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Swedish University of Agricultural Sciences

SLU Risk Assessment of Plant Pests

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Swedish risk ranking of plant pests: an update of assessed species – Report no. 3, 2026

Authors

This report was prepared by SLU Risk Assessment of Plant Pests at the Swedish University of Agricultural Sciences:

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The Swedish risk ranking of plant pests project

SLU Risk Assessment of Plant Pests was requested by the *Swedish Board of Agriculture* (NPPO) to conduct a risk ranking of a target group of plant pests relevant to Sweden from a phytosanitary perspective. The risk ranking model FinnPRIO (Heikkilä et al. 2016) is used for the assessments and subsequent rankings. A description of the project aim, scope and methodology is presented in another report, i.e. Boberg and Björklund (2026).

Currently 133 taxa have been assessed and ranked. Recently EFSA published a series of pest reports to support the ranking of EU candidate priority pests (EFSA 2026). These reports include estimates of for example pest spread and expected yield losses based on Expert Knowledge Elicitation. A batch of previously assessed species was updated taking this new information into account as well as information from other new sources. This report presents the updated risk-ranking results for 23 taxa, representing 24 FinnPRIO assessments, including separate assessment of *Bursaphelenchus xylophilus* under current and future climate.

The following 24 assessments have now been updated:

- *Agrilus anxius* [AGRLAX]
- *Agrilus planipennis* [AGRLPL]
- *Anoplophora chinensis* [ANOLCN]
- *Anthonomus eugenii* [ANTHEU]
- *Aromia bungii* [AROMBU]
- *Arrhenodes minutus* [ARRHMI]
- *Bursaphelenchus xylophilus* (Current Climate)[BURSXY]
- *Bursaphelenchus xylophilus* (Future Climate)[BURSXY]
- *Choristoneura fumiferana* [CHONFU]
- *Choristoneura parallela* [CHONPA]
- *Conotrachelus nenuphar* [CONHNE]
- *Dendrolimus sibiricus* [DENDSI]
- *Diabrotica virgifera zeae* [DIABVZ]
- *Helicoverpa zea* [HELIZE]
- *Keiferia lycopersicella* [GNORLY]
- *Nepovirus myrtilli* [BLMOV0]
- *Pissodes nemorensis* [PISONE]
- *Pissodes nitidus* [PISONI]
- *Pissodes strobi* [PISOST]
- *Pissodes terminalis* [PISOTE]
- *Pissodes yunnanensis* [PISOYU]
- *Pseudocercospora pini-densiflorae* [CERSPD]
- *Rhagoletis pomonella* [RHAGPO]
- *Spodoptera litura* [PRODLI]

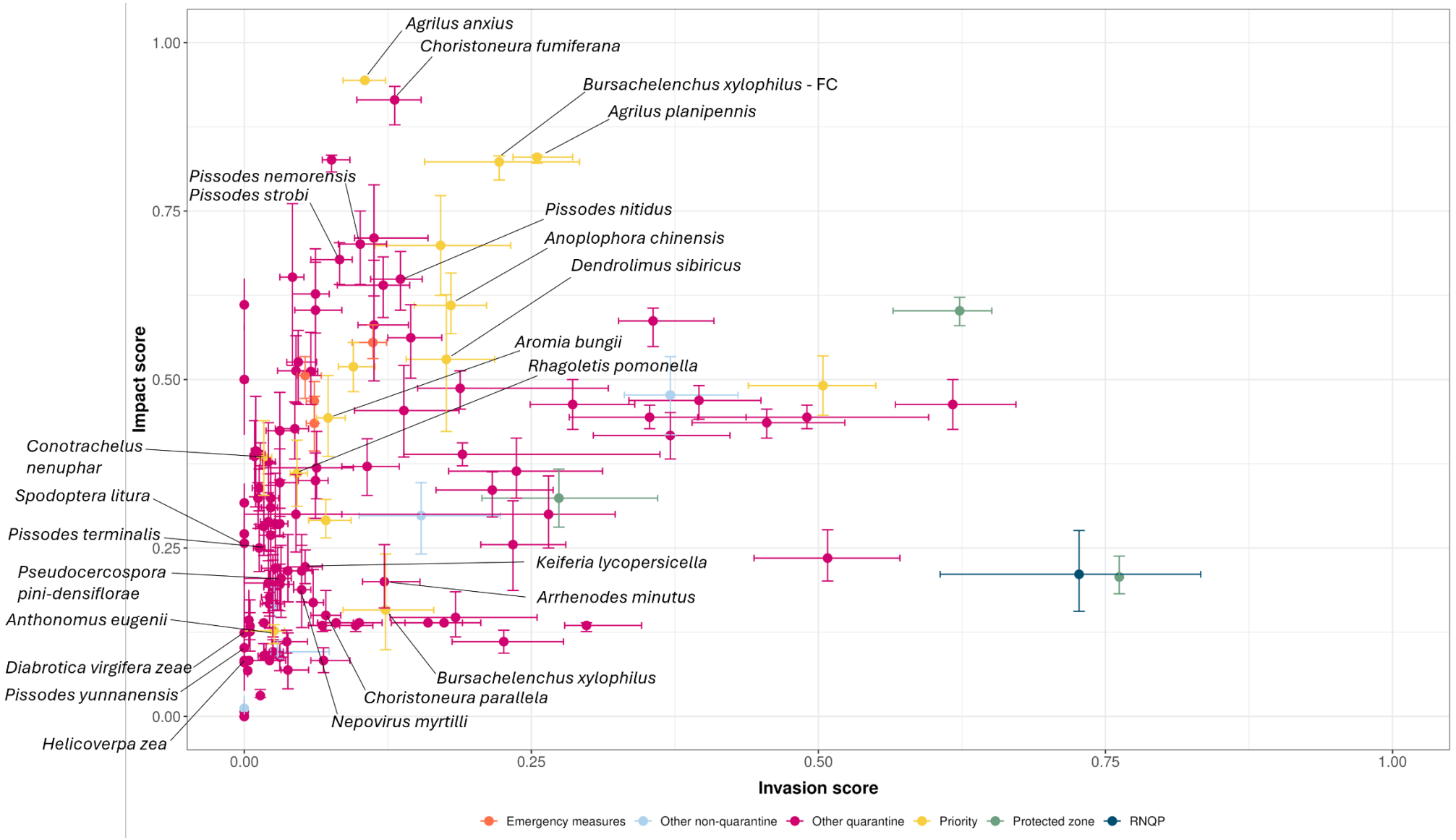
Information about how the updates influenced the FinnPRIO-scores is presented in Appendix 1.

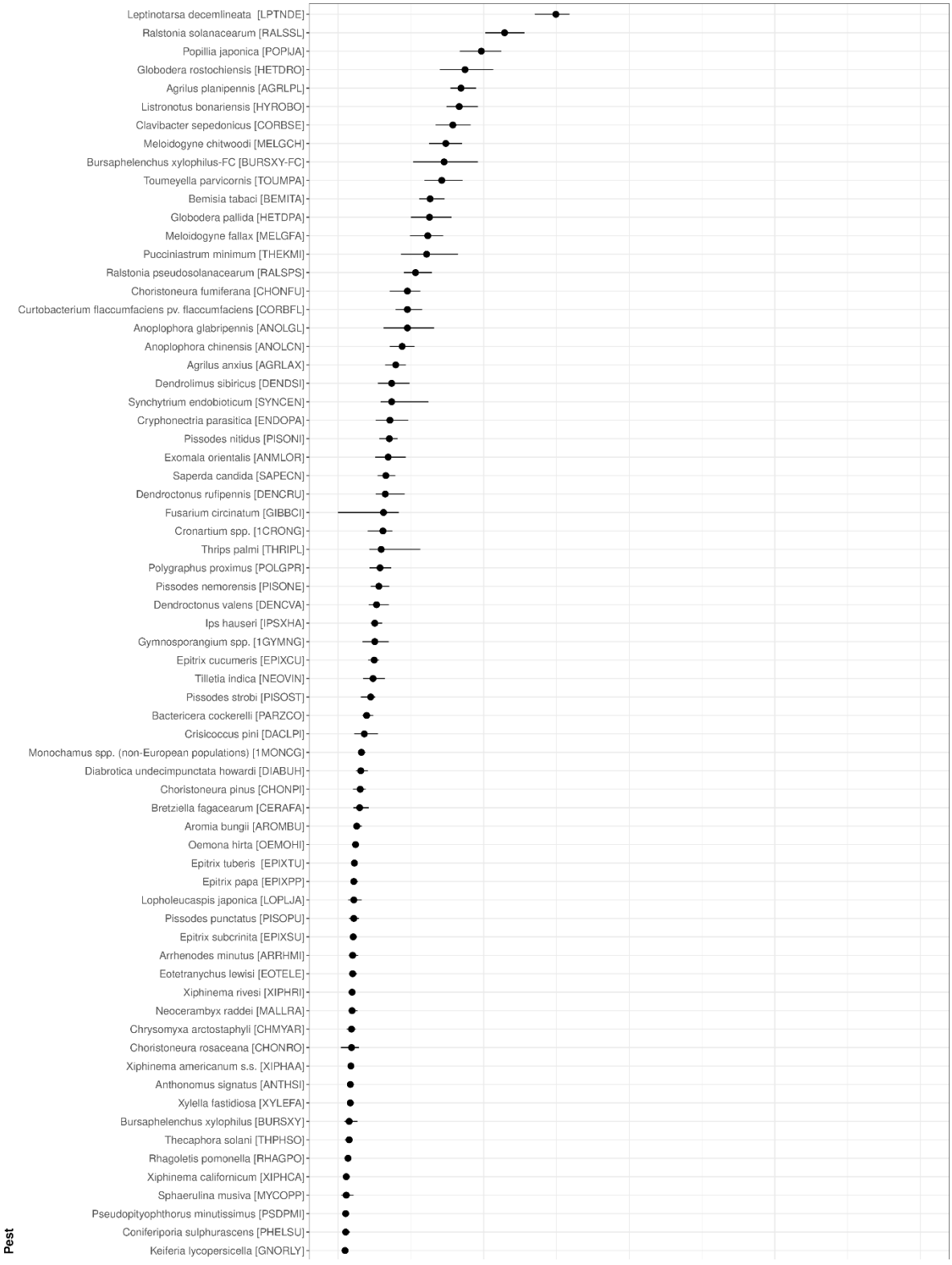
A complete list of all assessed species and date of the assessments can be found in Appendix 2.

Results

The pest scores calculated for the FinnPRIO component *Impact* along with the composite *Invasion* scores (*Entry* × *Establishment & Spread*) and *Risk* scores (*Entry* × *Establishment & Spread* × *Impact*) are presented in two figures below. The dots in the figures represent the median values of 50 000 iterations and the whiskers represent the 5th and 95th percentiles of the probability distributions of the scores. The results of the assessments can also be explored using the FinnPRIO-Explorer Adapted application available at https://finnprio-explorer-adapted.serve.scilifelab.se/app/finnprio-explorer-adapted. For example, the underlying scores for each FinnPRIO assessment component can be accessed under the tab "Show pests in data table". The most recent assessments can be identified by sorting the table by "Assessed, month/year" so that they appear first.

Figure 1 (next page)**.** The invasion and impact scores of each pest are visualized by plotting the invasion scores (*Entry* × *Establishment & Spread*) against the scores for *Impact* for each assessed pest. The approximate positions of the updated assessments are highlighted in the figure. The dots in the figures represent the median values and the whiskers represent the 5th and 95th percentiles. As a general guide to interpretation, species in the lower left represent the lowest estimated risk, whereas risk increases toward the upper right as both invasion and impact scores increase.


Agrilus anxius
Choristoneura fumiferana
Bursachelenchus xylophilus - FC
Agrilus planipennis
Pissodes nemorensis
Pissodes strobi
Pissodes nitidus
Anoplophora chinensis
Dendrolimus sibiricus
Aromia bungii
Rhagoletis pomonella
Conotrachelus nenuphar
Spodoptera litura
Pissodes terminalis
Keiferia lycopersicella
Pseudocercospora pini-densiflorae
Arrhenodes minutus
Anthonomus eugenii
Diabrotica virgifera zeae
Pissodes yunnanensis
Bursachelenchus xylophilus
Choristoneura parallela
Nepovirus myrtilli
Helicoverpa zea
Impact score
1.00
0.75
0.50
0.25
0.00
0.00
0.25
0.50
0.75
1.00
Invasion score
Emergency measures
Other non-quarantine
Other quarantine
Priority
Protected zone
RNQP


Leptinotarsa decemlineata [LPTNDE]
Ralstonia solanacearum [RALSSL]
Popillia japonica [POPIJA]
Globodera rostochiensis [HETDRO]
Agrilus planipennis [AGRLPL]
Listronotus bonariensis [HYROBO]
Clavibacter sepedonicus [CORBSE]
Meloidogyne chitwoodi [MELGCH]
Bursaphelenchus xylophilus-FC [BURSXY-FC]
Toumeyella parvicornis [TOUMPA]
Bemisia tabaci [BEMITA]
Globodera pallida [HETDPA]
Meloidogyne fallax [MELGFA]
Pucciniastrum minimum [THEKMI]
Ralstonia pseudosolanacearum [RALSPS]
Choristoneura fumiferana [CHONFU]
Curtobacterium flaccumfaciens pv. flaccumfaciens [CORBFL]
Anoplophora glabripennis [ANOLGL]
Anoplophora chinensis [ANOLCN]
Agrilus anxius [AGRLAX]
Dendrolimus sibiricus [DENDSI]
Synchytrium endobioticum [SYNCEN]
Cryphonectria parasitica [ENDOPA]
Pissodes nitidus [PISONI]
Exomala orientalis [ANMLOR]
Saperda candida [SAPECN]
Dendroctonus rufipennis [DENCRU]
Fusarium circinatum [GIBBCI]
Cronartium spp. [1CRONG]
Thrips palmi [THRIPL]
Polygraphus proximus [POLGPR]
Pissodes nemorensis [PISONE]
Dendroctonus valens [DENCVA]
Ips hauseri [IPSXHA]
Gymnosporangium spp. [1GYMNG]
Epitrix cucumeris [EPIXCU]
Tilletia indica [NEOVIN]
Pissodes strobi [PISOST]
Bactericera cockerelli [PARZCO]
Crisicoccus pini [DACLPI]
Monochamus spp. (non-European populations) [1MONCG]
Diabrotica undecimpunctata howardi [DIABUH]
Choristoneura pinus [CHONPI]
Bretziella fagacearum [CERAFA]
Aromia bungii [AROMBU]
Oemona hirta [OEMOHI]
Epitrix tuberis [EPIXTU]
Epitrix papa [EPIXPP]
Lopholeucaspis japonica [LOPLJA]
Pissodes punctatus [PISOPU]
Epitrix subcrinita [EPIXSU]
Arrhenodes minutus [ARRHMI]
Eotetranychus lewisi [EOTELE]
Xiphinema rivesi [XIPHRI]
Neocerambyx raddei [MALLRA]
Chrysomyxa arctostaphyli [CHMYAR]
Choristoneura rosaceana [CHONRO]
Xiphinema americanum s.s. [XIPHAA]
Anthonomus signatus [ANTHSI]
Xylella fastidiosa [XYLEFA]
Bursaphelenchus xylophilus [BURSXY]
Thecaphora solani [THPHSO]
Rhagoletis pomonella [RHAGPO]
Xiphinema californicum [XIPHCA]
Sphaerulina musiva [MYCOPP]
Pseudopityophthorus minutissimus [PSDPMI]
Coniferiporia sulphurascens [PHELSU]
Keiferia lycopersicella [GNORLY]
Pest

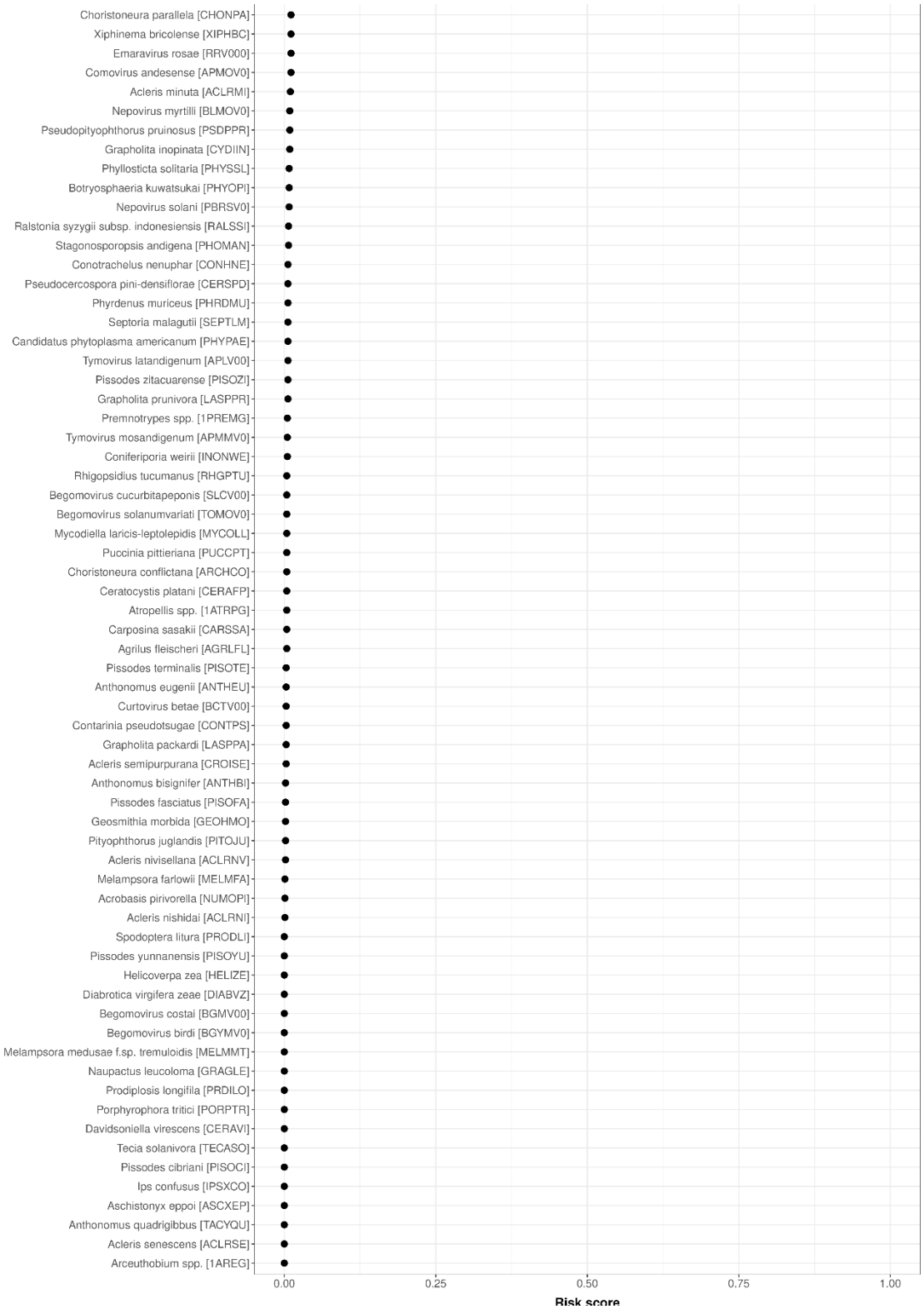


Figure 2. FinnPRIO *Risk* scores. The dots in the figures represent the median values and the whiskers represent the 5th and 95th percentiles. Note that the components of manageability are not included in the *Risk* score. Abbreviations following *Bursaphelenchus xylophilus* refer to current climate (CC) and future climate (FC).

References

Boberg, J. and Björklund, N. (2026) Project report: Swedish risk ranking of plant pests. Technical report SLU.ua.2022.2.6-4500. SLU Risk Assessment of Plant Pests, Swedish University of Agricultural Sciences. https://doi.org/10.5281/zenodo.20703253

EFSA (European Food Safety Authority). (2026). Priority pests. https://www.efsa.europa.eu/en/topics/priority-pests

Heikkilä, J., Tuomola, J., Pouta, E., & Hannunen, S. (2016). FinnPRIO: a model for ranking invasive plant pests based on risk. Biological Invasions, 18(7), 1827-1842. https://doi.org/10.1007/s10530-016-1123-4

Appendix 1. How the updates influenced the FinnPRIO scores

The updated assessments resulted in changes to the FinnPRIO scores, as presented in Table 1, with the most notable changes highlighted below.

For four pests the change in risk score may be considered noteworthy, i.e.,

1.) The risk score for *Agrilus planipennis* decreased by 0.117
2.) The risk score for *Dendrolimus sibiricus* decreased by 0.054
3.) The risk score for *Anoplophora chinensis* increased by 0.050
4.) The risk score for *Agrilus anxius* increased by 0.041

For five pests the change in impact score may be considered noteworthy, i.e.,

1.) The impact score for *Pissodes nemorensis* increased by 0.290
2.) The impact score for *Aromia bungii* increased by 0.199
3.) The impact score for *Dendrolimus sibiricus* decreased by 0.176
4.) The impact score for *Arrhenodes minutus* decreased by 0.135
5.) The impact score for *Anoplophora chinensis* increased by 0.091

For four pests the change in invasion score may be considered noteworthy, i.e.,

1.) The invasion score for *Agrilus planipennis* decreased by 0.180
2.) The invasion score for *Anoplophora chinensis* increased by 0.064
3.) The invasion score for *Bursaphelenchus xylophilus* (current climate) decreased by 0.057
4.) The invasion score for *Agrilus anxius* increased by 0.042

For five pests the change in manageability may be considered noteworthy, i.e.,

1.) The manageability score for *Rhagoletis pomonella* increased by 0.251
2.) The manageability score for *Pissodes nemorensis* increased by 0.218
3.) The manageability score for *Pissodes strobi* increased by 0.218
4.) The manageability score for *Pissodes terminalis* increased by 0.218
5.) The manageability score for *Arrhenodes minutus* increased by 0.186

Table 1. Influence of the updates on the FinnPRIO-scores.

Pest	Change in Invasion score	Change in Impact score	Change in Risk score	Change in Manageability score
Agrilus anxius	0.042	0.024	0.041	-0.154
Agrilus planipennis	-0.180	0.077	-0.117	0.001
Anoplophora chinensis	0.064	0.091	0.050	0.000
Anthonomus eugenii	-0.029	-0.007	-0.004	0.001
Aromia bungii	-0.009	0.199	0.012	0.000
Arrhenodes minutus	0.041	-0.135	-0.002	0.186
Bursaphelenchus xylophilus	-0.057	0.027	-0.004	0.000
Bursaphelenchus xylophilus-FC	-0.016	-0.010	-0.017	0.000
Choristoneura fumiferana	0.030	0.024	0.029	0.000
Choristoneura parallela	0.001	0.000	0.000	0.000
Conotrachelus nenuphar	-0.030	0.042	-0.010	0.033
Dendrolimus sibiricus	-0.033	-0.176	-0.054	0.001
Diabrotica virgifera zeae	0.000	0.034	0.000	0.000
Helicoverpa zea	0.000	-0.015	0.000	0.000
Keiferia lycopersicella	0.000	0.000	0.000	0.000
Nepovirus myrtilli	0.022	0.000	0.004	0.000
Pissodes nemorensis	-0.038	0.290	0.013	0.218
Pissodes nitidus	-0.025	0.038	-0.010	-0.032
Pissodes strobi	-0.011	0.046	-0.003	0.218
Pissodes terminalis	-0.005	0.043	-0.001	0.218
Pissodes yunnanensis	0.000	0.014	0.000	-0.001
Pseudocercospora pini-densiflorae	0.012	0.023	0.002	0.000
Rhagoletis pomonella	0.033	0.039	0.013	0.251
Spodoptera litura	0.000	-0.002	0.000	0.000

Appendix 2. List of all the assessed species/genera and date of the most recent assessment

Pest name	EPPO code	Assessment date
Acleris minuta	ACLRMI	18.06.2025
Acleris nishidai	ACLRNI	18.06.2025
Acleris nivisellana	ACLRNV	18.06.2025
Acleris semipurpurana	CROISE	09.01.2026
Acleris senescens	ACLRSE	18.06.2025
Acrobasis pirivorella	NUMOPI	08.10.2021
Agrilus anxius	AGRLAX	30.10.2026
Agrilus fleischeri	AGRLFL	11.06.2021
Agrilus planipennis	AGRLPL	30.10.2026
Anoplophora chinensis	ANOLCN	28.10.2026
Anoplophora glabripennis	ANOLGL	18.06.2025
Anthonomus bisignifer	ANTHBI	29.05.2026
Anthonomus eugenii	ANTHEU	28.10.2026
Anthonomus quadrigibbus	TACYQU	17.05.2021
Anthonomus signatus	ANTHSI	29.05.2026
Arceuthobium spp.	1AREG	20.03.2025
Aromia bungii	AROMBU	29.10.2026
Arrhenodes minutus	ARRHMI	29.10.2026
Aschistonyx eppoi	ASCXEP	10.06.2021
Atropellis spp.	1ATRPG	16.06.2021
Bactericera cockerelli	PARZCO	19.12.2025
Begomovirus birdi	BGYMV0	29.05.2026
Begomovirus costai	BGMV00	29.05.2026
Begomovirus cucurbitapeponis	SLCV00	29.05.2026
Begomovirus solanumvariati	TOMOV0	29.05.2026
Bemisia tabaci	BEMITA	28.05.2021
Botryosphaeria kuwatsukai	PHYOPI	31.03.2026
Bretziella fagacearum	CERAFA	17.04.2026
Bursaphelenchus xylophilus (Current Climate)	BURSXY	15.10.2026
Bursaphelenchus xylophilus (Future Climate)	BURSXY	15.10.2026
Candidatus phytoplasma americanum	PHYPAE	18.12.2025
Carposina sasakii	CARSSA	13.06.2021
Ceratocystis platani	CERAFP	01.02.2022
Choristoneura conflictana	ARCHCO	17.06.2025
Choristoneura fumiferana	CHONFU	17.09.2026
Choristoneura parallela	CHONPA	28.10.2026
Choristoneura pinus	CHONPI	17.06.2025
Choristoneura rosaceana	CHONRO	17.06.2025
Chrysomyxa arctostaphyli	CHMYAR	08.02.2022

Pest name	EPPO code	Assessment date
Clavibacter sepedonicus	CORBSE	19.03.2025
Comovirus andesense	APMOV0	18.12.2025
Coniferiporia sulphurascens	PHELSU	06.05.2021
Coniferiporia weirii	INONWE	06.05.2021
Conotrachelus nenuphar	CONHNE	29.10.2026
Contarinia pseudotsugae	CONTPS	14.06.2021
Crisicoccus pini	DACLPI	28.03.2022
Cronartium spp.	1CRONG	29.06.2021
Cryphonectria parasitica	ENDOPA	29.06.2021
Curtobacterium flaccumfaciens pv. flaccumfaciens	CORBFL	20.03.2025
Curtovirus betae	BCTV00	29.05.2026
Davidsoniella virescens	CERAVI	02.02.2022
Dendroctonus rufipennis	DENCRU	30.06.2021
Dendroctonus valens	DENCVA	30.06.2021
Dendrolimus sibiricus	DENDSI	29.10.2026
Diabrotica undecimpunctata howardi	DIABUH	18.06.2025
Diabrotica virgifera zeae	DIABVZ	28.10.2026
Emaravirus rosae	RRV000	13.08.2024
Eotetranychus lewisi	EOTELE	31.03.2026
Epitrix cucumeris	EPIXCU	19.12.2025
Epitrix papa	EPIXPP	02.02.2026
Epitrix subcrinita	EPIXSU	19.12.2025
Epitrix tuberis	EPIXTU	19.12.2025
Exomala orientalis	ANMLOR	29.05.2026
Fusarium circinatum	GIBBCI	27.03.2026
Geosmithia morbida	GEOHMO	10.02.2022
Globodera pallida	HETDPA	19.12.2025
Globodera rostochiensis	HETDRO	19.12.2025
Grapholita inopinata	CYDIIN	23.06.2021
Grapholita packardi	LASPPA	18.08.2021
Grapholita prunivora	LASPPR	16.06.2021
Gymnosporangium spp.	1GYMNG	07.06.2021
Helicoverpa zea	HELIZE	28.10.2026
Ips confusus	IPSXCO	08.10.2021
Ips hauseri	IPSXHA	05.01.2022
Keiferia lycopersicella	GNORLY	28.10.2026
Leptinotarsa decemlineata	LPTNDE	19.12.2025
Listronotus bonariensis	HYROBO	17.04.2026
Lopholeucaspis japonica	LOPLJA	20.03.2025
Melampsora farlowii	MELMFA	26.05.2021
Melampsora medusae f.sp. *tremuloidis*	MELMMT	29.08.2024
Meloidogyne chitwoodi	MELGCH	19.12.2025
Meloidogyne fallax	MELGFA	18.12.2025

Pest name	EPPO code	Assessment date
Monochamus spp. (non-European populations)	1MONCG	28.04.2021
Mycodiella laricis-leptolepidis	MYCOLL	31.03.2026
Naupactus leucoloma	GRAGLE	19.12.2025
Neocerambyx raddei	MALLRA	31.03.2026
Nepovirus myrtilli	BLMOV0	28.10.2026
Nepovirus solani	PBRSV0	18.12.2025
Oemona hirta	OEMOHI	18.06.2025
Phyllosticta solitaria	PHYSSL	31.03.2026
Phyrdenus muriceus	PHRDMU	29.05.2026
Pissodes cibriani	PISOCI	15.08.2024
Pissodes fasciatus	PISOFA	15.08.2024
Pissodes nemorensis	PISONE	17.09.2026
Pissodes nitidus	PISONI	30.10.2026
Pissodes punctatus	PISOPU	14.08.2024
Pissodes strobi	PISOST	17.09.2026
Pissodes terminalis	PISOTE	30.10.2026
Pissodes yunnanensis	PISOYU	30.10.2026
Pissodes zitacuarense	PISOZI	14.08.2024
Pityophthorus juglandis	PITOJU	20.09.2021
Polygraphus proximus	POLGPR	17.04.2026
Popillia japonica	POPIJA	29.04.2025
Porphyrophora tritici	PORPTR	17.06.2025
Premnotrypes spp.	1PREMG	31.03.2026
Prodiplosis longifila	PRDILO	17.06.2025
Pseudocercospora pini-densiflorae	CERSPD	28.10.2026
Pseudopityophthorus minutissimus	PSDPMI	31.03.2026
Pseudopityophthorus pruinosus	PSDPPR	31.03.2026
Puccinia pittieriana	PUCCPT	18.12.2025
Pucciniastrum minimum	THEKMI	13.08.2024
Ralstonia pseudosolanacearum	RALSPS	29.05.2026
Ralstonia solanacearum	RALSSL	29.05.2026
Ralstonia syzygii subsp. *indonesiensis*	RALSSI	29.05.2026
Rhagoletis pomonella	RHAGPO	28.10.2026
Rhigopsidius tucumanus	RHGPTU	29.05.2026
Saperda candida	SAPECN	31.03.2026
Septoria malagutii	SEPTLM	31.03.2026
Sphaerulina musiva	MYCOPP	13.08.2024
Spodoptera litura	PRODLI	30.10.2026
Stagonosporopsis andigena	PHOMAN	24.03.2026
Synchytrium endobioticum	SYNCEN	29.04.2021
Tecia solanivora	TECASO	19.12.2025
Thecaphora solani	THPHSO	31.03.2026
Thrips palmi	THRIPL	19.03.2025

Pest name	EPPO code	Assessment date
Tilletia indica	NEOVIN	19.03.2025
Toumeyella parvicornis	TOUMPA	30.04.2025
Tymovirus latandigenum	APLV00	18.12.2025
Tymovirus mosandigenum	APMMV0	18.12.2025
Xiphinema americanum (sensu stricto)	XIPHAA	29.05.2026
Xiphinema bricolense	XIPHBC	29.05.2026
Xiphinema californicum	XIPHCA	29.05.2026
Xiphinema rivesi (non-EU populations)	XIPHRI	29.05.2026
Xylella fastidiosa	XYLEFA	20.03.2025