Table S-1a. Main characteristics of the 163 Scolytinae with an invasion history. Biological traits

Species	Species code	Main references on the species[1]	Tribe	Feeding[2] habits	Inbreeding (Y/N)	Polyphagy[3]	Aggregation pheromones[4]	Primary attractants[5]	conifer / non-conifer / both[6]
Pagiocerus frontalis (Fabricius)	PAGIFR	WB; Bright & Peck 1998	Bothrosternini	S	N	4	0	0	2
Gnathotrichus materiarius (Fitch)	GNAHMA	ATK; Kirkendall and Faccoli 2010; Smith & Hulcr (2015); Inward (2020)	Corthylini	A	N	1	2	2	1
Monarthrum mali (Fitch)	MNTHMA	ATK; Kirkendall and Faccoli 2010; Smith & Hulcr (2015)	Corthylini	A	N	12	0	2	2
Pityophthorus juglandis Blackman	PITOJU	ATK; Montecchio et Faccoli 2014; Smith & Hulcr (2015)	Corthylini	B	N	1	2	2	2
Pityophthorus solus (Blackman)	PITOSO	ATK; WB; Goldarazena et al. 2014	Corthylini	B	N	1	1	1	1
Cryphalus pallidus Eichhoff	cryphpa	CABI Invasive Species Compendium; Johnson et al 2017; Beaver 1987b	Cryphalini	B	N	2	1	1	2
Cryphalus wapleri Eichhoff	CRYHWA	WB; Brockerhoff et al. 2006	Cryphalini	B	N	2	1	1	2
Cryptocarenus heveae (Hagedorn)	cryphev	ATK;	Corthylini	B	N	17	0	2	2
Cryphalus scabricollis (Eichhoff)	CRYHSC	WB; Kirkendall and Faccoli 2010; Faccoli et al. 2016; Gaaliche et al., 2018; Mifsud & Knizek 2009.	Cryphalini	B	N	7	1	1	2
Cryphalus dilutus (Eichhoff)	hypdil	ATK	Cryphalini	B	N	2	0	2	2
Cryphalus mangiferae (Stebbing)	HYPCMA	ATK; Haack 2001; Beaver 1987b	Cryphalini	B	N	1	0	2	2
Hypothenemus africanus (Hopkins)	HYOTAF	ATK; Haack 2001; Jordal & Kirkendall 1998	Trypophloeini	H	Y	4	0	1	2
Hypothenemus areccae (Hornung)	HYOTSU	ATK; Haack 2001; padil 2019; Nakagawa et al. 2003	Trypophloeini	S	Y	8	0	2	2
Hypothenemus birmanus (Eichhoff)	HYOTBI	ATK; Haack 2001; Bright & Peck 1998	Trypophloeini	B	Y	29	0	2	2
Hypothenemus brunneus Hopkins	HYOTBR	ATK; Haack 2001; Bright & Peck 1998	Trypophloeini	B	Y	30	0	2	2
Hypothenemus californicus Hopkins	HYOTCA	ATK; Haack 2001	Trypophloeini	B	Y	23	0	2	2
Hypothenemus columbi Hopkins	HYOTCO	ATK; Haack 2001	Trypophloeini	B	Y	22	0	2	2

1 ATK: Atkinson 2022; WB: Wood and Bright. 1992. Note that Bright (2021) was not used for this study because the data search ended in December 2020.

2 Feeding habits: A: ambrosia beetles (xylomycetophagous); B: bark beetles (phloeophagous); HER: herbiphagous; SPM: spermatophagous

3 Number of host-plant families (from ATK and WB).

4 Source for pheromones: El-Sayed (2018). 2 = pheromone(s) identified in the species; 1 = pheromone(s) in at least one other species in the genus; 0 = no pheromone identified or unknown. NB: only semiochemicals identified as pheromones in El-Sayed (2018) are considered; attractants, allomones and synomones are not. For *Euwallacea* spp., the reference is Cooperband et al. (2017)

5 Sources for primary attractants: main references on the species. 2 = attractant(s) identified in the species; 1 = attractant(s) for at least one other species in the genus; 0 = no attractant(s) identified, or unknown.

6 1 = conifers ; 2 = non-conifers ; 3 = non-conifers and conifers.

Table S-1a. Main characteristics of the 163 Scolytinae with an invasion history. Biological traits

Species	Species code	Main references on the species[1]	Tribe	Feeding[2] habits	Inbreeding (Y/N)	Polyphagy[3]	Aggregation pheromones[4]	Primary attractants[5]	conifer / non-conifer / both[6]
Hypothenemus crudiae (Panzer)	HYOTHI	ATK; Haack 2001; Jordal & Kirkendall 1998	Trypophloeini	H	Y	57	0	2	3
Hypothenemus elephas (Eichhoff)	hypele	ATK	Trypophloeini	B	Y	1	0	2	2
Hypothenemus erectus LeConte	HYOTER	ATK; Haack 2001	Trypophloeini	B	Y	32	0	2	2
Hypothenemus eruditus Westwood	HYOTEU	ATK; Mifsud & Knizek 2009; Kirkendall and Faccoli 2010; Jordal & Kirkendall 1998	Trypophloeini	H	Y	65	0	2	3
Hypothenemus hampei (Ferrari)	STEHHA	ATK; Jaramillo et al. 2013	Trypophloeini	S	Y	1	0	2	2
Hypothenemus javanus (Eggers)	HYOTJA	ATK; Haack 2001; Beaver 1987b	Trypophloeini	B	Y	19	0	2	2
Hypothenemus leprieuri (Perris)	HYOTLE	WB; Mifsud & Knizek 2009	Trypophloeini	B	Y	1	0	1	2
Hypothenemus obscurus (Fabricius)	HYOTOB	ATK; Haack 2001	Trypophloeini	B	Y	11	0	1	2
Hypothenemus plumeriae (Nordlinger)	STEHPL	ATK	Trypophloeini	B	Y	14	0	2	2
Hypothenemus pubescens Hopkins	HYOTPB	ATK	Trypophloeini	H	Y	2	0	2	2
Hypothenemus seriatus (Eichhoff)	STEHSE	ATK; Jordal & Kirkendall 1998	Trypophloeini	H	Y	57	0	2	3
Hypothenemus setosus (Eichhoff)	HYOTSE	ATK; Haack 2001; Jordal & Kirkendall 1998	Trypophloeini	H	Y	9	0	2	2
Eidophelus jalapae (Letzner)	scojal	ATK	Ernoporini	B	N	9	0	2	2
Aphanarthrum (*Coleobothrus*) *alluaudi* Peyerimhoff	aphall	WB; Kirkendall et al. 2015	Crypturgini	H	N	1	0	0	2
Aphanarthrum affine Wollaston	aphaff	WB; Israelson 1972	Crypturgini	H	N	1	0	0	2
Aphanarthrum bicolor Wollaston	aphbic	WB; Israelson 1972	Crypturgini	H	N	1	0	0	2
Aphanarthrum mairei Peyerimhoff	aphmai	WB; Israelson 1972	Crypturgini	H	N	1	0	0	2
Aphanarthrum piscatorium Wollaston	aphpis	WB; Israelson 1972	Crypturgini	H	N	1	0	0	2
Crypturgus cylindricollis Eggers	CRYUCY	Mifsud & Knizek 2009	Crypturgini	B	N	1	0	1	1
Crypturgus numidicus Ferrari	CRYUNU	WB; Mifsud & Knizek 2009	Crypturgini	B	N	1	0	1	1
Crypturgus pusillus (Gyllenhal)	CRYUPU	ATK; Haack 2001	Crypturgini	B	N	1	0	2	1
Coccotrypes aciculatus Schedl	cocoac	ATK	Dryocoetini	S	Y	1	0	1	2
Coccotrypes advena Blandford	COCOAD	WB; Haack 2001; Brockerhoff et al. 2006; Nakagawa et al. 2003; Jordal & Kirkendall 1998	Dryocoetini	S	Y	20	0	1	3
Coccotrypes carpophagus (Hornung)	COCOCA	ATK; Haack 2001; Bright & Peck 1998	Dryocoetini	S	Y	12	0	2	2
Coccotrypes cyperi (Beeson)	COCOCY	ATK; Haack 2001; Jordal & Kirkendall 1998	Dryocoetini	H	Y	24	0	2	2
Coccotrypes dactyliperda Fabricius	COCODA	WB; Haack 2001; Kirkendall et Faccoli 2010; Brockerhoff et al. 2006; Kirkendall 2018; Mifsud & Knizek 2009; Beaver 1987b	Dryocoetini	S	Y	6	0	2	2

Table S-1a. Main characteristics of the 163 Scolytinae with an invasion history. Biological traits

Species	Species code	Main references on the species[1]	Tribe	Feeding[2] habits	Inbreeding (Y/N)	Polyphagy[3]	Aggregation pheromones[4]	Primary attractants[5]	conifer / non-conifer / both[6]
Coccotrypes distinctus (Motschulsky)	COCODI	ATK; Haack 2001; Brockerhoff et al. 2006; Kirkendall 2018	Dryocoetini	S	Y	4	0	2	2
Coccotrypes rhizophorae (Hopkins)	COCORH	ATK; Wood 1982; Haack 2001	Dryocoetini	S	Y	5	0	1	2
Coccotrypes robustus Eichhoff	COCORO	ATK; Wood 1982; Haack 2001	Dryocoetini	S	Y	1	0	1	2
Coccotrypes rutschuruensis Eggers	COCORU	ATK; Wood 2007; Haack 2001	Dryocoetini	S	Y	3	0	1	2
Coccotrypes vulgaris (Eggers)	COCOVU	ATK; Haack 2001	Dryocoetini	B	Y	8	0	1	2
Cyrtogenius luteus (Blanford)	CYRGLU	WB; Fletchmann and Atkinson 2018; Faccoli et al. 2012; Gomez et al. 2012; Kirkendall et al. 2015	Dryocoetini	B	N	1	0	2	1
Dactylotrypes longicollis (Wollaston)	DACPLO	ATK; ; Kirkendall et al. 2015; Kirkendall and Faccoli 2010; Kirkendall 2018	Dryocoetini	S	N	2	0	2	2
Dryocoetes himalayensis Strohmeyer	DRYOHI	WB; Kirkendall and Faccoli 2010	Dryocoetini	B	N	2	1	1	2
Thamnurgus characiae Rosenhauer	THMNCH	WB; Mifsud & Knizek 2009	Dryocoetini	B	N	1	0	0	2
Microborus boops Blandford	micboop	ATK	Hexacolini	B	N	1	0	0	2
Hylastes angustatus (Herbst)	HYASAN	WB; Schedl 1957, 1965; Tribe 1992	Hylastini	B	N	1	0	1	1
Hylastes ater (Paykull)	HYASAR	WB; Brockerhoff et al. 2003; Kirkendall 2018	Hylastini	B	N	2	0	2	1
Hylastes linearis Erichson	HYASLI	WB; Kirkendall 2018	Hylastini	B	N	1	0	1	1
Hylastes opacus Erichson	HYASOP	ATK; Haack 2001; 2006	Hylastini	B	N	1	0	2	1
Hylastinus obscurus (Marsham)	HYATOB	ATK; Haack 2001	Hylastini	B	N	1	0	2	2
Hylurgops palliatus (Gyllenhal)	HYLUPA	ATK; Haack 2001; 2006	Hylastini	B	N	1	0	2	1
Hylesinus toranio (= *Bostrychus oleiperda*) (Danthione)	HYESOL	ATK; Kirkendall 2018	Hylesinini	B	N	1	0	1	2
Kissophagus hederae (Schmidt)	KISSHE	WB; Mifsud & Knizek 2009	Hylesinini	B	N	1	0	0	2
Dendroctonus micans (Kugelann)	DENCMI	WB; Bevan & King 1983	Hylurgini	B	Y	1	0	0	1
Dendroctonus valens LeConte	DENCVA	ATK; Yan et al. 2005	Hylurgini	B	N	1	2	2	1
Hylurgus ligniperda (Fabricius)	HYLGLI	ATK; Haack 2001; 2006; Brockerhoff et al. 2006; Kirkendall 2018	Hylurgini	B	N	1	0	2	1
Hylurgus micklitzi Wachtl	HYLGNI	WB; Mifsud & Knizek 2009	Hylurgini	B	N	1	0	1	1
Pseudohylesinus sericeus (Mannerheim)	PSDHSE	ATK	Hylurgini	B	N	1	0	2	1
Tomicus piniperda (Linnaeus)	BLASPI	ATK; Haack 2001	Hylurgini	B	N	1	0	2	1
Hypoborus ficus Erichson	HYPBFI	WB; Israelson 1990	Hypoborini	B	N	1	0	1	2
Liparthrum artemisiae Wollaston	lipart	WB; Israelson 1990	Hypoborini	B	N	1	0	0	2
Liparthrum bituberculatum Wollaston	lipbit	WB; Israelson 1990	Hypoborini	B	N	1	0	0	2
Liparthrum curtum Wollaston	lipcur	WB; Israelson 1990	Hypoborini	B	N	3	0	0	2
Liparthrum inarmatum Wollaston	lipina	WB; Israelson 1990	Hypoborini	B	N	1	0	0	2
Liparthrum mandibulare Wollaston	lipman	WB; Israelson 1990	Hypoborini	B	N	1	0	0	2

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Liparthrum mori (Aube)	LPRTMO	WB; Mifsud & Knizek 2009	Hypoborini	B	N	2	0	0	2
Ips calligraphus (Germar)	IPSXCA	ATK	Ipini	B	N	1	2	2	1
Ips cembrae (Herr)	IPSXCE	WB; Crooke & Bevan 1957	Ipini	B	N	1	2	0	1
Ips grandicollis (Eichhoff)	IPSXGR	ATK	Ipini	B	N	1	2	2	1
Orthotomicus angulatus (Eichhoff)	ortang	WB	Ipini	B	N	2	1	1	1
Orthotomicus caelatus (Eichhoff)	ORTCCA	ATK;	Ipini	B	N	1	0	2	1
Orthotomicus erosus (Wollaston)	IPSXER	ATK; Haack 2006; Mifsud & Knizek 2009; Tribe 1992	Ipini	B	N	1	2	2	1
Orthotomicus laricis (Fabricius)	IPSXLC	WB; Kirkendall 2018	Ipini	B	N	1	0	1	1
Orthotomicus proximus (Eichhoff)	IPSXPR	WB	Ipini	B	N	1	1	1	1
Pityogenes bidentatus (Herbst)	PITYBD	ATK; Haack 2001	Ipini	B	N	1	2	2	1
Pityogenes calcaratus (Eichhoff)	PITYCC	WB; Mifsud & Knizek 2009	Ipini	B	N	1	2	1	1
Pityogenes chalcographus (Linnaeus)	PITYCH	WB; Haack 2001	Ipini	B	N	1	2	1	1
Pityokteines curvidens (Germar)	PITKCU	WB	Ipini	B	N	1	2	0	1
Premnobius ambitiosus (Schaufuss)	preamb	ATK	Ipini	B	Y	5	0	1	2
Premnobius cavipennis Eichhoff	PREBCA	ATK; Haack 2001	Ipini	B	Y	32	0	2	2
Phloeosinus armatus Reitter	PHLSAR	ATK; Haack 2001	Phloeosinini	B	N	1	0	1	1
Phloeosinus cupressi Hopkins	PHLSCU	ATK; Neumann 1987; Brockerhoff et al. 2006; Wood 1977?	Phloeosinini	B	N	2	0	2	1
Phloeosinus rudis Blandford	PHLSRD	WB; Kirkendall and Faccoli 2010	Phloeosinini	B	N	1	0	1	1
Phloeosinus thujae (Perris)	PHLSTH	WB; Mifsud & Knizek 2009	Phloeosinini	B	N	1	0	1	1
Phloeotribus liminaris (Harris)	PHLBLI	ATK; Kirkendall and Faccoli 2010	Phloeotribini	B	N	2	0	2	2
Phloeotribus scarabaeoides (Bernard)	PHLBOL	WB	Phloeotribini	B	N	2	0	2	2
Polygraphus poligraphus (Linnaeus)	POLGPO	WB; EPPO GD	Polygraphini	B	N	1	2	1	1
Polygraphus proximus Blandford	POLGPR	WB; EPPO GD	Polygraphini	B	N	1	2	1	1
Polygraphus rufipennis (Kirby)	POLGRU	WB; EPPO GD	Polygraphini	B	N	1	2	1	1
Scolytus amygdali Guerin-Meneville	SCOLAM	WB; Mifsud & Knizek 2009	Scolytini	B	N	1	2	1	2
Scolytus dimidiatus Chapuis	scodim	ATK	Scolytini	B	N	2	1	1	2
Scolytus kirschi Skahtzky	SCOLKI	WB; Six et al. 2005	Scolytini	B	N	4	1	1	2
Scolytus mali (Bechstein)	SCOLMA	ATK; Haack 2001	Scolytini	B	N	2	1	2	2
Scolytus multistriatus (Marsham)	SCOLMU	ATK; Haack 2001; Brockerhoff et al. 2006; Fauna Europaea 2019; Kirkendall 2018	Scolytini	B	N	3	2	2	2
Scolytus rugulosus (Muller)	SCOLRU	ATK; Haack 2001; Mifsud & Knizek 2009; Kirkendall 2018	Scolytini	B	N	1	1	1	2
Scolytus schevyrewi Semenov	SCOLSH	ATK; Haack 2001; Lee et al., 2009	Scolytini	B	N	5	1	2	2
Scolytus sulcifrons Rey	SCOLSU	Mifsud & Knizek 2009	Scolytini	B	N	2	1	1	2

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Species	**Species code**	**Main references on the species[1]**	**Tribe**	**Feeding[2] habits**	**Inbreeding (Y/N)**	**Polyphagy[3]**	**Aggregation pheromones[4]**	**Primary attractants[5]**	**conifer / non-conifer / both[6]**
Scolytoplatypus tycon Blandford	scotyc	WB; Beaver and Gebhardt 2006; Shapovalov et al. 2010	Scolytoplatypodini	A	N	11	0	0	3
Amasa truncatus (*Xyleborus truncatus*) (Erichson)	XYLBTR	WB; Brockerhoff et al. 2006; Kirkendall 2018; Gomez et al. 2017	Xyleborini	A	Y	2	0	2	3
Ambrosiodmus compressus (Lea)	AMBDCO	WB; Brockerhoff et al. 2006	Xyleborini	A	Y	6	0	2	3
Ambrosiodmus lewisi (Blandford)	AMBDLE	WB; Haack 2001; 2006	Xyleborini	A	Y	15	0	2	2
Ambrosiodmus minor (Stebbing)	AMBDMI	ATK	Xyleborini	A	Y	5	0	1	2
Ambrosiodmus obliquus (LeConte)	AMBDOB	ATK; Faccoli et al. 2009	Xyleborini	A	Y	17	0	2	2
Ambrosiodmus rubricollis (Eichhoff)	AMBDRU	HB; Haack 2001; Kirkendall et Faccoli 2010	Xyleborini	A	Y	17	0	2	2
Ambrosiophilus (*Xyleborus*) *atratus* (Eichhoff)	XYLBAT	ATK; Kirkendall and Faccoli 2010; Haack 2001; 2006	Xyleborini	A	Y	4	0	2	3
Ambrosiophilus nodulosus (Eggers)	AMBHNO	ATK; Smith and Cognato 2015 ; Smith et al. 2017	Xyleborini	A	Y	3	0	1	2
Anisandrus (*Xyleborus*) *dispar* (Fabricius)	XYLBDI	ATK; Haack 2001	Xyleborini	A	Y	17	0	2	3
Anisandrus maiche (Kurentzov)	ANIDMA	ATK; Rabaglia et al. 2009; EPPO 2013	Xyleborini	A	Y	5	0	2	2
Cnestus (*Xylosandrus*) *mutilatus* (Blandford	XYLSMU	ATK; Haack 2001; 2006	Xyleborini	A	Y	13	0	2	3
Cyclorhipidion bodoanum (*Xyleborus californicus*) (Reitter)	XYLBCA	ATK; Haack 2001; Kirkendall and Faccoli 2010; Inward (in press)	Xyleborini	A	Y	3	0	2	2
Cyclorhipidion fukiense (Eggers)	CYCRFU	ATK; Hoebeke et al. 2018	Xyleborini	A	Y	1	1	2	2
Cyclorhipidion pelliculosum (Eichhoff)	XYLBPL	ATK; Atkinson et al. 1990	Xyleborini	A	Y	3	0	2	2
Dryocoetoides cristatus (Fabricius)	drycris	WB; Zanuncio et al 2005;	Xyleborini	A	Y	4	0	1	2
Dryoxylon onoharaense (Murayama)	DRYXON	ATK; Haack 2001	Xyleborini	A	Y	4	0	0	2
Eccoptopterus spinosus (Olivier)	ECCOSI	WB; Beaver 1988	Xyleborini	A	Y	10	0	2	2
Euwallacea (*Xyleborus*) *piceus* (Motschulsky)	EUWAPI	WB; Beaver 1988	Xyleborini	A	Y	26	1	1	3
Euwallacea (Xyleborus) similis (Ferrari)	XYLBSI	Atkinson 2021; Haack 2001; 2006; O'Donnell et al. 2016; Beaver & Liu 2016	Xyleborini	A	Y	5	1	2	3
Euwallacea fornicatus (Eichhoff)	EUWAWH	ATK; Haack 2006; Mendel et al., 2012; Paap et al. 2018; Beaver & Liu 2016.	Xyleborini	A	Y	18	2	2	2
Euwallacea interjectus (Blandford)	XYLBIN	ATK; Cognato et al. 2015	Xyleborini	A	Y	19	1	2	3
Euwallacea kuroshio Gomez and Hulcr	EUWAKU	ATK; Gomez et al 2018b	Xyleborini	A	Y	1	1	1	2
Euwallacea perbrevis (Schedl, 1951)	EUWAPE	ATK; Smith et al 2019	Xyleborini	A	Y	17	2	2	2
Euwallacea validus (Eichhoff)	XYLBVA	ATK; Haack 2001	Xyleborini	A	Y	18	1	2	3
Microperus (*Coptodryas*) *eucalypticus* (Schedl)	MIPREU	Morgan 1967; Brockerhoff et al. 2006; Beaver & Liu 2016	Xyleborini	A	Y	6	0	0	2

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Microperus quercicola (Eggers)	micquer	Mandelshtam et al 2018; Lantschner et al 2020	Xyleborini	A	Y	4	0	0	2
Planiculus (Euwallacea) bicolor (Blandford)	euwabic	Beaver 1988	Xyleborini	A	Y	12	1	1	2
Theoborus ricini (Eggers)	theori	ATK	Xyleborini	A	Y	13	0	2	2
Truncaudum (*Cyclorhipidion*) *agnatum* (Eggers)	TRUCAG	WB; Beaver & Liu 2016	Xyleborini	A	Y	4	0	2	2
Xyleborinus andrewesi (Blandford)	XYBIAN	ATK; Okins & Thomas 2010; Beaver 1988	Xyleborini	A	Y	14	0	2	2
Xyleborinus artestriatus (Eichhoff)	XYBIAR	ATK; Cognato et al. 2013	Xyleborini	A	Y	7	0	2	2
Xyleborinus attenuatus (Blandford)	XYBIAL	ATK; Haack 2001; 2006; Kirkendall et Faccoli 2010	Xyleborini	A	Y	7	0	2	2
Xyleborinus exiguus (Walker)	XYBIEX	ATK	Xyleborini	A	Y	13	0	1	2
Xyleborinus gracilis Eichhoff	XYBIGR	ATK; Bright & Peck 1998	Xyleborini	A	Y	14	0	2	2
Xyleborinus octiesdentatus (Murayama)	XYBIOC	ATK; Rabaglia et al. 2010	Xyleborini	A	Y	3	0	2	2
Xyleborinus saxeseni (Ratzeburg)	XYLBSA	ATK; Haack 2001; Brockerhoff et al. 2006; Mifsud & Knizek 2009; Beaver & Liu 2016	Xyleborini	A	Y	24	0	2	3
Xyleborus affinis Eichhoff	XYLBAF	ATK; Kirkendall & Faccoli 2010; Beaver & Liu 2016; Beaver 1988; Beaver & Liu 2016	Xyleborini	A	Y	47	0	2	3
Xyleborus africanus Eggers	xylafr	WB; Beaver 1988	Xyleborini	A	Y	7	0	1	2
Xyleborus atratus Eichhoff	xylatr	WB; Faccoli 2008	Xyleborini	A	Y	15	0	2	3
Xyleborus bispinatus Eichhoff	XYLBBI	ATK; Faccoli et al. 2016	Xyleborini	A	Y	6	0	2	2
Xyleborus ferrugineus (Fabricius)	XYLBFE	ATK; Beaver & Liu 2016; Bright & Peck 1998; Beaver 1988; Beaver & Liu 2016	Xyleborini	A	Y	33	0	2	3
Xyleborus glabratus Eichhoff	XYLBGR	ATK; Haack 2001; 2006	Xyleborini	A	Y	4	0	2	3
Xyleborus monographus (Fabricius)	XYLBMO	ATK; Rabaglia et al. 2020; Smith et al 2020	Xyleborini	A	Y	6	0	2	2
Xyleborus perforans (Wollaston)	XYLBPE	WB; Beaver & Liu 2016; Beaver 1988	Xyleborini	A	Y	28	0	2	2
Xyleborus pfeilii (Ratzeburg)	XYLBPF	ATK; Haack 2001, 2006; Kirkendall et Faccoli 2010	Xyleborini	A	Y	13	0	2	3
Xyleborus seriatus Blandford	XYLBSE	ATK; Haack 2006	Xyleborini	A	Y	12	0	2	3
Xyleborus spinulosus Blandford	XYLBSN	ATK; Bright & Peck 1998	Xyleborini	A	Y	13	0	2	3
Xyleborus volvulus (Fabricius)	xylvol	ATK; Beaver 1988; Bright & Peck 1998	Xyleborini	A	Y	25	0	2	3
Xylosandrus (*Apoxyleborus*) *mancus* (Blandford)	xylman	WB; Beaver 1988	Xyleborini	A	Y	14	0	2	2
Xylosandrus amputatus (Blandford)	XYLSAM	ATK; Cognato et al. 2011	Xyleborini	A	Y	4	0	2	2

Table S-1a. Main characteristics of the 163 Scolytinae with an invasion history. Biological traits

Species	Species code	Main references on the species[1]	Tribe	Feeding[2] habits	Inbreeding (Y/N)	Polyphagy[3]	Aggregation pheromones[4]	Primary attractants[5]	conifer / non-conifer / both[6]
Xylosandrus compactus (Eichhoff)	XYLSCO	ATK; Haack 2001; Garonna et al. 2012; Beaver 1988; Beaver & Liu 2016	Xyleborini	A	Y	28	0	2	2
Xylosandrus crassiusculus (Motschulsky)	XYLSCR	ATK; Haack 2001; Kirkendall and Faccoli 2010; Kirkendall 2018; padil 2019; Beaver 1988; Beaver & Liu 2016; EPPO 2019	Xyleborini	A	Y	51	0	2	3
Xylosandrus germanus (Blandford)	XYLSGE	ATK; Haack 2001; Kirkendall et Faccoli 2010;	Xyleborini	A	Y	29	0	2	3
Xylosandrus morigerus (Blandford)	XYLSMO	ATK; Kirkendall et Faccoli 2010; Beaver 1988; Beaver & Liu 2016	Xyleborini	A	Y	39	0	2	2
Xylosandrus pseudosolidus (Schedl)	XYLSPS	WB; Brockerhoff et al. 2006	Xyleborini	A	Y	4	0	1	3
Xyloterinus politus (Say)	xypol	WB; Dodelin & Saurat 2017	Xyleborini	A	Y	7	0	2	2
Trypodendron domesticum (Linnaeus)	TRYDDO	ATK; Haack 2001; Fauna Europaea 2019	Xyloterini	A	N	8	2	2	2

Table S-1b. Main characteristics of the 163 Scolytinae with an invasion history. Impact and landmasses colonised

Species	Spec code	Impact on plant health[7]	References on impact	Comments on impact	Nb of land masses	Landmasses[8]
Amasa truncatus (*Xyleborus truncatus*) (Erichson)	XYLBTR	1	damage	Borer of dead exotics and natives, also in live eucalypts	4	AUS; TAS; SAM; NZL
Ambrosiodmus compressus (Lea)	AMBDCO	1	Brockerhoff & Bain (2000)	Borer of dead exotics and natives, also in live eucalypts	2	AUS; NZL
Ambrosiodmus lewisi (Blandford)	AMBDLE	0	Haack 2006	From dead oak branches	9	ASI; JPN; LKA; TWN; BOR; JAW; SUM; PHL; NAM
Ambrosiodmus minor (Stebbing)	AMBDMI	0	Hulcr et al. 2018	Wood decay	2	NAM; ASI
Ambrosiodmus obliquus (LeConte)	AMBDOB	0	Faccoli et al. 2009		7	AFR; CAM; HIS; GLP; PRI; NAM; SAM
Ambrosiodmus rubricollis (Eichhoff)	AMBDRU	1	Kirkendall & Faccoli (2010)	On a live *Aesculus hippocastaneum*	7	NAM; EUR; ASI; BON; JPN; TWN; AUS
Ambrosiophilus (*Xyleborus*) *atratus* (Eichhoff)	XYLBAT	0	Rabaglia 2006		10	ASI; JAW; SUM; PHL; JPN; NAM; NWG; EUR; TWN; IDN
Ambrosiophilus nodulosus (Eggers)	AMBHNO	0		No data on damage to plant health	2	ASI; NAM
Anisandrus (*Xyleborus*) *dispar* (Fabricius)	XYLBDI	1	CABI 2021b	The beetle preferentially attacks stressed trees.	4	ASI; NAM; EUR; GBR
Anisandrus maiche (Kurentzov)	ANIDMA	0	Terekhova & Skrylnik (2012)	Drying out trees and fresh deadwood trees	3	ASI; NAM ; EUR
Aphanarthrum (*Coleobothrus*) *alluaudi* Peyerimhoff	aphall	0		Fungi: Kolarik et al (2007). Impact: No data on damage to plant health	2	AFR; CNY
Aphanarthrum affine Wollaston	aphaff	0		Fungi: Kolarik et al (2007). Impact: No data on damage to plant health	3	AFR; EUR; CNY
Aphanarthrum bicolor Wollaston	aphbic	0		Fungi: Kolarik et al (2007). Impact: No data on damage to plant health	2	CNY; MDR
Aphanarthrum mairei Peyerimhoff	aphmai	0		Fungi: Kolarik et al (2007). Impact: No data on damage to plant health	3	AFR; CNY; MDR
Aphanarthrum piscatorium Wollaston	aphpis	0		Fungi: Kolarik et al (2007). Impact: No data on damage to plant health	2	CNY; MDR
Cnestus (*Xylosandrus*) *mutilatus* (Blandford	XYLSMU	0	CABI 2018	https://www.cabi.org/isc/datasheet/57239	8	ASI; NAM; LKA; JPN; OKI; TWN; IDN; NWG
Coccotrypes aciculatus Schedl	cocoac	0		No data on damage to plant health	6	CAM; BRB; CUB; NAM; NWG; SAM

[7] 0 = no documented impact; 1 = indications of impact, with some uncertainties; 2 = known substantial impact

[8] See the acronyms in Table S-2. Landmasses: all areas isolated by a sea or an ocean (islands and continents).

Table S-1b. Main characteristics of the 163 Scolytinae with an invasion history. Impact and landmasses colonised

Species	Spec code	Impact on plant health[7]	References on impact	Comments on impact	Nb of land masses	Landmasses[8]
Coccotrypes advena Blandford	COCOAD	0	Seybold et al. 2016	*Coccotrypes advena* Blandford is thought to be native to Asia (Indonesia) and breeds in either bark or large seeds of a variety of tropical hosts	16	CUB; JPN; LKA; AUS; NZL; FJI; BOR; JAW; SUM; HAW; FSM; NWG; NAM; PHL; WSM; SAM
Coccotrypes carpophagus (Hornung)	COCOCA	1	Rodriguez et al. 2014	"Janzen [14] found up to 99% of *Euterpe globosa* seeds damaged by *Coccotrypes carpophagus* in Puerto Rico"	30	AFR; AZO; CNY; MDG; REU; SYC; ASI; IDN; PHL; LKA; CAM; BMU; CUB; GRD; GLP; JAM; MSR; PRI; HIS; VIL; GBR; EUR; JPN; NAM; AUS; GUM; HAW; SAM; TTO; GAL
Coccotrypes cyperi (Beeson)	COCOCY	0	Kirkendall 2018; Beaver 1987b	"This polyphagous *Coccotrypes* is widely distributed in tropical and subtropical environments around the world, and breeds in everything from seeds and twigs to under bark of branches"	21	ASI; IDN; LKA; CAM; GLP; JAM; MTQ; PRI; HIS; NAM; AUS; COK; FJI; FSM; WSM; TAH; TON; HAW; SAM; TTO; SYC
Coccotrypes dactyliperda Fabricius	COCODA	2	Rodriguez et al. 2014	"Blumberg [33] quoted a 30–40% yield loss of unripe *P. dactylifera* dates attacked by C. dactyliperda in Israel"	25	AFR; CNY; MDG; MDR; ASI; IDN; CAM; BHS; CUB; JAM; PRI; HIS; EUR; JPN; NAM; AUS; NWG; NZL; SLB; HAW; GAL; TTO; SAM; MLT; SYC
Coccotrypes distinctus (Motschulsky)	COCODI	0		No data on damage to plant health	14	LKA; CAM; JAM; PRI; HIS; VIL; BMU; NAM; GUM; FSM; NWG; HAW; SAM; NZL
Coccotrypes rhizophorae (Hopkins)	COCORH	2	Sousa et al. 2003	"Mortality due to beetle attack increased linearly from an average of 10% inside a gap to 72% at 20 m into the forest"	6	ASI; JAW; SUM; IDN; NAM; GAL
Coccotrypes robustus Eichhoff	COCORO	0		No data on damage to plant health	3	PRI; CUB; NAM
Coccotrypes rutschuruensis Eggers	COCORU	0		No data on damage to plant health	3	AFR; NAM; SAM
Coccotrypes vulgaris (Eggers)	COCOVU	0	Beaver 1976		11	ASI; IDN; LUZ; LKA; CAM; PRI; NAM; FJI; NWG; WSM; SAM
Cryphalus pallidus Eichhoff	cryphpa	0	Johnson et al 2017	in Lantschner et al 2020	4	AFR; EUR; SYC; MDG
Cryphalus wapleri Eichhoff	CRYHWA	0		No data on damage to plant health	3	AUS; NZL; NWG
Cryptocarenus heveae (Hagedorn)	cryphev	0	Wood 1977	"It infests the pith of small, broken, or unthrifty stems of a wide variety of trees, shrubs, and woody vines."	10	AFR; CAM; CUB; GLP; JAM; PRI; HIS; NAM; SAM; TTO
Crypturgus cylindricollis Eggers	CRYUCY	0		No data on damage to plant health	3	EUR; ASI; MLT
Crypturgus numidicus Ferrari	CRYUNU	0		No data on damage to plant health	7	EUR; COR; SAR; SIC; AFR; ASI; MLT

Table S-1b. Main characteristics of the 163 Scolytinae with an invasion history. Impact and landmasses colonised

Species	Spec code	Impact on plant health[7]	References on impact	Comments on impact	Nb of land masses	Landmasses[8]
Crypturgus pusillus (Gyllenhal)	CRYUPU	0		No data on damage to plant health	7	AFR; ASI; EUR; GBR; TWN; JPN; NAM
Cyclorhipidion bodoanum (*Xyleborus californicus*) (Reitter)	XYLBCA	0	Inward 2019	No data on damage to plant health	4	ASI; NAM; EUR; GBR
Cyclorhipidion fukiense (Eggers)	CYCRFU	0		No data on damage to plant health	3	ASI; TWN; NAM
Cyclorhipidion pelliculosum (Eichhoff)	XYLBPL	0		No data on damage to plant health	3	ASI; JPN; NAM
Cyrtogenius luteus (Blanford)	CYRGLU	0		No data on damage to plant health	14	ASI; JPN; TWN; JAW; PHL; FSM; BIS; CRL; GIL; MAR; WSM; NWG; SAM; EUR
Dactylotrypes longicollis (Wollaston)	DACPLO	0		No data on damage to plant health	5	MDR; CNY; EUR; NAM; SAM
Dendroctonus micans (Kugelann)	DENCMI	2	Grégoire 1988		4	ASI; SAK; EUR; GBR
Dendroctonus valens LeConte	DENCVA	2	Liu et al. 2013	Fungi: Lu et al. 2009	3	CAM; NAM; ASI
Dryocoetes himalayensis Strohmeyer	DRYOHI	0	Foit et al. 2017		2	ASI; EUR
Dryocoetoides cristatus (Fabricius)	drycris	0		No data on damage to plant health	4	AFR; STP; TTO; SAM
Dryoxylon onoharaense (Murayama)	DRYXON	0		No data on damage to plant health	2	NAM; JPN
Eccoptopterus spinosus (Olivier)	ECCOSI	0	Beaver 1987	No data on damage to plant health	19	AFR; SYC; CNY; FER; ASI; AND; JPN; LKA; TWN; AUS; BOR; CEL; JAW; SUM; MDG; NWG; PHL; REU; TON
Euwallacea (*Xyleborus*) *piceus* (Motschulsky)	EUWAPI	1	CABI 2021d	"It attacks dying, dead and recently felled trees. It has not been found in living trees"	16	SYC; AFR; AND; LKA; ASI; TWN; AUS; FJI; BOR; JAW; MEN; MDG; FSM; NWG; PHL; WSM
Euwallacea (Xyleborus) similis (Ferrari)	XYLBSI	1	CABI 2021k	« Attacks by *X. similis* are normally secondary on stressed, dying or dead trees. However, the species could become a pest in reforestation projects or in plantations"	26	AFR; MDG; MUS; SYC; CCK; ASI; IDN; PHL; LKA; TWN; JPN; NAM; AUS; CRL; CXR; FJI; GUM; KIR; MHL; FSM; NWG; SLB; TAH; HAW; NCL; SAM
Euwallacea fornicatus (Eichhoff)	EUWAWH	2	Smith et al. 2019	"Ambrosia beetles of the *Euwallacea fornicatus* (Eichhoff, 1868) species complex are emerging tree pests, responsible for significant damage to orchards and ecosystems around the world"	24	AFR; COM; REU; ASI; JAW; SUM; LUZ; LKA; CAM; ASI; TWN; JPN; NAM; AUS; CRL; FJI; GUM; NBR; NWG; NZL; WSM; HAW; NCL; SAM
Euwallacea interjectus (Blandford)	XYLBIN	2	Cognato et al 2015	"This species has the potential to transmit tree fungal diseases given the evidence that it exacerbates fig wilt in Japanese orchards"	13	ASI; BOR; JAW; SUM; MEN; PHL; TWN; LKA; JPN; OKI; NAM; SAM; HAW

Table S-1b. Main characteristics of the 163 Scolytinae with an invasion history. Impact and landmasses colonised

Species	Spec code	Impact on plant health[7]	References on impact	Comments on impact	Nb of land masses	Landmasses[8]
Euwallacea kuroshio Gomez and Hulcr	EUWAKU	2	Smith et al. 2019	"Ambrosia beetles of the *Euwallacea fornicatus* (Eichhoff, 1868) species complex are emerging tree pests, responsible for significant damage to orchards and ecosystems around the world"	5	ASI; JAW; TWN; JPN; NAM
Euwallacea perbrevis (Schedl, 1951)	EUWAPE	2	Smith et al. 2019	"Ambrosia beetles of the *Euwallacea fornicatus* (Eichhoff, 1868) species complex are emerging tree pests, responsible for significant damage to orchards and ecosystems around the world"	14	AFR; MDG; MUS; ASI; JAW; LKA; CAM; BRB; CUB; HIS; GLP; PRI; KNA; NAM; AUS; CRL; COK; REU; WSM; HAW; SAM; SYC
Euwallacea validus (Eichhoff)	XYLBVA	2	Cognato et al 2015	"*Euwallacea validus* has been implicated in the transmission of *Verticillium nonalfalfae* Inderb., a fungal disease of tree-of-heaven (*Ailanthus altissima* (Mill.) Swingle) and striped maple"	4	ASI; PHL; JPN; NAM
Gnathotrichus materiarius (Fitch)	GNAHMA	0	Inward 2019	"*Gnathotrichus materiarius* attacks only dead and dying hosts, and damage to date has been limited to the excavation of galleries in timber and staining by the fungus"	4	EUR; HIS; NAM; GBR
Hylastes angustatus (Herbst)	HYASAN	1	Reay & Walsh 2002a	"*Hylastes angustatus* (Herbst) was reported to kill *Pinus patula* Schiede & Deppe seedlings in South Africa, but there was little quantitative assessment given (Atkinson & Govender 1997"	3	AFR; EUR; GBR;
Hylastes ater (Paykull)	HYASAR	1	Reay & Walsh 2002a	"*H. ater* attack was the dominant factor contributing to seedling mortality in the first year following planting"	8	AZO; ASI; JPN; AUS; EUR; GBR; NZL; SAM
Hylastes linearis Erichson	HYASLI	0	Mendel et al. 1997	"Mortality due to other biotic agents, i.e., *Hylastes linearis* and *Pityophthorus pubescens* was practically nil"	7	AFR; CNY; MDR; EUR; GBR; COR; SAM
Hylastes opacus Erichson	HYASOP	0	Kumbasli et al. 2018	"*H. opacus* breeds in the bark of stumps or at the bases of unhealthy Pinus spp."	5	EUR; GBR; JPN; ASI; NAM
Hylastinus obscurus (Marsham)	HYATOB	0		On red clover (*Trifolium pratense*)	7	AFR; CNY; MDR; EUR; GBR; NAM; SAM
Hylesinus toranio (= *Bostrychus oleiperda*) (Danthione)	HYESOL	0	Abia et al. (2014)	On olive trees	6	AFR; ASI; JPN; EUR; GBR; SAM
Hylurgops palliatus (Gyllenhal)	HYLUPA	0		On fallen trees	6	AFR; EUR; ASI; GBR; JPN; NAM

Table S-1b. Main characteristics of the 163 Scolytinae with an invasion history. Impact and landmasses colonised

Species	Spec code	Impact on plant health[7]	References on impact	Comments on impact	Nb of land masses	Landmasses[8]
Hylurgus ligniperda (Fabricius)	HYLGLI	0	Reay & Walsh 2002a	"there is no evidence that overwintering *H. ligniperda* larval populations are a threat to seedlings in New Zealand"	13	AFR; AZO; CNY; MDR; SHN; EUR; ASI; GBR; JPN; NAM; AUS; NZL; SAM
Hylurgus micklitzi Wachtl	HYLGNI	0		No data on damage to plant health	6	EUR; SAR; SIC; ASI; AFR; MLT
Hypoborus ficus Erichson	HYPBFI	1	CABI 2018	Fungi: Kolarik et al (2007). Impact: https://www.cabi.org/isc/datasheet/24078 - "*Hypoborus ficus* is one of the common pests of fig that causes drying out and death of the tree"	7	AFR; AZO; ASI; EUR; SAR; CNY; MDG
Cryphalus scabricollis (Eichhoff)	CRYHSC	1	Faccoli et al. (2016)	"Although *H. scabricollis* usually colonizes the bark of dying or stressed trees, according to what observed both in Malta and Sicily the species is able to infest also apparently healthy fig trees, killing them in a few weeks"	8	ASI; AND; HAI; LKA; LUZ; MLT; SIC; AFR
Cryphalus dilutus (Eichhoff)	hypdil	0		No data on damage to plant health	5	AFR; ASI; EUR; MLT; NAM
Cryphalus mangiferae (Stebbing)	HYPCMA	1	Al Adawi et al. 2014	"The mango sudden decline pathogen, *Ceratocystis manginecans*, is vectored by *Hypocryphalus mangiferae* (Coleoptera: Scolytinae) in Oman"	22	AFR; MDG; MUS; ASI; JAW; LKA; CAM; BRB; CUB; HIS; GLP; PRI; KNA; NAM; AUS; CRL; COK; REU; WSM; HAW; SAM; SYC
Hypothenemus africanus (Hopkins)	HYOTAF	0		No data on damage to plant health	10	AFR; JAW; CAM; BHS; JAM; PRI; HIS; VIL; NAM; SAM
Hypothenemus areccae (Hornung)	HYOTSU	1	Beaver 1987	"*H. areccae* has been recorded killing mango seedlings in Malaya"	21	AFR; ASI; IDN; PHL; LKA; CAM; BHS; MTQ; PRI; VIL; EUR; NAM; CRL; FJI; MRQ; MHL; NCL; AUS; NZL; HAW; SAM
Hypothenemus birmanus (Eichhoff)	HYOTBI	1	Beaver 1987	"*H. birmanus* contributed to the death of mango transplants in Western Samoa"	27	MDG; ASI; COK; FJI; IDN; PHL; SYC; LKA; CAM; CUB; JAM; PRI; JPN; NAM; AUS; GUM; HEN; FSM; NBR; NCL; NZL; PNG; WSM; SCI; HAW; SAM; GAL
Hypothenemus brunneus Hopkins	HYOTBR	0	Bright & Peck 1998	"Adults attack injured or broken branches."	11	CAM; BHS; CUB; GLP; JAM; PRI; VIL; NAM; SAM; TTO; GAL
Hypothenemus californicus Hopkins	HYOTCA	0	Bright & Peck 1998	"This species feeds on a wide variety of host plants"	7	AFR; CAM; LCA; ASI; NAM; SAM; GAL
Hypothenemus columbi Hopkins	HYOTCO	0	Bright & Peck 1998	"The biology of this species is similar to that of *H. eruditus*"	9	CAM; ATG; BHS; CUB; PRI; NAM; SAM; TTO; GAL

Table S-1b. Main characteristics of the 163 Scolytinae with an invasion history. Impact and landmasses colonised

Species	Spec code	Impact on plant health[7]	References on impact	Comments on impact	Nb of land masses	Landmasses[8]
Hypothenemus crudiae (Panzer)	HYOTHI	2	Wood 1977; Bright & Peck 1998	Wood 1977: "its greatest populations occur in seeds, pods, or other fruiting bodies, where it has caused much economic damage in mature seeds both in the field and in storage. Its importance in agriculture or forestry is limited to its effect on seed production."	21	AFR; CPV; MDG; ASI; JAW; LKA; CAM; CUB; GRD; MSR; PRI; HIS; NAM; AUS; COK; MRQ; FSM; HAW; SAM; GAL; TTO;
Hypothenemus elephas (Eichhoff)	hypele	0		No data on damage to plant health	4	AFR; MDG; MUS; SAM
Hypothenemus erectus LeConte	HYOTER	0		No data on damage to plant health	7	CAM; BHS; CUB; JAM; VIL; NAM; SAM
Hypothenemus eruditus Westwood	HYOTEU	1	Kambestad et al 2017	"*H. eruditus* usually breeds in dead, sometimes quite dry, host tissues, and is generally not considered to be a pest. However, attacks on commercially important plants such as coffee, cocoa, macadamia nuts, camphor trees, plane trees, and timber of rubberwood have been reported"	37	AFR; AZO; CNY; MDG; SYC; ASI; JAW; SUM; MRQ; PHL; LKA; CAM; BHS; CUB; DMA; GLP; JAM; NEV; PRI; HIS; VCT; VIL; GBR; EUR; TWN; JPN; NAM; AUS; COK; FJI; FSM; NCL; HAW; SAM; GAL; TTO; MLT
Hypothenemus hampei (Ferrari)	STEHHA	2	Vega et al. 2015	on coffee berries	18	AFR; CNY; FER; STP; ASI; JAW; SUM; PHL; LKA; CAM; JAM; PRI; NAM; FSM; NCL; WSM; TAH; SAM
Hypothenemus javanus (Eggers)	HYOTJA	0	Vega et al. 2015		17	AFR; STP; ASI; JAW; PHL; LKA; CAM; BHS; CUB; P; GLHIS; MTQ; TWN; NAM; HAW; SAM; SYC
Hypothenemus leprieuri (Perris)	HYOTLE	0		No data on damage to plant health	5	AFR; ASI; SAR; CYP; MLT
Hypothenemus obscurus (Fabricius)	HYOTOB	1	Vega et al. 2015	"...the second most economically damaging species in the genus (after the coffee berry borer)"	12	JAW; CAM; CUB; GLP; JAM; PRI; HIS; NAM; HAW; SAM; GAL; TTO
Hypothenemus plumeriae (Nordlinger)	STEHPL	0		No data on damage to plant health	9	AFR; CAM; GLP; HIS; NAM; HAW; SAM; GAL; TTO
Hypothenemus pubescens Hopkins	HYOTPB	0		No data on damage to plant health	4	PRI; NAM; HAW; SAM
Hypothenemus seriatus (Eichhoff)	STEHSE	1	Vega et al. 2015	"This species is also known to damage cocoa seedlings"	22	AFR; MDG; SYC; JAW; PHL; LKA; CAM; BHS; BRB; CUB; HIS; PRI; DMA; VIL; ASI; NAM; AUS; FJI; FSM; HAW; SAM; GAL
Hypothenemus setosus (Eichhoff)	HYOTSE	0		No data on damage to plant health	11	AFR; MDG; CAM; CUB; GLP; HIS; JAM; PRI; TWN; NAM; SAM
Ips calligraphus (Germar)	IPSXCA	0		No data on damage to plant health	5	LUZ; BHS; JAM; HIS; NAM;

Table S-1b. Main characteristics of the 163 Scolytinae with an invasion history. Impact and landmasses colonised

Species	Spec code	Impact on plant health[7]	References on impact	Comments on impact	Nb of land masses	Landmasses[8]
Ips cembrae (Herr)	IPSXCE	1		Fungi: Redfern, D. B., Stoakley, J. T., Steele, H., & Minter, D. W. (1987). Dieback and death of larch caused by *Ceratocystis laricicola* sp. nov. following attack by *Ips cembrae*. Plant Pathology, 36(4), 467-480.	2	EUR; GBR;
Ips grandicollis (Eichhoff)	IPSXGR	1	CABI 2018	Fungi: Zhou et al. 2007; Stone & Simpson, 1989. Impact: https://www.cabi.org/isc/datasheet/28825	5	BHS; HIS; JAM; AUS; NAM
Kissophagus hederae (Schmidt)	KISSHE	0		No data on damage to plant health	7	AFR; EUR; SAR; SIC; GBR; MLT; ASI
Liparthrum artemisiae Wollaston	lipart	0		No data on damage to plant health	2	MDR; CNY
Liparthrum bituberculatum Wollaston	lipbit	0		No data on damage to plant health	2	MDR; CNY
Liparthrum curtum Wollaston	lipcur	0		No data on damage to plant health	3	AZO; MDR; CNY
Liparthrum inarmatum Wollaston	lipina	0		No data on damage to plant health	3	MDR; CNY; AFR
Liparthrum mandibulare Wollaston	lipman	0		No data on damage to plant health	2	MDR; CNY
Liparthrum mori (Aube)	LPRTMO	0		No data on damage to plant health	4	AFR; EUR; SAR; MLT
Microborus boops Blandford	micboop	0	Wood 1977	Branches	6	AFR; MDG; CAM; JAM; SAM; TTO
Microperus (*Coptodryas*) *eucalypticus* (Schedl)	MIPREU	0	Beaver & Liu 2016	"(…) with the exception of *M. eucalypticus*, (…) all have been recorded as pest species"	3	AUS; NZL; NCL
Microperus quercicola (Eggers)	micquer	0		No data on damage to plant health	3	ASI; JPN; TWN
Monarthrum mali (Fitch)	MNTHMA	0	Kirkendall et al. 2008	"The eastern USA species *M. mali* and *M. fasciatum* attack dying, injured, or recently cut trees"	8	EUR; BHS; CUB; DMA; HIS; GLP; PRI; NAM
Orthotomicus angulatus (Eichhoff)	ortang	0		No data on damage to plant health	3	ASI; JPN; TWN
Orthotomicus caelatus (Eichhoff)	ORTCCA	0		No data on damage to plant health	3	AFR; BHS; NAM
Orthotomicus erosus (Wollaston)	IPSXER	1	CABI 2018; Mendel 1987	https://www.cabi.org/isc/datasheet/37954; Mendel 1987: "Severe outbreaks occur after excessive thinning followed by a winter with low rainfall, in plots with poor phytosanitation, where there is a lack of ecological adaption of pine species, or after fire in adjoining stands. P. *calcaratus* also attacks young seedlings affected by the Israeli pine bast scale."	13	EUR; AZO; COR; GBR; SAR; SIC; MLT; AFR; MDR; FJI; ASI; NAM; SAM
Orthotomicus laricis (Fabricius)	IPSXLC	0		Expert knowledge	9	AFR; ASI; JPN; SAK; EUR; COR; GBR; SAR; SAM
Orthotomicus proximus (Eichhoff)	IPSXPR	0		No data on damage to plant health	4	ASI; JPN; EUR; COR; MDG

Table S-1b. Main characteristics of the 163 Scolytinae with an invasion history. Impact and landmasses colonised

Species	Spec code	Impact on plant health[7]	References on impact	Comments on impact	Nb of land masses	Landmasses[8]
Pagiocerus frontalis (Fabricius)	PAGIFR	0	Kirkendall et al. 2015	"often collected from seeds of Lauraceae, including commercial avocado (*Persea americana* Mill.). In Mexico, it bores into partially or completely exposed seeds lying on the ground and does not attack fruits on the tree"	8	GAL; NAM; CUB; GLP; HIS; JAM; CAM; SAM
Phloeosinus armatus Reitter	PHLSAR	1	Mendel 1984	"They breed on stems and branches of well-developed trees which are suffering from sudden stress due to drought, fire, root damage, or heavy infestation by the fungus *Seiridium cardinale* (Wag.)"	4	CYP; EUR; ASI; NAM
Phloeosinus cupressi Hopkins	PHLSCU	0		https://www.nzffa.org.nz/farm-forestry-model/the-essentials/forest-health-pests-and-diseases/Pests/Phloeosinus-cupressi/the-cypress-bark-beetle/: "The cypress barkbeetle breeds under the bark of dead and dying trees but is more often found under the bark of felled trees or in dead branches."	4	CAM; NAM; AUS; NZL
Phloeosinus rudis Blandford	PHLSRD	1	Moraal 2010; Moucheron et al. 2019	On weakened trees. "In the summer of 2004, hundreds of shrubs and trees of Cupressaceae in The Netherlands were killed by the Japanese cypress bark beetle, *Phloeosinus rudis*."	3	ASI; JPN; EUR
Phloeosinus thujae (Perris)	PHLSTH	1	Moraal 2010	"In addition [to P. rudis], the Mediterranean cypress bark beetles *Phloeosinus bicolor* and *Phloeosinus thujae* were identified as well as the cause of death of many Cupressaceae on several locations in 2004."	9	AFR; ASI; MLT; EUR; GBR; COR; SAR; SIC; CNY
Phloeotribus liminaris (Harris)	PHLBLI	1	Pennacchio et al 2004	"The beetle's wintering activity is particularly harmful, as it digs refuges in the vital internal bark of trees in good vegetative condition"	2	NAM; EUR
Phloeotribus scarabaeoides (Bernard)	PHLBOL	1	González & Campos (1994)	No data on damage to plant health	6	AFR; ASI; EUR; CYP; COR; SAR
Pityogenes bidentatus (Herbst)	PITYBD	0		No data on damage to plant health	5	MDG; EUR; GBR; ASI; NAM

Table S-1b. Main characteristics of the 163 Scolytinae with an invasion history. Impact and landmasses colonised

Species	Spec code	Impact on plant health[7]	References on impact	Comments on impact	Nb of land masses	Landmasses[8]
Pityogenes calcaratus (Eichhoff)	PITYCC	1	Mendel 1987	"Severe outbreaks occur after excessive thinning followed by a winter with low rainfall, in plots with poor phytosanitation, where there is a lack of ecological adaption of pine species, or after fire in adjoining stands. P. calcaratus also attacks young seedlings affected by the Israeli pine bast scale."	6	MLT; EUR; COR; SAR; AFR; ASI
Pityogenes chalcographus (Linnaeus)	PITYCH	1	Hedgren 2004	"this study confirms *P. chalcographus* as a species restricted to weakened, or recently killed trees"	7	JAM; ASI; KUR; SAK; JPN; EUR; GBR
Pityokteines curvidens (Germar)	PITKCU	1	CABI 2018	https://www.cabi.org/isc/datasheet/45720	4	AFR; ASI; JPN; EUR
Pityophthorus juglandis Blackman	PITOJU	2	EPPO 2015	Fungi: Kolarik et al 2011; pheromone: not in Pherobase but described in a patent by Seybold & USDA	2	EUR; NAM
Pityophthorus solus (Blackman)	PITOSO	0		No data on damage to plant health	2	NAM; EUR
Planiculus (Euwallacea) bicolor (Blandford)	euwabic	0	Beaver 1988	No data on damage to plant health	11	ASI; SYC; AND; JPN; LKA; FJI; BOR; JAW; LUZ; WSM; SLB
Polygraphus poligraphus (Linnaeus)	POLGPO	0		No data on damage to plant health	6	AFR; JPN; SAK; ASI; EUR; GBR;
Polygraphus proximus Blandford	POLGPR	1	Krivets et al. 2015	"this species is currently one of the main factors of degradation of the Siberian fir forests "	4	ASI; JPN; SAK; EUR
Polygraphus rufipennis (Kirby)	POLGRU	0	Bowers et al. 1996	No data on damage to plant health	2	NAM; AFR
Premnobius ambitiosus (Schaufuss)	preamb	0		No data on damage to plant health	4	AFR; CNY; CAM; SAM
Premnobius cavipennis Eichhoff	PREBCA	0	Rabaglia et al. 2006	No data on damage to plant health	11	AFR; MDG; CAM; BHS; CUB; DMA; JAM; PRI; NAM; SAM; TTO
Pseudohylesinus sericeus (Mannerheim)	PSDHSE	0		No data on damage to plant health	2	JPN; NAM
Scolytogenes jalapae (Letzner)	scojal	0		No data on damage to plant health	10	CAM; CUB; GLP; JAM; HIS; PRI; VIL; JPN; NAM; SAM
Scolytoplatypus tycon Blandford	scotyc	0		No data on damage to plant health	4	ASI; JPN; SAK; EUR
Scolytus amygdali Guerin-Meneville	SCOLAM	0	Zeiri et al. 2018	These beetles target weak, old trees, where they make galleries and holes in the bark.	9	EUR; COR; SAR; SIC; MLT; CNY; AFR; CYP; ASI
Scolytus dimidiatus Chapuis	scodim	0		No data on damage to plant health	5	CAM; CUB; JAM; NAM; SAM

Table S-1b. Main characteristics of the 163 Scolytinae with an invasion history. Impact and landmasses colonised

Species	Spec code	Impact on plant health[7]	References on impact	Comments on impact	Nb of land masses	Landmasses[8]
Scolytus kirschi Skahtzky	SCOLKI	2	Six et al. 2005	Fungi: Six et al. 2005. Impact: Six et al. 2005: "*Scolytus kirschii* is a serious pest of elms, capable of killing healthy trees, resulting in considerable economic impact. Furthermore, the beetle is capable of being the vector of the pathogens responsible for Dutch elm disease (DED), *Ophiostoma ulmi* and *Ophiostoma novo-ulmi*.	4	ASI; AFR; EUR; SIC
Scolytus mali (Bechstein)	SCOLMA	0		No data on damage to plant health	4	AFR; EUR; GBR; NAM;
Scolytus multistriatus (Marsham)	SCOLMU	2	CABI 2018	https://www.cabi.org/isc/datasheet/49212	13	AFR; ASI; IDN; EUR; GBR; IRL; SIC; SAR; NAM; AUS; NWG; NZL; SAM
Scolytus rugulosus (Muller)	SCOLRU	1		Blackman 1922	11	EUR; COR; GBR; SAR; SIC; MLT; AFR; ASI; CYP; NAM; SAM
Scolytus schevyrewi Semenov	SCOLSH	2	CABI 2018; Jacobi et al 2013	Fungi: Jacobi et al 2013. Impact: https://www.cabi.org/isc/datasheet/49200; "The inoculation of trees via feeding wounds was successful 30% of the time for in-vivo trials and 33% for in-vitro trials"	2	ASI; NAM
Scolytus sulcifrons Rey	SCOLSU	0		No data on damage to plant health	3	EUR; ASI; MLT
Thamnurgus characiae Rosenhauer	THMNCH	0		No data on damage to plant health	5	EUR; SAR; SIC; MLT; AFR
Theoborus ricini (Eggers)	theori	0		No data on damage to plant health	7	AFR; STP; CAM; PRI; HIS; NAM; SAM
Tomicus piniperda (Linnaeus)	BLASPI	1	Langstrom and Hellqvist 1993	Shoot cutting, sometimes massive	9	AFR; MDR; ASI; PHL; JPN; TWN; EUR; GBR; NAM
Truncaudum (*Cyclorhipidion*) *agnatum* (Eggers)	TRUCAG	0	Sanguansub et al 2012	Truncaudum agnatum collected from cut logs	11	ASI; NCL; AUS; BIS; BOR; JAW; CRL; PLW; NWG; LUZ; SLB
Trypodendron domesticum (Linnaeus)	TRYDDO	1	La Spina et al. 2013		6	EUR; GBR; IRL; SIC; SAR; NAM
Xyleborinus andrewesi (Blandford)	XYBIAN	0	Okins & Thomas 2009	"Unless they occur in very large numbers, damage is minimal (...) *Xyleborinus andrewesi* is unlikely to become even a minor pest"	14	AFR; SYC; ASI; IDN; JAW; PHL; LKA; CUB; JAM; JPN; NAM; MAR; NWG; HAW
Xyleborinus artestriatus (Eichhoff)	XYBIAR	0	Gomez et al. 2018		7	ASI; IDN; LKA; NAM; AUS; FJI; NWG

Table S-1b. Main characteristics of the 163 Scolytinae with an invasion history. Impact and landmasses colonised

Species	Spec code	Impact on plant health[7]	References on impact	Comments on impact	Nb of land masses	Landmasses[8]
Xyleborinus attenuatus (Blandford)	XYBIAL	0	SLU 2017	"There is however little support in the easily accessible literature that the pest cause significant damage. This is in agreement with a previous literature search that showed that there had not been a single report of damage by *X. attenuatus* on living trees in USA"	4	ASI; JPN; EUR; NAM
Xyleborinus exiguus (Walker)	XYBIEX	0		No data on damage to plant health	20	AFR; ASI; IDN; JAW; SUM; PHL; LKA; CAM; AUS; COK; FJI; GUM; MAR; NCL; NUE; PLW; PNG; WSM; SCI; SLB
Xyleborinus gracilis Eichhoff	XYBIGR	0	Rabaglia et al. 2006		6	GAL, NAM; AZO; CAM; GLP; SAM
Xyleborinus octiesdentatus (Murayama)	XYBIOC	0		No data on damage to plant health	3	ASI; JPN; NAM
Xyleborinus saxeseni (Ratzeburg)	XYLBSA	2	Rabaglia et al. 2006	"It is one of the most damaging and occasionally aggressive species in the tribe in North America."	24	EUR; AZO; COR; GBR; SAR; SIC; MLT; AFR; CNY; MDR; ASI; JPN; PHL; TWN; NAM; GUM; NWG; AUS; NZL; WSM; HAW; SAM; GAL; NCL
Xyleborus affinis Eichhoff	XYLBAF	1	Rabaglia et al. 2006	"As with *X. ferrugineus*, this species can cause economic damage in moist, lowland areas of the Neotropics."	33	AFR; AZO; FER; MDG; MUS; REU; SYC; IDN; LKA; CAM; BRB; CUB; DMA; GLP; JAM; PRI; HIS; VCT; ASI; NAM; AUS; COK; FJI; MAR; NCL; PLW; WSM; TAH; HAW; SAM; GAL; TTO; EUR
Xyleborus africanus Eggers	xylafr	0		No data	2	AFR; SYC
Xyleborus atratus Eichhoff	xylatr	0		No data on damage to plant health	7	ASI; JPN; TWN; PHL; IDN; NWG; NAM; EUR
Xyleborus bispinatus Eichhoff	XYLBBI	0	Faccoli et al. (2016)	"*X. bispinatus* (…) was found in Sicily only in dying or recently killed fig trees both in 2014 and 2015 "	7	CAM; HIS; NAM; PNG; SAM; TTO; EUR
Xyleborus ferrugineus (Fabricius)	XYLBFE	2	Rabaglia et al. 2006	"As with *X. ferrugineus*, this species can cause economic damage in moist, lowland areas of the Neotropics."	31	AFR; AZO; CPV; FER; MDG; REU; SYC; CAM; BHS; CUB; DMA; GLP; JAM; PRI; HIS; VIL; NAM; WSM; AUS; COK; FJI; GUM; MRQ; NCL; NWG; TAH; TKL; HAW; SAM; GAL; TTO

Table S-1b. Main characteristics of the 163 Scolytinae with an invasion history. Impact and landmasses colonised

Species	Spec code	Impact on plant health[7]	References on impact	Comments on impact	Nb of land masses	Landmasses[8]
Xyleborus glabratus Eichhoff	XYLBGR	2	Hughes et al. 2017	USDA Forest Service Forest Inventory and Analysis data were used to estimate that over 300 million trees of redbay (*Persea borbonia sensu lato*) have succumbed to the disease since the early 2000s (ca 1/3 of the pre-invasion population)	4	ASI; JPN; TWN; NAM
Xyleborus monographus (Fabricius)	XYLBMO	0		No data on damage to plant health	4	AFR; EUR; GBR; NAM
Xyleborus perforans (Wollaston)	XYLBPE	1	CABI 2018	https://www.cabi.org/isc/datasheet/57169 - X. *perforans* has been recorded as a minor pest of sugarcane and coconut trees in Indonesia (Kalshoven, 1964; Browne, 1968), and in the days of wooden beer, wine and rum barrels, was known to bore into casks and cause leakage (Blandford, 1893; Schedl, 1963). It has been known to cause minor damage by its attacks on the tapped panels of rubber trees in Guyana and Sri Lanka (Browne, 1968), and on coffee and coffee shade trees in Suriname (LePelley, 1968). However, it is more important in many areas because of its heavy attacks on newly felled trees and recently sawn, unseasoned timber. The attacks result in numerous pinholes in the wood and fungal staining around them (Browne, 1961), and can render the timber unusable for furniture or veneer. "	36	AFR; ASI; NAM; CPV; EUR; FJI; IDN; JPN; MDG; PHL; SLB; LKA; TWN; TON; BIS; AUS; AZO; CNY; COK; AZO; GUM; KIR; MDR; MAR; MUS; FSM; NCL; NWG; VAN; NUE; OKI; PLW; SYC; SCI; TAH; TUA
Xyleborus pfeilii (Ratzeburg)	XYLBPF	0	CDFA 2018	https://blogs.cdfa.ca.gov/Section3162/?p=5255	7	AFR; EUR; ASI; JPN; NAM; NZL; SAM
Xyleborus seriatus Blandford	XYLBSE	0	EPPO Reporting Service 2006-10	Recent finding and so far, no reports of hosts, damage or expansion in USA. In Asia, many conifer and hardwood species are reported as hosts (*Acer, Aesculus, Betula Chamaecyparis, Cryptomeria, Fagus, Larix, Pinus, Prunus, Quercus, Thuja, Tilia* and *Tsuga*).	3	ASI; JPN; NAM
Xyleborus spinulosus Blandford	XYLBSN	0	Gomez et al. 2018		6	CAM; GAL; HIS; VIL; NAM; HAW;

Table S-1b. Main characteristics of the 163 Scolytinae with an invasion history. Impact and landmasses colonised

Species	Spec code	Impact on plant health[7]	References on impact	Comments on impact	Nb of land masses	Landmasses[8]
Xyleborus volvulus (Fabricius)	xylvol	0	Menocal et al. 2017	"Although *X. volvulus* has not been associated with economic damage to trees..."	25	AFR; MUS; MDG; SYC; ASI; TWN; PHL; CAM; SAM; GAL; ATG; BHS; CUB; GRD; JAM; HIS; VIL; JPN; NAM; WSM; AUS; NCL; HAW; TTO; SLB
Xylosandrus (*Apoxyleborus*) *mancus* (Blandford)	xylman	0		No data on damage to plant health	10	AFR; SYC; ASI; JPN; TWN; JAW; SUM; LKA; MDG; PHL
Xylosandrus amputatus (Blandford)	XYLSAM	0	Bateman et al. 2015	"Since it was first detected in Florida, this species has spread north to Georgia, but has not yet been found attacking healthy trees nor causing economic damages in the United States."	4	ASI; JPN; TWN; NAM
Xylosandrus compactus (Eichhoff)	XYLSCO	2	CABI 2019	https://www.cabi.org/isc/datasheet/57234	27	AFR; COM; FER; MDG; REU; SYC; ASI; IDN; PHL; LKA; VIL; CUB; DMA; PRI; TWN; JPN; NAM; FJI; GUM; NZL; WSM; HAW; NCL; SAM; TTO; EUR; SIC
Xylosandrus crassiusculus (Motschulsky)	XYLSCR	2	CABI 2019	https://www.cabi.org/isc/datasheet/57235	25	AFR; FER; MDG; MUS; SYC; ASI; IDN; SUM; PHL; LKA; CAM; PRI; TWN; JPN; EUR; NAM; GUM; NCL; PLW; PNG; WSM; HAW; AUS; SAM; NZL
Xylosandrus germanus (Blandford)	XYLSGE	1	Galko et al. 2019	While living but weakened trees in Europe and North America are attacked by *X. germanus*, the greatest negative impact within Slovakia is attacks on recently felled logs of oak, beech and spruce trees, which provide high quality timber/lumber.	7	ASI; EUR; GBR; JPN; TWN; NAM; HAW
Xylosandrus morigerus (Blandford)	XYLSMO	2	Beaver 1987	"*X. morigerus* attacked tree seedlings, including tea and mahogany in Java (Kalshoven 1961). It is also a potential pest of established living trees as a twig borer. It is an important pest of coffee in several countries and often attacks shade and ornamental trees"	25	MDG; ASI; IDN; MUS; PHL; LKA; CAM; PRI; GBR; EUR; TWN; NAM; AUS; CRL; FJI; GUM; MAR; NBR; NCL; PNG; WSM; HAW; SAM; GAL; SYC
Xylosandrus pseudosolidus (Schedl)	XYLSPS	0	Brockerhoff et al. (2003)		3	AUS; TAS; NZL
Xyloterinus politus (Say)	xypol	0		No data on damage to plant health	2	NAM; EUR

Table S-1b. Main characteristics of the 163 Scolytinae with an invasion history. Impact and landmasses colonised

Table S-1c. References

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