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Updates on the baseline distribution of Invasive Alien Species of Union concern (2019)

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Abstract

The geographical distribution (baseline) of the 37 Invasive Alien Species (IAS) of Union concern listed by Commission Implementing Regulation (EU) 2016/1141, under the frame of Regulation (EU) 2014/1143, was published in 2017 as a JRC science-for-policy report. It includes validated country level occurrences by 18 EU Member States (MS) Competent Authorities and validated grid level occurrences by 13 MS Competent Authorities. Since then, three additional MS Competent Authorities (Bulgaria, Italy, and Luxemburg) provided validated data. Furthermore, two MS Competent Authorities (Finland, Cyprus) supplemented their data provided in the baseline. The current report includes the additional information provided by the aforementioned MS Competent Authorities. This information updates the information associated to the corresponding species and MS of the baseline of the first 37 IAS of Union concern. This updated spatial information informs the implementation of Art. 16 of the EU Regulation 1143/2014, dictating the mandatory notification of early detections of listed species to the European Commission and to the other MS.

1 Introduction

The EU Regulation no. 1143/2014 on the prevention and management of the introduction and spread of Invasive Alien Species (IAS) (EU 2014; hereinafter referred to as the IAS Regulation), which entered into force on 1 January 2015, gives priority at European level to a subset of IAS, named as IAS of Union concern (Art. 4 "the Union list", hereinafter referred to as IAS of Union concern). Species are included in this list *inter alia* because they can cause such a significant damage in Member States (MS) justifying the adoption of dedicated measures at Union level. The list of IAS of Union concern has a dynamic character, focusing on species whose inclusion in the list would effectively prevent, minimize or mitigate their adverse impact in a cost efficient manner (EU 2014).

The first list of IAS of Union concern, published with the Commission Implementing Regulation (EU) 2016/1141 of 13.07.2016 (which entered into force on 03.08.2016) contained 37 taxa, including both animals and plants. Subsequently, 12 IAS of Union concern were added in the Union list with the Commission Implementing Regulation (EU) 2017/1263 of 12.07.2017 (which entered into force on 02.08.2017).

Under the IAS Regulation, MS must prevent the introduction and spread of the listed species, enforce effective early detection and rapid eradication mechanisms for new introductions, and adopt management measures for species already widely spread.

The effective implementation of the IAS Regulation, in particular with reference to Art. 16, dictating the mandatory notification of early detections of listed species to the European Commission and to the other MS, can benefit from a detailed and up to date spatial information of the IAS of Union concern in the MS territories. Therefore, it is crucial to avail of a geographic baseline with the current distribution of the IAS of Union concern. To this end, EU baselines of spatial distribution for the IAS of Union concern were published as JRC science-for-policy reports based on data aggregated through the European Alien Species Information Network (EASIN¹) and validated by the MS competent authorities:

1. a baseline of 37 IAS of Union concern (Tsiamis et al. 2017), based on the Commission Implementing Regulation (EU) 2016/1141 of 13.07.2016;
2. a baseline of 12 IAS of Union concern (Tsiamis et al. 2019²), based on the Commission Implementing Regulation (EU) 2017/1263 of 12.07.2017.

Since the publication of the baseline report of the first 37 IAS of Union concern (Tsiamis et al. 2017) three additional MS provided data while two others delivered updated data on the distribution of several IAS of Union concern.

The current report includes the additional spatial data on the distribution of several of the first 37 IAS of Union concern. This information updates the associated information on the corresponding species and MS of the first 37 IAS of Union concern (Tsiamis et al. 2017).

¹ EASIN (<https://easin.jrc.ec.europa.eu/>) constitutes the core of the information system supporting MS in the implementation of the IAS Regulation (EU 2014, Art. 25).

²With the exception of the species *Nyctereutes procyonoides*

2 New baseline data

The baseline report on the first 37 IAS of Union concern (Tsiamis et al. 2017) includes validated country level occurrences by 18 EU MS Competent Authorities and validated grid level occurrences by 13 MS Competent Authorities. Since the publication of the report, three additional MS (Bulgaria, Italy, Luxembourg) provided validated data. Furthermore, two MS Authorities (Finland, Cyprus) supplemented data already given data in the baseline. In more detail:

1. Country level data that fulfill information gaps of the first baseline:

Bulgaria: *Pseudorasbora parva*, present in Bulgaria since 1975 (Stefanov et al. 2018).

2. Grid level data (10x10 km) that fulfill information gaps of the first baseline:

Cyprus: *Procambarus clarkii* and *Trachemys scripta*.

Finland: *Pacifastacus leniusculus*.

Italy: *Baccharis halimifolia*, *Callosciurus erythraeus*, *Ludwigia grandiflora*, *Myriophyllum aquaticum*, *Oxyura jamaicensis*, *Vespa velutina nigrithorax*.

3. Grid level data (10x10 km) that updates the corresponding information of the first baseline report on certain IAS and countries. The information in the report was based exclusively on EASIN data but it is currently endorsed by the relevant MS:

Italy: *Eichhornia crassipes*, *Eriocheir sinensis*, *Hydrocotyle ranunculoides*, *Lagarosiphon major*, *Lithobates catesbeianus*, *Ludwigia peploides*, *Myocastor coypus*, *Orconectes limosus*, *Pacifastacus leniusculus*, *Procambarus clarkii*, *Procambarus fallax f. virginalis*, *Procyon lotor*, *Pseudorasbora parva*, *Pueraria montana var. lobata*, *Sciurus carolinensis*, *Tamias sibiricus*, *Threskiornis aethiopicus*, *Trachemys scripta*.

Luxemburg: *Orconectes limosus*, *Pacifastacus leniusculus*, *Procyon lotor*, *Pseudorasbora parva*, *Trachemys scripta*.

The updated spatial information of the above species at grid level (10x10 km) and the original data sources are provided for each species and for each associated country through ArcGIS shapefiles. This information is directly provided through a web-link in the EASIN website (<https://easin.jrc.ec.europa.eu/easin/Documentation/Baseline>).

The updated presence of the first 37 IAS of Union concern per EU MS, supplemented with the additional information provided in the current report, is presented in Table 1.

Table 1. Status of the occurrence of the first 37 IAS of Union concern in the EU MS, in light of supplemented information from MS. E=established populations, C=casual occurrences. Information corresponding to grey-shaded indicates data coming only from EASIN datasets. In these cases there is no distinction between established and casual records (all marked as Present = "P"). For *Trachemys scripta* three subspecies are included: *T. scripta scripta*, *T. scripta elegans*, and *T. scripta troostii*.

SPECIES NAME	AT	BE	BG	HR	CY	CZ	DK	EE	FI	FR	DE	EL	HU	IE	IT	LV	LT	LU	MT	NL	PL	PT	RO	SK	SI	ES	SE	UK
<i>Baccharis halimifolia</i>		E								E					E											E		E
<i>Cabomba caroliniana</i>	E	E					E			E	P		P							E	E						E	E
<i>Callosciurus erythraeus</i>		C								E					E					E								
<i>Corvus splendens</i>										C		E	P			E				E	E					C		
<i>Eichhornia crassipes</i>		C				E				E	P		P		E					C		P	P			E		C
<i>Eriocheir sinensis</i>	C	E				E	C	C	E	E	P		P	E	E	E	P	P		E	E	P	P	P		E	E	E
<i>Heracleum persicum</i>						E	E	E	E																		E	E
<i>Heracleum sosnowskyi</i>							E	E	E		P		P			E	P				E		P	P				
<i>Herpestes javanicus</i>				E																								
<i>Hydrocotyle ranunculoides</i>		E								E	P		P		E					E						E		E
<i>Lagarosiphon major</i>	E	E								E	P		P	E	E					E		P				E		E
<i>Lithobates catesbeianus</i>		E								E	P	E			E											E		E
<i>Ludwigia grandiflora</i>		E								E	P		P	E	E					E						E		E
<i>Ludwigia peploides</i>		E								E		E			E					E						E		

<i>Lysichiton americanus</i>		E				E	C	E	E	P			E				E						E	E				
<i>Muntingia reevesii</i>		E				E							E				E							E				
<i>Myocastor coypus</i>	E	E	P	E		E			E	P	E	P	E	E			E	E		P	P	E	E					
<i>Myriophyllum aquaticum</i>	E	E							E	P		P	E	E		P		E		P	P			E	E			
<i>Nasua nasua</i>		C							E	P														E				
<i>Orconectes limosus</i>	E	E	P	E		E			E	P		P		E	E	P	E		E	E		P	P	E	E	E		
<i>Orconectes virilis</i>																		E							E			
<i>Oxyura jamaicensis</i>	E	E				E	C		E	E	P		P	E	E			E	C	P			C		E			
<i>Pacifastacus leniusculus</i>	E	E		E		E	E	E	E	E	P	E	P		E	E	P	E		E	E	P		P	E	E	E	E
<i>Parthenium hysterophorus</i>		C																										
<i>Percocottus glenii</i>			P	E					E		P		P			P			E			P	P					
<i>Persicaria perfoliata</i>																												
<i>Procambarus clarkii</i>	E	E			E					E	P			E				E		P				E	E			
<i>Procambarus fallax</i> f. <i>virginalis</i>				E		E					P			E				E				P						
<i>Procyon lotor</i>	E	E		E		E	E			E	P		P	E	E		P	E		C	E		P	P	E	E	C	
<i>Pseudorasbora parva</i>	E	E	E	E		E	E			E	P	E	P		E		P	E		E	E		P		E	E	E	
<i>Pueraria montana</i> var. <i>lobata</i>														E														

<i>Sciurus carolinensis</i>		C									P			E	E				C							E		
<i>Sciurus niger</i>		C																										
<i>Tamias sibiricus</i>		E							E	P			E	E					E						C		C	
<i>Threskiornis aethiopicus</i>	C	C				C	C		E	P	E			E	E				C	C	P				E		C	
<i>Trachemys scripta*</i>	E	C	P	E	E	E	E	C	E	E	P	E		E	E	E		E		C	E	P	P		E	E	C	C
<i>Vespa velutina nigrithorax</i>		C							E	P				E							P				E			

3 Conclusions

The updated and additional data presented in the current report enrich the information included in the distribution baseline of the first 37 IAS of Union concern (Tsiamis et al. 2017). This baseline constitutes an important tool supporting the implementation of the IAS Regulation. The baseline data is crucial to track new detections of IAS of Union concern in unaffected areas of the EU territory, in relation with Art. 16, which dictates the mandatory notification of early detections of listed species to the European Commission and to the other MS. In addition, the baseline data is available in the EASIN website (<https://easin.jrc.ec.europa.eu/easin/Services/Reporting>), obeying to the format required by the Commission Implementing Regulation (EU) 2017/1454³, and can be reused by MS to comply with reporting obligations under Art. 24 of the IAS Regulation.

It should be noted that although the updated baseline of the first 37 IAS of Union concern offers the best available information within the EU, it can be further enriched with additional information from the MS that did not provide input to the baseline. New contribution of spatial data will be swiftly used to update the baseline.

³ COMMISSION IMPLEMENTING REGULATION (EU) 2017/1454 of 10 August 2017 specifying the technical formats for reporting by the Member States pursuant to Regulation (EU) No 1143/2014

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List of abbreviations and definitions

EASIN	European Alien System Information Network (http://easin.jrc.ec.europa.eu/)
EU	European Union
IAS	Invasive Alien Species as defined in Art. 3 of EU Regulation 1143/2014
IAS of Union concern	Species identified according to Art. 4 of the EU Regulation 1143/2014, requiring EU concerted action, published in the EU Commission Implementing Regulations 1141/2016 of 13 July 2016 and 1263/2017 of 12 July 2017
IAS Regulation	Regulation (EU) No 1143/2014 of the European Parliament and of the Council of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species
JRC	Joint Research Centre Directorate of the European Commission
MS	Member States

List of tables

Table 1. Status of the occurrence of the first 37 IAS of Union concern in the EU MS, in light of supplemented information from MS. E=established populations, C=casual occurrences. Information corresponding to grey-shaded indicates data coming only from EASIN datasets. In these cases there is no distinction between established and casual records (all marked as Present = "P"). For *Trachemys scripta* three subspecies are included: *T. scripta scripta*, *T. scripta elegans*, and *T. scripta troostii*.....5

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