present                                                                 | List of non-EU European countries where pest is present                                      | Presence outside EU (continents) | Comments/Uncertainties                                                                 | Reference                                                                 |
|-----|------------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|---------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| 42  | *Ips typographus*            | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, UK | Belarus, Bosnia-Herzegovina, Moldova, Montenegro, Norway, Russia, Switzerland, Ukraine         | Asia, North Africa               |                                                                                        | Alonso-Zarazaga et al. (2017), Vorst et al. (2008), Vorst (2010) and Heijerman and Noordijk (2017, 2019) |
| 43  | *Orthotomicus erosus*        | Austria, Bulgaria, Croatia, Cyprus, France, Greece, Hungary, Italy, Malta, Netherlands, Portugal, Slovenia, Spain, UK | North Macedonia, Montenegro, Norway, Russia, Switzerland, Ukraine                              | North America, South America, Asia, North Africa, Sub-Saharan Africa | CY NPPO: The species is present in Cyprus                                               | Atkinson (2018), Vorst et al. (2008) and Vorst (2010)                     |
| 44  | *Orthotomicus laricis*       | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, UK | Belarus, Bosnia-Herzegovina, North Macedonia, Moldova, Montenegro, Norway, Russia, Switzerland, Ukraine | South America, Asia, North Africa                                                  |                                                                                        | Atkinson (2018)                                                          |
| 45  | *Orthotomicus longicollis*   | Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Poland, Slovakia, Slovenia, Spain, Sweden | Belarus, Bosnia-Herzegovina, North Macedonia, Norway, Russia, Serbia, Switzerland, Ukraine    | Asia                             |                                                                                        | Alonso-Zarazaga et al. (2017)                                             |
| 46  | *Orthotomicus mannsfeldi*    | Austria, Bulgaria, Croatia, France, Greece, Hungary, Italy, Poland, Romania, Spain                        | Bosnia-Herzegovina, North Macedonia, Montenegro                                                | Asia                             |                                                                                        | Alonso-Zarazaga et al. (2017)                                             |
| IID | Species                  | List of EU MS where species is present                                                                 | List of non-EU European countries where pest is present                                                                 | Presence outside EU (continents)                  | Comments/Uncertainties                                                                                                                                                                                                 | Reference                                                                                         |
|-----|-------------------------|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| 47  | Orthotomicus proximus   | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Netherland, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden | Belarus, Bosnia-Herzegovina, Moldova, Montenegro, Norway, Russia, Serbia, Switzerland, Ukraine                        | Asia, North Africa, Sub-Saharan Africa          |                                                                                                                                                                                                                       | Alonso-Zarazaga et al. (2017) and Artsdatabanken (2019)                                           |
| 48  | Orthotomicus robustus   | Austria, Bulgaria, Czech Republic, Greece, Hungary, Slovakia                                           | Bosnia-Herzegovina                                                                                            | Asia, North Africa                             |                                                                                                                                                                                                                       | Alonso-Zarazaga et al. (2017)                                                                     |
| 49  | Orthotomicus starki     | Lithuania, Poland                                                                                     | Belarus, Russia                                                                                                  |                                                 | F1 NPPO: the species does not occur in Finland. The species was found in Poland before 1960 and Karpinski (1931) described it from Poland                                                                               | Alonso-Zarazaga et al. (2017) and de Jong et al. (2014)                                          |
| 50  | Orthotomicus suturalis  | Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Netherland, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, UK | Belarus, Bosnia-Herzegovina, North Macedonia, Moldova, Montenegro, Norway, Russia, Serbia, Switzerland, Ukraine |                                                 |                                                                                                                                                                                                                       | Alonso-Zarazaga et al. (2017)                                                                     |
| 51  | Phloeosinus aubei        | Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, France, Greece, Hungary, Italy, Netherland, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, UK | Albania, Bosnia-Herzegovina, North Macedonia, Montenegro, Russia, Switzerland, Ukraine                          | Asia, North Africa                             | SI NPPO: The presence of the species was confirmed based on the entomological collection of the Biotechnical Faculty, Department of Forestry and Renewable Forest Resources                                                      | Alonso-Zarazaga et al. (2017), Moraal (2005) and Vorst (2010)                                    |
| 52  | Phloeosinus henschi      | Bulgaria, Croatia, Greece, Slovenia, Italy                                                            | Bosnia and Herzegovina, North Macedonia, Ukraine                                                                  | Asia                                            | The species is associated with pathogenic fungi (Geosmithia spp.)                                                                                                                                                      | Alonso-Zarazaga et al. (2017), de Jong et al. (2014) and Kolarik et al. (2007)                   |
| IID | Species                  | List of EU MS where species is present | List of non-EU European countries where pest is present | Presence outside EU (continents) | Comments/Uncertainties | Reference                                                                 |
|-----|--------------------------|----------------------------------------|---------------------------------------------------------|--------------------------------|-------------------------|---------------------------------------------------------------------------|
| 53. | *Phloeosinus laricinis*  | Italy                                   |                                          |                                |                         | Alonso-Zarazaga et al. (2017)                                             |
| 54. | *Phloeosinus pfefferi*   | Cyprus                                  |                                          |                                |                         | Alonso-Zarazaga et al. (2017)                                             |
| 55. | *Phloeosinus rudis*      | France, Netherlands, Italy, Belgium     |                                          |                                | Asia                    | Alonso-Zarazaga et al. (2017), de Jong et al. (2014) and Moucheron et al. (2019) |
| 56. | *Phloeosinus thujae*     | Austria, Belgium, Bulgaria, Croatia, France, Germany, Greece, Hungary, Italy, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, UK | Albania, Bosnia-Herzegovina, North Macedonia, Montenegro, Russia, Switzerland, Ukraine | Asia, North Africa |                                                     | Alonso-Zarazaga et al. (2017), Lindelöw (2013) and ArtDatabanken SLU (2019f) |
| 57. | *Phloeotribus spinulosus*| Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Italy, Latvia, Netherlands, Poland, Romania, Slovakia, Spain, Sweden | Belarus, Norway, Russia, Switzerland, Ukraine | Asia |                                                     | Alonso-Zarazaga et al. (2017)                                             |
| 58. | *Pityogenes bidentatus*  | Austria, Belgium, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, UK | Belarus, Bosnia-Herzegovina, North Macedonia, Moldova, Montenegro, Norway, Russia, Switzerland, Ukraine | North America, Asia, Sub-Saharan Africa |                                                     | Atkinson (2018)                                                           |
| 59. | *Pityogenes bistri dentatus* | Austria, Bulgaria, Croatia, Cyprus, Czech Republic, France, Germany, Greece, Hungary, Italy, Poland, Romania, Slovakia, Slovenia, Spain | Albania, Bosnia-Herzegovina, North Macedonia, Montenegro, Russia, Switzerland, Ukraine | Asia |                                                     | Alonso-Zarazaga et al. (2017)                                             |
| IID | Species                        | List of EU MS where species is present | List of non-EU European countries where pest is present | Presence outside EU (continents) | Comments/Uncertainties                                                                                                                                                                                                 | Reference                                                                                     |
|-----|--------------------------------|----------------------------------------|-------------------------------------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| 60. | *Pityogenes calcaratus*        | Croatia, France, Greece, Italy, Malta, Portugal, Slovenia, Spain | Russia, Ukraine                                     | Asia, North Africa                | SI NPPO: The species was confirmed as present based on the entomological collection of the Biotechnical Faculty, Department of Forestry and Renewable Forest Resources                                                                 | Alonso-Zarazaga et al. (2017)                                                              |
| 61. | *Pityogenes chalcographus*     | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Poland, Slovakia, Slovenia, Spain, Sweden, UK | Belarus, Bosnia-Herzegovina, North Macedonia, Moldova, Montenegro, Norway, Russia, Switzerland | Asia                                                                            |                                                                                                                                                                                                                           | Alonso-Zarazaga et al. (2017), Vorst et al. (2008), Vorst (2010) and Heijerman and Noordijk (2018, 2019) |
| 62. | *Pityogenes conjunctus*        | Austria, Bulgaria, Czech Republic, France, Germany, Hungary, Italy, Romania, Slovakia, Slovenia | Switzerland, Ukraine                                | Asia                                                                            |                                                                                                                                                                                                                           | Alonso-Zarazaga et al. (2017)                                                              |
| 63. | *Pityogenes irkutensis*        | Finland, Sweden                        | Norway, Russia, Turkey                               | Asia                                                                            | FI NPPO: occurred in Finland before 1960. Vulnerable in Finland according to the Finnish red-list. SE NPPO: established in Sweden with old records e.g. from 1937. Red-listed in Sweden. Should be on the EU list.                                                                 | Alonso-Zarazaga et al. (2017), de Jong et al. (2014), Hyvärinen et al. (2019), ArtDataBanken (2015), ArtDataBanken SLU (2019c,g), and Voolma et al. (2004) |
| 64. | *Pityogenes irkutensis monacensis* | Austria, Bulgaria, Czech Republic, Germany, Lithuania, Poland, Romania | Montenegro, Serbia, Switzerland, Ukraine             |                                                                                                                                                                                                                           |                                                                                                                                                                                                                           | Alonso-Zarazaga et al. (2017)                                                              |
| 65. | *Pityogenes porifrons*         | Cyprus, Greece                         |                                                                                                                                                                          |                                                                                                                                                                                                                           |                                                                                                                                                                                                                           | Alonso-Zarazaga et al. (2017)                                                              |
| IID | Species                  | List of EU MS where species is present | List of non-EU European countries where pest is present | Presence outside EU (continents) | Comments/Uncertainties | Reference                                      |
|-----|-------------------------|----------------------------------------|--------------------------------------------------------|---------------------------------|-------------------------|------------------------------------------------|
| 66  | Pityogenes quadridens   | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Poland, Slovakia, Slovenia, Spain, Sweden, UK | Belarus, Bosnia-Herzegovina, North Macedonia, Moldova, Montenegro, Norway, Russia, Switzerland, Ukraine | Asia                           |                         | Alonso-Zarazaga et al. (2017)                  |
| 67  | Pityogenes saalasi      | Finland, Poland, Sweden                | Norway, Russia                                        | Asia                            | FI NPPO: occurred in Finland before 1960. SE NPPO: established in Sweden with old records e.g. from 1944. Should be on the EU list. | Alonso-Zarazaga et al. (2017), de Jong et al. (2014), Hyvarinen et al. (2019), ArtDatabanken SLU (2019d), and Voolma et al. (2004) |
| 68  | Pityogenes trepanatus   | Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Italy, Latvia, Netherland, Poland, Portugal, Romania, Slovenia, Spain, Sweden, UK | Belarus, Bosnia-Herzegovina, Montenegro, Norway, Russia, Switzerland, Ukraine | SI NPPO: The presence of the species was confirmed based on the entomological collection of the Biotechnical Faculty, Department of Forestry and Renewable Forest Resources |                         | Alonso-Zarazaga et al. (2017), Vorst et al. (2008), Vorst (2010) and Heijerman and Noordijk (2016) |
| 69  | Pityokteines curvidens  | Austria, Belgium, Bulgaria, Croatia, Czech Republic, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Poland, Portugal, Romania, Slovenia, Spain | Belarus, Bosnia-Herzegovina, North Macedonia, Montenegro, Russia, Serbia, Switzerland, Ukraine | South America, Asia, Sub-Saharan Africa |                         | Atkinson (2018)                                |
| 70  | Pityokteines spinidens  | Austria, Belgium, Bulgaria, Croatia, Czech Republic, France, Germany, Greece, Italy, Netherland, Poland, Romania, Slovakia, Slovenia, Spain | Bosnia-Herzegovina, Montenegro, Russia, Serbia, Switzerland | Asia                            | BE NPPO: the species is present in Belgium. SI NPPO: the species is present in Slovenia | Alonso-Zarazaga et al. (2017) and Heijerman and Noordijk (2017) |
| IID | Species                     | List of EU MS where species is present                                                                 | List of non-EU European countries where pest is present       | Presence outside EU (continents) | Comments/Uncertainties                        | Reference                                      |
|-----|-----------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|---------------------------------|---------------------------------------------|------------------------------------------------|
| 71. | Pityokteines vorontzowi    | Austria, Belgium, Bulgaria, Croatia, Czech Republic, France, Germany, Greece, Hungary, Italy, Poland, Romania, Slovakia, Slovenia, Spain | Bosnia-Herzegovina, North Macedonia, Montenegro, Russia, Switzerland, Ukraine | Asia                             |                                              | Alonso-Zarazaga et al. (2017) and Moucheron et al. (2018) |
| 72. | Pityophthorus balcanicus    | Bulgaria, Czech Republic, Romania, Slovakia, Slovenia                                                  | Albania, Bosnia-Herzegovina, North Macedonia, Montenegro, Serbia |                                              |                                              | Alonso-Zarazaga et al. (2017) and Titovsek (1983) |
| 73. | Pityophthorus buyssoni angeri | France (Mainland and Corsica)                                                                          | FR NPPO: endemic species in Corsica.                         | Alonso-Zarazaga et al. (2017) and de Jong et al. (2014) |
| 74. | Pityophthorus buyssoni buyssoni | Bulgaria, France, Greece, Italy, Spain                                                                  | Switzerland                                                 | FR NPPO: the species is widespread in France and Europe | Alonso-Zarazaga et al. (2017)                                      |
| 75. | Pityophthorus carniolicus   | Austria, Croatia, Czech Republic, France, Germany, Hungary, Italy, Poland, Slovakia, Slovenia             |                                              | Alonso-Zarazaga et al. (2017)                                      |
| 76. | Pityophthorus cephalonicae  | Greece, Poland                                                                                           |                                              | Alonso-Zarazaga et al. (2017)                                      |
| 77. | Pityophthorus exsculptus    | Austria, Bulgaria, Czech Republic, France, Germany, Hungary, Italy, Poland, Slovakia                      | Bosnia-Herzegovina, Switzerland                              | Alonso-Zarazaga et al. (2017)                                      |
| 78. | Pityophthorus glabratus     | Austria, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Italy, Lithuania, Luxembourg, Netherlands, Poland, Slovakia, Spain, Sweden | Belarus, Montenegro, Norway, Russia, Serbia, Switzerland, Ukraine | Asia, North Africa              | Alonso-Zarazaga et al. (2017) and Vorst (2010) |
| 79. | Pityophthorus henscheli     | Austria, Bulgaria, France, Germany, Greece, Italy, Romania                                               | Bosnia, Montenegro, Switzerland                              | Alonso-Zarazaga et al. (2017)                                      |
| IID | Species | List of EU MS where species is present | List of non-EU European countries where pest is present | Presence outside EU (continents) | Comments/Uncertainties | Reference |
|-----|---------|----------------------------------------|--------------------------------------------------------|---------------------------------|--------------------------|-----------|
| 80. | *Pityophthorus lichtensteinii* | Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Slovakia, Slovenia, Spain, Sweden, UK | Bosnia-Herzegovina, North Macedonia, Montenegro, Norway, Russia, Switzerland, Ukraine | Asia | | Alonso-Zarazaga et al. (2017) |
| 81. | *Pityophthorus micrographus micrographus* | Austria, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Poland, Romania, Spain, Sweden, UK | Belarus, Montenegro, Norway, Russia, Serbia, Switzerland | Asia | | Alonso-Zarazaga et al. (2017) |
| 82. | *Pityophthorus morosovi* | Austria, Czech Republic, Finland, Latvia, Poland, Sweden | Russia | Asia | | Alonso-Zarazaga et al. (2017) |
| 83. | *Pityophthorus pinsapo* | Spain | | | | Alonso-Zarazaga et al. (2017) |
| 84. | *Pityophthorus pityographus pityographus* | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, France, Germany, Greece, Hungary, Italy, Poland, Romania, Slovakia, Slovenia, Spain, Sweden | Bosnia-Herzegovina, North Macedonia, Montenegro, Switzerland, Ukraine | | | Alonso-Zarazaga et al. (2017) and Ericson (2010) |
| 85. | *Pityophthorus pubescens* | Austria, Belgium, Croatia, Cyprus, Czech Republic, Denmark, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Poland, Slovakia, Slovenia, Spain, Sweden, UK | Norway, Switzerland | Asia, North Africa | | Alonso-Zarazaga et al. (2017) |
| 86. | *Pityophthorus traegardhi* | Austria, Estonia, Finland, Poland, Sweden | Norway, Russia | Asia | | Alonso-Zarazaga et al. (2017) |
| IID | Species                  | List of EU MS where species is present                                                                 | List of non-EU European countries where pest is present | Presence outside EU (continents) | Comments/Uncertainties | Reference                                             |
|-----|-------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------|---------------------------------|-------------------------|-------------------------------------------------------|
| 87. | *Polygraphus grandiclava* | Austria, Belgium, Bulgaria, Croatia, Czech Republic, France, Germany, Hungary, Italy, Netherlands, Poland, Romania, Slovakia, Slovenia | Bosnia-Herzegovina, Moldova, Montenegro, Russia, Serbia, Switzerland, Ukraine |                                |                         | Alonso-Zarazaga et al. (2017), Heijerman and Noordijk (2019), Vorst et al. (2008) and Vorst (2010) |
| 88. | *Polygraphus poligraphus* | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, UK | Belarus, Bosnia-Herzegovina, Moldova, Montenegro, Norway, Russia, Switzerland, Ukraine | Asia, Sub-Saharan Africa       |                         | Alonso-Zarazaga et al. (2017), Vorst (2010), Titovšek (1988) and Martikainen et al. (1999) |
| 89. | *Polygraphus punctifrons* | Czech Republic, Estonia, Finland, Latvia, Poland, Slovakia, Sweden | Norway, Russia, Ukraine | Asia                             |                         | Alonso-Zarazaga et al. (2017)                         |
| 90. | *Polygraphus subopacus*  | Austria, Bulgaria, Czech Republic, Estonia, Finland, France, Germany, Hungary, Latvia, Poland, Slovakia, Sweden | Montenegro, Norway, Russia, Switzerland | Asia                             |                         | Alonso-Zarazaga et al. (2017)                         |
| 91. | *Tomicus destruens*      | Croatia, Cyprus, France, Greece, Italy, Portugal, Slovenia, Spain | Russia, Ukraine | Asia, North Africa                |                         | Alonso-Zarazaga et al. (2017)                         |
| 92. | *Tomicus minor*          | Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, UK | Belarus, Bosnia-Herzegovina, North Macedonia, Montenegro, Norway, Russia, Switzerland, Ukraine | Asia                             |                         | Alonso-Zarazaga et al. (2017)                         |
| IID | Species       | List of EU MS where species is present                                      | List of non-EU European countries where pest is present | Presence outside EU (continents) | Comments/Uncertainties                                                                 | Reference                                      |
|-----|--------------|------------------------------------------------------------------------------|--------------------------------------------------------|---------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------|
| 93  | *Tomicus piniperda* | Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Netherland, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, UK | Belarus, Bosnia-Herzegovina, North Macedonia, Montenegro, Norway, Russia, Switzerland, Ukraine | North America, Asia, North Africa |                                                                                     | Atkinson (2018)                               |
| 94  | *Trypodendron laeve* | Austria, Czech Republic, Estonia, Finland, Germany, Latvia, Poland, Romania, Slovakia, Sweden | Norway, Russia, Switzerland | Asia                             |                                                                                     | Alonso-Zarazaga et al. (2017)                |
| 95  | *Trypodendron lineatum* | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Netherland, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, UK | Belarus, Bosnia-Herzegovina, North Macedonia, Montenegro, Norway, Russia, Switzerland | North America, Asia, North Africa |                                                                                     | Atkinson (2018)                               |
| 96  | *Xyleborinus saxesenii* | Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Czech Republic, France, Germany, Greece, Hungary, Italy, Latvia, Netherland, Poland, Slovenia, Spain, Sweden, UK | Albania, Russia, Ukraine | North America, South America, Asia, North Africa, Sub-Saharan Africa, Oceania |                                                                                     | Atkinson (2018), Heijerman and Noordijk (2016, 2017, 2018, 2019), Vorst et al. (2008), Vorst (2010) and Wood and Bright (1992) |
| 97  | *Xyleborus eurygraphus* | Austria, Croatia, Czech Republic, France, Germany, Greece, Hungary, Italy, Luxembourg, Netherlands, Poland, Portugal, Slovakia, Spain | Bosnia-Herzegovina, North Macedonia, Moldova, Montenegro, Russia, Serbia, Switzerland, Ukraine | Asia, North Africa | NL NPPO: the presence of X. eurygraphus in the NL is questionable. All historical findings are associated with wood imports and it is, thus, questionable whether a viable population has established (Heijerman, 2010). | Alonso-Zarazaga et al. (2017)                 |
| IID | Species               | List of EU MS where species is present                                                                 | List of non-EU European countries where pest is present | Presence outside EU (continents) | Comments/Uncertainties | Reference                                      |
|-----|-----------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|---------------------------------|------------------------|------------------------------------------------|
| 98. | *Xylechinus pilosus*  | Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, UK                  | Montenegro, Norway, Russia, Ukraine                                                                      | Asia                            |                        | Alonso-Zarazaga et al. (2017)                      |
| 99. | *Xylosandrus germanus*| Austria, Belgium, Croatia, Czech Republic, Denmark, France, Germany, Hungary, Italy, Netherlands, Poland, Romania, Slovenia, Spain, UK | Russia, Switzerland, Ukraine                                                                            | North America, Asia              | Introduced into Europe | Atkinson (2018), Jurc et al. (2010) and Björklund and Boberg (2017) |
Annex A – Full list non-EU Scolytinae

The annex contains detailed information on occurrence and the hosts of different non-EU Scolytinae species.

Annex B – Short list non EU Scolytinae

The annex contains detailed information of those non-EU Scolytinae species for which information on their biology and impact was available.