Alcedo atthis (Common Kingfisher)

European Red List of Birds

Supplementary Material

The European Union (EU28) Red List assessments were based principally on the official data reported by EU Member States to the European Commission under Article 12 of the Birds Directive in 2019-20. For the European Red List assessments, similar data were sourced from BirdLife Partners and other collaborating experts in other European countries and territories. For more information, see BirdLife International (2021).

Contents

Recommended citation

BirdLife International (2021) European Red List of Birds. Luxembourg: Publications Office of the European Union.

Further information

http://datazone.birdlife.org/info/euroredlist
http://www.birdlife.org/europe-and-central-asia/european-red-list-birds-0
http://www.iucnredlist.org/regions/europe
http://ec.europa.eu/environment/nature/conservation/species/redlist/

Data requests and feedback

To request access to these data in electronic format, provide new information, correct any errors or provide feedback, please email science@birdlife.org.

Table 1. Reported national breeding population size and trends in Europe[1].

Country (or territory)[2]	Population estimate				Short-term population trend[5]				Long-term population trend[5]				Subspecific population (where relevant)
	Size (pairs)[3]	Europe (%)	Year(s)	Method[4]	Direction[6]	Magnitude (%)[7]	Year(s)	Method[4]	Direction[6]	Magnitude (%)[7]	Year(s)	Method[4]	
Albania	35–120	<1	2007-2018	partial	-	-77 to -65	2007-2018	partial	-	-77 to -65	1980-2018	expert	
Armenia	210–320	<1	2013-2018	complete	-	-8 to -5	2007-2018	complete	?		2003-2018	deficient	
Austria	500–800	<1	2013-2018	complete	+	15 to 30	2007-2018	partial	?		1981-2018	deficient	
Azerbaijan	500–5000	1	1996-2019	expert	?		2013-2019	expert	0		1980-2019	expert	
Belarus	5000–8000	5	2010-2018	partial	0	-10 to 10	2012-2019	expert	+	30 to 70	1980-2019	expert	
Belgium	900–1600	<1	2013-2018	partial	F		2008-2018	partial	+	-5 to 68	1973-2018	partial	
Bosnia & HG	800–1200	<1	2015-2018	complete	?	-10 to 10	2007-2018	complete	?		1980-2018	deficient	
Bulgaria	900–3600	1	2005-2018	partial	-	-15 to -10	2001-2018	partial	-	-15 to -10	1980-2018	partial	
Croatia	700–1000	<1	2012-2012	expert	?		2007-2018	deficient	?		1980-2018	deficient	
Czechia	700–1400	<1	2014-2017	complete	?		2007-2018	complete	+		1982-2018	complete	
Denmark	300	<1	2017	expert	F		2004-2017	expert	F		1980-2017	expert	
Estonia	200–500	<1	2013-2017	expert	+	-10 to 20	2006-2017	expert	0		1980-2017	expert	
Finland	5–15	<1	2013-2018	partial	+		2007-2018	partial	F		1980-2018	partial	
France	15000–30000	16	2013-2018	partial	?	-10 to 25	2007-2018	partial	-	-7	2001-2017	partial	
Georgia	380–3900	<1	2013-2017	partial	?			deficient	?				
Germany	9500–15000	9	2016-2016	expert	0		2004-2016	expert	+	29	1980-2016	expert	
Greece	500–1000	<1	2013-2018	partial	?		2007-2018	deficient	?		1980-2018	deficient	
Hungary	1200–2000	1	2014-2018	partial	?		2007-2018	expert	?		1994-2018	expert	
Rep. Ireland	360–1100	<1	2010-2010	partial	-		1991-2010	partial	-		1980-2010	partial	
Italy	6000–16000	7	2013-2018	expert	-	-35 to -15	2000-2014	partial	+	50 to 100	1993-2018	expert	
Kosovo	250–350	<1	2007-2019	partial	0		2007-2018	partial	0		1990-2018	partial	
Latvia	750–1200	<1	2013-2017	partial	0	7 to 10	2000-2017	partial	+	170 to 176	1991-2017	partial	
Lithuania	620–1000	<1	2013-2018	partial	0	0	2013-2018	partial	-	-10 to 0	1980-2018	partial	
Luxembourg	50–70	<1	2013-2018	partial	-	-20 to -10	2007-2018	partial	-	-40 to -30	1980-2018	partial	
North Macedonia	20–100	<1	2014-2019	expert	0		2007-2018	expert	?		1980-2019		
Moldova	500–600	<1	2014-2017	partial	0		2007-2018	partial	0		1990-2018	expert	
Montenegro	140–200	<1	2013-2018	partial	-		2007-2018	expert	?				
Netherlands	400–1400	<1	2013-2017	complete	+	38 to 69	2006-2017	complete	+	1047 to 1267	1980-2017	complete	
Norway	5	<1	2013-2018	complete	F		2013-2018	complete	?		1980-2018	partial	
Poland	2500–6000	3	2013-2018	expert	?	-4 to 149	2007-2018	complete	?		1980-2018	deficient	
Portugal	5000–30000	9	2013-2018	partial	-		2007-2018	partial	?		1980-2018	deficient	
Romania	5000–10000	5	2013-2018	expert	?		2007-2018	deficient	?		1980-2018	deficient	

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Table 1. Reported national breeding population size and trends in Europe[1].

Country (or territory)[2]	Population estimate				Short-term population trend[5]				Long-term population trend[5]				Subspecific population (where relevant)
	Size (pairs)[3]	Europe (%)	Year(s)	Method[4]	Direction[6]	Magnitude (%)[7]	Year(s)	Method[4]	Direction[6]	Magnitude (%)[7]	Year(s)	Method[4]	
Russia	12000–20000	12	2008-2018	partial	-	-15 to -10	2008-2018	expert	-	-29 to -20	1980-2018	expert	
Serbia	1600–2600	2	2013-2018	partial	0	0	2007-2018	complete	0	0	1980-2018	complete	
Slovakia	700–1000	<1	2013-2018	partial	0		2007-2018	partial	-	-30 to -20	1980-2018	partial	
Slovenia	250–350	<1	2013-2018	complete	0		2006-2018	complete	-	-30 to -10	1980-2018	expert	
Spain	2700–24200	6	2007-2018	partial	?	-6 to 3	2007-2018	complete	-		1980-2018	complete	
Sweden	170–330	<1	2013-2018	partial	0	-30 to 30	2007-2018	partial	F		1980-2018	partial	
Switzerland	400–500	<1	2013–2016	complete	0	-1 to 80	2007-2018	complete	+	28 to 78	1990-2018	complete	
Turkey	90–900	<1	2013-2019	partial	?		2012-2018	expert	?		1980-2013	expert	
Ukraine	9000–20000	10	2015-2017	partial	?		2007-2019	deficient	F		1980-2018	deficient	
United Kingdom	3800–6500	4	2016	partial	-		2004-2016	complete	+		1980-2016	complete	
EU28	58700–157000	68											
Europe	**89700–220000**	**100**											

[1] See 'Sources' at end of factsheet, and for more details on individual EU Member State reports, see the Article 12 reporting portal at http://bd.eionet.europa.eu/article12/report.
[2] The designation of geographical entities and the presentation of the material do not imply the expression of any opinion whatsoever on the part of IUCN or BirdLife International concerning the legal status of any country, territory or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.
[3] In the few cases where population size estimates were reported in units other than those specified, they were converted to the correct units using standard correction factors.
[4] The 'method used' (replacing the data 'quality' assessment in the 2015 European Red List) is reported as: a) Complete: complete survey or a statistically robust estimate; b) Partial: based mainly on extrapolation from a limited amount of data; c) Expert: based mainly on expert opinion with very limited data; d) Defficient: insufficient or no data available.
[5] The robustness of regional trends to the effects of any missing or incomplete data was tested using plausible scenarios, based on other sources of information, including any other reported information, recent national Red Lists, scientific literature, other publications and consultation with relevant experts.
[6] Trend directions are reported as: increasing (+); decreasing (-); stable (0); fluctuating (F); or unknown (?).
[7] Trend magnitudes are rounded to the nearest integer.

Table 2. Reported national wintering population sizes and trends in Europe[1]. Note that some countries within the species' wintering range did not report any data, and that only minimum totals are presented, to avoid double-counting of birds moving between countries.

Country (or territory)[2]	Population estimate				Short-term population trend[5]				Long-term population trend[5]				Subspecific population (where relevant)
	Size (individuals)[3]	Europe (%)	Year(s)	Method[4]	Direction[6]	Magnitude (%)[7]	Year(s)	Method[4]	Direction[6]	Magnitude (%)[7]	Year(s)	Method[4]	
Albania	20–35	<1	2007-2018	complete	+	0 to 16	2007-2018	complete	0	0	1980-2018	complete	
Andorra		<1			?				?				
Bosnia & HG	50–200	3	2015-2018	complete	?	-10 to 10	2007-2018	deficient	?		1980-2018	deficient	
Croatia	10	<1	2018-2018	expert	?		2007-2018	deficient	?		1980-2018	deficient	
Cyprus	50–250	4	2013-2018	partial	?		2007-2018	deficient	?		1980-2018	deficient	
Czechia	1700–3500	82	2015-2019	complete	+	5	2008-2019	complete	+	4	1980-2019	complete	
Gibraltar	1–5	<1	2014-2018	expert	0	1 to 5	2001-2012	expert	0	1 to 5	1980-2018	expert	
Serbia	100–500	8	2013-2018	partial	F		2013-2018	expert	?	-10 to 10	1980-2018	expert	
Turkey	50–100	2	2013-2019	complete	?		2008-2019	expert	?		1980-2019	expert	
EU28	1700–3800	87											
Europe	**1900–4600**	**100**											

[1] See 'Sources' at end of factsheet, and for more details on individual EU Member State reports, see the Article 12 reporting portal at http://bd.eionet.europa.eu/article12/report.
[2] The designation of geographical entities and the presentation of the material do not imply the expression of any opinion whatsoever on the part of IUCN or BirdLife International concerning the legal status of any country, territory or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.
[3] In the few cases where population size estimates were reported in units other than those specified, they were converted to the correct units using standard correction factors.
[4] The 'method used' (replacing the data 'quality' assessment in the 2015 European Red List) is reported as: a) Complete: complete survey or a statistically robust estimate; b) Partial: based mainly on extrapolation from a limited amount of data; c) Expert: based mainly on expert opinion with very limited data; d) Defficient: insufficient or no data available.
[5] The robustness of regional trends to the effects of any missing or incomplete data was tested using plausible scenarios, based on other sources of information, including any other reported information, recent national Red Lists, scientific literature, other publications and consultation with relevant experts.
[6] Trend directions are reported as: increasing (+); decreasing (-); stable (0); fluctuating (F); or unknown (?).
[7] Trend magnitudes are rounded to the nearest integer.

Trend maps

A symbol appears in each country where the species occurs: the shape and colour of the symbol represent the population trend in that country, and the size of the symbol corresponds to the proportion of the European population occurring in that country.

KEY

- Large increase (≥50%)
- Moderate increase (20–49%)
- Small increase (<20%)
- Increase of unknown magnitude
- Stable or fluctuating
- Unknown
- Present (no population or trend data)
- Extinct since 1980
- Large decrease (≥50%)
- Moderate decrease (20–49%)
- Small decrease (<20%)
- Decrease of unknown magnitude

Each symbol, with the exception of Present and Extinct, may occur in up to three different size classes, corresponding to the proportion of the European population occurring in that country.

- Large: ≥10% of the European population
- Medium: 1–9% of the European population
- Small: <1% of the European population

The designation of geographical entities and the presentation of the material do not imply the expression of any opinion whatsoever on the part of IUCN or BirdLife International concerning the legal status of any country, territory or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Figure 1. Breeding population sizes and short-term trends across Europe.

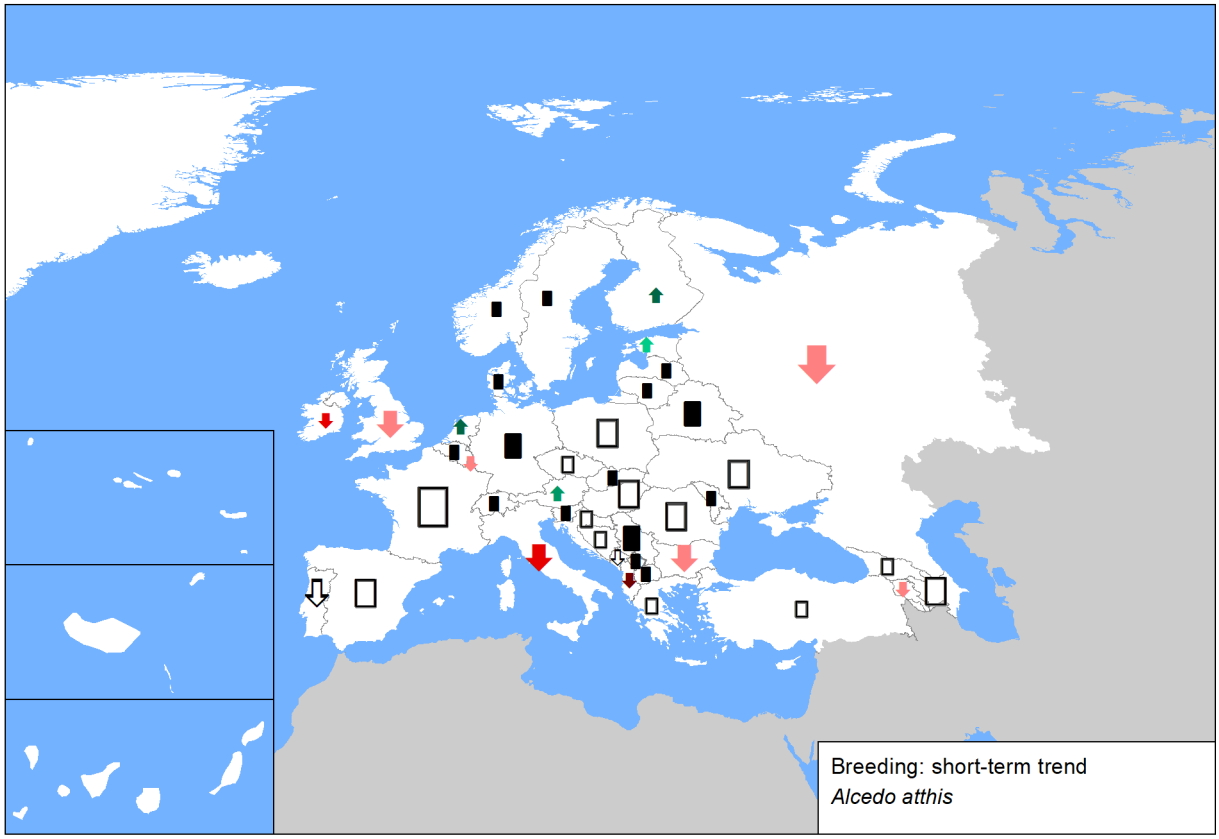


Figure 2. Breeding population sizes and long-term trends across Europe.

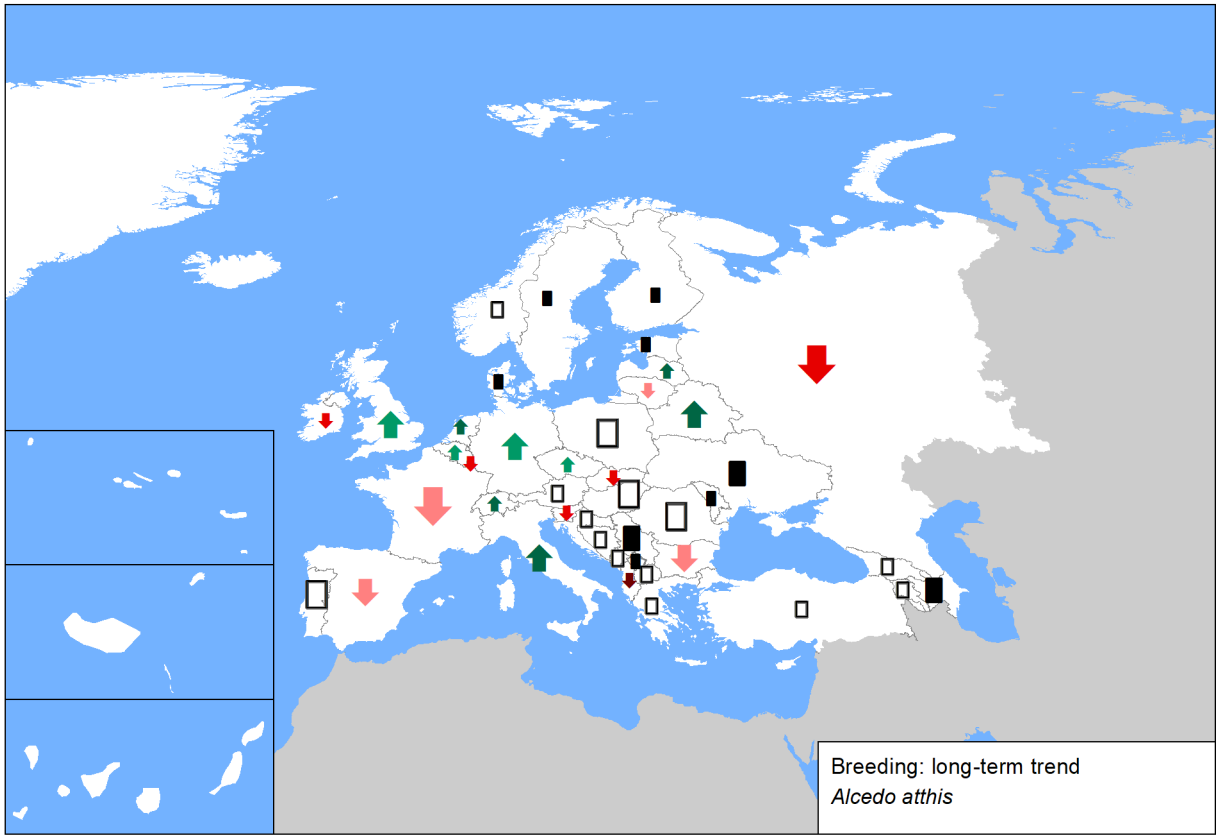


Figure 3. Reported wintering population sizes and short-term trends across Europe. Note that some countries within the species' wintering range did not report any data.

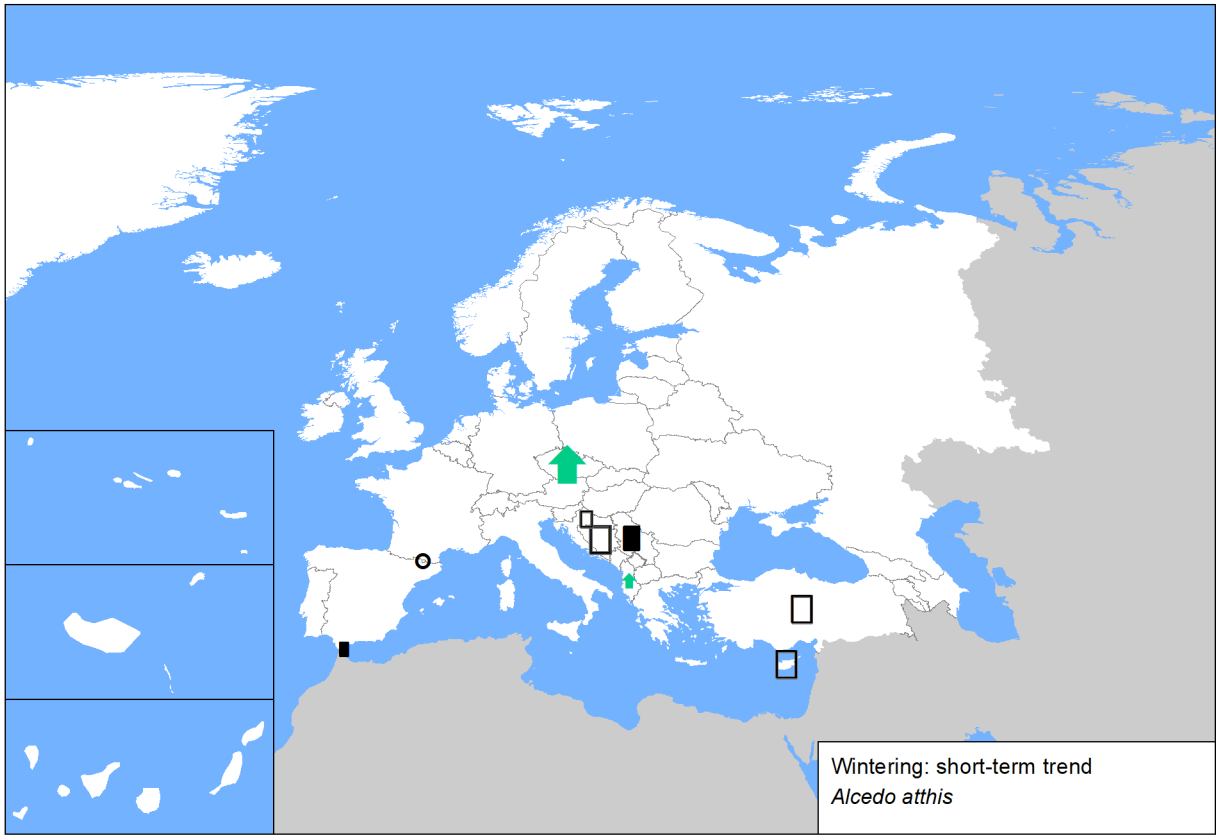
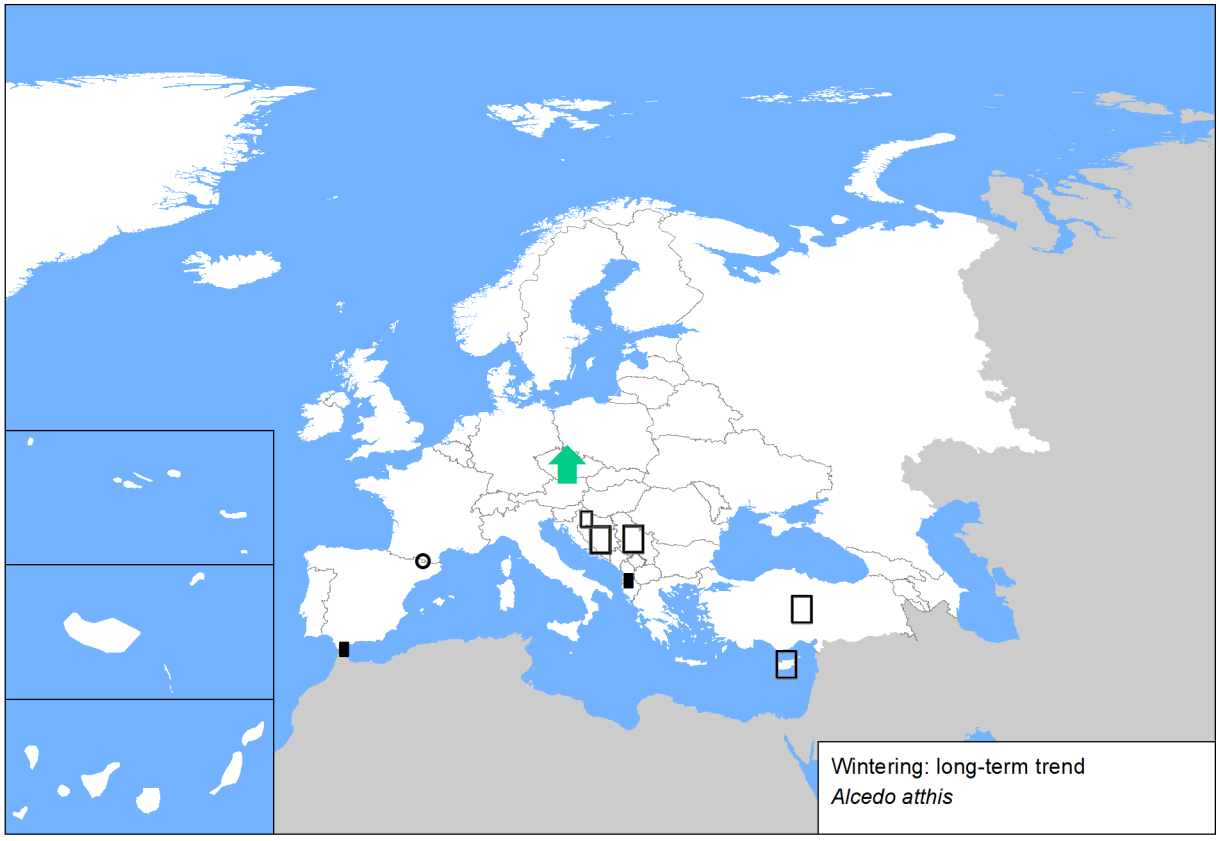


Figure 4. Reported wintering population sizes and long-term trends across Europe. Note that some countries within the species' wintering range did not report any data.



Sources

Albania

Breeding population size: Bino & Xeka pers. obs.
Breeding short-term trend: Bino & Xeka pers. obs.
Breeding long-term trend: Bino pers. obs.
Winter population size: Bino pers. obs.
Winter short-term trend: Bino et al. 2018
Winter long-term trend: Bino et al. 2018

Andorra

Winter short-term trend: Population trend not analysed for wintering birds

Armenia

Breeding population size: TSE NGO National Bird Monitoring data.
Breeding short-term trend: TSE (2020) The Atlas of the Breeding Birds in Armenia. In preparation.
Breeding long-term trend: TSE (2020) The Atlas of the Breeding Birds in Armenia. In preparation.

Austria

Breeding population size: BirdLife Austria, unpublished data from www.ornitho.at
Breeding short-term trend: BirdLife Austria, unpublished data from www.ornitho.at; BirdLife Austria, unpublished archive data
Breeding long-term trend: BirdLife Austria, unpublished archive data

Azerbaijan

Breeding population size: BirdLife International 2004
Breeding short-term trend: AOS data base
Breeding long-term trend: AOS Data Base

Belarus

Breeding population size: Research work of the National Academy of Sciences of the Republic of Belarus “Dynamics and predictive assessment of changes in the state of populations of the main resource and biocenotically most important bird species in Belarus”
Breeding long-term trend: Tarantovich M. - personal communication

Belgium

Breeding population size: Vermeersch G. et al. (2018, in press). Broedvogels in Vlaanderen in de periode 2013-2018. Rapporten van het Instituut voor Natuur- en Bosonderzoek (INBO), Brussel. / Paquet, J-Y., Anselin, A., Vermeersch, G., Derouaux, A., Devos, K. (2019, in prep.). Contribution of Belgium to EBCC European Breeding Bird Atlas 2. Internal Report.
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Breeding long-term trend: Vermeersch G. et al. (2018, in press). Broedvogels in Vlaanderen in de periode 2013-2018. Rapporten van het Instituut voor Natuur- en Bosonderzoek (INBO), Brussel. / Paquet, J-Y., Anselin, A., Vermeersch, G., Derouaux, A., Devos, K. (2019, in prep.). Contribution of Belgium to EBCC European Breeding Bird Atlas 2. Internal Report.

Bosnia and Herzegovina

Breeding population size: Based on data for EBBA2
Breeding short-term trend: more individual articles e.g published in magazine Bilten mreže posmatrača ptica u Bosni i Hercegovini-see https://ptice.ba/bs/category/bilteni_/), individual reports (e.g. for EBBA2, projects etc)
Winter population size: based on IWC reports-all reports published in magazine Bilten mreže posmatrača ptica (www.ptice.ba)
Winter short-term trend: based on IWC reports-all reports published in magazine Bilten mreže posmatrača ptica (www.ptice.ba)
Winter long-term trend: There are no qualitative data before 2005 to make estimates

Bulgaria

Breeding population size: Grozdanov, A., Spasov, S., Stefanov, T., Kutsarov, I. 2007. Alcedo atthis. In: Iankov, P. (Ed.) Atlas of breeding birds in Bulgaria. Bulgarian Society for the Protection of Birds Conservation series, Book 10, BSPB, Sofia.; National Art. 12 reporting database 2013-2018; Nankinov,D. et al. Breeding totals of the ornithofauna in Bulgaria. Green Balkans, Plovdiv, 2004.
Breeding short-term trend: expert opinion; National Art. 12 reporting database 2013-2018;
Breeding long-term trend: Nankinov,D. et al. Breeding totals of the ornithofauna in Bulgaria. Green Balkans, Plovdiv, 2004.

Croatia

Breeding population size: Zavod za ornitologiju (Sanja Barišić, Davor Ćiković, Jelena Kralj, Goran Sušić,Vesna Tutiš), Dragan Radović, Ivan Budinski, Robert Crnković, Antun Delić, Dubravko Dender, Vlatka Dumbović, Ivan Darko Grlica, Bariša Ilić, Luka Jurinović, Davor Krnjeta, Krešimir Leskovar, Duje Lisičić, Ivica Lolić, Gordan Lukač. Kristijan Mandić, Krešimir Mikulić, Tibor Mikuska, Gvido Piasevoli, Andrej Radalj, Zlatko Ružanović, Vlatka Šćetarić, Mirko Šetina, Adrian Tomik (2015): Procjene brojnosti za SPA područja. Državni zavod za zaštitu prirode, Zagreb
Breeding short-term trend: no data available
Breeding long-term trend: no data available
Winter population size: Dumbović Mazal V., Pintar V., Zadravec M. (2019): Prvo izvješće o brojnosti i rasprostranjenosti ptica u Hrvatskoj sukladno odredbama Direktive o pticama.
Winter short-term trend: no data available
Winter long-term trend: no data available

Cyprus

Winter population size: Monthly waterbird counts by BirdLife Cyprus and Game & Fauna Service, as published in BirdLife Cyprus monthly checklists and also by the Game & Fauna Service; Analysis of recent BirdLife Cyprus bird sightings records reported in the society's annual reports.
Winter short-term trend: Monthly waterbird counts by BirdLife Cyprus and Game & Fauna Service, as published in BirdLife Cyprus monthly checklists and also by the Game & Fauna Service; Analysis of recent BirdLife Cyprus bird sightings records reported in the society's annual eports. Very poor data
Winter long-term trend: Poor data

Czechia

Breeding population size: Šťastný et Bejček in prep. - Atlas hnízdního rozšíření ptáků ČR 2014-2017
Breeding short-term trend: ČSO (unpubl.): Common Bird Monitoring Programme
Breeding long-term trend: ČSO (unpubl.): Common Bird Monitoring Programme
Winter population size: Waterbird numbers were recorded in mid-January by regular citizen-science monitoring programme - the International Waterbird Census (IWC) – see Gilissen et al. 2002, Wetlands International 2006, Wetlands International 2019. Hundreds of volunteer birdwatchers conduct the mid-January counts on predetermined dates and sites each year, aiming to maximize synchrony (Gilissen et al. 2002, Musil et al. 2011, Musilová et al. 2014). The estimation of population size was calculated by Trends and Indices for Monitoring data (TRIM) software (Statistics Netherlands version 3.52, Pannekoek and Van Strien, 2005). 'Time Totals' values (hereafter used as Time Totals) of the data (i.e. the actual count values plus the numbers of birds estimated by the TRIM software) for all 1155 sites included in the analysis were used to generate total estimates of the range of numbers of the waterbird species wintering in the Czech Republic between 2015 and 2019. We use the range (min–max) of population estimates due to the effect of between-year variation in numbers because of variable climatic conditions (Musil et al. 2008, Musilová et al. 2018). Gilissen N, Haanstra L, Delany S, Boere G, Hagemeijer W (2002) Numbers and distribution of wintering waterbirds in the Western Palearctic and Southwest Asia in 1987, 1988 and 1999. Results from the International Waterbird Census. Wetlands International Global Series No. 11, Wetlands International, Wageningen, The Netherlands. Musil P, Darolová A, Jureček J, Musilová Z, Podhrázský M, Slabeyová K (2008) The long-term trends in numbers of wintering geese in the Czech Republic and Slovakia in 1991–2007. Tichodroma 20: 61–67. Musil P, Musilová Z, Fuchs R, Poláková S (2011) Long-term changes in numbers and distribution of wintering waterbirds in the Czech Republic, 1966–2008. Bird Study 58: 450–460. Musilová Z, Musil P, Zouhar J, Adam M (2018) Changes in habitat suitability influence non-breeding distribution of waterbirds in central Europe. Ibis: 160: 582–596. Musilová Z, Musil P, Zouhar J, Bejček V, Šťastný K, Hudec K (2014) Numbers of wintering waterbirds in the Czech Republic: long-term and spatial-scale approaches to assess population size. Bird Study 61: 321–331.
Winter short-term trend: Waterbird numbers were recorded in mid-January by regular citizen-science monitoring programme - the International Waterbird Census (IWC) – see Gilissen et al. 2002, Wetlands International 2006, Wetlands International 2019. Hundreds of volunteer birdwatchers conduct the mid-January counts on predetermined dates and sites each year, aiming to maximize synchrony (Gilissen et al. 2002, Musil et al. 2011, Musilová et al. 2014). The individual species trends in numbers was calculated by Trends and Indices for Monitoring data (TRIM) software (Statistics Netherlands version 3.52, Pannekoek and Van Strien, 2005). The additive slope (i.e. the change in indices from one year to the next) was used to estimate the Czech trend, see also Fouque et al. (2009), Musil et al. (2011), Musilová et al. (2015), Musilová et al. (2018 a, b). Fouque C, Guillemain M, Schricke V (2009) Trends in the numbers of Coot Fulica atra and wildfowl Anatidae wintering in France and their relationship with hunting activity at wetland sites. Wildfowl. Special Issue 2: 42–59. Gilissen N, Haanstra L, Delany S, Boere G, Hagemeijer W (2002) Numbers and distribution of wintering waterbirds in the Western Palearctic and Southwest Asia in 1987, 1988 and 1999. Results from the International Waterbird Census. Wetlands International Global Series No. 11, Wetlands International, Wageningen, The Netherlands. Musil P, Musilová Z, Fuchs R, Poláková S (2011) Long-term changes in numbers and distribution of wintering waterbirds in the Czech Republic, 1966–2008. Bird Study 58: 450–460. Musilová Z, Musil P, Zouhar J, Adam M (2018a) Changes in habitat suitability influence non-breeding distribution of waterbirds in central Europe. Ibis: 160: 582–596. Musilová Z, Musil P, Zouhar J, Adam M, Bejček V (2018b) Importance of Natura 2000 sites for wintering waterbirds: Low preference, species' distribution changes and carrying capacity of Natura 2000 could fail to protect the species. Biological Conservation 228: 79–88. Musilová Z, Musil P, Zouhar J, Bejček V, Šťastný K, Hudec K (2014) Numbers of wintering waterbirds in the Czech Republic: long-term and spatial-scale approaches to assess population size. Bird Study 61: 321–331. Musilová Z, Musil P, Zouhar J, Romportl D (2015) Long-term trends, total numbers and species richness of increasing waterbird populations at sites on the edge of their winter range: cold-weather refuge sites are more important than protected sites. J Ornithol: 1–10. Pannekoek J, Van Strien AJ (2005) TRIM 3 Manual (TRends and Indices for Monitoring Data). Statistics Netherlands, Voorburg, The Netherlands. Wetlands International (2006) Waterbird population estimates. Fourth Edition. Wetlands International, Wageningen, The Netherlands. Wetlands International (2019) Waterbird Population Estimates. Available at: wpe.wetlands.org (accessed 10 March 2019).

Alcedo atthis (Common Kingfisher)

Czechia

Winter long-term trend: Waterbird numbers were recorded in mid-January by regular citizen-science monitoring programme - the International Waterbird Census (IWC) – see Gilissen et al. 2002, Wetlands International 2006, Wetlands International 2019. Hundreds of volunteer birdwatchers conduct the mid-January counts on predetermined dates and sites each year, aiming to maximize synchrony (Gilissen et al. 2002, Musil et al. 2011, Musilová et al. 2014). The individual species trends in numbers was calculated by Trends and Indices for Monitoring data (TRIM) software (Statistics Netherlands version 3.52, Pannekoek and Van Strien, 2005). The additive slope (i.e. the change in indices from one year to the next) was used to estimate the Czech trend, see also Fouque et al. (2009), Musil et al. (2011), Musilová et al. (2015), Musilová et al. (2018 a, b). Fouque C, Guillemain M, Schricke V (2009) Trends in the numbers of Coot Fulica atra and wildfowl Anatidae wintering in France and their relationship with hunting activity at wetland sites. Wildfowl. Special Issue 2: 42–59. Gilissen N, Haanstra L, Delany S, Boere G, Hagemeijer W (2002) Numbers and distribution of wintering waterbirds in the Western Palearctic and Southwest Asia in 1987, 1988 and 1999. Results from the International Waterbird Census. Wetlands International Global Series No. 11, Wetlands International, Wageningen, The Netherlands. Musil P, Musilová Z, Fuchs R, Poláková S (2011) Long-term changes in numbers and distribution of wintering waterbirds in the Czech Republic, 1966–2008. Bird Study 58: 450–460. Musilová Z, Musil P, Zouhar J, Adam M (2018a) Changes in habitat suitability influence non-breeding distribution of waterbirds in central Europe. Ibis: 160: 582–596. Musilová Z, Musil P, Zouhar J, Adam M, Bejček V (2018b) Importance of Natura 2000 sites for wintering waterbirds: Low preference, species' distribution changes and carrying capacity of Natura 2000 could fail to protect the species. Biological Conservation 228: 79–88. Musilová Z, Musil P, Zouhar J, Bejček V, Šťastný K, Hudec K (2014) Numbers of wintering waterbirds in the Czech Republic: long-term and spatial-scale approaches to assess population size. Bird Study 61: 321–331. Musilová Z, Musil P, Zouhar J, Romportl D (2015) Long-term trends, total numbers and species richness of increasing waterbird populations at sites on the edge of their winter range: cold-weather refuge sites are more important than protected sites. J Ornithol: 1–10. Pannekoek J, Van Strien AJ (2005) TRIM 3 Manual (TRends and Indices for Monitoring Data). Statistics Netherlands, Voorburg, The Netherlands. Wetlands International (2006) Waterbird population estimates. Fourth Edition. Wetlands International, Wageningen, The Netherlands. Wetlands International (2019) Waterbird Population Estimates. Available at: wpe.wetlands.org (accessed 10 March 2019).

Denmark

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Estonia

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Moldova

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Russia

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Serbia

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Breeding long-term trend: Ferdi Akarsu Pers. Comm. Both Euphrates and Tigris River dam projects ha been effecting this species breeding situation. Because of the newly formed dam resorvioir, speices lost thier suitable bredding sand stracture to build its nest hole. So nobody research spesificly but it is obvious it is big threat for this species

Winter population size: Ebird Datebase and Midwinter Fowl Counts (2013-2018), Birdlife Estimate

Winter short-term trend: Midwinter bird counts 2012-2019

Winter long-term trend: Midwinter bird counts 1980-2019 and Historical Records come from OSME and other midwinter counts

Ukraine

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