



THE IUCN RED LIST  
OF THREATENED SPECIES™



## ***Troglodytes troglodytes* (Northern Wren)**

### **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**

Reported national population sizes and trends  
Trend maps of reported national population data  
Sources of reported national population data  
Species factsheet bibliography

#### **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](mailto:science@birdlife.org).

*Troglodytes troglodytes* (Northern Wren)

**Table 1.** Reported national breeding population size and trends in Europe<sup>1</sup>.

Country (or territory) <sup>2</sup>	Population estimate				Short-term population trend <sup>5</sup>				Long-term population trend <sup>5</sup>				Subspecific population (where relevant)
	Size (pairs) <sup>3</sup>	Europe (%)	Year(s)	Method <sup>4</sup>	Direction <sup>6</sup>	Magnitude (%) <sup>7</sup>	Year(s)	Method <sup>4</sup>	Direction <sup>6</sup>	Magnitude (%) <sup>7</sup>	Year(s)	Method <sup>4</sup>	
Albania	1300–2900	<1	2007-2018	partial	0	-42 to 32	2007-2018	partial	-	-42 to 32	1980-2018	expert	
Andorra	1200–3700	<1	2014-2017	partial	?		2011-2018	complete	?				
Armenia	8800–12000	<1	2013-2018	complete	0		2007-2018		0		2003-2018	partial	
Austria	180000–290000	<1	2013-2018	partial	0		2007-2018	complete	?		1981-2018	deficient	all others
Azerbaijan	10000–100000	<1	1996-2019	expert	?		2013-2019	expert	?		1980-2019	expert	
Belarus	600000–800000	2	2010-2018	partial	0	-10 to 10	2012-2019	expert	0	0	1980-2019	expert	
Belgium	369000–576000	1	2013-2018	expert	0	-3 to 8	2008-2018	complete	+	54 to 140	1973-2018	partial	all others
Bosnia & HG	30000–60000	<1	2015-2018	complete	?	-10 to 10	2007-2018	complete	?		1980-2018	deficient	
Bulgaria	50000–100000	<1	2005-2018	partial	0		2000-2018	partial	0		1980-2018	partial	all others
Croatia	200000–400000	<1	2013-2018	expert	?		2007-2018	deficient	?		1980-2018	deficient	all others
Cyprus	3000–9000	<1	2013-2018	partial	+	28 to 50	2007-2018	partial	0	0	1980-2018	expert	all others
Czechia	130000–260000	<1	2014-2017	complete	0		2007-2018	complete	+		1982-2018	complete	all others
Denmark	432000–433000	1	2017	partial	F	-64 to 166	2006-2017	complete	F	-12 to 105	1980-2017	complete	all others
DK: Faroe Is	600–850	<1	2001	expert	?				?				
Estonia	250000–300000	<1	2013-2017	expert	0	13 to 31	2007-2018	expert	+	22 to 36	1983-2018	expert	all others
Finland	86400–302000	<1	2013-2018	complete	+	48 to 103	2007-2018	complete	+	96 to 270	1984-2018	complete	all others
France	3000000–7000000	11	2013-2018	partial	0		2007-2018	complete	-	-20	2001-2018	complete	all others
Georgia	25600–257000	<1	2013-2017	partial	?			deficient	?				
Germany	2550000–3000000	7	2016-2016	complete	0	-9 to 1	2004-2016	complete	0		1980-2016	expert	all others
Gibraltar	50–100	<1	2014-2018	partial	0	0	2001-2018	partial	0	0	1980-2018	partial	all others
Greece	50000–100000	<1	2015	partial	0		2007-2018	partial	+		1980-2018	partial	all others
Hungary	46000–71000	<1	2014-2018	complete	?	-18 to 67	2007-2018	complete	0		1980-2018	partial	all others
Iceland	3000–5000	<1	2000	expert	0		2002-2014	partial	+		1980-2014	partial	
Rep. Ireland	4710000–12900000	14	2011-2016	complete	+	3 to 10	2006-2016	complete	?		1980-2016	deficient	all others
Italy	1000000–2500000	4	2013-2018	expert	0		2000-2014	partial	0		1993-2018	expert	all others
Kosovo	13000–15000	<1	2007-2019	partial	-		2007-2018	partial	?		1990-2018	partial	
Latvia	446000–570000	1	2016-2016	complete	+	17 to 76	2005-2018	complete	+	105 to 106	1991-2016	partial	all others
Lithuania	80000–100000	<1	2013-2018	partial	0	0	2013-2018	partial	0	0	1980-2018	partial	all others
Luxembourg	15000–20000	<1	2013-2018	partial	0	0	2007-2018	partial	?		1980-2018	expert	all others
North Macedonia	50000–100000	<1	2014-2019	expert	0		2007-2018	expert	?		1980-2019		
Moldova	6000–8200	<1	2014-2017	partial	0		2007-2018	partial	0		1990-2018	expert	
Montenegro	15000–20000	<1	2002-2012	expert	0		2007-2018	expert	?				

*Troglodytes troglodytes* (Northern Wren)

**Table 1.** Reported national breeding population size and trends in Europe<sup>1</sup>.

Country (or territory) <sup>2</sup>	Population estimate				Short-term population trend <sup>5</sup>				Long-term population trend <sup>5</sup>				Subspecific population (where relevant)
	Size (pairs) <sup>3</sup>	Europe (%)	Year(s)	Method <sup>4</sup>	Direction <sup>6</sup>	Magnitude (%) <sup>7</sup>	Year(s)	Method <sup>4</sup>	Direction <sup>6</sup>	Magnitude (%) <sup>7</sup>	Year(s)	Method <sup>4</sup>	
Netherlands	400000–600000	1	2013-2015	complete	0	-3 to 6	2006-2017	complete	+	71 to 102	1984-2017	complete	all others
Norway	350000–700000	1	2013-2018	expert	F		2013-2018	partial	F		1980-2018	partial	
Poland	656000–1300000	2	2013-2018	complete	+	11 to 35	2007-2018	complete	?		1980-2018	deficient	all others
Portugal	500000–2000000	2	2013-2018	partial	0		2004-2018	partial	0		1980-2018	partial	all others
Romania	339000–576000	1	2013-2015	complete	?	-9 to 9	2008-2018	complete	?		1980-2018	deficient	all others
Russia	1200000–3500000	5	2008-2018	partial	0		2008-2018	expert	0		1980-2018	expert	
Serbia	35500–55000	<1	2013-2018	partial	0	0	2007-2018	complete	0	0	1980-2018	complete	
Slovakia	100000–200000	<1	2013-2018	partial	0		2007-2018	partial	0		1980-2018	partial	all others
Slovenia	74000–101000	<1	2018-2018	complete	?		2008-2018	complete	?		1980-2018	deficient	all others
Spain	2750000–3600000	8	2004-2006	partial	+		2007-2018	partial	0		1980-2018	partial	all others
Sweden	812000–897000	2	2013-2018	partial	+	64 to 81	2007-2018	partial	+	253 to 370	1980-2018	partial	all others
Switzerland	400000–550000	1	2013–2016	partial	0	-24 to 52	2007-2018	complete	+	32 to 89	1990-2018	complete	
Turkey	400000–1200000	2	2002-2012	expert	?		2008-2019	deficient	?		1980-2013	deficient	
Ukraine	70000–140000	<1	2015-2017	partial	F	5 to 10	2007-2019	expert	F	10 to 20	1980-2019	expert	
United Kingdom	10800000–10900000	27	2016	partial	+	15	2004-2016	complete	+	77	1980-2016	complete	all others
United Kingdom	38	<1	2012-2016	complete	+	35	2001-2016	complete	+	122	1978-2016	complete	fridariensis
EU28	30000000–49000000	88											
<b>Europe</b>	<b>33200000–56500000</b>	<b>100</b>											

<sup>1</sup> 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>.

<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> 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) Deficient: insufficient or no data available.

<sup>5</sup> 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.

<sup>6</sup> Trend directions are reported as: increasing (+); decreasing (-); stable (0); fluctuating (F); or unknown (?).

<sup>7</sup> Trend magnitudes are rounded to the nearest integer.

*Troglodytes troglodytes* (Northern Wren)

**Table 2.** Reported national wintering population sizes and trends in Europe<sup>1</sup>. 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) <sup>2</sup>	Population estimate				Short-term population trend <sup>5</sup>				Long-term population trend <sup>5</sup>				Subspecific population (where relevant)
	Size (individuals) <sup>3</sup>	Europe (%)	Year(s)	Method <sup>4</sup>	Direction <sup>6</sup>	Magnitude (%) <sup>7</sup>	Year(s)	Method <sup>4</sup>	Direction <sup>6</sup>	Magnitude (%) <sup>7</sup>	Year(s)	Method <sup>4</sup>	
Iceland	10000–15000	100	2018	expert	0		2002-2014	partial	+		1980-2014	partial	
<b>Europe</b>	<b>10000–15000</b>	<b>100</b>											

<sup>1</sup> 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>.

<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> 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.

<sup>5</sup> 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.

<sup>6</sup> Trend directions are reported as: increasing (+); decreasing (-); stable (0); fluctuating (F); or unknown (?).

<sup>7</sup> 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

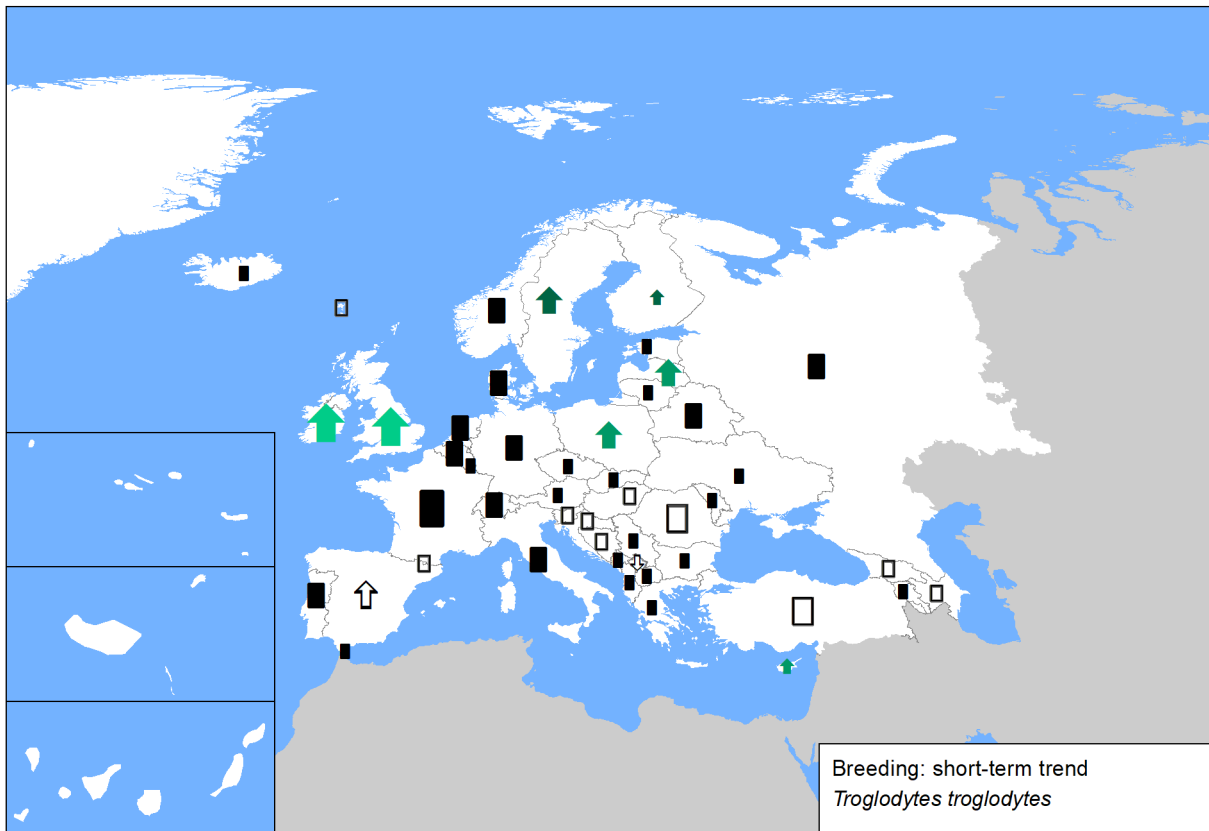
- |   |                                  |
|---|----------------------------------|
| ↑ Large increase ( $\geq 50\%$ )        | ↓ Large decrease ( $\geq 50\%$ ) |
| ↑ Moderate increase (20–49%)            | ↓ Moderate decrease (20–49%)     |
| ↑ Small increase ( $< 20\%$ )           | ↓ Small decrease ( $< 20\%$ )    |
| ↑ Increase of unknown magnitude         | ↓ 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.

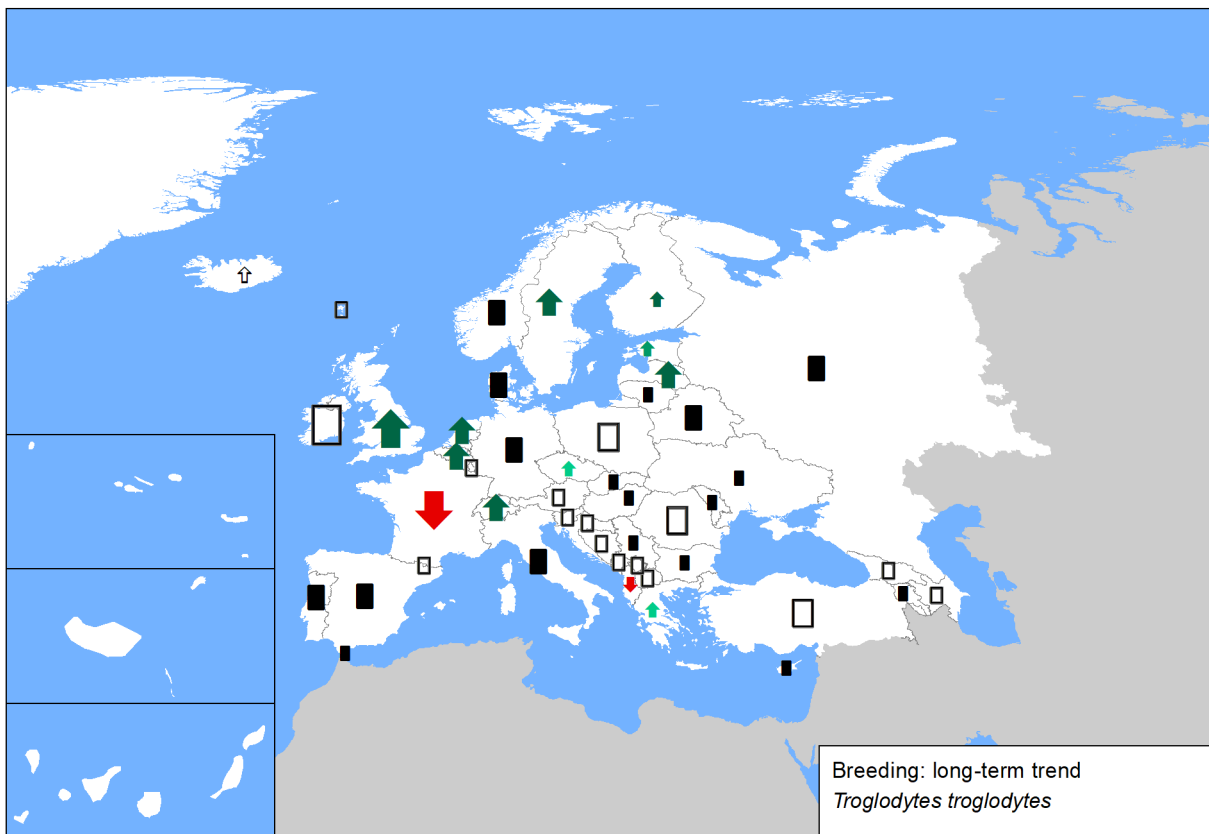
- ↑ Large:  $\geq 10\%$  of the European population
- ↑ Medium: 1–9% of the European population
- ↑ Small:  $< 1\%$  of the European population

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.

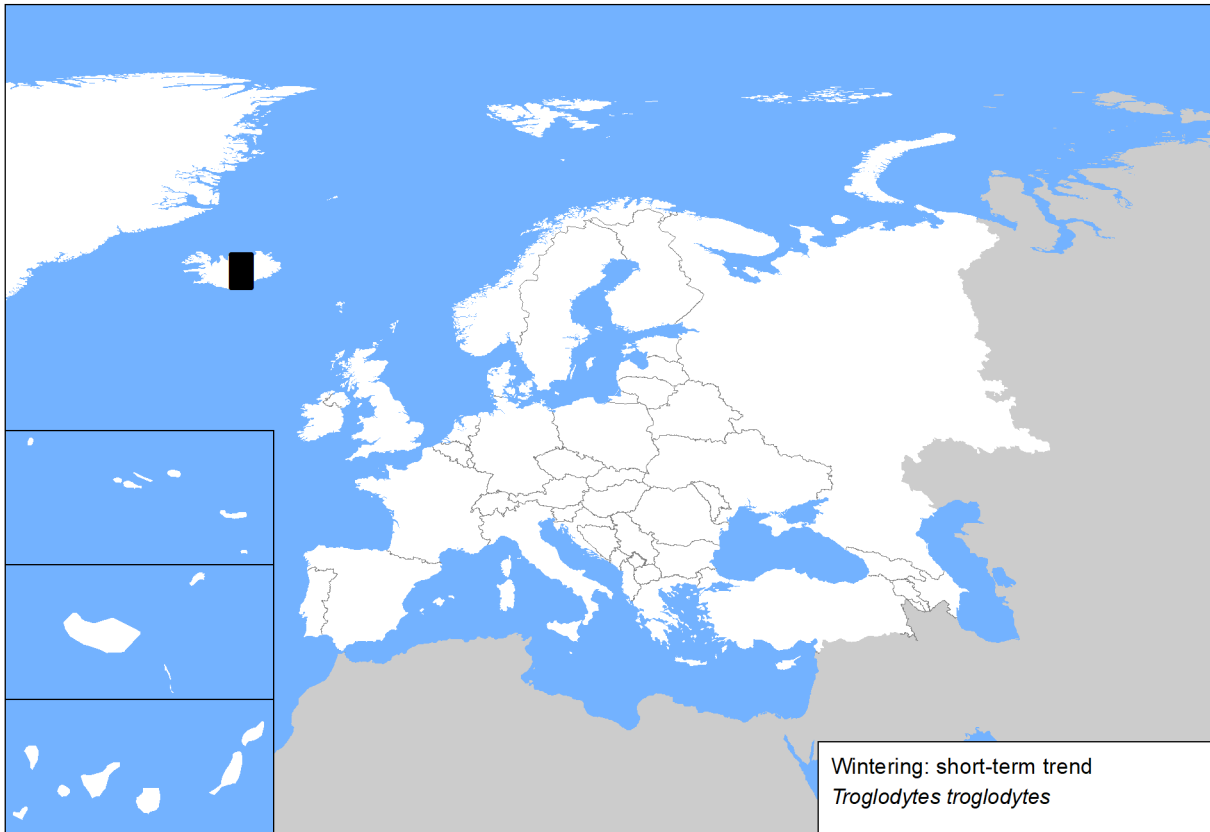
**Figure 1.** Breeding population sizes and short-term trends across Europe.



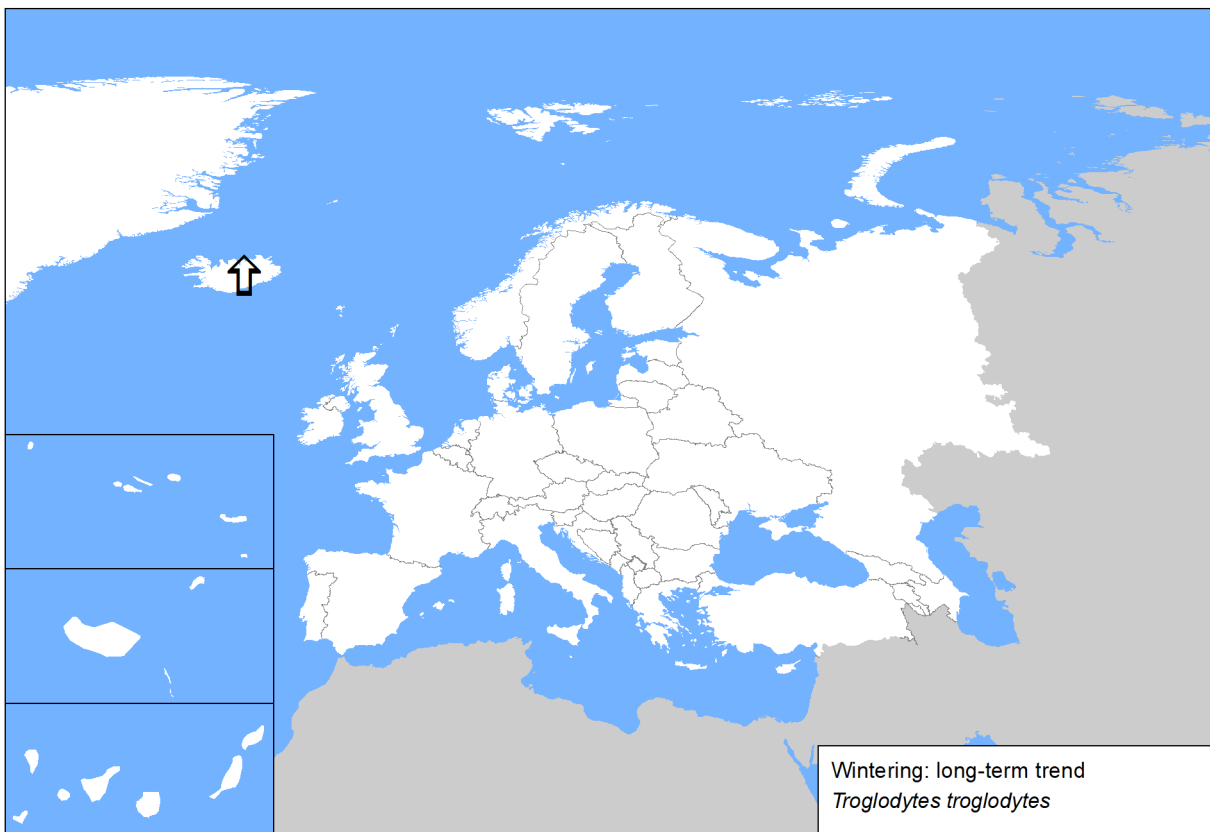
**Figure 2.** Breeding population sizes and long-term trends across Europe.



**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.



## *Troglodytes troglodytes* (Northern Wren)

### Sources

#### Albania

<b>Breeding population size:</b> Bino & Xeka pers. obs.
<b>Breeding short-term trend:</b> Bino & Xeka pers. obs.
<b>Breeding long-term trend:</b> Bino pers. obs.

#### Andorra

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

#### Armenia

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

#### Austria: all others

<b>Breeding population size:</b> 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
<b>Breeding short-term trend:</b> BirdLife Austria, results of the Austrian Breeding bird monitoring ("Brutvogelmonitoring")
<b>Breeding long-term trend:</b> BirdLife Austria, unpublished

#### Azerbaijan

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

#### Belarus

<b>Breeding population size:</b> 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"
<b>Breeding long-term trend:</b> Nikiforov M.E., Kozulin A.V., eds. Belarussian birds at the beginning of XXI century: status, numbers, distribution. - 1997. - Minsk. - 187 p.

#### Belgium: all others

<b>Breeding population size:</b> 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.
<b>Breeding short-term trend:</b> 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.
<b>Breeding long-term trend:</b> 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

<b>Breeding population size:</b> Based on data for EBBA2
<b>Breeding short-term trend:</b> more individual articles e.g published in magazine Bilten mreže posmatrača ptica u Bosni i Hercegovini-see <a href="https://ptice.ba/bs/category/bilteni_/">https://ptice.ba/bs/category/bilteni_/</a> , individual reports (e.g. for EBBA2, projects etc)

#### Bulgaria: all others

<b>Breeding population size:</b> 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; BSPB Bird Database
<b>Breeding short-term trend:</b> 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;
<b>Breeding long-term trend:</b> 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: all others

<b>Breeding population size:</b> Dumbović Mazal V., Pintar V., Zdravec M. (2019): Prvo izvješće o brojnosti i rasprostranjenosti ptica u Hrvatskoj sukladno odredbama Direktive o pticama.
<b>Breeding short-term trend:</b> Dumbović Mazal V., Pintar V., Zdravec M. (2019): Prvo izvješće o brojnosti i rasprostranjenosti ptica u Hrvatskoj sukladno odredbama Direktive o pticama.
<b>Breeding long-term trend:</b> Dumbović Mazal V., Pintar V., Zdravec M. (2019): Prvo izvješće o brojnosti i rasprostranjenosti ptica u Hrvatskoj sukladno odredbama Direktive o pticama.

## *Troglodytes troglodytes* (Northern Wren)

### Cyprus: all others

<b>Breeding population size:</b> Expert opinion based on the "Study on FBI and CBI Indicators" (Birdlife Cyprus, 2017)
<b>Breeding short-term trend:</b> Study on FBI and CBI Indicators, Birdlife Cyprus, 2017
<b>Breeding long-term trend:</b> Flint & Stewart BOU Checklist no 6 (1992) The Birds of Cyprus; Whaley DJ & Dawes JC, 2003 Cyprus breeding Birds' Atlas; Analysis of recent BirdLife Cyprus bird sightings records reported in the society's annual reports.

### Czechia: all others

<b>Breeding population size:</b> Šťastný et Bejček in prep. - Atlas hnízdního rozšíření ptáků ČR 2014-2017
<b>Breeding short-term trend:</b> ČSO (unpubl.): Common Bird Monitoring Programme
<b>Breeding long-term trend:</b> ČSO (unpubl.): Common Bird Monitoring Programme

### Denmark: all others

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

### DK: Faroe Is

<b>Breeding population size:</b> Bengston (2001) per Hammer et al. (2014) Færøsk trækfugleatlas [Faroe bird migration atlas]. Fróðskapur / Faroe University Press, Tórshavn.
--

### Estonia: all others

<b>Breeding population size:</b> Estonian Working Group on Bird Status and Numbers
<b>Breeding short-term trend:</b> [1] Estonian Working Group on Bird Status and Numbers [2] Point counts of breeding birds. <a href="http://seire.keskkonnainfo.ee/index.php?option=com_content&amp;view=article&amp;id=3417&amp;Itemid=5815">http://seire.keskkonnainfo.ee/index.php?option=com_content&amp;view=article&amp;id=3417&amp;Itemid=5815</a>
<b>Breeding long-term trend:</b> [1] Estonian Working Group on Bird Status and Numbers [2] Point counts of breeding birds. <a href="http://seire.keskkonnainfo.ee/index.php?option=com_content&amp;view=article&amp;id=3417&amp;Itemid=5815">http://seire.keskkonnainfo.ee/index.php?option=com_content&amp;view=article&amp;id=3417&amp;Itemid=5815</a>

### Finland: all others

<b>Breeding population size:</b> 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.
<b>Breeding short-term trend:</b> Väisänen R. A., Lehikoinen, A. & Sirkiä, P. 2018: Suomen pesivän maalinnuston kannanvaihtelut. — Linnut -vuosikirja 2017:16–31
<b>Breeding long-term trend:</b> Väisänen R. A., Lehikoinen, A. & Sirkiä, P. 2018: Suomen pesivän maalinnuston kannanvaihtelut. — Linnut -vuosikirja 2017:16–31

### France: all others

<b>Breeding short-term trend:</b> . STOC EPS / MNHN.
<b>Breeding long-term trend:</b> . STOC EPS / MNHN.

### Georgia

<b>Breeding population size:</b> EBBA Georgia, prepared by Sabuko-Society for nature conservation, Iliia state university, NGO "psovi".
---

### Germany: all others

<b>Breeding population size:</b> Monitoring häufiger Brutvögel ( <a href="http://www.dda-web.de/index.php?cat=monitoring&amp;subcat=ha_neu&amp;subsubcat=kontakt">http://www.dda-web.de/index.php?cat=monitoring&amp;subcat=ha_neu&amp;subsubcat=kontakt</a> )
<b>Breeding short-term trend:</b> Monitoring häufiger Brutvögel ( <a href="http://www.dda-web.de/index.php?cat=monitoring&amp;subcat=ha_neu&amp;subsubcat=kontakt">http://www.dda-web.de/index.php?cat=monitoring&amp;subcat=ha_neu&amp;subsubcat=kontakt</a> )
<b>Breeding long-term trend:</b> Gerlach et al. (in Vorb.): Vögel in Deutschland – 2019. Dachverband Deutscher Avifaunisten, Bundesamt für Naturschutz und Länderarbeitsgemeinschaft der Vogelschutzwarten, Münster.

### Gibraltar: all others

<b>Breeding population size:</b> 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).
<b>Breeding short-term trend:</b> 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).

## *Troglodytes troglodytes* (Northern Wren)

### Gibraltar: all others

**Breeding 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: all others

**Breeding population size:** 1) BirdLife International (2004) Birds in Europe: Population estimates, trends and conservation status. Cambridge, UK: BirdLife International (BirdLife Conservation Series No. 12).

**Breeding short-term trend:** 1) BirdLife International (2004) Birds in Europe: Population estimates, trends and conservation status. Cambridge, UK: BirdLife International (BirdLife Conservation Series No. 12).

**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: all others

**Breeding population size:** National common bird monitoring scheme (MMM) database.

**Breeding short-term trend:** National common bird monitoring scheme (MMM) database.

**Breeding long-term trend:** National common bird monitoring scheme (MMM) database. Haraszthy L. (szerk.) (1984): Magyarország fészkelő madarai. Natura, Budapest. Haraszthy, L. (szerk.) (1998): Magyarország madarai. Mezőgazda Kiadó, Budapest. Magyar G., Hadarics T., Waliczky Z., Schmidt A., Nagy T. & Bankovics A. (1998): Magyarország madarainak névjegyzéke. Madártani Intézet, Budapest, 110 p. BirdLife International (2004) Birds in Europe: population estimates, trends and conservation status. Cambridge, UK: BirdLife International. (BirdLife Conservation Series No.12.), 223 p. MME Nomenclator Bizottság (2008): Magyarország madarainak névjegyzéke. Nomenclator avium Hungariae. Magyar Madártani és Természetvédelmi Egyesület, Budapest. 189-190 p.

### Iceland

**Breeding population size:** Icelandic Institute of Natural History 2000. Red list of birds. Reykjavík: Icelandic Institute of Natural History.

**Breeding short-term trend:** 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: all others

**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: all others

**Breeding population size:** Brichetti P & Fracasso G. 2007. Ornitologia italiana. Vol.4 (Apodidae-Prunellidae). Alberto Perdisa Editore, Bologna

**Breeding short-term trend:** Extrapolated data by the average annual trend, from: Rete Rurale Nazionale & LIPU (2015). Uccelli comuni in Italia. Aggiornamento degli andamenti di popolazione e del FBI per la Rete Rurale Nazionale dal 2000 al 2014. LIPU, 16 pp.

**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: all others

**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.

## *Troglodytes troglodytes* (Northern Wren)

### Latvia: all others

**Breeding long-term trend:** Strazds M., Priednieks J., Vaverins G. 1994. [Size of Latvian bird populations.] (in Latvian) In: Putni dabā, 4: 3–18 Aunins A., Mardega I. 2018. [Countrywide monitoring of the common birds. Final report for the year 2018.] (in Latvian) Latvian Ornithological society.

### Lithuania: all others

**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 Census 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: all others

**Breeding population size:** Ornitho.lu (2018): online database natur&environment 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&environment Luxembourg. ISBN: 978-2-919920-01-3

**Breeding short-term trend:** Ornitho.lu (2018): online database natur&environment 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&environment Luxembourg. ISBN: 978-2-919920-01-3; LUXOR (2018): natur&environment – Bird-database, Luxembourg

**Breeding long-term trend:** Experts' estimate

### 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

### 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: all others

**Breeding population size:** Sovon Bird atlas (Sovon 2018)

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

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

### 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 for norske hekkefugler. NOF Rapport 2-2015. 268 pp.

### Poland: all others

**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

### Portugal: all others

**Breeding population size:** eBird (2019). eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: <http://www.ebird.org/portugal/home>. (Accessed: October 22, 2018).

**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 (relatório não publicado).

**Breeding long-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 (relatório não publicado); Relatório Nacional Directiva Aves (2008-2012).

### Romania: all others

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

## *Troglodytes troglodytes* (Northern Wren)

### Romania: all others

<b>Breeding short-term trend:</b> Romanian Common Bird Monitoring Programme, Ornitodata (Romanian Ornithological Society) Database, OpenBirdMaps (Milvus Group) Database
<b>Breeding long-term trend:</b> Ornitodata (Romanian Ornithological Society) Database, OpenBirdMaps (Milvus Group) Database, Rombird (Romanian Rarity Commission) Database

### Russia

<b>Breeding population size:</b> Voltzit & Kalyakin 2013-2019; Database of the project on Atlas of breeding birds of European Russia
<b>Breeding short-term trend:</b> Preobrazhenskaya unpublished. voop21@rambler.ru; Red Data Book of Lipetsk Region 2014; Sarychev unpublished. vssar@yandex.ru
<b>Breeding long-term trend:</b> Preobrazhenskaya unpublished. voop21@rambler.ru

### Serbia

<b>Breeding population size:</b> 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.
<b>Breeding short-term trend:</b> 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.
<b>Breeding long-term trend:</b> 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: all others

<b>Breeding population size:</b> Coordinatory group for reporting 2019. Danko Štefan, Darolová Alžbeta, Krištin Anton: Rozšírenie vtákov na Slovensku. VEDA, vyd. SAV Bratislava, 2002.
<b>Breeding short-term trend:</b> Coordinatory group for reporting 2019, AVES-Symfony Database 2013-2018, KIMS Database 2013-2018. Danko Štefan, Darolová Alžbeta, Krištin Anton: Rozšírenie vtákov na Slovensku. VEDA, vyd. SAV Bratislava, 2002. CBC - common bird census
<b>Breeding long-term trend:</b> Coordinatory group for reporting 2019, AVES-Symfony Database 2013-2018, KIMS Database 2013-2018. Danko Štefan, Darolová Alžbeta, Krištin Anton: Rozšírenie vtákov na Slovensku. VEDA, vyd. SAV Bratislava, 2002. CBC - common bird census

### Slovenia: all others

<b>Breeding population size:</b> Mihelič T., Kmecl P., Denac K., Koce U., Vrezec A., Denac D. (eds.) (2019): Atlas ptic Slovenije. Popis gnezdičk 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.
<b>Breeding short-term trend:</b> 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.
<b>Breeding long-term trend:</b> There are no sources for this information.

### Spain: all others

<b>Breeding population size:</b> Carrascal, L.M. & Palomino, D. (2008). Las aves comunes reproductoras en España. Población en 2004-2006. SEO/BirdLife. Madrid. 202 pp. ( <a href="https://www.miteco.gob.es/es/biodiversidad/temas/inventarios-nacionales/19_paseriformes_2004_2006_tcm30-208258.pdf">https://www.miteco.gob.es/es/biodiversidad/temas/inventarios-nacionales/19_paseriformes_2004_2006_tcm30-208258.pdf</a> )
<b>Breeding short-term trend:</b> Carrascal, L.M. & Palomino, D. (2008). Las aves comunes reproductoras en España. Población en 2004-2006. SEO/BirdLife. Madrid. 202 pp. ( <a href="https://www.miteco.gob.es/es/biodiversidad/temas/inventarios-nacionales/19_paseriformes_2004_2006_tcm30-208258.pdf">https://www.miteco.gob.es/es/biodiversidad/temas/inventarios-nacionales/19_paseriformes_2004_2006_tcm30-208258.pdf</a> ) Database of the 'Atlas de las aves reproductoras de España'. Updated version 2011 with data from SEO/BirdLife's monitoring programmes. In: Inventario Español de Especies Terrestres, Inventario Español del Patrimonio Natural y de la Biodiversidad. Ministerio de Agricultura, Alimentación y Medio Ambiente (2013). ( <a href="https://www.miteco.gob.es/fr/biodiversidad/temas/inventarios-nacionales/inventario-especies-terrestres/ieet_aves_sist_seg_tendencia_comunes_esp.aspx">https://www.miteco.gob.es/fr/biodiversidad/temas/inventarios-nacionales/inventario-especies-terrestres/ieet_aves_sist_seg_tendencia_comunes_esp.aspx</a> ) Información proporcionada por las Comunidades Autónomas. SEO/BirdLife (2019). Programas de seguimiento y grupos de trabajo de SEO/BirdLife 2018. SEO/BirdLife. Madrid. ( <a href="https://doi.org/10.31170/0073">https://doi.org/10.31170/0073</a> )
<b>Breeding long-term trend:</b> Database of the 'Atlas de las aves reproductoras de España'. Updated version 2011 with data from SEO/BirdLife's monitoring programmes. In: Inventario Español de Especies Terrestres, Inventario Español del Patrimonio Natural y de la Biodiversidad. Ministerio de Agricultura, Alimentación y Medio Ambiente (2013). ( <a href="https://www.miteco.gob.es/fr/biodiversidad/temas/inventarios-nacionales/inventario-especies-terrestres/ieet_aves_sist_seg_tendencia_comunes_esp.aspx">https://www.miteco.gob.es/fr/biodiversidad/temas/inventarios-nacionales/inventario-especies-terrestres/ieet_aves_sist_seg_tendencia_comunes_esp.aspx</a> )

### Sweden: all others

<b>Breeding population size:</b> 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.
<b>Breeding short-term trend:</b> Svensk fågeltaxering - Swedish Bird Survey
<b>Breeding long-term trend:</b> Svensk fågeltaxering - Swedish Bird Survey

### Switzerland

<b>Breeding population size:</b> Knaus, P., S. Antoniazza, S. Wechsler, J. Guélat, M. Kéry, N. Strelbel & T. Sattler (2018): Swiss Breeding Bird Atlas 2013–2016. Distribution and population trends of birds in Switzerland and Liechtenstein. Swiss Ornithological Institute, Sempach.
<b>Breeding short-term trend:</b> <a href="https://www.vogelwarte.ch/en/projects/population-trends/breeding-population-indices/">https://www.vogelwarte.ch/en/projects/population-trends/breeding-population-indices/</a>
<b>Breeding long-term trend:</b> <a href="https://www.vogelwarte.ch/en/projects/population-trends/breeding-population-indices/">https://www.vogelwarte.ch/en/projects/population-trends/breeding-population-indices/</a>

## *Troglodytes troglodytes* (Northern Wren)

### Turkey

**Breeding population size:** Ferdi Akarsu personal communication (2019), Arslangünderođdu Z.2005. İstanbul Belgrad Ormanının Ornitofaunası Üzerinde Arařtırmalar (Studies on the Ornithofauna of İstanbul Belgrade Forests). İ.Ü Fenbilimleri Enstitüsü. Phd Thesis. 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) Kirwan G.M., Boyla K. A., Castell P., Demirci B., Özen M., Welch H., Marlow T., 2008, Birds of Turkey. Londra, Christopher Helm, 978-1-4081-0475-

### Ukraine

**Breeding population size:** Atlas work, non-published data

### United Kingdom: all others

**Breeding population size:** Baseline = Gibbons, D.W., Reid, J.B. & Chapman, R.A. 1993. The New Atlas of Breeding Birds in Britain and Ireland: 1988-1991. Poyser, London. Extrapolation from 1995 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., Eglinton, 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](http://www.bto.org/birdtrends)

### United Kingdom: fridariensis

**Breeding population size:** RBBP; Holling, M. & the Rare Breeding Birds Panel. 2018. Rare breeding birds in the United Kingdom in 2016. British Birds 111: 644-694.

**Breeding short-term trend:** RBBP; Holling, M. & the Rare Breeding Birds Panel. 2018. Rare breeding birds in the United Kingdom in 2016. British Birds 111: 644-694.

**Breeding long-term trend:** RBBP; Holling, M. & the Rare Breeding Birds Panel. 2018. Rare breeding birds in the United Kingdom in 2016. British Birds 111: 644-694.

## 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.
- BirdLife International. 2004. *Birds in Europe: population estimates, trends and conservation status*. BirdLife International, Cambridge, U.K.
- Brazil, M. 2009. *Birds of East Asia: eastern China, Taiwan, Korea, Japan, eastern Russia*. Christopher Helm, London.
- Crick, H.Q.P. and Sparks, T.H. 1999. Climate change related to egg-laying trends. *Nature* 399: 423-424.
- Crick, H.Q.P., Dudley, C., Glue, D.E. and Thomson, D.L. 1997. UK birds are laying earlier. *Nature* 388: 526.
- Hüppop, O. and Hüppop, K. 2003. North Atlantic Oscillation and timing of spring migration in birds. *Proceedings of the Royal Society of London Series B* 270: 233-240.
- Jenkins, D. and Watson, A. 2000. Dates of first arrival and song of birds during 1974-1999 in mid-Deeside, Scotland. *Bird Study* 47: 249-251.
- 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.
- Kroodsma, D., Brewer, D., Christie, D.A. and Bonan, A. 2015. Northern Wren (*Troglodytes troglodytes*). 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.
- 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.
- Robinson, R.A., Baillie, S.R. and Crick, H.Q.P. 2007. Weather-dependent survival: implications of climate change for passerine population processes. *Ibis* 149(2): 357-364.
- Snow, D.W. and Perrins, C.M. 1998. *The Birds of the Western Palearctic, Volume 2: Passerines*. Oxford University Press, Oxford.
- Tøttrup, A.P., Thorup, K. and Rahbek, C. 2006. Patterns of change in timing of spring migration in North European songbird populations. *Journal of Avian Biology* 37: 84-92.