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“Making flyway conservation happen”

UPDATE ON THE STATUS OF NON-NATIVE WATERBIRD SPECIES WITHIN THE AEWA AREA

*Prepared for the UNEP/AEWA Secretariat by the
UNEP- World Conservation Monitoring Centre (UNEP-WCMC)*

Introduction

Article IV of the Agreement introduces the AEWA Action Plan (Annex 3 to the Agreement). Paragraph 7.4 of the AEWA Action Plan requires the Agreement Secretariat, in coordination with the Technical Committee and the Parties, to prepare a series of seven international reviews on the implementation of the Action Plan. These reviews shall be prepared at different frequencies, as per paragraph 7.5, and shall be submitted to the Meeting for the Parties (MOP) for consideration.

Amongst these seven international reviews is the *Review on the Status of Introduced Non-native Waterbird Species and Hybrids thereof*. This review has been produced regularly and submitted to every second session of MOP so far, in accordance with paragraph 7.5, which determines the frequency of each international review.

For MOP6, the Technical Committee decided to produce a shorter report that updates the information from the latest full report submitted to 4th Meeting of the Parties of AEWA (MOP4). Based on information submitted through AEWA National Reports for the Triennium 2012-2014 and data from the International Waterbird Census, the report provides a reduced, succinct update, highlighting changes in population status of non-native waterbirds compared to the status presented in the second edition of the review on the status of introduced non-native waterbird species conducted for MOP4 in 2008. It also identifies newly introduced species, and reassesses the risk status applied to non-native waterbird species based on their impacts on native waterbird species and their habitats in countries within the AEWA Area.

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Action requested from the Meeting of the Parties

The Meeting of the Parties is invited to note the *Update on the Status of Non-native Waterbird Species within the AEWA Area* and take its conclusions and recommendations into account in the decision-making process.

Update on the status of non-native waterbird species within the AEWA Area

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UNEP/AEWA Secretariat

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Executive Summary

This report provides an update for the Secretariat of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) on the status of introduced non-native waterbird species within the AEWA Area, pursuant to paragraph 7.4 of the AEWA Action Plan. Based on information submitted through AEWA National Reports for the Triennium 2012-2014 and data from the International Waterbird Census, the report highlights changes in population status of non-native waterbirds compared to the status presented in the second edition of the review on the status of introduced non-native waterbird species conducted for the 4th Meeting of the Parties of AEWA (MOP4) in 2008. It also identifies newly introduced species, and reassesses the risk status applied to non-native waterbird species based on their impacts on native waterbird species and their habitats in countries within the AEWA Area. This information will be submitted to MOP6 for consideration. A summary of the EU Regulation 1143/2014 on the prevention and management of the introduction and spread of invasive alien species, and its potential implications for AEWA, is also provided.

Data availability and reliability, as well as differences in reporting, were limiting factors in assessing changes in status of non-native waterbirds compared to the status in 2008. Gaps in AEWA National Report submissions, as well as the level of completion of individual reports, also affected assessments.

Reporting rates could be enhanced by capacity building on identifying non-native species and factors that indicate potential risks posed to native waterbird species. Rephrasing questions on non-native species in the AEWA National Reporting template to avoid misinterpretation and loss of information could also enhance rates.

Further research, including on risk assessments for non-native waterbirds, and consultation with Parties would be beneficial in assessing the current status of non-native waterbirds in the AEWA Area.

Keeping in mind the data/information limitations, a number of populations appear to have increased substantially in a number of AEWA Contracting Parties since 2008, which may warrant coordinated action across Parties. Species classified as “High” and “Very High” risk should be prioritised:

- *Anas platyrhynchos* (Mallard) in Africa;
- *Branta canadensis* (Greater Canada Goose) in much of Europe;
- *Branta hutchinsii* (Cackling Goose) in Belgium, Germany and the Netherlands;
- *Oxyura jamaicensis* (Ruddy Duck) throughout Europe; and
- *Threskiornis aethiopicus* (Sacred Ibis) mostly in south-central Europe.

It is important to maintain awareness of relevant international policy developments and to act on the implications of these for AEWA. In this context, the EU Regulation 1134/2014 has the potential to be supportive of AEWA implementation in relation to non-natives and invasive alien species if the Union, Regional and/or National Lists established under the Regulation align with AEWA priorities, and action plans to address priority pathways are aligned with AEWA plans.

In addition, the reporting obligations of the Regulation, and the information support system designed to support its implementation, may also produce useful information for EU Member States that are Contracting Parties to AEWA to use in their AEWA National Reports. AEWA could support the implementation of the Regulation by facilitating cooperation and coordination with countries outside of the EU on efforts to prevent the introduction and spread of invasive alien species. Such synergies could be enhanced by establishing a formal relationship between the AEWA Standing Committee and Technical Committee and the committee and scientific forum created by the Regulation.

I. Conclusions and Recommendations

Data availability and reliability, as well as differences in reporting, were limiting factors in assessing changes in status of non-native waterbirds compared to the status in 2008 (Table 1). Gaps in AEWA National Report submissions, as well as the level of completion of individual reports, also affected assessments. Further research and consultation with Parties would be beneficial in assessing the current status of non-native waterbirds in the AEWA Area.

It is important to maintain awareness of relevant international policy developments and to act on the implications of these for AEWA. In this context, EU Regulation 1134/2014 has the potential to be highly supportive of AEWA implementation in relation to non-natives and invasive alien species. Attention should also be paid to developments under the Bern Convention on the conservation of European wildlife and natural habitats, which should this Convention attempt to design and implement an equivalent regime on IAS for its Parties that are not EU Member States¹, there would be potential for mutual support in implementation between AEWA, EU Regulation 1134/2014, and such a regime.

Research

1. **Support research on risks posed by non-native waterbirds.** Further detailed analyses of the population status of the species considered by this report and how they adversely impact native Annex 2 species and their habitats could help to inform both implementation of AEWA and EU Regulation 1134/2014. *Action item for: AEWA Contracting Parties.*
2. **Align the Union, Regional and/or National Lists established under EU Regulation 1134/2014 with AEWA priorities.** This could provide an effective means of targeting coordinated action in the EU region of the AEWA Area. *Action item for: EU Member States and AEWA MOP, in collaboration with the European Commission.*
3. **Develop internationally-agreed standards and guidance for risk assessment with respect to non-native waterbirds.** This would support implementation of EU Regulation 1134/2014 and AEWA. *Action item for: AEWA Technical Committee and AEWA MOP, in collaboration with the European Commission.*

Targeted action against invasive non-native species

4. **Coordinate action against priority species.** A number of populations appear to have increased substantially in a number of AEWA Contracting Parties since 2008, which may warrant coordinated action across Parties. Species classified as “High” and “Very High” risk should be prioritised: *Anas platyrhynchos* (Mallard) in Africa; *Branta canadensis* (Greater Canada Goose) in much of Europe; *Branta hutchinsii* (Cackling Goose) in Belgium, Germany and the Netherlands; *Oxyura jamaicensis* (Ruddy Duck) throughout Europe; and *Threskiornis aethiopicus* (Sacred Ibis) mostly in south-central Europe. *Action item for: AEWA Contracting Parties.*

¹ Trouwborst, A. 2015. The Bern Convention and EU Regulation 1143/2014 on the Prevention and Management of the Introduction and Spread of Invasive Alien Species. Prepared on behalf of the Bern Convention on the Conservation of European Wildlife and Natural Habitats, Strasbourg, 18 June 2015, T-PVS/Inf(2015) 14.

AEWA reporting

5. **Enhance reporting rates through capacity building.** Based on the completeness and quality of National Report submissions, Parties may benefit from capacity building in relation to identifying non-native species and factors that indicate potential risks posed to native waterbird species. *Action item for: AEWA Contracting Parties, AEWA Secretariat.*
6. **Rephrase questions in the National Reporting template to avoid misinterpretation and loss of information.** Questions in section 3 of the National Report template appeared to cause some confusion, with many Parties providing details on native species instead of non-natives. Suggested revisions have been submitted by UNEP-WCMC to the AEWA Secretariat in the context of the Analysis of National Reports for the triennium 2012-2014. *Action item for: AEWA Secretariat.*

Cooperation between AEWA and EU Regulation 1134/2014

7. **AEWA could act as a platform to facilitate cooperation and coordination with countries outside of the EU on efforts to prevent the introduction and spread of IAS.** This could include work in the context of any parallel regime for non-EU Bern Convention Contracting Parties if developed. *Action item for: AEWA Contracting Parties, AEWA Secretariat, AEWA Technical Committee.*
8. **Contracting Parties that are also EU Member States should align the action plans to address priority pathways as required under EU Regulation 1134/2014 with the AEWA Action Plan, the AEWA International and National Single Species Action Plans and other relevant national, regional and international plans.** *Action item for: relevant AEWA Contracting Parties.*
9. **Establish a formal relationship between the AEWA Standing Committee and Technical Committee and the bodies created by EU Regulation 1134/2014 to enhance synergies.** *Action item for: AEWA Standing Committee and AEWA Technical Committee, in collaboration with the European Commission.*

Align AEWA and other reporting obligations

10. **Contracting Parties that are also EU Member States should explore options for using the information collected for EU Regulation 1134/2014's reporting obligations to complete relevant sections of the AEWA National Report in future.** *Action item for: relevant AEWA Contracting Parties.*
11. **The Commission is to establish an 'information support system' to support the application of EU Regulation 1134/2014 by 2 January 2016 that will interconnect with existing data systems on IAS. This may provide an opportunity to explore options for interoperability between the EU system and the AEWA Online Reporting System (ORS) to improve efficiencies in reporting.** *Action item for: relevant AEWA Contracting Parties, AEWA Technical Committee, AEWA Secretariat.*

II. Introduction

This document provides an update on the status of introduced non-native waterbird species within the territories of AEWA Contracting Parties. It presents changes in such species' population status compared to their status in 2008 and highlights newly introduced species. On this basis, it provides a reassessment of the risk status applied to these non-native waterbird species, which categorises them depending on their impacts on native waterbird species and habitats in countries within the AEWA Area. This information will be submitted to MOP6 for consideration.

The Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) aims to 'maintain and/or restore species to a favourable conservation status through coordinated conservation action for the waterbirds using the migratory system within its geographical remit'.² Specifically in reference to non-native waterbird species, Article III(2)g of the Agreement text³ states: 'prohibit the deliberate introduction of non-native waterbird species into the environment and take all appropriate measures to prevent the unintentional release of such species if this introduction or release would prejudice the conservation status of wild flora and fauna; when non-native waterbird species have already been introduced, the Parties shall take all appropriate measures to prevent these species from becoming a potential threat to indigenous species'.

The AEWA Action Plan provides a framework for Contracting Parties for conserving waterbirds by addressing species and habitat conservation measures, as well as management of human activities, research, monitoring, education, and information provision.⁴ The Action Plan has a number of paragraphs that relate to the management of non-native species under paragraph 2 on 'Introductions', including:

- '2.5.1 Parties shall prohibit the introduction into the environment of non-native species of animals and plants which may be detrimental to the populations listed in Table 1.'⁵
- 2.5.2 Parties shall require the taking of appropriate precautions to avoid the accidental escape of captive animals belonging to non-native species, which may be detrimental to the populations listed in Table 1.
- 2.5.3 Parties shall take measures to the extent feasible and appropriate, including taking, to ensure that when non-native species or hybrids thereof have already been introduced into their territory, those species or their hybrids do not pose a potential hazard to the populations listed in Table 1.'

There is a need for up-to-date information on the status of non-native introduced waterbirds in order to support Contracting Parties in undertaking these measures.

Paragraph 7.4 of the AEWA Action Plan requires the preparation of a series of international reviews at different frequency (cf. Paragraph 7.5) necessary for the implementation of AEWA. Amongst them is a review on the status of introduced non-native waterbird species and hybrids thereof, which is to be compiled for each second Meeting of the Parties (MOP).

² Review on the status of introduced non-native waterbird species and hybrids thereof, 2nd edition, compiled by the British Trust for Ornithology (BTO) on behalf of the AEWA Secretariat in 2008 (Banks et al. 2008).

³ Agreement Text and Annexes, Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA), Article III 'General Conservation Measures'.

⁴ Article II and Annex 3 'AEWA Action Plan as amended by the fifth 5th Session of the Meeting of the Parties, 14-18 May 2012, La Rochelle, France', Agreement text and annexes, AEWA.

⁵ Table 1 – 'Status of the populations of migratory waterbirds' which forms part of the Action Plan.

The first and the second editions of these reviews were submitted to MOP₂ in 2002 and MOP₄ in 2008, respectively. These reviews noted a lack of published literature on the subject and therefore combined literature reviews with expert input (including AEWA focal points) in relevant AEWA Contracting Parties. For this third edition of this review the AEWA Technical Committee requested a limited update rather than a full review. In line with the terms of reference from the Technical Committee, this report uses information submitted by AEWA Contracting Parties on the status of non-native waterbirds from the AEWA National Reports for the Triennium 2012-2014 and data from the International Waterbird Census (IWC)⁶ to assess changes in the status of non-native species compared to the 2008 review. It is important to note that due to limitations in the submitted AEWA National Reports and because in some cases the IWC data appears to combine population figures for both native and non-native birds, the risk assessments provided on the basis of this data (see Table 1) may require further ground-truthing.

This report has the following objectives:

- 1) Identify changes in the population sizes, trends and distribution of non-native waterbirds, as well as the potential occurrence of newly introduced waterbird species (based on the information provided by AEWA Contracting Parties and data from IWC);
- 2) Identify what remedial actions have been taken to mitigate the effects of introduced waterbird species on native waterbird species (based on information provided by Contracting Parties);
- 3) Identify gaps in data and knowledge in relation to non-native waterbirds;
- 4) Highlight recent relevant international policy developments by summarising the EU Regulations 1143/2014 on the prevention and management of the introduction and spread of invasive alien species⁷, and its implications for AEWA; and
- 5) Make conclusions and recommendations based on the updated information on the status and potential impacts of non-native introduced waterbirds in countries within the AEWA Area.

Objectives 1-3 are addressed through the provision of an overview table (Table 1) in Section III. In addition to providing an update of the review on the status of non-native waterbird species, the Technical Committee requested that this report summarises EU Regulation 1143/2014 and its potential implications for AEWA (objective 4), and this summary is presented in Section IV. The information contained in Table 1, gaps in data and knowledge identified when preparing Table 1, and the assessment of EU Regulation 1143/2014, inform conclusions and recommendations presented in Section II.

⁶ Wetlands International (2015) International Waterbird Census Database. Wetlands International, Ede.

⁷ 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 (OJ L 317, 4.11.2014).

III. Overview of the past and the most recent status of AEWA non-native bird species

An overview of the past and most recent status of non-native waterbird species that may pose a risk to native waterbird species in the AEWA Area is presented in Table 1. In total, 36 species were assessed: 32 species that were identified as introduced species that are known to breed within the AEWA Area based on the second review in 2008⁸ and four additional species that were identified as potentially posing a risk to native species within the National Reports for the Triennium 2012-2014. Details of these 36 species, including the 2008 status and the corresponding update based on the information submitted by Contracting Parties in their National Reports and data from the International Waterbird Census (IWC) are provided together in Table 1.

Methodology

Table 1 has been compiled using three primary datasets:

- the *Review on the status of introduced non-native waterbird species and hybrids thereof*, 2nd edition, compiled by the British Trust for Ornithology (BTO) on behalf of the AEWA Secretariat in 2008⁹;
- the AEWA National Reports for the Triennium 2012-2014 (hereafter ‘AEWA National Reports’), submitted by 39 Contracting Parties by July 2015 and analysed by UNEP-WCMC in August 2015¹⁰; and
- data from the IWC¹¹ on the national count totals of the 36 species assessed within individual countries.

Columns 2-6 of Table 1 have, where possible, been compiled based on the second review in 2008. The only exceptions are data for *Anas bahamensis*, *Branta hutchinsii*, *Pelecanus crispus*, and *Pelecanus rufescens*, which were not included in the second review, but have been added in to this current review because their presence was reported by Contracting Parties in the AEWA National Reports. For these species, columns 2-6 have been compiled based on answers to questions on ‘previous data’ in the AEWA National Reports, where available. Where no or limited population status information was available from the 2008 review, data provided in AEWA National Reports was used instead (indicated with a footnote in Table 1).

Columns 7-8, 10-11, and 13 were compiled based on information provided in the AEWA National Reports. Information has been summarised in this table, and has only been included where it was deemed to be of added value for informing future action.

Column 9 was compiled based on data from IWC. Where the IWC dataset provided numbers at subspecies level, the figures were combined and presented at the species level. In some cases, the population figures appear to combine population figures for both native and non-native birds, obscuring

⁸ Banks, A.N., Wright, L.J., Maclean, I.M.D. and Rehfisch, M.M. 2008. Review of the Status of Introduced Non-Native Waterbird Species in the Area of the African-Eurasian Waterbird Agreement: 2007 Update. BTO Research Report 489. BTO, Thetford.

⁹ Ibid.

¹⁰ UNEP-WCMC. 2015. Analysis of AEWA National Reports for the Triennium 2012-2014. UNEP-WCMC, Cambridge.

¹¹ Wetlands International (2015) International Waterbird Census Database. Wetlands International, Ede.

the true levels of non-native bird populations. The IWC data in Table 1 for the United Kingdom has been reviewed by an expert of the AEWA Technical Committee and IWC estimates have been removed in favour of AEWA National Report data, where recommended.

Columns 12 and 13 were completed based on expert assessment; more specifically, the completion of column 12 followed the same methodology as that of the second review. That is, the risk status is categorised from Very High – High – Medium – Low – Very Low, and these assessments are subjective, but based on the evidence gathered as part of this review.

Species/country combinations not included in the second review (2008), and not reported within AEWA National Reports, were added on the basis of expert advice (Tim Inskipp), based on IWC data. A number of species which were considered to be non-natives in the United Kingdom in the second review, but which were confirmed not to be non-native by an expert from the AEWA Technical Committee were excluded from Table 1.

It is important to note that the data in the submitted AEWA National Reports is incomplete and that the absence of information in Table 1 does therefore not mean that non-native waterbird species are not posing any risks in these countries. Whilst 39 Contracting Parties submitted Annual Reports, not all of them provided information on the status of non-native species and some of those that did provided incomplete information. Furthermore, as the IWC data appears in some cases to be a combination of native and non-native populations, these data limitations mean that the risk assessments provided in Table 1 are likely to require further verification, for example by seeking further input and clarification from Contracting Parties.

Table 1: Overview of the status of non-native introduced waterbirds within the AEWA Area, including previous and current risk status (p= pairs, i= individuals, ns= not specified; B= breeding, W= non-breeding/wintering). Green columns based on 2008 review (unless otherwise specified); blue columns based on AEWA National Reports, IWC data and expert advice. If the current risk status is high or very high, these are indicated in orange and red, respectively. Data quality, where available in AEWA Annual Reports, is provided ('Poor', 'Moderate', 'Good'). **See key for risk types and footnotes at the end of the table.**

Species	Status in countries with introduced populations	Introduced breeding range in the AEWA Area	Previous status	Risks presented (bold if based on reference)	Risk status	Reported introduced range in AEWA Area	Most recent status (data quality and year(s) of assessment provided, where available)	Most recent status IWC	Population trend (arrows indicate trend, with ~ = fluctuating)	Risks presented in introduced range	Risk status	Remedial actions taken in past triennium
ANSERIFORMES												
ANATIDAE												
<i>Aix galericulata</i> (Mandarin)	Widespread, increasing	Austria	40-60p	2, 3	Low - Medium	Austria		23i (2010) ³			Low - Medium	
		Belgium	>100p			Belgium	B: 100p (2004-2007)	66i (2012-2014) ³				
		France	18p			France	B: 28-34p, Moderate (2000-2006) ⁴	30i (2014) ³	B: ? Moderate			
		Germany	~350p			Germany	B: 350p (2004-2007)	604i (2011) ³				
		Monaco	2p									
		Netherlands	>200-260p			Netherlands	B: 200-260p, Poor, (2008-2010) W: 400i, Moderate, (2003/2004-2007/2008)	96i (2013) ³	B: ↔ Poor W: ~ Moderate			
		Poland	<20p			Poland		108i (2014) ³				
		Spain	Occasional			Spain		2i (2013) ³				
		Switzerland	<10p			Switzerland	B: 3-16p, Good (2009-2013) W: 100-134i, Good (2005-2014)	87i (2014) ³	B: ? W: ↑ Good	2		Hunting permitted
		United Kingdom	~7,000i present in early 1990s			United Kingdom	W: 7000i, Moderate (2004-2007)		B: ↑ Good W: ↑ Good		Low - Medium	
						Bosnia		2i (2012) ³				
						Croatia	W: 2i, Good (2012)	1i (2012) ³	W: ?			
						Czech Republic	B: 2-5p, Good (2014) W: 20-50i, Good (2014)	30i (2014) ³	B: ↑ Good W: ↑	Other – no further information specified		
						Estonia	W: occasionally recorded, Good (2008-2012)					
						Ireland		4i (2013) ³				
						Italy	B: occasionally recorded W: 71i, Good (2006-2010)	27i (2012) ³	B: ? W: ↑ Good			Control in place
						Latvia		1i (2011) ³				
						Lithuania		1i (2011) ³				
						Norway	B: 1p, Good (2014) W: 10-25i, Good (2014)		B: ↔ Good W: Good			Hunting permitted
						Romania		1i (2009) ³				

Species	Status in countries with introduced populations	Introduced breeding range in the AEWA Area	Previous status	Risks presented (bold if based on reference)	Risk status	Reported introduced range in AEWA Area	Most recent status (data quality and year(s) of assessment provided, where available)	Most recent status IWC	Population trend (arrows indicate trend, with ~ = fluctuating)	Risks presented in introduced range	Risk status	Remedial actions taken in past triennium	
						Slovakia	B: 1p, Good (2013) W: 5-15i, Good (2011-2013)						
						Slovenia	W: 2i, Good (2014)	2i (2014) ³	W: ?				
						Sweden	W: occasionally recorded, Moderate	2i (2015) ³					
	Widespread, increasing	South Africa (possibly)	Breeding may occur occasionally but not confirmed	2, 3	-	South Africa	B: occasionally recorded (2004-2007)	1i (2009) ³					
<i>Aix galericulata</i> totals:			85 -3,000p				B: ~685-767p W: ~7,610-7,699i	~1,504i					
<i>Aix sponsa</i> (Wood Duck)	Localised, increasing	Austria	0-2	None known	Low	Austria		9i (2009) ³			Low	Control in place	
		Belgium	25-30p			Belgium	B: 25-30p (2004-2007)	8i (2012-2014) ³					
		France	Occasional			France	B: 1p (2002-2006)	3i (2014) ³	B: ? Moderate				
		Germany	~30p			Germany	B: 30p (2004-2007)	8i (2011) ³					
		Netherlands	1-5p			Netherlands	B: 1-5p (2008-2010) W: 10-20i, Moderate (2008-2010)	1i (2013) ³	B: ~ Poor W: ? Poor	3			
		Spain	Occasional			Spain		1i (2008) ⁴					
		United Kingdom	<5p most years, probably under-recorded			United Kingdom	B: 2-5p (2006-2008) W: 5i, Moderate (2012-2013)		B: ? W: ↑ Moderate				
						Croatia	W: 0-7i, Good (2012)		W: ?				
						Czech Republic	W: 1-5i, Good (2014)	2i (2014) ³	W: ↑ Good				
						Estonia	W: occasionally recorded, Good (2008-2012)						
						Italy	W: 7i, Good (2006-2010)	1i (2012) ³	W: ~ Good				
						Lithuania		1i (2014) ³					
						Poland		5i (2014) ³					
						Slovakia	W: 2-5i, Moderate (2011-2012)	1i (2004) ³	W: ~ Moderate				
						Slovenia	W: no information (2008-2010)	1i (2013) ³	W: ?				
						South Africa	W: no information	1i (2006) ³					
						Sweden	W: occasionally recorded, Moderate						
						Switzerland		4i (2014) ³					
<i>Aix sponsa</i> totals:			50-100p				B: 59-71p; W: ~25-49i	~50i					
<i>Alopochen aegyptiaca</i> (Egyptian Goose)	Widespread, increasing rapidly	Belgium	800-1,100p	2, 4, 5	Medium - High	Belgium	B: 800-1,100p (2004-2007) W: 1,780-2,486i, Good (2013-2014)	2,522i (2012-2014) ³	B: ↑ Good W: ↑ Good	2 (herons, raptors, peregrine)	Medium-High		

Species	Status in countries with introduced populations	Introduced breeding range in the AEWA Area	Previous status	Risks presented (bold if based on reference)	Risk status	Reported introduced range in AEWA Area	Most recent status (data quality and year(s) of assessment provided, where available)	Most recent status IWC	Population trend (arrows indicate trend, with ~ = fluctuating)	Risks presented in introduced range	Risk status	Remedial actions taken in past triennium
										falcons), 4, 5, 6		
		Denmark	20p			Denmark	B: 8-32p (2014-2015) W: 300-500i, Good (2005-2014)		B: ↑ Good W: ↑ Good	8 (unknown)		Hunting permitted
		France	23p			France	B: 150-200p (2009-2011) W: 460-686i, Good (2011)	362i (2014) ⁴	B: ↑ Good W: ↑ Good			No national plan for control, only local initiatives
		Germany	~2,000p			Germany	B: 5,000-7,500p (2009)	1,496i (2011) ³	B: ↑ Good			Hunting permitted
		Israel	30 – 50p			Israel		4i (2006) ²				
		Mauritius	Confirmed but no data									
		Netherlands	>4,500-5,000p			Netherlands	B: 7,700-11,900p (2012) W: 31,800-38,000i, Good (2007/2008-2009/2010)	18,855i (2013) ³	B: ↑ Good W: ? Good	2, 3		Eradication by all legal means; currently no nat. programme, provinces are responsible for policy and management
		Spain	Occasional			Spain		33i (2013) ⁴				
		Switzerland	2p			Switzerland	B: 8p (2013) W: 24-28i, good (2005-2014)	31i (2014) ³	B: ↑ Good W: ↑ Good			Control in place
		United Arab Emirates	100-200			United Arab Emirates		13i (2013) ³				
		United Kingdom	78-130p (poss. underestimate, poss. >2,520-3,160p)			United Kingdom	B: 1,100p (2004-2008) W: 2,520-3,160i, Moderate (2004-2007)		B: ↑ Good W: ↑ Good			
						Austria		1i (2005) ³				
						Croatia	W: 1i, Good (2012)		W: ?			
						Czech Republic	B: 10-15p (2014) W: 30-50i, Good (2014)	2i (2014) ³	B: ↑ Good W: ↑ Good	2		
						Estonia	W: occasionally recorded, Good (2008-2012)					
						Greece			1 (2014)			
						Italy	W: 24i, Good, 2006-2010	18i (2012) ³	W: ↑ Good			Control in place
						Jordan		1i (2013) ³				
						Luxembourg	B: 4-30p (2010-2012)		B: ↑ Good			

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						Poland		1i (2012) ³				
						Slovakia	B: 1p (2014) W: 1-4i, Good (2007-2013)		B: ? W: ↑ Moderate			
						Slovenia	W: 3i, Good (2014)	3i (2014) ³				
						Sweden	W: occasionally recorded, Moderate					
<i>Alopochen aegyptiaca</i> totals:			7,550-10,000p				B: 14,781-21,886p W: ~36,943-44,942i	~23999i				
<i>Anas bahamensis</i> (White-cheeked Pintail)						France	B: occasionally recorded (1987-2007) ³	1i (2011) ³				
						Italy	W: occasionally recorded (2001-2010)	1i (2005) ³				Control in place
		Netherlands ¹	W: 1i, occasionally recorded, Poor (2007/2008-2009/2010)			Netherlands	W: 5-10i, Poor, (2010/2011-2012/2013) ³	1i (2008) ³	W: ~ Poor		Very low	
						Germany		2i (2010) ³				
						Switzerland		4i (2014) ³				
						United Kingdom	W: 4i, Good (2010/11) ³					
<i>Anas bahamensis</i> totals:							W: ~9-14i	~10i				
<i>Anas melleri</i> (Meller's Duck)	Localised, stable	Mauritius	Not known	Not known	Very Low							
<i>Anas melleri</i> totals:			Not known									
<i>Anas platyrhynchos</i> (including <i>A. platyrhynchos forma domestica</i>) (Mallard)	Widespread, increasing locally	Austria (<i>forma domestica</i>)	Not reported 2004-2007, but likely to have been present and breeding	2, 3, 7	Medium	Austria		42,931i (2010) ²			Medium	
		Ireland	Not reported 2004-2007, but likely to have been present and breeding			Ireland		5,955i (2013) ²				
		Israel	>200p			Israel		11,028i (2006) ²				
		Lebanon	Confirmed but no data			Lebanon		21i (2003) ²				
		Lesotho (<i>forma domestica</i>)	1000									
		United Arab Emirates	At least 50-100			United Arab Emirates		288i (2013) ²				
		United Kingdom	50,000-127,000p,			United Kingdom		130,235i (2013) ²				

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			includes intr. and native birds in unknown proportions. >1million birds/year may be released for shooting; large proportion of these are shot										
						Swaziland	B: 400-500p, Poor (2014) ⁴		B: ↑ Good	2, 3 (<i>Anas undulata</i> , <i>A. smithii</i> , <i>A. sparsa</i>)			
	Widespread, increasing locally	Madagascar	Not reported in 2004-2007, but likely to have been present and breeding	2, 3, 7	Very High	Madagascar	W: no information				Very High	Establishing coordination body, networks and partnerships to address problem; raise awareness, building capacity, securing resources	
		Mauritius	Confirmed but no data										
		South Africa	Widespread, but no data			South Africa	B: 1-382i, Poor (2015) ⁴	48i (2013) ³	B: ? Poor	2 (affecting Anatidae in urban/suburban areas), 3 (with native <i>Anas</i> spp.), 4			
		South Africa (<i>forma domestica</i>)	Not reported 2004-2007, but likely to have been present and breeding										
						Namibia		9i (2015) ³					
Anas platyrhynchos totals:			Inestimable			B: 401-882p							
<i>Anser albifrons</i> (Greater White-fronted Goose)	Localised, occasional breeding	Germany ²	<5p	7	Very Low	Germany		88,725i (2011) ²			Very Low		
		Netherlands				Netherlands		761,280i (2013) ²					
		United Kingdom	~5p			United Kingdom							
						Moldova		3,001i (2014) ²					
Anser albifrons totals:			5-10p										

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<i>Anser anser</i> (Greylag Goose)	Widespread, increasing rapidly	France	141-162p+	2, 3, 4, 5, 6, 7	Medium	France		15,635i (2014) ²			Medium	
		Germany	17,000-20,000p			Germany		52,731i (2011) ²				
		Italy	280-350p			Italy		9,305i (2012) ²				
		Ireland	8,000i present in winter incl. an unknown prop. of natural migrants (4,000 migrants and 1,000 intr. birds in 1999)			Ireland		2,267i (2013) ²				
		Israel	~10p			Israel		15i (2006) ²				
		Lithuania (possibly)				Lithuania		156i (2014) ²				
		Netherlands				Netherlands		387,444i (2013) ²				
		Switzerland (possibly)				Switzerland		896i (2014) ²				
		South Africa (probably)										
		Ukraine (possibly)			-	Ukraine		43i (2010)			Low	
Anser anser totals:			>20,000-40,000p									
<i>Anser brachyrhynchus</i> (Pink-footed Goose)	Localised, occasional breeding	France	Small feral populations since 2003; little known about reproduction	None known	Very Low	France		2i (2014) ²			Very Low	
		Germany	>5p			Germany		79i (2011) ²				
		Italy ¹	W: 3p (no date)		-	Italy		1i (2013) ⁴				
		Netherlands ¹	W: 50p (no date)			Netherlands		927i (2013) ²				
Anser brachyrhynchus totals:			~59-60p									
<i>Anser cygnoides</i> (Swan Goose)	Widespread, increasing locally	Germany	100-150p	2, 3	Low	Germany	B: 100-150p (2004-2007)	37i (2011) ³			Low	
		Italy	Occasional			Italy	B: occasionally recorded (2004-2007) W: 54i, Good (2006-2010) ³		B: ? W: ↑ Good			
		Netherlands	150p			Netherlands	B: 13p (2009) ³ W: 100-150i, Poor (2010/2011-2012/2013) ³	135i (2013) ³	B: ↓ Poor W: ~ Poor	3 (with <i>Anser anser</i>)		
		United Kingdom	Occasional			United Kingdom	W: 12i (2012/2013) ³	7i (2013) ³				
						Austria		2i (2010) ³				
						Belgium		16i (2012-2014) ³				
						France		3i (2014) ³				
						Serbia		1i (2012) ³				

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						Slovenia		3i (2013) ³				
						Switzerland		2i (2014) ³				
Anser cygnoides totals:			250-350p				B: ~113-163p W: 166-216i	~206i				
Anser fabalis (Bean Goose)	Localised, occasional breeding	Belgium		None known	Very Low	Belgium		4,025i (2012-2014) ²			Very Low	
		Netherlands				Netherlands ²		155,096i (2013) ²				
Anser fabalis totals:			0-5p									
Anser indicus (Bar-headed Goose)	Widespread, increasing slowly	Belgium	>25-30p	3	Low	Belgium	B: 25-30p (2004-2007)	39i (2012-2014) ³			Low	
		France	4-6p			France	B: 4-6p (2004-2007)	18i (2014) ³				
		Germany	~10p			Germany	B: 10p (2004-2007)	13i (2011) ³				
		Italy	Present, no breeding record			Italy	W: 3i, Good (2006-2010)	2i (2012) ³	W: ↔ Good			
		Netherlands	100-125p			Netherlands	B: 10-310p (2012) W: 150-200i, Poor (2010/2011-2012/2013)	146i (2013) ³	B: ↔ Moderate W: ↓ Moderate	3 (with Anser anser & Branta leucopsis), 5		
		Switzerland	0-2p			Switzerland		1i (2014) ³				
		United Kingdom	> 3-10p; 3p recorded (2003-2005); >10p probably breed annually			United Kingdom	B: 3-10p (2004-2007) W: 16i, Good (2012-2013)	16i (2013) ³				
						Austria		4i (2010) ³				
						Estonia	W: occasionally recorded, Good (2008-2012)					
						Norway	B: occasionally recorded, Good (2014) W: 100-160i, Good (2014)		B: ↔ Good W: Good	3 (with Anser anser)		Hunting permitted
						Slovakia	W: 1-1i, Good (2003 – 2013)		W: ? Poor			
						Spain		1i (2013) ³				
						Sweden	W: occasionally recorded, Moderate	1i (2010) ³				
Anser indicus totals:			140-190p				B: ~52-366p W: ~270-380i	~240i				
Branta canadensis (Greater Canada Goose)	Widespread, Increasing Rapidly	Belgium ⁵	>1,500p	2, 3, 4, 5, 6	High	Belgium	B: 3,000p (2008-2012)	13,374i (2012-2014) ³	B: ↑ Good	2, 3 (with Anser anser), 4, 5, 6	Very High	Control or eradication programme being implemented (no further details)

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		Denmark ⁵	20p			Denmark	B: 7-11p (2014-2015) W: 17,790i, Good (2013)	6,045i (2013) ³	B: ↑ Good W: ~ Good	6		Hunting permitted
		Netherlands ⁵	3,200p			Netherlands	B: 5,200-10,400p (2012) W: 31,700i (2007/2008-2009/2010)	26,005i (2013) ³	B: ↑ Good W: ↑ Good	1, 2, 3 (with <i>Branta leucopsis</i>), 4, 5		Eradication by all legal means; currently no national programme; provinces are responsible for policy and management
		Sweden ⁵	10,000p			Sweden ³		37,373i (2015) ³				
		Austria ⁵	~5			Austria		12i (2010) ³			High	Program to reduce population by 20% since 2012; legal culling and hunting
		France ⁵	4,390-4,700i			France	B: 1,100p, (2008) W: 6,000i, Moderate (2008-2009)	5,104i (2014) ³	B: ↑ Moderate W: ↑ Moderate			
		Germany ⁵	1,400-1,500p			Germany	B: 1,400-1,500p, (2004-2007)	17,661i (2011) ³				
		Italy ⁵	1-2p (~12i)			Italy	B: 1-2p (2004-2007) W: 40i, Good (2006-2010)	35i (2012) ⁴	B: ? W: ? Good			Control in place
		Luxembourg ⁵	5-10p			Luxembourg	B: 10-15p (2012-2014) W: no information		B: ↑ Good W: ?	4		
		Norway ⁵	>2,000p			Norway	B: 1,000-2,000p, Moderate (2015)	130i (2012) ³	B: ↓ Moderate	2 (Divers, dabbling ducks/ geese), 3 (with <i>Anser anser</i>)		Hunting permitted
		Poland ⁵	3p			Poland		2i (2014) ³				
		Switzerland ⁵	1p			Switzerland		10i (2014) ³				
		United Kingdom ⁵	>89,000i			United Kingdom	B: 62,000p (2004-2008) W: 190,000i, Good (2004/2005- 2008/2009)		B: ↑ Good W: ↑ Good	6		
		Ireland ⁵	1,050i			Ireland		165i (2013) ³			Medium	
		Finland ⁵	7,000p			Finland		14i (2014) ³			Low	Hunting permitted
						Croatia	W: 1i, Good (2013)		W: ?			
						Czech Republic	W: 5i, Good (2014)	1i (2012) ³	W: ? Good	2		
						Estonia	B: 4-8p (2014) W: 20i, Good (2003-2008)	1i (2012) ³	B: ? Poor W: ↑ Good			
						Greece		13i (2013) ³				

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						Latvia	W: 25-125i, Poor (2013)	20i (2012) ⁴				Hunting permitted	
						Libya		1i (2012) ³					
						Lithuania		2i (2014) ⁴					
						Slovakia	W: 1i, Good (2013)		W: ? Moderate				
						Slovenia	W: 7i (2008-2010)	6i (2012) ⁴	W: ?				
						Spain		1i (2010) ⁴					
	Ukraine	Confirmed but no data			-								
Branta canadensis totals:			48,500-73,750p				B: 73,722-80,036p W: 245,589-245,709i	~165,280i					
Branta hutchinsii ¹ (Cackling Goose)		Belgium	B: 300p (1996-2002)			Belgium	B: 1,500p (2004-2007)	F: 12i (2014) ³			High		
		Germany	B: 500-1000p (1996-2002)			Germany	B: 1,400-1,500p (2004-2007)						
						Netherlands		2,412i (2013) ³					
						Estonia	W: occasionally recorded, Good (2008-2012)				Low		
		Sweden	W: occasionally recorded, Moderate			Sweden	W: occasionally recorded, Moderate						
						United Kingdom	W: 1i, Good (2012-2013)	1i (2013) ³					
Branta hutchinsii totals:		Total:	800-1300p			Total:	B: 2,900-3,000p W: ~1i	~2,425i					
Branta leucopsis (Barnacle Goose)	Widespread, increasing	Austria	1-2p	4, 5, 7	Low - Medium	Austria		4i (2010) ⁴			Low		
		Belgium	>180-250p			Belgium		7,142i (2012-2014) ²					
		Germany ²	~190p			Germany		130,862i (2011) ²					
		France ²	1-2p			France		395i (2014) ²					
		Netherlands	>750-1100p			Netherlands		620,956i (2013) ²					
		United Kingdom ²	>2,000i			United Kingdom	B: 1,000p (2004-2008) W: no information						
						Italy		17i (2012) ⁴					
						Serbia		1i (2012) ⁴					
						Slovenia		1i (2009) ⁴					
						Switzerland		5i (2014) ⁴					
Branta leucopsis totals:			1,620-2,550p				B: 1,000p						
Cairina moschata (Muscovy Duck)	Widespread, Stable	Austria	Up to 5	2, 3	Low	Austria		76i (2010) ³			Low		
		Germany	~20p			Germany	B: 20p (2004-2007)	2i (2009) ³					
		Netherlands	15-30p			Netherlands	B: 15-40p (2008-2010) W: 150i, Moderate, (2003/2004-2007/2008)	95i (2013) ³	B: ↑ Poor W: ↑ Moderate				

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		South Africa	Confirmed but no data			South Africa		7i (2013) ³					
		Spain	Confirmed but no data			Spain		6i (2006) ³					
		United Kingdom	<10p/year but probably under-reported			United Kingdom	B: 3-5p (2006-2008) W: 55i, Good (2012/2013)	55i (2013) ³	B: ? W: ↓ Good				
		Israel	~20p										
		Mauritius	Unknown but widespread										
		Seychelles	10-15p										
							Belgium		14i (2014) ³			Low	Control in place
							Czech Republic		13i (2014) ³				
							France		3i (2014) ³				
							Ireland		1i (2012) ³				
							Italy	W: 133i, Good (2006-2010)	105i (2012) ³	W: ↑ Good			
							Serbia		8i (2012) ³				
							Slovakia		4i (2007) ³				
							Slovenia	W: 25i, Good (2014)	25i (2014) ³	W: ?			
					Switzerland		3i (2014) ³						
Cairina moschata totals:			Inestimable			B: 38-65p; W: 363i	~417i						
<i>Chen caerulescens</i> (Snow Goose)	Localised, stable	Germany	5p	3	Low	Germany	B: 5p (2004-2007)	5i (2011) ⁴			Low	Control in place	
		Netherlands	2p			Netherlands	B: 10-15p (2008-2010) W: 35i, Moderate (2009)	16i (2013) ⁴	B: ↑ Good W: ~ Moderate	3 (w. <i>Branta leucopsis</i>)			
		United Kingdom	8p (>10i)			United Kingdom	B: 60p (2004-2008) W: 100i, Good (2004-2007)		B: ↓ Good W: ↓ Good				
							Belgium		1i (2012) ⁴				
							Estonia	W: occasionally recorded, Good (2008-2012)					
							France	W: occasionally recorded (2004-2007)	2i (2013) ⁴				
							Italy	W: occasionally recorded, Good (2006-2010)	3i (2012) ⁴				
							Norway	B: occasionally recorded, Good (2015) W: 10-20i, Good (2014)		B: ↓ W: ? Good			2 (dabbling ducks), 3 (with <i>Anser anser</i>)
							Slovakia	W: 1-2i, Good (2005)	1i (2005) ³	W: ? Moderate			
							Spain		1i (2009) ⁴				
							Sweden	W: occasionally recorded, Moderate	1i (2011) ³				
Chen caerulescens totals:			c. 15p			B: ~75-80p W: ~146-157	~45i						

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<i>Chen canagicus</i> (Emperor Goose)	Localised, occasional breeding	Netherlands	5p	3	Low	Netherlands	B: 3p (2008) W: 13i, Moderate (2008-2009) ³	3i (2013) ⁴	B: ↑ Moderate W: ↑ Moderate		Low	
		United Kingdom	2p (>30i)			United Kingdom	B: 1p (2007-2008) W: 10-30i, Good (2012-2013)		B: W: ↑ Good			
							Germany		1i (2010) ⁴			
<i>Chen canagicus</i> totals:			5-10p				B: 4p; W: 23-43	~7i				
<i>Chloephaga picta</i> (Upland Goose)	Localised, increasing	Belgium	4-7p (At least 30-45i)	2, 4, 5	Low - Medium	Belgium	B: 4-7p (2004-2007)	4i (2014) ³			Low – Medium	
		Netherlands	Several ind. present. Poss. occasional breeding			Netherlands	B: 1p (2012-2014) W: 3-10i, Moderate (2012-2014)	1i (2012) ⁴	B: ~ Moderate W: ↔ Moderate			
		United Kingdom	Occasional			United Kingdom	W: 1i, Good (2008-2009)	1i (2009) ³				
<i>Chloephaga picta</i> totals:			4-10p				B: 5-8p; W: 4-11	~6i				
<i>Cygnus atratus</i> (Black Swan)	Widespread, increasing	Belgium	>40-45p	2, 3, 4	Medium	Belgium	B: 40-45p (2004-2007)	11i (2012-2014) ³		1, 2	Medium	
		France	~25p			France	B: 32p (2009-2011) W: 98i, Moderate (2009-2011)	55i (2014) ³	B: ↑ Good W: ↑ Good			
		Germany	~15p			Germany	B: 15p (2004-2007)	3i (2011) ³				
		Italy	5-20p			Italy	B: 1-3p (2004-2010) W: 34i, Good (2006-2010)	25i (2012) ³	B: ↔ Poor W: ↔ Good			Control in place
		Mauritius	Few; increasing									
		Netherlands	>60-70p			Netherlands	B: 60-70p (2008-2010) W: 140i, Moderate, (2003-2007/2008)	154i (2013) ³	B: ↔ Poor W: ↔ Moderate	3, 6		
		Spain	Occasional			Spain		1i (2011) ³				
		Switzerland	Maximum 2p			Switzerland		6i (2014) ³				
		Ukraine	-									
	United Kingdom	11-16p (>150i)	United Kingdom	B: 11-25p (2006-2008) W: 150i, Good (2004-2007)		B: ↑ Good W: ↑ Moderate						
							Austria		1i (2010) ³			
							Croatia	W: 6i, Good (2012)	2i (2002) ³	W: ?		
							Czech Republic	W: 3i, Good (2014)		W: ? Good	2 (affects <i>Cygnus olor</i>)	
							Estonia	W: occasionally recorded, Good (2008-2012)				
							Romania		1i (2009) ³			
							Slovakia	W: occasionally recorded (2004-2007)				
							Slovenia	W: 1i, Good (2014)	1i (2014) ³			
<i>Cygnus atratus</i> totals:			155-225p				B: 159-190p; W: ~432	~289i				

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<i>Cygnus cygnus</i> (Whooper Swan)	Localised, stable	Germany ²	11p	3, 7	Very Low	Germany		18,619i (2011) ²			Very Low	
						Moldova		157i (2015) ²				
<i>Cygnus cygnus</i> totals:			14-18p									
<i>Cygnus olor</i> (Mute Swan)	Widespread, increasing locally	Austria	>400	2, 3, 4, 5, 6, 7	Very Low	Austria		2,134i (2010) ²			Very Low	
		Croatia ¹	-			Croatia		2,091i (2013) ²				
		Estonia	2,500-3,000p			Estonia		7,822i (2014) ²				
		Finland	Not reported 2004-2007, but likely to have been present and breeding.			Finland		2,078i (2014) ²				
		France ^{1,2}	3600-4800i Moderate (2002-2003)			France	W: 6500-8000i, Moderate (2005-2006)	17,587i (2014) ²	W: ↑ Good			
		Germany ²	Not reported 2004-2007, but likely to have been present and breeding.			Germany		29,708i (2011) ²				
		Greece	~5p			Greece		1,444i (2014) ²				
		Italy ²	>300p			Italy	B: 300-500p, 2013 W: 4098i, Good (2006-2010)	4,116i (2012) ²	B: ↑ Good W: ↑ Good	7		
		Latvia	Not reported 2004-2007, but likely to have been present and breeding.			Latvia		9,78i (2012) ²				
		Switzerland	Not reported 2004-2007, but likely to have been present and breeding.			Switzerland		7,532i (2014) ²				
		South Africa	Present but not breeding			South Africa		1i (2010) ³				
		Luxembourg	Not reported 2004-2007, but likely to have been present and breeding.									
		United Arab Emirates	Occasional escapes occur									
						Belgium		1,221i (2012-2014) ²			Very Low	

Species	Status in countries with introduced populations	Introduced breeding range in the AEW Area	Previous status	Risks presented (bold if based on reference)	Risk status	Reported introduced range in AEW Area	Most recent status (data quality and year(s) of assessment provided, where available)	Most recent status IWC	Population trend (arrows indicate trend, with ~ = fluctuating)	Risks presented in introduced range	Risk status	Remedial actions taken in past triennium
						Ireland		2,018i (2013) ²				
						Lithuania		1,175i (2014) ²				
						Netherlands		24,537i (2013) ²				
						Norway		76i (2012) ²				
						Spain		7i (2013) ²				
						Sweden		22,690i (2015) ²				
	Widespread, increasing locally	Mauritius	Confirmed but no data	2, 3, 4, 5, 6, 7	Medium							
Cygnus olor totals:			17,057–25,500p				B: 300-500p W: 10,598-12,098i					
<i>Dendrocygna viduata</i> (White-faced Whistling Duck)	Localised, increasing	Mauritius	No. of breeding pairs unknown, species occurred since 1800s.	None known	Low							
Dendrocygna viduata totals:			Not known									
<i>Netta rufina</i> (Red-crested Pochard)	Localised, increasing	United Kingdom	6- 19p, breeding likely under-recorded; population is increasing (>250i)	3	Very Low	United Kingdom	B: 10-34p (2004-2008) W: 320i, Good, (2004/2005-2008/2009)		B: ↑ Moderate W: ↑ Good		Low - Medium	
Netta rufina totals:			6-19p				B: 10-34p W: 320i	~341i				
<i>Oxyura jamaicensis</i> (Ruddy Duck)	Widespread, declining	Denmark	1	2, 3	Very High	Denmark	B: occasionally recorded (2009-2014) W: 10-60i (2005-2014)		B: ↓ Good W: ↓ Good		Very High	Hunting permitted
		France	32-39p (280i wintering)			France	B: 13-16p (2010) W: 280i (2004-2007)	175i (2014) ³	B: ? Good W: ↑ Good			Program to reduce population by 20% since 2012; legal culling/hunting
		Germany	0-1p			Germany	B: 1p (2004-2007)	2i (2010) ³				
		Ireland	34-39p			Ireland		1i (2011) ³				
		Netherlands	12-15p (96i wintering)			Netherlands	B: 9-15p (2008-2010) W: 53i, Good (2014)	24i (2013) ³	B: ? Good W: ? Moderate	2, 3		Program to eradicate species by culling by voluntary hunters
		United Kingdom	Confirmed (<2000i)			United Kingdom	B: 7p (2014) W: 47i, Good (2013/2014)		B: ↓ Good W: ↓ Good	3 (with <i>Oxyura leucocephala</i>)		A general licence allows year-round shooting by landowners

Species	Status in countries with introduced populations	Introduced breeding range in the AEWA Area	Previous status	Risks presented (bold if based on reference)	Risk status	Reported introduced range in AEWA Area	Most recent status (data quality and year(s) of assessment provided, where available)	Most recent status IWC	Population trend (arrows indicate trend, with ~ = fluctuating)	Risks presented in introduced range	Risk status	Remedial actions taken in past triennium
						Austria		1i (2010) ³				
						Belgium	W: 5-14i (2013-2014)	4i (2009-2014) ³		2, 3 (with <i>Oxyura leucocephala</i>)		Selective shooting by a specialised hunter
						Czech Republic	W: occasionally recorded, Good (2014)	1i (2010) ³	W: ? Good			
						Italy	W: 2i, Good (2006-2010)	5i (2009) ⁴		3 (with <i>Oxyura leucocephala</i>)		
						Morocco		2i (1999) ³				
						Slovakia	W: 1i, Good (2013)		W: ? Good			
						Switzerland	W: 4i, Good (2012)	1i (2013) ³	W: ~ Good	3 (with <i>Oxyura leucocephala</i>)		
<i>Oxyura jamaicensis</i> totals:			400-800p				B: ~30-39p W: ~402-461i	~248i				
<i>Tadorna ferruginea</i> (Ruddy Shelduck)		Austria	1-2p			Austria		18i (2008) ⁴				
		Belgium ⁴	5-10p			Belgium	B: 5-10p (2004-2007)	25i (2012-2014) ⁴				
		France	3-11p			France	B: 0-11p (2004-2007)	35i (2014) ⁴	B: ↔ Poor			Control in place
		Germany ⁴	~60p			Germany	B: 160-200p (2009)	11i (2011) ⁴	B: ↑ Good			
		Netherlands ⁴	9p			Netherlands	B: 11-30p (2008-2011) W: 650i, Moderate (2003/2004-2007/2008) ³	15i (2013) ⁴	B: ↔ Moderate W: ↑ Good	3		
		Switzerland	~25p (c. 450i)			Switzerland	B: 3-12p (2008-2013) W: 343-507i, Good (2005-2014)	1,198i (2014) ⁴	B: ? W: ↑ Good	2		Control in place
		Ukraine	0-300p			Ukraine		5i (2010)				
		United Kingdom ⁴	3-5p			United Kingdom	B: 3p (2006-2008) W: no information	3i (2012) ⁴	B: ↓ Good W: ↓ Good			
						Czech Republic		3i (2013) ⁴				
						Estonia	W: occasionally recorded, Good (2008-2012)					
						Ireland		2i (2013) ⁴				
						Italy	W: 19i (2006-2010)					Control in place
						South Africa		1 (2009) ³				
<i>Tadorna ferruginea</i> totals:			105-425p				B: 182-266p W: ~1,012-1,176i	~1,315i				
PELECANIFORMES												
PELECANIDAE												
<i>Pelecanus crispus</i> ¹ (Dalmatian Pelican)						France	B: 10i, Moderate (2006)	1i (2013) ³	B: ↔ Poor		Very Low	
<i>Pelecanus crispus</i> totals:							B: 10i	1i				

Species	Status in countries with introduced populations	Introduced breeding range in the AEWA Area	Previous status	Risks presented (bold if based on reference)	Risk status	Reported introduced range in AEWA Area	Most recent status (data quality and year(s) of assessment provided, where available)	Most recent status IWC	Population trend (arrows indicate trend, with ~ = fluctuating)	Risks presented in introduced range	Risk status	Remedial actions taken in past triennium
<i>Pelecanus rufescens</i> ¹ (Pink-backed Pelican)						France Italy	B: 50ns W: no information	14i (2011) ³ 1i (2004) ³			Very Low	
<i>Pelecanus rufescens</i> totals:							B: 50ns	~15i				
CICONIIFORMES												
PHOENICOPTERIDAE												
<i>Phoenicopterus chilensis</i> (Chilean Flamingo)	Localised, stable	France	0-1p, single pairs have bred since 1976 (not every year), sometimes forming pairs with <i>P. roseus</i>	3	Low - Medium	France	B: 1p (2006)	1i (2012) ³	B: ? Moderate			
		Germany	5-8p (35i)			Germany	B: 5-8p (2004-2007) W: 35i (2004-2007)	2i (2011) ³			Low - Medium	
		Netherlands				Netherlands	W: 30-50i, Moderate (2012-2014)	26i (2013) ³	W: ↔ Moderate			
						Austria		2i (2009) ³				
						Italy	W: occasionally recorded (2001-2010)					Control in place
<i>Phoenicopterus chilensis</i> totals:			5-9p				B: 6-9p; W: ~65-85i	~31i				
<i>Phoenicopterus roseus</i> (Greater Flamingo)	Localised, stable	Germany	1-2p (12i)			Germany	B: 2ns W: no information					
		United Arab Emirates ²	<150 - Small breeding colony of artificially fed birds on lake at Abu Dhabi Airport. >150 young prod. in 2007 - unknown prop. of these were wild birds	None known	Very Low	United Arab Emirates		13,907i (2013) ²			Very Low	
						Netherlands		10i (2013) ³				
						United Kingdom	W: no information	1i (2012) ³				
<i>Phoenicopterus roseus</i> totals:			1-150p			Total:	B: 2ns					
<i>Phoenicopterus ruber</i> (Caribbean Flamingo)	Localised, stable	Germany	0-1p, ≥1i present at Zwillbrocker Ven 1994-2006, forming hybrid pairs with <i>P. chilensis</i> or <i>P. roseus</i>	3	Low	Germany	B: 1p (2004-2007) W: 1i (2004-2007)				Low	
		United Arab Emirates ²	<150p - Small breeding colony									

Species	Status in countries with introduced populations	Introduced breeding range in the AEWA Area	Previous status	Risks presented (bold if based on reference)	Risk status	Reported introduced range in AEWA Area	Most recent status (data quality and year(s) of assessment provided, where available)	Most recent status IWC	Population trend (arrows indicate trend, with ~ = fluctuating)	Risks presented in introduced range	Risk status	Remedial actions taken in past triennium					
			of artificially fed birds at Abu Dhabi Airport. >150 young prod. in 2007 - unknown prop. were wild birds														
						Montenegro		17i (2015) ^{3, 6}									
						Netherlands	W: 1i, Moderate (2012-2014)	1i (2006) ³	W: ↔ Moderate								
Phoenicopterus ruber totals:			1–150p				B: 1p; W: 2i	~18i									
THRESKIORNITHIDAE																	
Threskiornis aethiopicus (Sacred Ibis)	Localised, increasing rapidly	France	1,205p	1, 2	High	France	B: 1,205p (2004-2007) W: no information	639i (2014) ³			High	Population eradicated since 2014 in Mediterranean region					
		Italy	25-28p			Italy	B: 100-120p (2009-2012) W: no information	62i (2012) ³									
		Netherlands	7p			Netherlands	B: 1p (2010-2013) ³ W: no information	1i (2013) ³									
		Spain (incl. Canary Isl.)	Occasional (5p)			Spain (incl. Canary Isl.)		1i (2010) ³									
		United Arab Emirates	Confirmed but no data			United Arab Emirates		2i (2013) ⁴									
						Belgium	W: no information	1i (2012) ³									
						Germany		16i (2008) ³									
						United Kingdom	W: no information	1i (2008) ³									
		Threskiornis aethiopicus totals:					1,240-1,270p			B: 1,306-1,326p		~723i					
		GRUIFORMES															
		RALLIDAE															
Porphyrio porphyria (Purple Swamphen)	Localised, stable	Italy	Confirmed (40-50i)	None known	Low	Italy		583i (2012) ²			Low						
		United Arab Emirates	Confirmed but no data			United Arab Emirates		1i (2012) ²									
						Norway		4i (2010) ⁴									
Porphyrio porphyrio totals:			5-30p														

¹ data based on AEWA Annual Report data submitted by Contracting Party

² both native and non-native populations likely to be present, indicated as grey, italic front for emphasis

³ introduced population or escapees

⁴ potentially vagrant species, or occurrence uncertain

⁵ figures potentially include *Branta hutchinsii*

⁶ possibly misreported *Phoenicopterus roseus*

Key for risks:

- 1: Predation of native birds, eggs or young
- 2: Competitive exclusion of native species, or aggressive to native species
- 3: Hybridisation with native species
- 4: Eutrophication or pollution of waterbodies

- 5: Damage to natural or semi-natural habitats
- 6: Damage to man-made habitats or crops
- 7: Introduced birds prevent accurate monitoring of numbers of naturally occurring birds of the same species

IV. Recent relevant international policy developments: summary of EU Regulation 1143/2014 and potential implications for AEWA

Management of introductions/post-introductions of non-native waterbird species is key to the implementation of AEWA. Included in AEWA Article III on the *general conservation measures* that Contracting Parties should undertake, Article III(2)g *prohibits deliberate introduction of non-native waterbird species*, and calls for *appropriate measures to prevent unintentional release of such species* and to *prevent species already introduced becoming a potential threat to indigenous species*.¹² In addition, the AEWA Action Plan highlights the need for preventing introductions of non-native species that may be detrimental to native waterbirds, and for mitigating the effects of invasive species once introduced.¹³ Similarly, AEWA Resolution 4.5¹⁴ calls on Contracting Parties and other Range States to ‘prevent introductions, escapes and deliberate release of non-native waterbird species’; to ‘enforce and improve national legislation to this effect’ and to ‘coordinate their efforts to control and eradicate non-native waterbird species’, amongst other relevant provisions. Contracting Parties are taking actions nationally and regionally in line with these provisions by enacting legislation to control and manage non-native species. Being aware of recent policy developments in the AEWA Area related to this topic will help to inform such actions and to identify progress on implementation of the AEWA Action Plan.

One such development is the establishment of the European Union (EU) Regulation 1143/2014 on the prevention and management of the introduction and spread of invasive alien species (hereafter ‘the Regulation’) which entered into force on 1 January 2015¹⁵. The Regulation is a legally binding instrument that is directly applicable to all 28 EU Member States. The aim of the Regulation is to ‘prevent, minimise and mitigate the adverse impact on biodiversity of the introduction and spread within the European Union, both intentional and unintentional, of invasive alien species’.¹⁶ Key definitions used by the Regulation are:

- *Alien species* – ‘any live specimen of a species, subspecies or lower taxon of animals, plants, fungi or micro-organisms introduced outside its natural range; it includes any part, gametes, seeds, eggs or propagules of such species, as well as any hybrids, varieties or breeds that might survive and subsequently reproduce’¹⁷;
- *Invasive alien species (IAS)* – ‘alien species whose introduction or spread has been found to threaten or adversely impact upon biodiversity and related ecosystem services’¹⁸ which **does not apply to** ‘species changing their natural range without human intervention, in response to changing ecological conditions and climate change’.¹⁹

Several EU Member States highlighted the relevance of this new regulation in their AEWA National Reports. The information provided in the reports mainly concerns the existence of the Regulation, that national

¹² Agreement Text and Annexes, Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA), Article III ‘General Conservation Measures’.

¹³ Paragraph 2 (‘Introductions’) of the AEWA Action Plan (as amended by the fifth 5th Session of the Meeting of the Parties, 14-18 May 2012, La Rochelle, France).

¹⁴ AEWA Resolution 4.5 ‘Introduced non-native waterbird species in the agreement area’, 4th Session of the Meeting of the Parties, Antananarivo, 2008.

¹⁵ Europe has the largest number of non-native waterbirds in the AEWA Area given the long history of a) wildfowl collections from which escapes have occurred, and b) deliberate introductions, across the continent.

¹⁶ Article 1(1) European Union Regulation 1143/2014

¹⁷ Article 3(1), European Union Regulation 1143/2014.

¹⁸ Article 3(2), European Union Regulation 1143/2014.

¹⁹ Article 2(2)(a), European Union Regulation 1143/2014.

implementation is underway, and that the Regulation has been used to inform relevant legislation and/or action plans.

This section provides an overview of the provisions of the Regulation and its relevance to AEWA (particularly AEWA Article III(2)g), the AEWA Action Plan and the recommended provisions of Resolution 4.5 concerning strengthening legislation on the prevention of introductions and escapes of non-native species. It does not attempt to summarise the progress of EU Member States in implementing the Regulation. It was completed by reviewing the regulation text as provided by the Official Journal of the European Union²⁰, together with Trouwborst (2015)²¹ to aid interpretation. The potential implications for AEWA of the regulation were identified through reviewing the AEWA Agreement text, AEWA Action Plan, AEWA Strategic Plan 2009-2017, AEWA Resolution 4.5, as well as other AEWA documents such as Technical Committee reports and Standing Committee draft resolutions, and noting the complementarity between AEWA priorities and activities (as outlined in these documents) and the regulation requirements.

Prioritising species for action and pathways of unintentional introduction and spread of IAS

In order to ensure that EU-wide actions on IAS are targeted to the species posing the greatest risk, the European Commission (hereafter 'the Commission') will adopt a 'List of invasive alien species of Union concern'²² (hereafter the 'Union List'). The Union List will be based on inputs from Member States and will aim to include those species that are considered to have the potential to be most harmful and where they pose threats so significant that dedicated measures are required across the EU.

The inclusion of species on the Union List will be based on the criteria²³ below, including the capacity of the species to establish itself and reproduce outside its natural range:

- '(a) they are found, based on available scientific evidence, to be alien to the territory of the Union excluding the outermost regions;
- (b) they are found, based on available scientific evidence, to be capable of establishing a viable population and spreading in the environment under current conditions and in foreseeable climate change conditions in one biogeographical region shared by more than two Member States or one marine subregion excluding their outermost regions;
- (c) they are, based on available scientific evidence, likely to have a significant adverse impact on biodiversity or the related ecosystem services, and may also have an adverse impact on human health or the economy;
- (d) it is demonstrated by a risk assessment carried out pursuant to Article 5(1) that concerted action at Union level is required to prevent their introduction, establishment or spread;
- (e) it is likely that the inclusion on the Union list will effectively prevent, minimise or mitigate their adverse impact.'

This list will prioritise those species that are 'not yet present in the Union or are at an early stage of invasion' and those that 'are already established and have the most significant adverse impact'²⁴ (e.g. those that have been added to Annex B to Council Regulation (EC) No.338/97 and import of which into the Union is prohibited because of their invasive character and adverse impact on native species).

These criteria are to be applied 'with due consideration to the implementation cost for Member States, the cost of inaction, the cost-effectiveness and the socio-economic aspects'.²⁵ The risk assessment²⁶ mentioned in

²⁰ 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 (OJ L 317, 4.11.2014).

²¹ Trouwborst, A. 2015. The Bern Convention and EU Regulation 1143/2014 on the Prevention and Management of the Introduction and Spread of Invasive Alien Species. Prepared on behalf of the Bern Convention on the Conservation of European Wildlife and Natural Habitats, Strasbourg, 18 June 2015, T-PVS/Inf(2015) 14.

²² Article 4, European Union Regulation 1143/2014.

²³ Article 4(3), European Union Regulation 1143/2014.

²⁴ Article 4(6), European Union Regulation 1143/2014.

²⁵ Article 4(6), European Union Regulation 1143/2014.

²⁶ Article 5(1), European Union Regulation 1143/2014.

criterion (d) above will consider the following²⁷, in part to ensure compliance with the rules under the relevant Agreements of the World Trade Organisation regarding trade restrictions on species²⁸:

- ‘(a) a description of the species with its taxonomic identity, its history, and its natural and potential range;
- (b) a description of its reproduction and spread patterns and dynamics including an assessment of whether the environmental conditions necessary for its reproduction and spread exist;
- (c) a description of the potential pathways of introduction and spread of the species, both intentional and unintentional, including where relevant the commodities with which the species is generally associated;
- (d) a thorough assessment of the risk of introduction, establishment and spread in relevant biogeographical regions in current conditions and in foreseeable climate change conditions;
- (e) a description of the current distribution of the species, including whether the species is already present in the Union or in neighbouring countries, and a projection of its likely future distribution;
- (f) a description of the adverse impact on biodiversity and related ecosystem services, including on native species, protected sites, endangered habitats, as well as on human health, safety, and the economy including an assessment of the potential future impact having regard to available scientific knowledge;
- (g) an assessment of the potential costs of damage;
- (h) a description of the known uses for the species and social and economic benefits deriving from those uses.’

Technical work has already been completed to inform the Union List²⁹, and a draft list will be submitted by the Commission to the committee established by the Regulation no later than 2 January 2016.

In addition to the Union List, Member States may also identify ‘species native or non-native to the Union that require enhanced regional cooperation’³⁰ (hereafter the ‘Regional Lists’). At the request of Member States, the Commission will then facilitate international cooperation between relevant Member States for those species on the Regional Lists. This includes requiring Member States to apply a number of the measures described below related to early detection, rapid eradication and management of IAS that are widely spread.³¹ Species on the Regional List which are native to a Member State will not be subject to the duties to eradicate or manage such species in their territory. However, such Member States are required to cooperate with the Member States where the species poses a problem.³² National lists of IAS (hereafter ‘National Lists’) may also be developed by Member States to prioritise which species to apply measures to in their territory.³³

Implications/considerations for AEWA

The conservation of migratory waterbird species from AEWA Annex 2³⁴ found in Europe (particularly those populations in column A of Table 1 of AEWA Action Plan) and their habitats could be supported by the inclusion in the Union, Regional or National Lists established under this Regulation of IAS known to adversely impact such species. A number of Annex 2 species could also be included in these lists, given that a number of the non-natives considered by this update are Annex 2 species, have

²⁷ Article 5(1), European Union Regulation 1143/2014

²⁸ Trouwborst, A. (2015) ‘The Bern Convention and EU Regulation 1143/2014 on the Prevention and Management of the Introduction and Spread of Invasive Alien Species’, prepared on behalf of the Bern Convention on the Conservation of European Wildlife and Natural Habitats, Strasbourg, 18 June 2015, T-PVS/Inf(2015) 14.

²⁹ Roy, H. et al. (2014) *Invasive alien species – framework for the identification of invasive alien species of EU concern*, Report for European Commission, ENV.B.2/ETU/2013/0026, Natural Environment Research Council; Roy, H. et al. (2015) *Organisation and Running of a Scientific Workshop to Complete Selected Invasive Alien Species (IAS) Risk Assessments*, Report for European Commission, ARES(2014)2425342, Natural Environment Research Council.

³⁰ Article 11(1), European Union Regulation 1143/2014.

³¹ Article 11(3), European Union Regulation 1143/2014.

³² Article 11(3), European Union Regulation 1143/2014; Trouwborst, A. (2015) ‘The Bern Convention and EU Regulation 1143/2014 on the Prevention and Management of the Introduction and Spread of Invasive Alien Species’, prepared on behalf of the Bern Convention on the Conservation of European Wildlife and Natural Habitats, Strasbourg, 18 June 2015, T-PVS/Inf(2015) 14.

³³ Article 12, European Union Regulation 1143/2014.

³⁴ Agreement Text and Annexes, Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA).

increasing populations in Europe, and pose risks to indigenous species and their habitats. Further detailed analyses of the population status of the species considered by this current update of the review on the status of non-native waterbird species, and how they adversely impact native Annex 2 species and their habitats, could help to inform the lists.

The importance of the performance of the risk assessment process outlined by the Regulation for inclusion of IAS on the Union List reinforces the need for internationally-agreed standards and guidance for risk assessment with respect to non-native waterbirds. Such standardisation has previously been suggested by the AEWA Technical Committee³⁵ and should build on substantial work³⁶ previously undertaken by the Convention on Biological Diversity. Roy *et al.* (2014)³⁷ provide recommendations for developing existing risk analysis methods within a framework of minimum standards based on a review of, and gathering expert opinion on, available IAS risk analysis protocols.

Prevention of introductions

The Regulation provides a set of restrictions on Union List species³⁸ and for permit systems³⁹ that authorise exceptions to the restrictions (research, medical use, and ex-situ conservation), excluding placing the species on the market or releasing it into the environment. A crucial provision is that within one-and-a-half years following the adoption of the Union List, each Member State must conduct a ‘comprehensive analysis of the pathways of unintentional introduction and spread of IAS of Union concern at least in their territory’ and identify ‘priority pathways’.⁴⁰ Within three years after adoption of the Union List, each Member State is required to establish and implement one single action plan or a set of action plans (coordinated at the regional level as appropriate) to address the priority pathways.⁴¹ Each action plan needs to be submitted to the Commission and reviewed at least every six years.⁴²

Implications/considerations for AEWA

Depending on the non-native species included in the lists established by the Regulation, it has the potential to help European Union Contracting Parties address paragraph 2.5.1 of the AEWA Action Plan, in prohibiting the introduction into the environment of non-native species detrimental to the populations listed in Table 1 of the AEWA Action Plan, and therefore the component of AEWA Article III(2)g on *deliberate introductions*. The Regulation also provides a mechanism for addressing paragraph 2.5.2 of the AEWA Action Plan, on avoiding accidental escape of captive animals of non-native species (thereby contributing to implementing the *preventing unintentional release* component of AEWA Article III(2)g) through the permitting system and conditions for ex-situ conservation and non-commercial owners (see below under *Reporting obligations and mechanisms to ensure implementation, enforcement and review*).

Depending on the species included on the Union List, the action plans to address priority pathways to be developed by Member States should be aligned with, and vice versa:

- the AEWA Action Plan;
- the AEWA International and National Single Species Action Plans;
- relevant national plans (e.g. national 2020 Biodiversity Strategies/National Biodiversity Strategies and Action Plans, national action plans/strategies on non-native species, national IAS strategies);

³⁵ Draft Resolution 6.15 – Update on AEWA’s Contribution to Delivering the Aichi 2020 Biodiversity Targets, 10th Meeting of the Standing Committee, Doc StC 10.DR15, Agenda item 20.

³⁶ Analysis on pathways for the introduction of invasive Alien species: Updates. UNEP/CBD/COP/12/INF/10 <https://www.cbd.int/doc/meetings/cop/cop-12/information/cop-12-inf-10-en.doc>

³⁷ Roy, H. *et al.* (2014) *Invasive alien species – framework for the identification of invasive alien species of EU concern*, Report for European Commission, ENV.B.2/ETU/2013/0026, Natural Environment Research Council; Roy, H. *et al.* (2015) *Organisation and Running of a Scientific Workshop to Complete Selected Invasive Alien Species (IAS) Risk Assessments*, Report for European Commission, ARES(2014)2425342, Natural Environment Research Council.

³⁸ Article 7, European Union Regulation 1143/2014.

³⁹ Articles 8 and 9, European Union Regulation 1143/2014.

⁴⁰ Article 13(1), European Union Regulation 1143/2014.

⁴¹ Article 13(2), European Union Regulation 1143/2014.

⁴² Article 13(5), European Union Regulation 1143/2014.

- relevant regional plans (e.g. Action Plan Concerning Species Introductions and Invasive Species in the Mediterranean Sea under the Mediterranean Action Plan of the Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution); and
- relevant international plans (e.g. European Strategy on IAS under the Bern Convention on the Conservation of European Wildlife and Natural Habitats).

In the context of waterbird introductions, the action plans to address priority pathways could be informed by the guidance provided in Step 6 on measures to prevent the import of high risk waterbird species in *AEWA Revised Guidelines on Avoidance of Introductions of non-native Waterbird Species*.⁴³ Equally, lessons learned in the EU context could inform future revisions of the *AEWA Guidelines* and aid in the broader understanding of pathways for IAS to help target action throughout the AEWA Area.

Early detection and rapid eradication

The Regulation requires that a surveillance system to record occurrence of IAS in the environment, and to monitor the effectiveness of eradication measures, should be established in each Member State 18 months after the adoption of the Union List.⁴⁴ By 2 January 2016, Member States are required to 'have in place fully functioning structures to carry out the official controls necessary to prevent the intentional introduction into the Union of IAS of Union concern'.⁴⁵ Detailed requirements relevant to these structures are provided in the Regulation.⁴⁶ Following early detection, Member States should notify the Commission and other Member States as soon as possible⁴⁷, and within three months after the early detection notification apply eradication measures (with due regard for the environment, especially non-target species and their habitats)⁴⁸, except where robust scientific evidence concerning aspects of eradication suggests to the contrary.⁴⁹ Based on best practices, the Commission, together with all Member States, will develop guidelines and training programmes to facilitate the identification and detection of IAS of Union concern and the performance of efficient and effective controls.⁵⁰

Implications/considerations for AEWA

The *AEWA Revised Guidelines on Avoidance of Introductions of non-native Waterbird Species*⁵¹ could provide a good basis for the guidelines and training materials prepared in the EU context. Step 7 of these Guidelines could also be used as a model to guide the design of control strategies to limit or remove high risk non-native waterbird species, and the testing and reporting on the feasibility of these strategies. As guidelines and training programmes are developed in the EU, these could also be shared with other AEWA Contracting Parties to share lessons learned and best practice, and could provide a basis for revisions of the *AEWA Guidelines* in the future.

Member State surveillance systems may provide useful sources of information on the effectiveness of eradication measures to inform such measures in other AEWA Contracting Parties and Range States, together with information to address information gaps identified by AEWA (see below under *Reporting obligations and mechanisms to ensure implementation, enforcement and review*), for example information on the import/export of waterbirds.

Management of widely spread IAS

Within 18 months of an IAS being included on the Union List, the Regulations stipulate that Member States should have in place effective management measures that are proportionate to the impact on the environment, appropriate to the specific circumstances of the Member States, and based on an analysis of costs and

⁴³ AEWA 2012. AEWA Guidelines No. 10 Guidelines on Avoidance of Introductions of Non-Native Waterbird Species. AEWA Technical Series No. 12. Second revision. Bonn, Germany.

⁴⁴ Article 14, European Union Regulation 1143/2014.

⁴⁵ Article 15(1), European Union Regulation 1143/2014.

⁴⁶ Article 15, European Union Regulation 1143/2014.

⁴⁷ Article 16(2), European Union Regulation 1143/2014.

⁴⁸ Article 17(1), European Union Regulation 1143/2014.

⁴⁹ Article 18(1), European Union Regulation 1143/2014.

⁵⁰ Article 15(8), European Union Regulation 1143/2014.

⁵¹ AEWA 2012. AEWA Guidelines No. 10 Guidelines on Avoidance of Introductions of Non-Native Waterbird Species. AEWA Technical Series No. 12. Second revision. Bonn, Germany.

benefits.⁵² Member States are also required to carry out restoration measures to ‘assist the recovery of an ecosystem that has been degraded, damaged or destroyed by IAS of Union concern unless a cost-benefit analysis demonstrates [...] that the costs of those measures will be high and disproportionate to the benefits of restoration.’⁵³

Implications/considerations for AEWA

These provisions will allow Member States who are also Contracting Parties to AEWA to implement the component of AEWA Article III(2)g *on preventing species already introduced becoming a potential threat to indigenous species*, and the following aspects of the AEWA Action Plan⁵⁴:

- paragraph 2.5.3 *on ensuring that non-natives do not pose a potential hazard to the populations listed in Table 1 of the Action Plan*;
- paragraph 4.3.10 *on introduced terrestrial predators to breeding migratory waterbirds on islands and islets*; and
- partly address paragraph 3.3 *on restoration of areas that were previously important for migratory waterbird populations but have suffered degradation as a result of invasive non-natives*.

Information on resource requirements to address the risks posed to native species by introduced species that have become invasive in some Contracting Parties, as provided by the status reviews/updates on non-native waterbird species, could be useful for cost-benefit analyses when determining management measures.

Cooperation and coordination

When complying with the Regulation, Member States are encouraged to coordinate with other Member States and to use existing regional and international agreements to support doing so.⁵⁵ Member States are also encouraged to cooperate with countries outside of the EU, including by using existing structures.⁵⁶

Implications/considerations for AEWA

The coordinated approach provided by the Regulation makes AEWA and its framework directly relevant to the successful implementation of the Regulation. In particular, it aligns with AEWA Articles II and III⁵⁷ in helping Contracting Parties to: take coordinated measures to maintain migratory waterbird species in a favourable conservation status or to restore them to such status, and to exchange information and results from research, monitoring, conservation and education programmes; and cooperate with a view to assisting each other to implement AEWA. Moreover, acting as such a platform would be in line with the conclusion of the AEWA Technical Committee’s review of how to make AEWA more effective in coordinating with other ‘policy mechanisms to increase efficiency/effectiveness in addressing conservation issues and threats’.⁵⁸

Reporting obligations and mechanisms to ensure implementation, enforcement and review

By 1 June 2019, and every six years thereafter, Member States are required to report to the Commission on progress in implementing the Regulation based on a format specified by the Commission.⁵⁹ In order to assess progress, the Commission will review the application of the Regulation by 1 June 2021. In addition, an ‘information support system’ will be established by the Commission to support the application of the Regulation.⁶⁰ By 2 January 2016, this system ‘shall include a data support mechanism interconnecting existing data systems’ on IAS, primarily to support the Commission and Member States regarding early detection

⁵² Article 19(1), European Union Regulation 1143/2014.

⁵³ Article 20(1), European Union Regulation 1143/2014.

⁵⁴ AEWA Action Plan (as amended by the fifth Session of the Meeting of the Parties, 14–18 May 2012, La Rochelle, France).

⁵⁵ Article 22(1), European Union Regulation 1143/2014.

⁵⁶ Article 22(2), European Union Regulation 1143/2014.

⁵⁷ Agreement Text and Annexes, Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA), Articles II ‘Fundamental Principles’ and III ‘General Conservation Measures’.

⁵⁸ Report of the Technical Committee, AEWA/MOP 6.7, 10 August 2015.

⁵⁹ Article 24, European Union Regulation 1143/2014.

⁶⁰ Article 25, European Union Regulation 1143/2014.

notifications.⁶¹ By 2 January 2019, this data support mechanism must be able to share information on other aspects of the Regulation's application, possibly including information on IAS of Member State concern, and on pathways, risk assessment, management and eradication measures.⁶²

A committee (consisting of representatives of all Member States) has been established to support the Commission on the implementation of this Regulation⁶³, and a scientific forum⁶⁴ has been appointed (representatives of the scientific community from Member States) to support the committee on, in particular, the establishment and updating of the Union List, risk assessment, emergency measures, and derogations from the eradication obligation.

To enable non-commercial owners to keep their companion animals that belong to species included on the Union List until the end of the animal's natural life, all measures should be put in place to avoid reproduction or escape.⁶⁵ Commercial operators are allowed two years to slaughter, humanely cull, sell or hand over their stock if on the Union List to research or ex-situ conservation establishments.⁶⁶ The 'polluter pays principle' should be used to recover the costs of the measures needed to prevent, minimise or mitigate the adverse impact of IAS.⁶⁷ No further means of finance are identified in the Regulation.

Implications/considerations for AEWA

Member States will be required to report on:

- their surveillance and official control system, the distribution of IAS on the Union List or Regional Lists (including information regarding migratory or reproductive patterns);
- on action plans;
- eradication measures and their effectiveness (including impact on non-target species),
- permits issued and the results of permit inspections;
- public information measures and citizen action; and
- information on the costs of complying with the Regulation.⁶⁸

Such information also has relevance in the AEWA context and could also be used for completing section 3 'Non-native Waterbird Species Status' of the AEWA National Report template. If the information support system is successful in consolidating relevant data systems, then this may contribute to addressing AEWA Strategic Plan Target 3.5⁶⁹ on sharing information to inform conservation decision-making, and any perceived reporting burden⁷⁰ by making information easier to access for reporting. It would be useful to integrate IWC with the information support system.

The obligation to report on such information could be supportive of AEWA efforts to improve the accuracy of population trend data on migratory waterbirds (dependent on the species prioritised by the Regulation)⁷¹, the monitoring of avicultural collections⁷², and filling other information gaps in order to inform future status reviews/updates on non-native waterbird species and Conservation Status Reports.

⁶¹ Article 25(2), EU Regulation on the prevention and management of the introduction and spread of invasive alien species.

⁶² Article 25(3), European Union Regulation 1143/2014; Trouwborst, A. (2015) 'The Bern Convention and EU Regulation 1143/2014 on the Prevention and Management of the Introduction and Spread of Invasive Alien Species', prepared on behalf of the Bern Convention on the Conservation of European Wildlife and Natural Habitats, Strasbourg, 18 June 2015, T-PVS/Inf(2015) 14.

⁶³ Article 27, European Union Regulation 1143/2014; http://ec.europa.eu/environment/nature/invasivealien/index_en.htm

⁶⁴ Article 28, European Union Regulation 1143/2014; http://ec.europa.eu/environment/nature/invasivealien/index_en.htm

⁶⁵ Article 31, European Union Regulation 1143/2014.

⁶⁶ Article 32, European Union Regulation 1143/2014.

⁶⁷ Article 21 and preamble paragraph 33, European Union Regulation 1143/2014.

⁶⁸ Article 24(1) and preamble paragraph 33, European Union Regulation 1143/2014.

⁶⁹ AEWA Strategic Plan 2009-2017 Objective 3 'To increase knowledge about species and their populations, flyways and threats to them, as a basis for conservation action' Target 3.5 'By 2017, sharing and accessibility of relevant data and information are enhanced so as to underpin relevant conservation decision-making'.

⁷⁰ UNEP (2015). Sourcebook of opportunities for enhancing cooperation among the Biodiversity-related Conventions at national and regional levels. United Nations Environment Programme (UNEP), Nairobi, Kenya.

⁷¹ Section 5 'Research and monitoring, AEWA Action Plan (as amended by the fifth Session of the Meeting of the Parties, 14-18 May 2012, La Rochelle, France.

⁷² Paragraph 7, AEWA Resolution 4.5 'Introduced non-native waterbird species in the agreement area', 4th Session of the Meeting of the Parties, Antananarivo, 2008.

Member States could use the guidance on combatting escapes from aviculture found in Step 5 of *AEWA Revised Guidelines on Avoidance of Introductions of non-native Waterbird Species*⁷³, when preparing information for non-commercial owners of IAS on relevant actions that they can undertake to comply with the Regulation.

Establishing a formal relationship between the AEWA Standing Committee (with its role to liaise with Contracting Parties and promote the flow of information to Parties) and the AEWA Technical Committee as appropriate, and the bodies created by EU Regulation 1143/2014⁷⁴, including by capitalising on any commonalities in memberships between the bodies, would help to initiate such information exchange. Such a relationship would also help to further explore the considerations, a summary of which has been outlined above, related to the coming into force of EU Regulation 1143/2014, for achieving mutual progress on implementing the Regulation and in delivering on the articles and resolutions of AEWA.

⁷³ AEWA 2012. AEWA Guidelines No. 10 Guidelines on Avoidance of Introductions of Non-Native Waterbird Species. AEWA Technical Series No. 12. Second revision. Bonn, Germany.

⁷⁴ In addition to those mentioned above, the Working Group on IAS, WGIAS, which although not mentioned by the Regulation, has reconvened to provide an operational group providing concrete input to the implementation of the Regulation (Trouwborst, A. (2015) 'The Bern Convention and EU Regulation 1143/2014 on the Prevention and Management of the Introduction and Spread of Invasive Alien Species', prepared on behalf of the Bern Convention on the Conservation of European Wildlife and Natural Habitats, Strasbourg, 18 June 2015, T-PVS/Inf(2015) 14; http://ec.europa.eu/environment/nature/invasivealien/index_en.htm.