THE IUCN RED LIST
OF THREATENED SPECIES™

Sturnus vulgaris (Common Starling)

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	1200–2500	<1	2007-2018	partial	+	-2 to 140	2007-2018	partial	0	-18 to 140	1980-2018	expert	
Andorra	0–2	<1	2014-2017	deficient	?		2011-2018	deficient	?				
Armenia	35100–50800	<1	2013-2018	complete	+	7 to 15	2007-2018	complete	0		2003-2018	partial	
Austria	140000–240000	<1	2013-2018	partial	0		2007-2018	complete	?		1981-2018	deficient	
Azerbaijan	100000–500000	<1	1996-2019	expert	?		2013-2019	expert	?		1980-2019	expert	
Belarus	900000–1200000	3	2010-2018	partial	0	-10 to 10	2012-2019	expert	0	0	1980-2019	expert	
Belgium	155000–301000	<1	2013-2018	expert	-	-39 to -21	2008-2018	complete	-	-54 to -11	1973-2018	partial	
Bosnia & HG	100000–200000	<1	2015-2018	complete	?	-10 to 10	2007-2018	complete	?		1980-2018	deficient	
Bulgaria	800000–2000000	4	2005-2018	partial	-	-33 to -10	2001-2018	complete	0	0 to 5	1980-2018	expert	
Croatia	500000–1000000	2	2014-2014	expert	?		2007-2018	deficient	?		1980-2018	deficient	
Czechia	1000000–2000000	4	2014-2017	complete	+		2007-2018	complete	+		1982-2018	complete	
Denmark	289000–290000	<1	2017	partial	-	-58 to -18	2006-2017	complete	-	-70 to -56	1980-2017	complete	
DK: Faroe Is	25000	<1	2014	expert	?				?				
Estonia	200000–250000	<1	2013-2017	expert	0	-22 to -17	2007-2018	expert	0	-3 to 14	1983-2018	expert	
Finland	59100–113000	<1	2013-2018	complete	+	4 to 68	2007-2018	complete	-	-65 to -35	1980-2018	complete	
France	2000000–3500000	8	2013-2018	partial	+	23	2007-2018	complete	+	21	2001-2018	complete	
Georgia	6400–64200	<1	2013-2017	partial	?			deficient	?				
Germany	2600000–3600000	9	2016-2016	complete	-	-22 to -7	2004-2016	complete	-	-55	1980-2016	expert	
Greece	200000–390000	<1	2013-2018	partial	+		2007-2018	partial	0		1980-2018	partial	
Hungary	710000–990000	2	2014-2018	partial	0		2007-2018	complete	?		1980-2018	deficient	
Iceland	10000–15000	<1	2018	partial	+		2002-2014	partial	+		1980-2014	partial	
Rep. Ireland	718000–1870000	3	2011-2016	complete	0	-10 to 2	2006-2016	complete	?		1980-2016	deficient	
Italy	800000–2000000	4	2013-2018	expert	0		2012-2017	partial	-	-35 to -20	1993-2018	expert	
Kosovo	70000–120000	<1	2007-2019	partial	+		2007-2018	partial	+		1990-2018	partial	
Latvia	326000–407000	1	2016-2016	complete	+	3 to 61	2005-2018	complete	+	39 to 196	1995-2018	complete	
Lithuania	300000–500000	1	2013-2018	partial	0	0	2013-2018	partial	0	0	1980-2018	partial	
Luxembourg	30000–40000	<1	2013-2018	partial	0	0 to 10	2007-2018	partial	-	-20 to -10	1980-2018	expert	
North Macedonia	100000–500000	<1	2014-2019	expert	0		2007-2018	expert	?		1980-2019		
Malta	2	<1	2017-2018	expert	-		2013-2018	expert	0		1980-2018	expert	
Moldova	180000–220000	<1	2014-2017	partial	+		2007-2018	partial	0		1990-2018	expert	
Montenegro	5000–15000	<1	2002-2012	expert	0		2007-2018	expert	?				
Netherlands	450000–750000	2	2013-2015	complete	-	-19 to -4	2006-2017	complete	-	-77 to -58	1984-2017	complete	

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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]	
Norway	100000–200000	<1	2013-2018	expert	0		2013-2018	partial	0		1980-2018	partial	
Poland	2200000–2970000	7	2013-2018	complete	0	-8 to 16	2007-2018	complete	?		1980-2018	deficient	
PT: Azores	440000–968000	2	2015-2018	partial	+	0 to 50	2007-2017	complete	?		1980-2018	deficient	
Romania	2740000–3590000	9	2013-2015	complete	?	-7 to 1	2008-2018	complete	?		1980-2018	deficient	
Russia	2600000–4500000	10	2008-2018	partial	0		2008-2018	expert	?		1980-2018	deficient	
Serbia	313000–483000	1	2013-2018	partial	0	0	2007-2018	complete	-	-29 to -10	1980-2018	partial	
Slovakia	400000–800000	2	2013-2018	expert	0		2007-2018	expert	0		1980-2018	expert	
Slovenia	155000–301000	<1	2018-2018	complete	-		2008-2018	complete	?		1980-2018	deficient	
Spain	400000–1200000	2	1998-2002	complete	0		2007-2018	complete	+		1984-2018	partial	
ES: Canary Is	50–250	<1	1997-2018	partial	?		2007-2018	expert	?		1980-2018	expert	
Sweden	365000–448000	1	2013-2018	partial	-	-43 to -30	2007-2018	partial	-	-68 to -58	1980-2018	partial	
Switzerland	120000–140000	<1	2013–2016	partial	0	-6 to 30	2007-2018	complete	0	-7 to 16	1990-2018	complete	
Turkey	1000000–4000000	6	2002-2012	deficient	?		2008-2019	deficient	?		1980-2013	deficient	
Ukraine	1500000–2500000	6	2015-2017	partial	F		2007-2019	deficient	?		1980-2019	deficient	
United Kingdom	1530000–1950000	5	2016	partial	-		2004-2016	complete	-		1980-2016	complete	
EU28	19500000–32500000	71											
Europe	**26600000–47200000**	**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]	
Cyprus	5000–200000	34	2013-2018	partial	?		2007-2018	deficient	?		1980-2018	deficient	
Gibraltar	11–50	<1	2014-2018	partial	F	0 to 1000	2001-2018	partial	0	0	1980-2018	partial	
Iceland	30000–40000	37	2018	expert	+		2002-2014	partial	+		1980-2014	partial	
Malta	18700–37500	29	2017-2018	expert	-		2008-2013	expert	-		1980-2018	expert	
EU28	23700–238000	63											
Europe	**53700–278000**	**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
- Large decrease (≥50%)
- Moderate decrease (20–49%)
- Small decrease (<20%)
- Decrease of unknown magnitude
- Stable or fluctuating
- Unknown
- Present (no population or trend data)
- Extinct since 1980

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

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

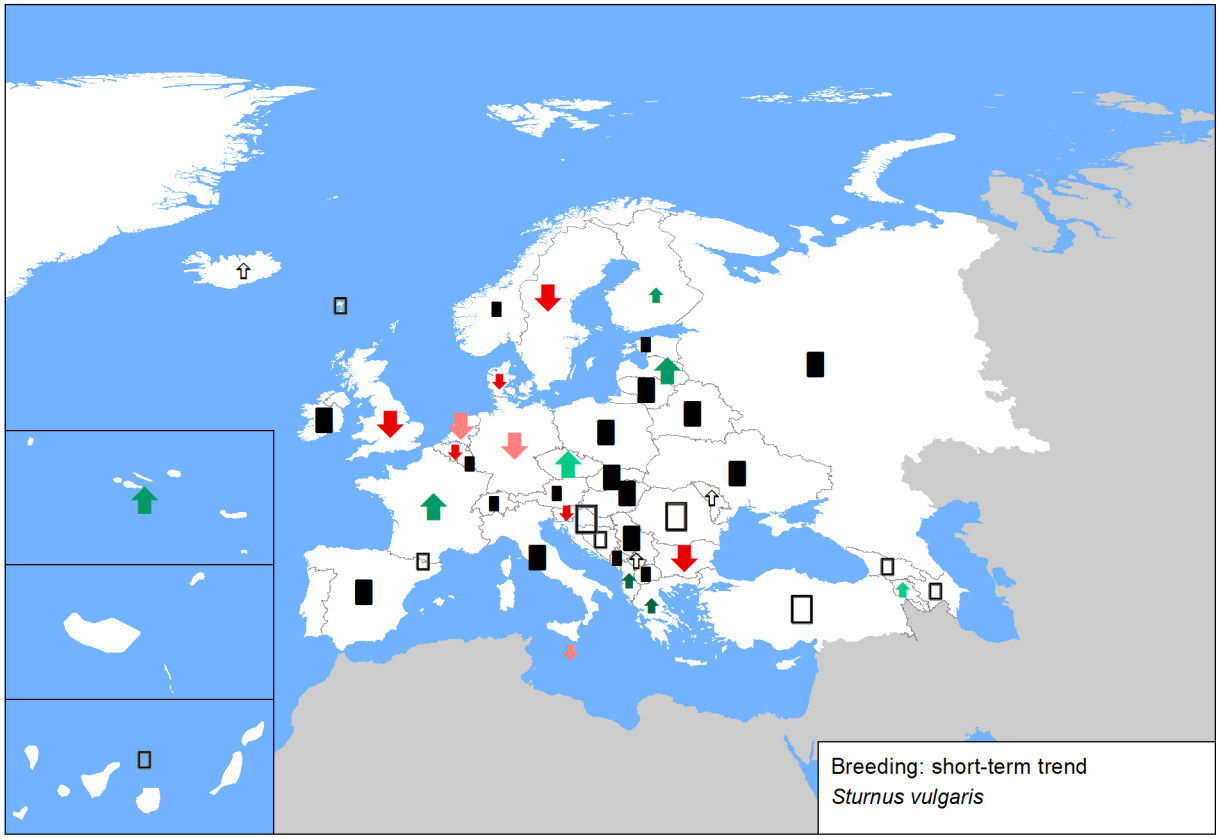


Figure 2. Breeding population sizes and long-term trends across Europe.

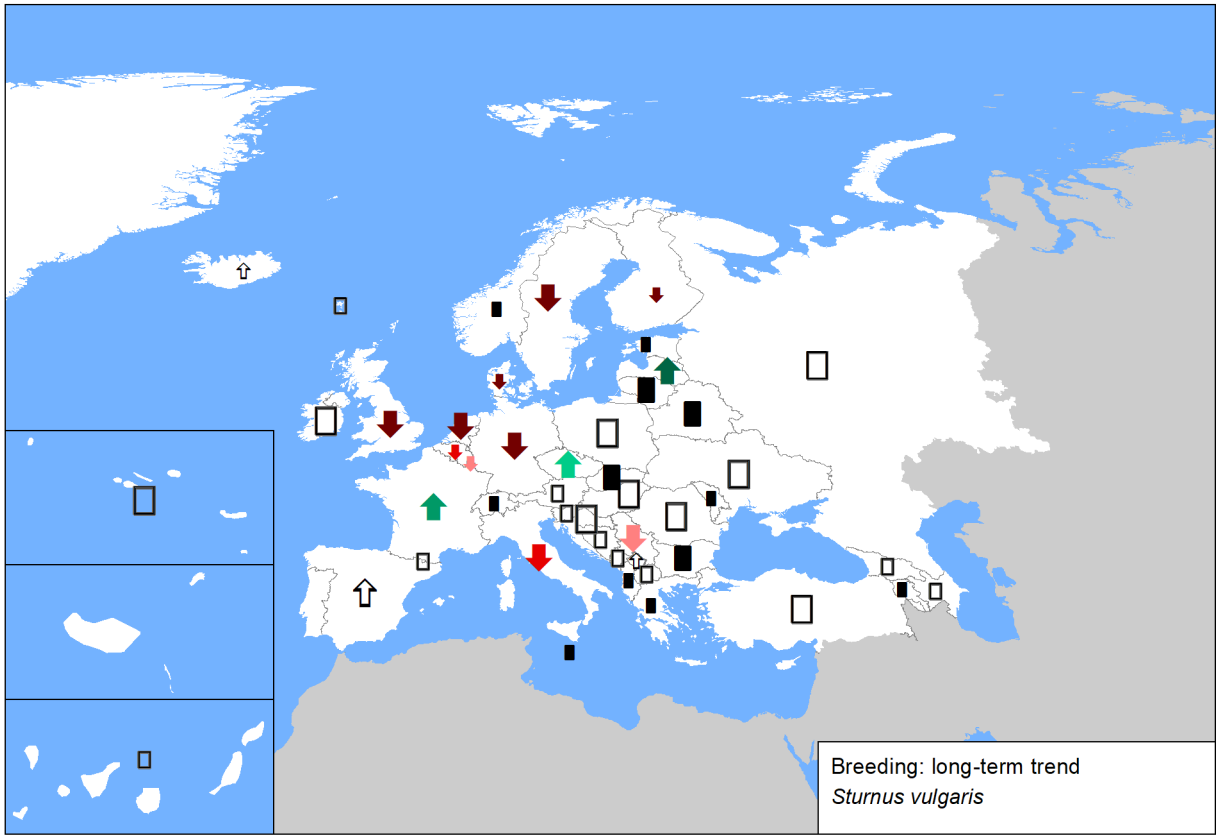


Figure 3. Reported wintering population sizes and short-term trends across Europe. Note that some countries within the species' wintering range did not report any data.

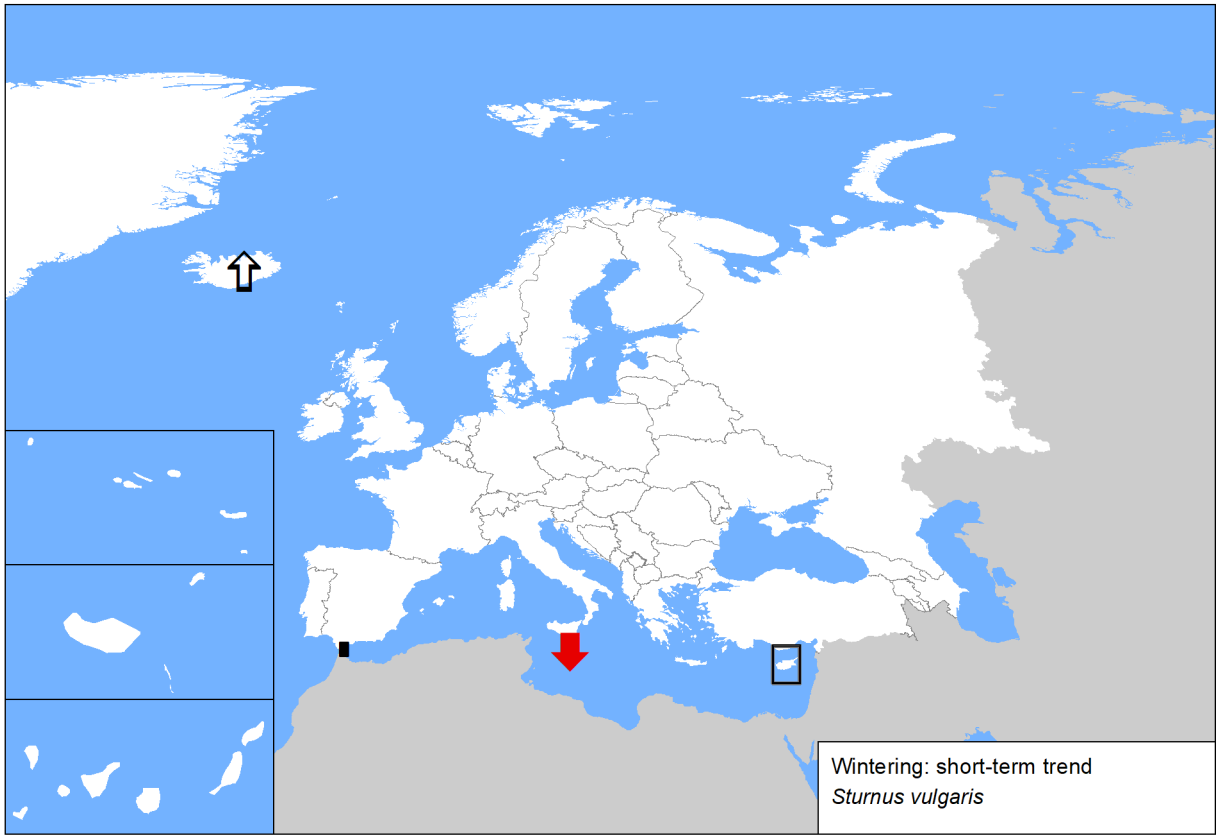
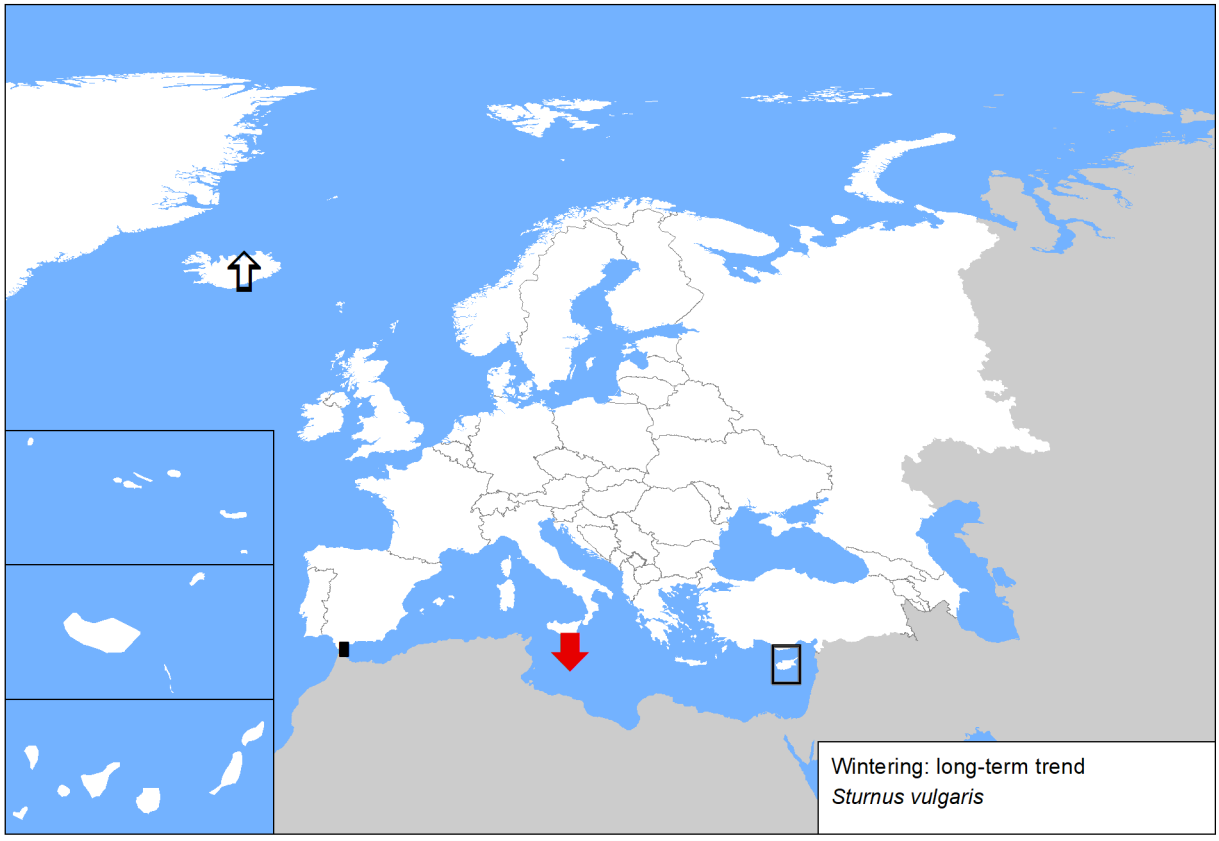


Figure 4. Reported wintering population sizes and long-term trends across Europe. Note that some countries within the species' wintering range did not report any data.



Sources

Albania

Breeding population size: Bino & Xeka 2020 in EBBA 2
Breeding short-term trend: Bino & Xeka pers. obs.
Breeding long-term trend: Bino pers. obs.

Andorra

Breeding population size: Fieldwork EBBA2, published at "Guia dels ocells d'Andorra. J. Nicolau & C. Pladevall, 2018"
Breeding short-term trend: Common Bird Monitoring Scheme of Andorra (SOCA)

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, estimate based on a sample of breeding densities from different sites and habitats and corrected by the results of the Austrian breeding bird monitoring ("Brutvogelmonitoring") for 1998- 2018
Breeding short-term trend: BirdLife Austria, results of the Austrian Breeding bird monitoring ("Brutvogelmonitoring")
Breeding long-term trend: BirdLife Austria, unpublished

Azerbaijan

Breeding population size: AOS data base
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: Nikiforov M.E., Kozulin A.V., eds. Belarussian birds at the beginning of XXI century: status, numbers, distribution. - 1997. - Minsk. - 187 p.

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.
Breeding short-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.
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)

Bulgaria

Breeding population size: Iankov, P. (ed.) 2007 Atlas of Breeding Birds in Bulgaria. Bulgarian Society for the Protection of Birds, Conservation Series, Book 10, Sofia, BSPB, 679 p.; National Art. 12 reporting database 2013-2018; SPAs mapping in 2012 Common Bird Monitoring Scheme http://bspb.org/monitoring/ Geographic Information System with Ornithologcal Information of BSPB; Ivanov B. 2011. Fauna of Bulgaria, Aves, part 3,195-200.
Breeding short-term trend: Common Bird Monitoring Scheme http://bspb.org/monitoring/; National Art. 12 reporting database 2013-2018; Population trend for the period 2005-2012.
Breeding long-term trend: Iankov, P. (ed.) 2007 Atlas of Breeding Birds in Bulgaria. Bulgarian Society for the Protection of Birds, Conservation Series, Book 10, Sofia, BSPB, 679 p.

Croatia

Breeding population size: Dumbović Mazal V., Pintar V., Zadravec M. (2019): Prvo izvješće o brojnosti i rasprostranjenosti ptica u Hrvatskoj sukladno odredbama Direktive o pticama.
Breeding short-term trend: no data available
Breeding 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. Very poor data (excluding bag data)

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 reports. 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

Denmark

Breeding population size: Charlotte M. Moshøj, Daniel Palm Eskildsen, Michael Fink Jørgensen & Thomas Vikstrøm, (2018): Overvågning af de almindelige fuglearter i Danmark 1975-2017 & Mandrup, E. 1997, Hvor mange fugle yngler i Danmark, Dansk Ornitologisk Tidsskrift, nr 3, 1997

Breeding short-term trend: Charlotte M. Moshøj, Daniel Palm Eskildsen, Michael Fink Jørgensen & Thomas Vikstrøm, (2018): Overvågning af de almindelige fuglearter i Danmark 1975-2017

Breeding long-term trend: Charlotte M. Moshøj, Daniel Palm Eskildsen, Michael Fink Jørgensen & Thomas Vikstrøm, (2018): Overvågning af de almindelige fuglearter i Danmark 1975-2017

DK: Faroe Is

Breeding population size: BirdLife International (2004) Birds in Europe: population estimates, trends and conservation status. BirdLife International, Cambridge, UK. Hammer et al. (2014) Færøsk trækfugleatlas [Faroese bird migration atlas]. Fróðskapur / Faroe University Press, Tórshavn.

Estonia

Breeding population size: Estonian Working Group on Bird Status and Numbers

Breeding short-term trend: [1] Estonian Working Group on Bird Status and Numbers [2] Point counts of breeding birds. http://seire.keskkonnainfo.ee/index.php?option=com_content&view=article&id=3417&Itemid=5815

Breeding long-term trend: Estonian Working Group on Bird Status and Numbers

Finland

Breeding population size: Lehikoinen, A. , Below, A., Jukarainen, A., Laaksonen, T., Lehtiniemi, T., Mikkola-Roos, M., Pessa, J., Rajasärkkä, A., Rusanen, P., Sirkiä, P., Tiainen, J. & Valkama, J. 2019: Suomen lintujen pesimäkantojen koot. – Linnut-vuosikirja 2018: 38-45.

Breeding short-term trend: Bird monitoring schemes of the Finnish Museum of Natural History, University of Helsinki.

Breeding long-term trend: Bird monitoring schemes of the Finnish Museum of Natural History, University of Helsinki.

France

Breeding population size: Issa N. & Muller Y. 2015. Atlas des oiseaux nicheurs de France métropolitaine. , LPO/SEOF/MNHN/Delachaux et Niestlé, Paris

Breeding short-term trend: Onkelinx, T., Devos, K., Jansen, I., Van Calster, H., & Quataert, P. 2017. Reply to the comment on 'Working with population totals in the presence of missing data comparing imputation methods in terms of bias and precision'by Bogaart et al. Journal of Ornithology, 158(3), 891-893 ; . STOC EPS / MNHN. ; Onkelinx, T., Devos, K., & Quataert, P. 2017. Working with population totals in the presence of missing data comparing imputation methods in terms of bias and precision. Journal of Ornithology, 158(2), 603-615

Breeding long-term trend: . STOC EPS / MNHN.

Georgia

Breeding population size: EBBA Georgia, prepared by Sabuko-Society for nature conservation, Ilia state university, NGO "psovi".

Germany

Breeding population size: Monitoring häufiger Brutvögel (http://www.dda-web.de/index.php?cat=monitoring&subcat=ha_neu&subsubcat=kontakt)

Breeding short-term trend: Monitoring häufiger Brutvögel (http://www.dda-web.de/index.php?cat=monitoring&subcat=ha_neu&subsubcat=kontakt)

Breeding long-term trend: Gerlach et al. (in Vorb.): Vögel in Deutschland – 2019. Dachverband Deutscher Avifaunisten, Bundesamt für Naturschutz und Länderarbeitsgemeinschaft der Vogelschutzwarten, Münster.

Gibraltar

Winter population size: Bensusan, K.J. & Perez, C.E. (2003). A Conservation Action Plan for MOD sites in Gibraltar: Gibraltar Ornithological & Natural History Society. GONHS. Cortes, J .E. (1978). Conservation – A Future? Semi - natural Nature Reserve, Gibraltar: A Management Plan. Gibraltar Ornithological and Natural History Society. GONHS. Cortes, J.E, (1996). Windmill Hill Flats: a good view of migration across the Straits of Gibraltar. Almoraima 15:163-184. Cortes, J.E., Finlayson J.C., Garcia, E.F.J., Mosquera, M.A.J., (1980). The Birds of Gibraltar. Gibraltar Books. Gibraltar. Environmental Action & Management Plan (2012). Government of Gibraltar. Gibraltar Bird Reports (2006 - 2012). Gibraltar Ornithological & Natural History Society Gibraltar Nature News (2006 – 2012). Bi-annual Publication. Gibraltar Ornithological & Natural History Society. Nature Protection Act 1991 (2013). Perez, C.E. (2013). Report on the Conservation of Terrestrial Flora & Fauna in Gibraltar (2012). Wildlife (Gibraltar) Ltd Perez, C.E. & Bensusan, K. J. (2005). Upper Rock Nature Reserve A Management and Action. Plan. Gibraltar: The Gibraltar Ornithological & Natural History Society (GONHS). Perez, C.E. (2006). Biodiversity Action Plan, Gibraltar: Planning for Nature. Gibraltar: Gibraltar Ornithological & Natural History Society (GONHS). Southern Waters of Gibraltar Management Scheme EU Natura 2000 Site (2012).

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Gibraltar

Winter short-term trend: Bensusan, K.J. & Perez, C.E. (2003). A Conservation Action Plan for MOD sites in Gibraltar: Gibraltar Ornithological & Natural History Society. GONHS. Cortes, J .E. (1978). Conservation – A Future? Semi - natural Nature Reserve, Gibraltar: A Management Plan. Gibraltar Ornithological and Natural History Society. GONHS. Cortes, J.E, (1996). Windmill Hill Flats: a good view of migration across the Straits of Gibraltar. Almoraima 15:163-184. Cortes, J.E., Finlayson J.C., Garcia, E.F.J., Mosquera, M.A.J., (1980). The Birds of Gibraltar. Gibraltar Books. Gibraltar. Environmental Action & Management Plan (2012). Government of Gibraltar. Gibraltar Bird Reports (2006 - 2012). Gibraltar Ornithological & Natural History Society Gibraltar Nature News (2006 – 2012). Bi-annual Publication. Gibraltar Ornithological & Natural History Society. Nature Protection Act 1991 (2013). Perez, C.E. (2013). Report on the Conservation of Terrestrial Flora & Fauna in Gibraltar (2012). Wildlife (Gibraltar) Ltd Perez, C.E. & Bensusan, K. J. (2005). Upper Rock Nature Reserve A Management and Action. Plan. Gibraltar: The Gibraltar Ornithological & Natural History Society (GONHS). Perez, C.E. (2006). Biodiversity Action Plan, Gibraltar: Planning for Nature. Gibraltar: Gibraltar Ornithological & Natural History Society (GONHS). Southern Waters of Gibraltar Management Scheme EU Natura 2000 Site (2012).
Winter long-term trend: Bensusan, K.J. & Perez, C.E. (2003). A Conservation Action Plan for MOD sites in Gibraltar: Gibraltar Ornithological & Natural History Society. GONHS. Cortes, J .E. (1978). Conservation – A Future? Semi - natural Nature Reserve, Gibraltar: A Management Plan. Gibraltar Ornithological and Natural History Society. GONHS. Cortes, J.E, (1996). Windmill Hill Flats: a good view of migration across the Straits of Gibraltar. Almoraima 15:163-184. Cortes, J.E., Finlayson J.C., Garcia, E.F.J., Mosquera, M.A.J., (1980). The Birds of Gibraltar. Gibraltar Books. Gibraltar. Environmental Action & Management Plan (2012). Government of Gibraltar. Gibraltar Bird Reports (2006 - 2012). Gibraltar Ornithological & Natural History Society Gibraltar Nature News (2006 – 2012). Bi-annual Publication. Gibraltar Ornithological & Natural History Society. Nature Protection Act 1991 (2013). Perez, C.E. (2013). Report on the Conservation of Terrestrial Flora & Fauna in Gibraltar (2012). Wildlife (Gibraltar) Ltd Perez, C.E. & Bensusan, K. J. (2005). Upper Rock Nature Reserve A Management and Action. Plan. Gibraltar: The Gibraltar Ornithological & Natural History Society (GONHS). Perez, C.E. (2006). Biodiversity Action Plan, Gibraltar: Planning for Nature. Gibraltar: Gibraltar Ornithological & Natural History Society (GONHS). Southern Waters of Gibraltar Management Scheme EU Natura 2000 Site (2012).

Greece

Breeding population size: (1) Hellenic Common Birds Monitoring Scheme database (2007-2019), Hellenic Ornithological Society, (2) BirdLife International (2017). European birds of conservation concern: populations, trends and national responsibilities. Cambridge. UK: BirdLife Internationa. ISBN 978-1-912086-00-9, (3) D. Portolou & V. Kati (2017). “Abundance and distribution of selected species – SEBI 01”. In: Kati V (Ed) “Greece-the state of environment 2015-2016: Nature and biodiversity. National report”. National Center of Environment and Sustainable Development, Athens, pp 3-20 – 3-36 [In Greek]. Available at: http://ekpaa.ypeka.gr/index.php/soer-2018
Breeding short-term trend: (1) Hellenic Common Birds Monitoring Scheme database (2007-2019), Hellenic Ornithological Society, (2) BirdLife International (2017). European birds of conservation concern: populations, trends and national responsibilities. Cambridge. UK: BirdLife Internationa. ISBN 978-1-912086-00-9, (3) D. Portolou & V. Kati (2017). “Abundance and distribution of selected species – SEBI 01”. In: Kati V (Ed) “Greece-the state of environment 2015-2016: Nature and biodiversity. National report”. National Center of Environment and Sustainable Development, Athens, pp 3-20 – 3-36 [In Greek]. Available at: http://ekpaa.ypeka.gr/index.php/soer-2018
Breeding long-term trend: 1) Handrinos,G., & Akriotis, T., (1997) The birds of Greece. C. Helm, A & C Black, London. 2) BirdLife International (2004) Birds in Europe:Population estimates, trends and conservation status. Cambridge, UK: Birdlife International (Birdlife Conservation Series No. 12).

Hungary

Breeding population size: Expert opinions. National common bird monitoring scheme (MMM) database.
Breeding short-term trend: Expert opinions. National common bird monitoring scheme (MMM) database.
Breeding long-term trend: Expert opinions. National common bird monitoring scheme (MMM) database.

Iceland

Breeding population size: Kristinn Haukur Skarphéðinsson, Borgný Katrínardóttir, Guðmundur A. Guðmundsson og Svenja N.V. Auhage 2016. Mikilvæg fuglasvæði á Íslandi. Fjölrit Náttúrufræðistofnunar Nr. 55. 295 s. rafræn útgáfa leiðrétt í nóvember 2017. http://utgafa.ni.is/fjolrit/Fjolrit_55.pdf;Icelandic Institute of Natural History, unpubl.data.
Breeding short-term trend: Icelandic Institute of Natural History. Mid-winter bird counts, https://www.ni.is/greinar/vetrarfuglatalningar-nidurstodur; Icelandic Institute of Natural History, unpubl.data.
Breeding long-term trend: Icelandic Institute of Natural History. Mid-winter bird counts, https://www.ni.is/greinar/vetrarfuglatalningar-nidurstodur; Icelandic Institute of Natural History, unpubl.data.
Winter population size: Icelandic Institute of Natural History. Mid-winter bird counts, https://www.ni.is/greinar/vetrarfuglatalningar-nidurstodur; Icelandic Institute of Natural History, unpubl.data.
Winter short-term trend: Icelandic Institute of Natural History. Mid-winter bird counts, https://www.ni.is/greinar/vetrarfuglatalningar-nidurstodur; Icelandic Institute of Natural History, unpubl.data.
Winter long-term trend: Icelandic Institute of Natural History. Mid-winter bird counts, https://www.ni.is/greinar/vetrarfuglatalningar-nidurstodur; Icelandic Institute of Natural History, unpubl.data.

Republic of Ireland

Breeding population size: Lewis, L. J., Coombes, D., Burke, B., O’Halloran, J., Walsh, A., Tierney, T. D. & Cummins, S. (2019) Countryside Bird Survey: Status and trends of common and widespread breeding birds 1998-2016. Irish Wildlife Manuals (in prep). National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.
Breeding short-term trend: Lewis, L. J., Coombes, D., Burke, B., O’Halloran, J., Walsh, A., Tierney, T. D. & Cummins, S. (2019) Countryside Bird Survey: Status and trends of common and widespread breeding birds 1998-2016. Irish Wildlife Manuals (in prep). National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.
Breeding long-term trend: Lewis, L. J., Coombes, D., Burke, B., O’Halloran, J., Walsh, A., Tierney, T. D. & Cummins, S. (2019) Countryside Bird Survey: Status and trends of common and widespread breeding birds 1998-2016. Irish Wildlife Manuals (in prep). National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.

Italy

Breeding population size: BirdLife International 2017. European birds of conservation concern: populations, trends and national responsibilities. Cambridge, UK: BirdLife International.
Breeding short-term trend: Extrapolated data by the average annual trend, from: Rete Rurale Nazionale & Lipu (2018). Uccelli comuni delle zone agricole in Italia. Aggiornamento degli andamenti di popolazione e del FBI per la Rete Rurale Nazionale dal 2000 al 2017. 16 pp.

Italy

Breeding long-term trend: Brichetti P., Meschini E., 1993. Stima delle popolazioni di uccelli nidificanti. In Meschini E., Frugis S.,1993. Atlante degli uccelli nidificanti in Italia. Suppl. Ric. Biol. Selvaggina, 20, 1-345.

Kosovo

Breeding population size: Qenan Maxhuni

Breeding short-term trend: Qenan Maxhuni

Breeding long-term trend: Puzovic, S. et al. (2004): Birds of Serbia and Montenegro – Size of nesting populations. I trends: 1990-2002. Ciconia 12

Latvia

Breeding population size: Aunins A., Mardega I. 2018. [Countrywide monitoring of the common birds. Final report for the year 2018.] (in Latvian) Latvian Ornithological society

Breeding short-term trend: Aunins A., Mardega I. 2018. [Countrywide monitoring of the common birds. Final report for the year 2018.] (in Latvian) Latvian Ornithological society

Breeding long-term trend: Aunins A., Mardega I. 2018. [Countrywide monitoring of the common birds. Final report for the year 2018.] (in Latvian) Latvian Ornithological society

Lithuania

Breeding population size: Expert working group of the Lithuanian Ornithological Society (lod@birdlife.lt) 2015-2018. Lietuvos perinčių paukščių atlaso duomenų bazė (Lithuanian Breeding Birds Atlas Database). Vilnius. Ministry of Environment of the Republic of Lithuania. 2012. Status and trends of bird populations (Article 12, Birds Directive 2009/147/EC) National Summary 2008-2012 Lithuania.

Breeding short-term trend: Expert working group of the Lithuanian Ornithological Society (lod@birdlife.lt) 2015-2018. Lietuvos perinčių paukščių atlaso duomenų bazė (Lithuanian Breeding Birds Atlas Database). Vilnius. Ministry of Environment of the Republic of Lithuania. 2012. Status and trends of bird populations (Article 12, Birds Directive 2009/147/EC) National Summary 2008-2012 Lithuania.

Breeding long-term trend: Logminas, V. (ed.). 1991. Lietuvos fauna: paukščiai. Vilnius: „Mokslas". Kurlavičius, P. (ed.) 2006. Lietuvos perinčių paukščių atlasas. Kaunas: „Lututė". Expert working group of the Lithuanian Ornithological Society (lod@birdlife.lt) BirdLife International/European Bird Cencus Council. 2000. European bird populations: estimates and trends. Cambridge, UK: BirdLife International (BirdLife Conservation Series No. 10). Raudonikis L. 2004. Important Bird Areas of the European Union Importance in Lithuania. Lithuanian Ornithological Society & Institute of Ecology of Vilnius University. Lutute, Vilnius. Jusys, V., Karalius, S., Raudonikis, L. 2012. Lietuvos paukščių pažinimo vadovas. Kaunas: „Lututė". Ministry of Environment of the Republic of Lithuania. 2012. Status and trends of bird populations (Article 12, Birds Directive 2009/147/EC) National Summary 2008-2012 Lithuania. Expert working group of the Lithuanian Ornithological Society (lod@birdlife.lt) 2015-2018. Lietuvos perinčių paukščių atlaso duomenų bazė (Lithuanian Breeding Birds Atlas Database). Vilnius.

Luxembourg

Breeding population size: Ornitho.lu (2018): online database natur&ëmwelt asbl & Dachverband Deutscher Avifaunisten (DDA) e.V.; Luxembourg Recorder (2018): database Musée national d'histoire naturelle; Luxembourg Lorgé P., E. Melchior (2016): Die Vögel Luxemburgs. Natur&ëmwelt Luxembourg. ISBN: 978-2-919920-01-3

Breeding short-term trend: Ornitho.lu (2018): online database natur&ëmwelt asbl & Dachverband Deutscher Avifaunisten (DDA) e.V.; Luxembourg Recorder (2018): database Musée national d'histoire naturelle; Luxembourg Lorgé P., E. Melchior (2016): Die Vögel Luxemburgs. Natur&ëmwelt Luxembourg. ISBN: 978-2-919920-01-3; LUXOR (2018): natur&ëmwelt – Bird-database, Luxembourg

Breeding long-term trend: Ornitho.lu (2018): online database natur&ëmwelt asbl & Dachverband Deutscher Avifaunisten (DDA) e.V.; Luxembourg Recorder (2018): database Musée national d'histoire naturelle; Luxembourg Lorgé P., E. Melchior (2016): Die Vögel Luxemburgs. Natur&ëmwelt Luxembourg. ISBN: 978-2-919920-01-3; LUXOR (2018): natur&ëmwelt – Bird-database, Luxembourg

North Macedonia

Breeding population size: unpublished data from the European Breeding Bird Atlas 2

Breeding short-term trend: unpublished data from the European Breeding Bird Atlas 2

Malta

Breeding population size: Malta Breeding Bird Atlas (2018) in preparation, (included a complete breeding bird population census in Malta together with a wintering bird census in 2017-2018)

Breeding short-term trend: Raine, A., Sultana, J. and Gillings, S. (2008). Malta Breeding Bird Atlas 2008. BirdLife Malta. Sultana, J., Borg J.J., Gauci, C. and Falzon, V., (2011). The Breeding Birds of Malta. BirdLife Malta.

Breeding long-term trend: Raine, A., Sultana, J. and Gillings, S. (2008). Malta Breeding Bird Atlas 2008. BirdLife Malta. Sultana, J., Borg J.J., Gauci, C. and Falzon, V., (2011). The Breeding Birds of Malta. BirdLife Malta.

Winter population size: Birdlife Malta (Unpublished data)

Winter short-term trend: "BirdLife International (2017)European birds of conservation concern:populations, trends and national responsibilitiesCambridge, UK: BirdLife International Pan-European Common Bird Monitoring Scheme (PECBMS) (2018) Trends of common birds in Europe, https://pecbms.info/trends_2018/

Winter long-term trend: "BirdLife International (2017)European birds of conservation concern:populations, trends and national responsibilitiesCambridge, UK: BirdLife International Pan-European Common Bird Monitoring Scheme (PECBMS) (2018) Trends of common birds in Europe, https://pecbms.info/trends_2018/"

Moldova

Breeding population size: Moldova`s contribution for the second European Breeding Bird Atlas (EBBA2)

Breeding short-term trend: SPPN expert opinion (sppn.moldova@gmail.com)

Breeding long-term trend: SPPN expert opinion (sppn.moldova@gmail.com)

Montenegro

Breeding population size: Puzovic, S., Simic, D., Saveljić, D., Gergelj, J., Tucakov,M.,Stojnic,N., Hulo, I., Ham, I., Vizi,O., Sciban,M., Ruzic,M., Vucanovic,M., Jovanovic, T. (2004): Birds of Serbia and Montenegro – Size of nesting populations. I trends: 1990-2002. Ciconia 12,

Netherlands

Breeding population size: Sovon Bird atlas (Sovon 2018)

Breeding short-term trend: NEM (Sovon, RWS, CBS, provincies)

Breeding long-term trend: NEM (Sovon, RWS, CBS, provincies)

Norway

Breeding population size: Shimmings P. & Øien, I.J. 2015. Bestandsestimater og trender for norske hekkefugler. NOF-rapport 2015-2.

Breeding short-term trend: Terrestrial monitoring programme - extensive (TOV-e)

Breeding long-term trend: Shimmings P. & Øien, I.J. 2015. Bestandsestimater og trender for norske hekkefugler. NOF-rapport 2015-2.

Poland

Breeding population size: State Environmental Monitoring / Chief Inspectorate of Environmental Protection (survey: MPPL – Common Bird Survey)

Breeding short-term trend: State Environmental Monitoring / Chief Inspectorate of Environmental Protection (survey: MPPL)

Breeding long-term trend: Chief Inspectorate of Environmental Protection & Polish Society for the Protection of Birds (OTOP) / BirdLife Poland

PT: Azores

Breeding population size: DRA (Data from 2018 not published; obtained from DRA monitoring scheme) Fontaine R., Fonseca A. & Gonçalves D. 2018 . Censo de pombo das rochas, rola turca, melro preto, estorninho malhado e milhafre Arquipélago dos Açores 2014-2017. CIBIO/InBIO Universidade do Porto, Universidade dos Açores.

Breeding short-term trend: Alonso H., Coelho R., Costa J., Gouveia C., Leitão D., Machado R., & Teodósio J. 2019. Relatório do Censo de Aves Comuns 2004-2018. Sociedade Portuguesa para o Estudo das Aves, Lisboa. URL: http://www.spea.pt/pt/estudo-e-conservacao/censos/censo-de-aves-comuns/

Breeding long-term trend: No sources available.

Romania

Breeding population size: Romanian Common Bird Monitoring Programme, Ornitodata (Romanian Ornithological Society) Database, OpenBirdMaps (Milvus Group) Database

Breeding short-term trend: Romanian Common Bird Monitoring Programme, Ornitodata (Romanian Ornithological Society) Database, OpenBirdMaps (Milvus Group) Database

Breeding long-term trend: Ornitodata (Romanian Ornithological Society) Database, OpenBirdMaps (Milvus Group) Database, Rombird (Romanian Rarity Commission) Database

Russia

Breeding population size: Voltzit & Kalyakin 2013-2019; Database of the project on Atlas of breeding birds of European Russia

Breeding short-term trend: Morkovin et al. 2017; Travin et al. 2017; Mischenko expert opinion. almovs@mail.ru; Sarychev expert opinion. vssar@yandex.ru

Serbia

Breeding population size: EBBA2 project; Puzović, S., Radišić, D., Ružić, M., Rajković, D., Radaković, M., Pantović, U., Janković, M., Stojnić, N., Šćiban, M., Tucakov, M., Gergelj, J., Sekulić, G., Agošton, A. & Raković, M. 2015. Birds of Serbia: Breeding Population Estimates and Trends for the Period 2008-2013. Bird protection and study society of Serbia, and Department of Biology and Ecology, Faculty of Sciences, University of Novi Sad, Novi Sad.

Breeding short-term trend: Puzović, S., Radišić, D., Ružić, M., Rajković, D., Radaković, M., Pantović, U., Janković, M., Stojnić, N., Šćiban, M., Tucakov, M., Gergelj, J., Sekulić, G., Agošton, A. & Raković, M. 2015. Birds of Serbia: Breeding Population Estimates and Trends for the Period 2008-2013. Bird protection and study society of Serbia, and Department of Biology and Ecology, Faculty of Sciences, University of Novi Sad, Novi Sad.

Breeding long-term trend: Puzović, S., Radišić, D., Ružić, M., Rajković, D., Radaković, M., Pantović, U., Janković, M., Stojnić, N., Šćiban, M., Tucakov, M., Gergelj, J., Sekulić, G., Agošton, A. & Raković, M. 2015. Birds of Serbia: Breeding Population Estimates and Trends for the Period 2008-2013. Bird protection and study society of Serbia, and Department of Biology and Ecology, Faculty of Sciences, University of Novi Sad, Novi Sad.

Slovakia

Breeding population size: Coordinatory group for reporting 2019. Danko Štefan, Darolová Alžbeta, Krištín Anton: Rozšírenie vtákov na Slovensku. VEDA, vyd. SAV Bratislava, 2002. Krištín in litt.

Breeding short-term trend: Coordinatory group for reporting 2019, AVES-Symfony Database 2013-2018, KIMS Database 2013-2018. Danko Štefan, Darolová Alžbeta, Krištín Anton: Rozšírenie vtákov na Slovensku. VEDA, vyd. SAV Bratislava, 2002. Ridzoň in litt. (www.vtaky.sk, 2019, manuscript in preparation), Krištín in litt.

Breeding long-term trend: Coordinatory group for reporting 2019, AVES-Symfony Database 2013-2018, KIMS Database 2013-2018. Danko Štefan, Darolová Alžbeta, Krištín Anton: Rozšírenie vtákov na Slovensku. VEDA, vyd. SAV Bratislava, 2002. Ridzoň in litt. (www.vtaky.sk, 2019, manuscript in preparation), Krištín in litt.

Slovenia

Breeding population size: Mihelič T., Kmecl P., Denac K., Koce U., Vrezec A., Denac D. (eds.) (2019): Atlas ptic Slovenije. Popis gnezdilk 2002–2017. (The atlas of birds of Slovenia. The census of breeding birds 2002-2017.) – DOPPS, Ljubljana. Kmecl P. & Šumrada T. (2018): Monitoring splošno razširjenih vrst ptic za določitev slovenskega indeksa ptic kmetijske krajine - končno poročilo za leto 2018. (Monitoring of common bird species for the determination of Slovenian farmland bird index - final report for the year 2018.) – DOPPS, Ljubljana.

Breeding short-term trend: Kmecl P. & Šumrada T. (2018): Monitoring splošno razširjenih vrst ptic za določitev slovenskega indeksa ptic kmetijske krajine - končno poročilo za leto 2018. (Monitoring of common bird species for the determination of Slovenian farmland bird index - final report for the year 2018.) – DOPPS, Ljubljana.

Breeding long-term trend: There are no sources for this information.

Spain

Breeding population size: Martí, R. & del Moral, J.C. (Eds.) (2003). Atlas de las Aves Reproductoras de España. Dirección General de Conservación de la Naturaleza-Sociedad Española de Ornitología. Madrid, 733 pp. (https://www.miteco.gob.es/es/biodiversidad/temas/inventarios-nacionales/inventario-especies-terrestres/inventario-nacional-de-biodiversidad/ieet_aves_atlas.aspx)

Spain

Breeding short-term trend: Información proporcionada por las Comunidades Autónomas. SEO/BirdLife (2019). Programas de seguimiento y grupos de trabajo de SEO/BirdLife 2018. SEO/BirdLife. Madrid. (https:doi.org/10.31170/0073)

Breeding long-term trend: Birdlife International/European Bird Census Council (2000) European bird populations: estimates and trends. Cambridge, UK: Birdlife International (Birdlife Conservation Series No. 10) Hagemeijer, E.J. & Blair, M.J. (Eds.) (1997). The EBCC Atlas of European Breeding birds: Their distribution and abundance. T & A D Poyser, London. Martí, R. & del Moral, J.C. (Eds.) (2003). Atlas de las Aves Reproductoras de España. Dirección General de Conservación de la Naturaleza- Sociedad Española de Ornitología. Madrid, 733 pp. (https://www.miteco.gob.es/es/biodiversidad/temas/inventarios-nacionales/inventario-especies-terrestres/inventario-nacional-de-biodiversidad/ieet_aves_atlas.aspx)

ES: Canary Is

Breeding population size: Lorenzo, J.A. (2007) (Ed). Atlas de las Aves Nidificantes en el Archipiélago Canario (1997-2003). Dirección General de Conservación de la Naturaleza-Sociedad Española de Ornitología. Madrid. 520 pp.

Breeding short-term trend: Lorenzo, J.A. (2007) (Ed). Atlas de las Aves Nidificantes en el Archipiélago Canario (1997-2003). Dirección General de Conservación de la Naturaleza-Sociedad Española de Ornitología. Madrid. 520 pp.

Breeding long-term trend: Lorenzo, J.A. (2007) (Ed). Atlas de las Aves Nidificantes en el Archipiélago Canario (1997-2003). Dirección General de Conservación de la Naturaleza-Sociedad Española de Ornitología. Madrid. 520 pp. Martín, A. & Lorenzo, J.A. (2001). Aves del Archipiélago Canario. Francisco Lemus Editor. La Laguna. 787 pp.

Sweden

Breeding population size: Ottosson, U., Ottvall, R., Elmberg, J., Green, M., Gustafsson, R., Haas, F., Holmqvist, N., Lindström, Å., Nilsson, L., Svensson, M., Svensson, S. & Tjernberg, M. 2012. Fåglarna i Sverige – antal och förekomst. SOF, Halmstad. Swedish Bird Survey. BirdLife Sverige, Annual Bird reports.

Breeding short-term trend: Svensk fågeltaxering - Swedish Bird Survey

Breeding long-term trend: Svensk fågeltaxering - Swedish Bird Survey

Switzerland

Breeding population size: Knaus, P., S. Antoniazza, S. Wechsler, J. Guélat, M. Kéry, N. Strebel & T. Sattler (2018): Swiss Breeding Bird Atlas 2013–2016. Distribution and population trends of birds in Switzerland and Liechtenstein. Swiss Ornithological Institute, Sempach.

Breeding short-term trend: https://www.vogelwarte.ch/en/projects/population-trends/breeding-population-indices/

Breeding long-term trend: https://www.vogelwarte.ch/en/projects/population-trends/breeding-population-indices/

Turkey

Breeding population size: Birdlife International (2004) Birds in Europe: population estimates, trends and conservation status, Cambridge UK: Birdlife International (Birdlife Conservation series no: 12) Kusbank Bird Database (Ebird)

Ukraine

Breeding population size: Atlas work, non-published data

United Kingdom

Breeding population size: Baseline = Newson, S.E., Evans, K.L., Noble, D.G., Greenwood, J.J.D. & Gaston, K.J. 2008. Use of distance sampling to improve estimates of national population sizes for common and widespread breeding birds in the UK. Journal of Applied Ecology 45: 1330-1338. Extrapolation from 2006 using Breeding Bird Survey monitoring trend.

Breeding short-term trend: BTO/JNCC/RSPB Breeding Bird Survey data: Harris, S.J., Massimino, D., Gillings, S., Eaton, M.A., Noble, D.G., Balmer, D.E., Procter, D., PearceHiggins, J.W. & Woodcock, P. 2018. The Breeding Bird Survey 2017. BTO Research Report 706 British Trust for Ornithology, Thetford. https://www.bto.org/sites/default/files/bbs-report-2017.pdf

Breeding long-term trend: Joint Common Bird Census/Breeding Bird Survey smoothed trend index. Woodward, I.D., Massimino, D., Hammond, M.J., Harris, S.J., Leech, D.I., Noble, D.G., Walker, R.H., Barimore, C., Dadam, D., Eglington, S.M., Marchant, J.H., Sullivan, M.J.P., Baillie, S.R. & Robinson, R.A. (2018) BirdTrends 2018: trends in numbers, breeding success and survival for UK breeding birds. Research Report 708. BTO, Thetford. www.bto.org/birdtrends

Bibliography

Bird, J. P., Martin, R., Akçakaya, H. R., Gilroy, J., Burfield, I. J., Garnett, S. G., Symes, A., Taylor, J., Sekercioglu, Ç. H. and Butchart, S. H. M. 2020. Generation lengths of the world's birds and their implications for extinction risk. Conservation Biology 34(5): 1252-1261. DOI: 10.1111/cobi.13486.

Brazil, M. 2009. Birds of East Asia: eastern China, Taiwan, Korea, Japan, eastern Russia. Christopher Helm, London.

Craig, A. and Feare, C. 2015. Common Starling (Sturnus vulgaris). In: J. del Hoyo, A. Elliott, J. Sargatal, D.A. Christie & E. de Juana (eds), Handbook of the Birds of the World Alive, Lynx Edicions, Barcelona.

Crick, H.Q.P., Dudley, C., Glue, D.E. and Thomson, D.L. 1997. UK birds are laying earlier. Nature 388: 526.

Gordo, O. and Sanz, J.J. 2005. Phenology and climate change: a long-term study in a Mediterranean locality. Oecologia 146: 484-495.

Hagemeijer, E.J.M. and Blair, M.J. 1997. The EBCC atlas of European breeding birds: their distribution and abundance. T. and A.D. Poyser, London.

Jenni, L. and Kery, M. 2003. Timing of autumn bird migration under climate change: advances in long-distance migrants, delays in short-distance migrants. Proceedings of the Royal Society of London Series B 270(1523): 1467-1471.

Rich, T.D., Beardmore, C.J., Berlanga, H., Blancher, P.J., Bradstreet, M.S.W., Butcher, G.S., Demarest, D.W., Dunn, E.H., Hunter, W.C., Inigo-Elias, E.E., Martell, A.M., Panjabi, A.O., Pashley, D.N., Rosenberg, K.V., Rustay, C.M., Wendt, J.S. and Will, T.C. 2004. Partners in flight: North American landbird conservation plan. Cornell Lab of Ornithology, Ithaca, NY.

Snow, D.W. and Perrins, C.M. 1998. The Birds of the Western Palearctic, Volume 2: Passerines. Oxford University Press, Oxford.

Sokolov, L.V. and Gordienko, N.S. 2008. Has recent climate warming affected the dates of bird arrival to the Il'men Reserve in the Southern Urals? Russian Journal of Ecology 39: 56-62.

Tryjanowski, P., Flux, J.E.C. and Sparks, T.H. 2006. Date of breeding of the starling Sturnus vulgaris in New Zealand is related to El Nino Southern Oscillation. Austral Ecology 31: 634-637.

Vähätalo, A.V., Rainio, K., Lehikoinen, A. and Lehikoinen, E. 2004. Spring arrival of birds depends on the North Atlantic Oscillation. Journal of Avian Biology 35: 210-216.