殷万东, 吴明可, 田宝良, 于宏伟, 王麒云, 丁建清 (2020) 生物入侵对黄河流域生态系统的影响及对策. 生物多样性, 2020, 28 (12): 1533–1545. http://www.biodiversity-science.net/CN/10.17520/biods.2020208

附录3　生态环境部公布的重大危害外来物种在黄河九省区的分布情况

Appendix 3　Distribution of the most harmful alien species announced by Ministry of Ecology and Environment in nine provinces of the Yellow River

物种 Species	分布地点 Distribution area									参考文献 Reference
	青海 Qinghai	四川 Sichuan	甘肃 Gansu	宁夏 Ningxia	内蒙古 Neimongol	山西 Shanxi	陕西 Shaanxi	河南 Henan	山东 Shandong	
紫茎泽兰 *Eupatorium adenophorum*	–	√	–	–	–	–	–	–	–	赵浩宇等, 2020
喜旱莲子草 *Alternanthera philoxeroides*	–	√	–	√	√	√	√	√	√	刘伟, 2012
豚草 *Ambrosia artemisiifolia*	–	√	–	–	–	–	–	√	√	王晓红, 2019
毒麦 *Lolium temulentum*	√	√	√	√	√	√	√	√	√	何剑和渊建民, 2003; 冯晶, 2016
互花米草 *Spartina alterniflora*	–	–	–	–	–	–	–	–	√	栾兆擎等, 2020
凤眼莲 *Eichhornia crassipes*	–	√	–	–	–	–	–	√	√	秦智雅等, 2016
假高粱 *Sorghum halepense*	–	–	–	–	–	–	–	–	√	雷军成和徐海根, 2011
美国白蛾 *Hyphantria cunea*	–	–	–	–	–	–	√	√	√	李淑贤, 2009; 潘孟等, 2020
红脂大小蠹 *Dendroctonus valens*	–	–	–	–	–	√	√	√	–	姚剑等, 2008
蔗扁蛾 *Opogona sacchari*	–	√	√	–	–	√	–	√	√	沈幼莲, 2008
牛蛙 *Rana catesbiana*	√	√	√	√	√	√	√	√	√	周伟等, 2012
反枝苋 *Amaranthus retroflexus*	√	√	√	√	√	√	√	√	√	刘伟, 2006
钻叶紫菀 *Aster subulatus*	√	√	–	–	–	–	√	√	–	徐海根和强胜, 2017
鬼针草 *Bidens pilosa*	√	√	√	√	√	√	√	√	√	邓玲姣和邹知明, 2012
小白酒草 *Conyza canadensis*	–	√	√	–	√	√	√	√	√	徐海根等, 2004
一年蓬 *Erigeron annuus*	√	√	√	√	√	√	√	√	√	王瑞等, 2010
尼罗罗非鱼 *Oreochromis niloticus*	–	–	–	–	–	–	–	–	√	王瑶瑶, 2019
悬铃木方翅网蝽 *Corythucha ciliate*	√	√	√	–	–	–	√	√	√	鞠瑞亭和李博, 2010
扶桑绵粉蚧 *Phenacoccus solenopsis*	–	√	–	–	–	–	–	–	–	王玉生, 2019
垂序商陆 *Phytolacca americana*	–	√	–	–	–	√	√	√	√	徐海根和强胜, 2017

附录 3 (续) Appendix 3 (continued)

物种 Species	分布地点 Distribution area									参考文献* Reference
	青海 Qinghai	四川 Sichuan	甘肃 Gansu	宁夏 Ningxia	内蒙古 Neimongol	山西 Shanxi	陕西 Shaanxi	河南 Henan	山东 Shandong	
苦颠茄 *Solanum khasianum*	–	√	–	–	–	–	–	–	–	付俊鹏, 2012
黄花刺茄 *Solanum rostratum*	–	–	–	–	√	√	–	–	–	郭晓艳等, 2012
藿香蓟 *Ageratum conyzoides*	–	√	–	–	–	–	–	–	–	刘碧英等, 2011
大狼杷草 *Bidens frondosa*	√	√	√	√	√	√	√	√	√	徐海根和强胜, 2017
野燕麦 *Avena fatua*	√	√	√	√	√	√	√	√	√	曹立耘, 2013; 郑殿升, 2010
食蚊鱼 *Gambusia affinis*	√	√	√	√	√	√	√	√	√	魏洁菲, 2019
美洲大蠊 *Periplaneta americana*	–	√	–	–	–	–	–	–	√	贺盼和马强, 2018
德国小蠊 *Blattella germanica*	√	√	√	√	√	√	√	√	√	贺盼和马强, 2018; 霍新北, 2015
无花果蜡蚧 *Ceroplastes rusci*	–	√	–	–	–	–	–	–	–	李海斌和武三安, 2013
松树蜂 *Sirex noctilio*	–	–	–	–	√	–	–	–	–	王明等, 2017
三裂叶豚草 *Ambrosia trifida*	–	√	–	–	√	√	–	–	√	赵浩宇等, 2018; 魏守辉等, 2006
加拿大一枝黄花 *Solidago canadensis*	–	√	–	–	–	–	–	√	–	孙晓方, 2020
黄顶菊 *Flaveria bidentis*	–	–	–	–	–	–	–	√	√	祁小旭, 2019
土荆芥 *Chenopodium ambrosioides*	–	√	–	–	–	–	√	–	√	徐海根和强胜, 2017
刺苋 *Amaranthus spinosus*	–	√	√	–	–	√	√	–	√	王瑞, 2006
落葵薯 *Anredera cordifolia*	–	√	–	–	–	–	–	–	–	徐海根和强胜, 2017
稻水象甲 *Lissorhoptrus oryzophilus*	–	–	–	–	–	–	–	√	√	黄华等, 2020
红火蚁 *Solenopsis invicta*	–	√	–	–	–	–	–	–	–	吴文佳等, 2019
克氏原螯虾 *Procambarus clarkii*	–	√	√	√	–	√	√	√	√	闵云艺, 2017; 刘训猛等, 2013
苹果蠹蛾 *Cydia pomonella*	–	–	√	–	–	–	–	–	–	吴永美等, 2018

殷万东, 吴明可, 田宝良, 于宏伟, 王麒云, 丁建清 (2020) 生物入侵对黄河流域生态系统的影响及对策. 生物多样性, 2020, 28 (12): 1533–1545. http://www.biodiversity-science.net/CN/10.17520/biods.2020208

√ 表示入侵生物在该省份已有分布记载; – 表示入侵生物在该省份尚无分布记载。
√ indicates that this invasive species has been recorded in this province; – indicates that this invasive species has not been recorded in this province.

参考文献

Cao LY (2013) Causes and control of weed damage of wild oat in wheat field. Pesticide Market News, 14(29), 41–42. (in Chinese) [曹立耘 (2013) 麦田野燕麦草害上升原因及防除. 农药市场信息, 14(29), 41–42.]

Deng LJ, Zou ZM (2012) Growth regularity, seed propagation and control effect of *Bidens pilosa*. Southwest China Journal of Agricultural Sciences, 25, 1460–1463. (in Chinese with English abstract) [邓玲姣, 邹知明 (2012) 三叶鬼针草生长、繁殖规律与防除效果研究. 西南农业学报, 25, 1460–1463.]

Feng J (2016) Study on Pest Risk Analysis for the Importation of Alfalfa Hay (*Medicago sativa*) from Sudan. Master's dissertation, Zhejiang University, Hangzhou. (in Chinese with English abstract) [冯晶 (2016) 进境苏丹苜蓿草风险分析与评估研究. 硕士学位论文, 浙江大学, 杭州.]

Fu JP (2012) The Spatial Pattern of *Phytolacca americana* Linn. and its Control Techniques in Sandy Coastal Shelter Forests. Master's dissertation, Shandong Agricultural University, Taian. (in Chinese with English abstract) [付俊鹏 (2012) 沙质海岸防护林垂序商陆的空间分布格局及其防控技术研究. 硕士学位论文, 山东农业大学, 泰安.]

Guo XY, Zhang JZ, Guo WD, Lu C (2012) Biological characteristics, hazards and prevention and control of alien invasive plants–*Solanum rostratum*. Inner Mongolia Forestry Investigation and Design, 35(6), 73–75. (in Chinese with English abstract) [郭晓艳, 张精哲, 郭卫东, 陆超 (2012) 外来入侵植物——黄花刺茄的生物学特性、危害与防控. 内蒙古林业调查设计, 35(6), 73–75.]

He J, Yuan JM (2003) Comprehensive control measures of poisonous wheat in Chenggu County. Plant Quarantine, 25(2), 124. (in Chinese) [何剑, 渊建民 (2003) 城固县毒麦的综合治理措施. 植物检疫, 25(2), 124.]

He P, Ma Q (2018) Distribution and control of cockroaches in China. Journal of Medical Pest Control, 34, 868–872. (in Chinese with English abstract) [贺盼, 马强 (2018) 我国蜚蠊的分布及防制概况. 医学动物防制, 34, 868–872.]

Huang H, Mao HY, Chen C, Peng J, Huang W (2020) Epidemic situation monitoring and comprehensive control countermeasures of rice water weevil in Xinyang. China Agricultural Technology Extension, 36(1), 85–88. (in Chinese) [黄华, 毛红彦, 陈昌, 彭娟, 黄伟 (2020) 信阳地区稻水象甲疫情监测与综合防控对策. 中国农技推广, 36(1), 85–88.]

Huo XB (2015) Invasion of *Blattella germanica* and its infestation management in urban environment in China. Chinese Journal of Vector Biology and Control, 26, 114–116. (in Chinese with English abstract) [霍新北 (2015) 我国城市德国小蠊的入侵及预防控制. 中国媒介生物学及控制杂志, 26, 114–116.]

Ju RT, Li B (2010) Sycamore lace bug, *Corythucha ciliata*, an invasive alien pest rapidly spreading in urban China. Biodiversity Science, 18, 638–646. (in Chinese with English abstract) [鞠瑞亭, 李博 (2010) 悬铃木方翅网蝽: 一种正在迅速扩张的城市外来入侵害虫. 生物多样性, 18, 638–646.]

Lei JC, Xu HG (2011) Prediction of the potential distribution of the alien invasive plant *Sorghum halepense* in China. Plant Protection, 37(3), 87–92. (in Chinese with English abstract) [雷军成, 徐海根 (2011) 外来入侵植物假高粱在我国的潜在分布区分析. 植物保护, 37(3), 87–92.]

Li HB, Wu SA (2013) Introduction to a new invasive pest, *Ceroplastes rusci* (Linnaeus) (Hemiptera : Coccoidea : Coccidae). Chinese Journal of Applied Entomology, 50, 1295–1300. (in Chinese with English abstract) [李海斌, 武三安 (2013) 外来入侵新害虫——无花果蜡蚧. 应用昆虫学报, 50, 1295–1300.]

Li SX, Gao BJ, Zhang DF, Ning C, Qu JL (2009) Studies of risk assessment of *Hypanthia cunea* (Drury). Chinese Agricultural Science Bulletin, 25, 202–206. (in Chinese with English abstract) [李淑贤, 高宝嘉, 张东风, 宁超, 屈金亮 (2009) 美国白蛾危险性评估研究. 中国农学通报, 25, 202–206.]

Liu BY, Pan YZ, Zhao YD, Cai L, Hou Y, Yang H, Zhang JF (2011) Effects of Pb stress on nutrient accumulation and allocation of *Ageratum conyzoides*. Journal of Agro-Environment Science, 30, 435–442. (in Chinese with English abstract) [刘碧英, 潘远智, 赵杨迪, 蔡蕾, 侯艳, 杨慧, 张建芳 (2011) Pb 胁迫对藿香蓟(*Ageratum conyzoides*)营养积累与分配的影响. 农业环境科学学报, 30, 435–442.]

Liu W (2006) Geographical Range and Possible Distribution Prediction of Several Main Species in *Amaranthus* in the World. Master's dissertation, Institute of Botany, Chinese Academy of Sciences, Beijing. (in Chinese with English abstract) [刘伟 (2006) 苋属入侵种的可能分布区预测及相关环境因子分析. 硕士学位论文, 中国科学院植物研究所, 北京.]

Liu W (2012) Research on the Biocontrol Technology, Mechanism and Utilization of Alligator Weed (*Alternanthera philoxeroides*). Master's

dissertation, East China Normal University, Shanghai. (in Chinese with English abstract) [刘伟 (2012) 喜旱莲子草的生物防治技术、机理及资源化利用研究. 硕士学位论文, 华东师范大学, 上海.]

Liu XM, Zhao YQ, Chen J (2013) Research progress on diseases and control techniques of *Procambarus clarkii* in China. China Fisheries, 56(10), 64–66. (in Chinese) [刘训猛, 赵宜清, 陈静 (2013) 我国克氏原螯虾病害及防治技术研究进展. 中国水产, 56(10), 64–66.]

Luan ZQ, Yan DD, Xue YY, Shi D, Xu DD, Liu B, Wang LB, An YT (2020) Research progress on the ecohydrological mechanisms of *Spartina alterniflora* invasion in coastal wetlands. Journal of Agricultural Resources and Environment, 37, 469–476. (in Chinese with English abstract) [栾兆擎, 闫丹丹, 薛媛媛, 史丹, 徐丹丹, 刘彬, 王立波, 安玉亭 (2020) 滨海湿地互花米草入侵的生态水文学机制研究进展. 农业资源与环境学报, 37, 469–476.]

Min YY (2017) A Preliminary Study on the Comparison of the Efficiency of Crayfish and Crab Culture in Jianghan Area. Master's dissertation, Yangtze University, Jingzhou. (in Chinese with English abstract) [闵云艺 (2017) 江汉地区虾蟹养殖模式效益比较的初步研究. 硕士学位论文, 长江大学, 荆州.]

Pan M, Sun XJ, Zou B (2020) Rapid control methods of *Hyphantria cunea* in Nanyang City. Xiandai Horticulture, 43(9), 191. (in Chinese) [潘孟, 孙新杰, 邹波 (2020) 南阳市美国白蛾快速防控方法. 现代园艺, 43(9), 191.]

Qi XX (2006) Effect of *Flaveria bidentis* Invasion on Plant Community and Soil Biological Community of Invaded Soil. Master's dissertation, Shenyang Agricultural University, Shenyang. (in Chinese with English abstract) [祁小旭 (2019) 黄顶菊对入侵地植物群落和土壤生物群落特征的影响. 硕士学位论文, 沈阳农业大学, 沈阳.]

Qin ZY, Tao JY, Hu C, Ruan AD (2016) Distribution, influence and control measures of *Eichhornia crassipes* in China. Journal of Anhui Agricultural Sciences, 44, 81–84. (in Chinese with English abstract) [秦智雅, 陶景怡, 胡辰, 阮爱东 (2016) 我国水域水葫芦的分布·影响·防治措施. 安徽农业科学, 44, 81–84.]

Shen YL (2008) Review on the research of *Opogona sacchari*. Zhejiang Entomological Society: Zhejiang Science and Technology Association, 174–179. Hangzhou. (in Chinese) [沈幼莲 (2008) 蔗扁蛾研究综述. 浙江省昆虫学会: 浙江省科学技术协会. 174–179. 杭州.]

Sun XF (2020) An analysis of the invasion mechanism of invasive plant *Solidago canadensis*. Horticulture & Seed, 40(1), 20–22. (in Chinese with English abstract) [孙晓方 (2020) 浅析入侵植物加拿大一枝黄花的入侵机理. 园艺与种苗, 40(1), 20–22.]

Wang M, Bao M, Ao TG, Ren LL, Luo YQ (2017) Population distribution patterns and ecological niches of two *Sirex* species damaging *Pinus sylvestris* var. *mongolica*. Chinese Journal of Applied Entomology, 54, 924–932. (in Chinese with English abstract) [王明, 保敏, 敖特根, 任利利, 骆有庆 (2017) 两种共同危害樟子松的树蜂的种群分布格局及生态位对比. 应用昆虫学报, 54, 924–932.]

Wang R (2006) Historical Reconstruction of Invasion and Expansion and Potential Spread of Some Threatening Invasive Alien Species in China. Master's dissertation, Institute of Botany, Chinese Academy of Sciences, Beijing. (in Chinese with English abstract) [王瑞 (2006) 我国严重威胁性外来入侵植物入侵与扩散历史过程重建及其潜在分布区的预测. 硕士学位论文, 中国科学院, 北京.]

Wang R, Wang YZ, Wan FH (2010) Spatiotemporal expansion pattern and potential spread of invasive alien plant *Erigeron annuus* (Asteraceae) in China. Chinese Journal of Ecology, 29, 1068–1074. (in Chinese with English abstract) [王瑞, 王印政, 万方浩 (2010) 外来入侵植物一年蓬在中国的时空扩散动态及其潜在分布区预测. 生态学杂志, 29, 1068–1074.]

Wang XH (2019) Harm and control of *Ambrosia artemisiifolia* to grassland. Animal Husbandry in Xinjiang, 34(4), 44–46. (in Chinese) [王晓红 (2019) 杂草豚草对草原的危害及防控. 新疆畜牧业, 34(4), 44–46.]

Wang YS (2019) Distribution Pattern and Genetic Structure of *Pheracoccns Sotenopsis* Tinsley and Distribution Pattern of Its Parasitoid Wasps in China. PhD dissertation, Chinese Academy of Agricultural Sciences, Beijing. (in Chinese with English abstract) [王玉生 (2019) 扶桑绵粉蚧在中国的地理分布与遗传结构及其寄生蜂的地理分布格局研究. 博士学位论文, 中国农业科学院, 北京.]

Wang YY (2019) Gonad Development Examination and Temporal and Spatial Expression Pattern Analysis of Sex Differentiation Related Genes in High Temperature Treated Female *Nile Tilapia*. Master's dissertation, Shandong Agricultural University, Taian. (in Chinese with English abstract) [王瑶瑶 (2019) 高温处理的尼罗罗非鱼性腺分化过程及性别决定相关基因时空表达模式研究. 硕士学位论文, 山东农业大学, 泰安.]

Wei JF (2019) Morphological Characteristics Affect Individual Mate Choice Decisions in Female and Male Western Mosquito Fish (*Gambusia affinis*). Master's dissertation, Northwest A & F University, Xi'an. (in Chinese with English abstract) [魏洁菲 (2019) 形态特征对雌雄两性西部食蚊鱼配偶选择决策的影响. 硕士学位论文, 西北农林科技大学, 西安.]

Wei SH, Qu Z, Zhang CX, Li YJ, Li XJ (2006) Invasive alien species giant ragweed (*Ambrosia trifida* L.) and its risk assessment. Plant Protection, 44(4), 14–19. (in Chinese with English abstract) [魏守辉, 曲哲, 张朝贤, 李咏军, 李香菊 (2006) 外来入侵物种三裂叶豚草(*Ambrosia trifida* L.)及其风险分析. 植物保护, 44(4), 14–19.]

殷万东, 吴明可, 田宝良, 于宏伟, 王麒云, 丁建清 (2020) 生物入侵对黄河流域生态系统的影响及对策. 生物多样性, 2020, 28 (12): 1533–1545. http://www.biodiversity-science.net/CN/10.17520/biods.2020208

Wu WJ, Wu J, Huang YY (2019) Risk analysis of *Solenopsis invicta* in Panxi area of Sichuan Province. Applicable Technologies for Rural Areas, 22(11), 50─52. (in Chinese) [吴文佳, 吴劼, 黄跃跃 (2019) 四川省攀西地区全国植物检疫性有害生物红火蚁风险性分析. 农村实用技术, 22(11), 50─52.]

Wu YM, Jin B, Gu ZR (2018) The distribution and control of *Cydia pomonella* (L.). Studies on Insects in Central China, 14, 150─157. (in Chinese with English abstract) [吴永美, 金彪, 谷志容 (2018) 苹果蠹蛾的分布及防控. 华中昆虫研究, 14, 150─157.]

Xu HG, Qiang S (2017) China Invasive Alien Species (revised edition). Science Press, Beijing. (in Chinese) [徐海根, 强胜 (2017) 中国外来入侵生物. 科学出版社, 北京.]

Yao J, Zhang LW, Yu XF (2008) Advances in red turpentine bark beetle, *Dendroctonus valens* LeConte. Journal of Anhui Agricultural University, 52, 416─420. (in Chinese with English abstract) [姚剑, 张龙娃, 余晓峰 (2008) 入侵害虫红脂大小蠹的研究进展. 安徽农业大学学报, 52, 416─420.]

Zhao HY, Chen XJ, Liu JD, Liu SN, Zhu JY, Zhou XG (2020) Suggestions on prevention and control of several major invasive pests in Sichuan Province. Sichuan Agriculture and Agricultural Machinery, 27(2), 51─52. (in Chinese) [赵浩宇, 陈晓娟, 刘俊豆, 刘胜男, 朱建义, 周小刚 (2020) 四川几种主要入侵有害生物防治建议. 四川农业与农机, 27(2), 51─52.]

Zheng DS (2010) Diversity of oat in China. Journal of Plant Genetic Resources, 11, 249─252. (in Chinese with English abstract) [郑殿升 (2010) 中国燕麦的多样性. 植物遗传资源学报, 11, 249─252.]

Zhou W, Zhao H, Yang X (2012) Prediction of potential geographic distribution areas for *Rana catesbiana* and *Mikania micrantha* in China using GARP Modeling System. Journal of Southwest Forestry University, 32(1), 51─55. (in Chinese with English abstract) [周伟, 赵衡, 杨熙 (2012) 利用 GARP 生态位模型预测牛蛙和薇甘菊在中国的地理分布. 西南林业大学学报, 32(1), 51─55.]