Anser fabalis (Bean Goose)

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).

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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.

Anser fabalis (Bean Goose)

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]	
Finland	1000–2500	<1	2013-2018	expert	0		2007-2018	expert	?		1980-2018	deficient	fabalis
Norway	30–60	<1	2013-2018	partial	?		2013-2018	deficient	?		1980-2018	partial	A. f. fabalis, North-east Europe/North-west Europe
Norway	200–420	<1	2013-2018	partial	+	0 to 5	2013-2018	expert	+	5 to 25	1980-2018	partial	A. f. rossicus, West & Central Siberia/NE & SW Europe
Russia	180000–200000	97	2010-2018	partial	0		2008-2018	partial	+	0	1980-2018	partial	A. f. rossicus, West & Central Siberia/NE & SW Europe
Russia	1800–3500	1	2010-2018	partial	-	0	2008-2018	partial	-	0	1980-2018	partial	A. f. fabalis, North-east Europe/North-west Europe
Sweden	260–600	<1	2013-2018	partial	-	-70 to -30	2007-2018	expert	-	-70 to -30	1980-2018	partial	fabalis
EU28	1200–3100	1											
Europe	**183000–208000**	**100**											

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

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

Country (or territory)[2]	Population estimate				Short-term population trend[5]				Long-term population trend[5]				Subspecific population (where relevant)
	Size (individuals)[3]	Europe (%)	Year(s)	Method[4]	Direction[6]	Magnitude (%)[7]	Year(s)	Method[4]	Direction[6]	Magnitude (%)[7]	Year(s)	Method[4]	
Albania	0	<1	2007-2018	complete	-	-100	2007-2018	complete	-	-100 to 0	1980-2018	complete	
Austria	21–1100	<1	2013-2018	complete	-		2007-2018	complete	-		1980-2018	complete	
Belarus	10	<1	2013-2018	partial	0	-10 to 10	2000-2012	partial	?				
Belgium	0–1	<1	2013-2018	complete	-		2007-2018	expert	-		1992-2018	expert	
Belgium	3400–7600	<1	2013-2018	complete	+	301 to 1743	2007-2018	complete	+	3127 to 17892	1992-2018	complete	
Bosnia & HG	10	<1	2015-2018	complete	?		2007-2018	deficient	?		1980-2018	deficient	
Bulgaria	12–200	<1	2013-2018	partial	F		2000-2018	complete	F		1980-2018	complete	
Croatia		<1	2012-2018	deficient	?		2007-2018	deficient	?		1980-2018	deficient	
Czechia	4900–12500	1	2015-2019	complete	?		2008-2019	complete	+		1980-2019	complete	
Czechia	10–100	<1	2015-2019	complete	?		2008-2019	complete	?		1980-2019	complete	
Denmark	5300–5400	<1	2017-2017	complete	-		2006-2017	complete	F		1981-2017	complete	
Denmark	2200–2300	<1	2017-2017	complete	F		2006-2017	complete	+		1987-2016	complete	
France	1100–2100	<1	2013-2018	complete	-	-47 to -6	2007-2017	complete	-	-52 to -36	1980-2017	complete	
Germany	365000	46	2011-2016	partial	+	10 to 40	2003-2016	partial	+	40 to 180	1980-2016	expert	
Germany	11500	1	2011-2016	complete	-		2003-2016	complete	-	-100 to -66	1980-2016	expert	
Greece		<1		deficient	?		2007-2018	deficient	?		1980-2018	deficient	
Hungary	500–3000	<1	2015-2018	partial	-	-97 to -88	2007-2018	complete	-	-99 to -97	1986-2018	complete	
Italy		<1	2013-2015	partial	?		2007-2018	partial	?		1993-2018	deficient	
Latvia	1–10	<1	2013-2018	complete	?		2007-2018	deficient	?		1980-2018	deficient	
Latvia	1–4000	<1	2013-2018	complete	?	-98 to 1181	2009-2018	complete	?	-100 to 3305081	1980-2018	complete	
Lithuania	10	<1	2013-2018	partial	?		2013-2018	deficient	?		1980-2018	deficient	
Lithuania	0–10	<1	2013-2018	partial	?		2013-2018	deficient	?		1980-2018	deficient	
Luxembourg	50–160	<1	2013-2018	complete	-	-20 to -10	2007-2018	complete	-	-70 to -60	1980-2018	complete	
Montenegro	2	<1	2013-2018	expert	0		2007-2018	expert	?				
Netherlands	205000–262000	28	2013-2017	complete	0	-29 to 71	2006-2017	complete	+	69 to 307	1981-2017	complete	
Netherlands	0–21	<1	2013-2017	complete	-	-98 to -87	2006-2017	complete	-	-100	1981-2017	complete	
Poland	63000–207000	14	2013-2018	partial	?	-61 to 8	2013-2018	complete	?		1980-2018	deficient	
Poland	7000–23000	2	2013-2018	partial	?		2007-2018	deficient	?		1980-2018	deficient	
Romania	10–45	<1	2013-2018	complete	?	-17 to 66	2013-2018	complete	+	52 to 112	1990-2018	complete	
Serbia	50	<1	2013-2018	partial	F		2013-2018	expert	-	-100 to -80	1980-2018	complete	
Slovakia	500–1500	<1	2013-2018	complete	-	-60 to -20	2007-2018	complete	-	-70 to -40	1980-2018	complete	

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]	
Slovenia	60	<1	2013-2018	complete	-		2007-2018	complete	-	-100 to -99	1980-2018	expert	
Sweden	32000–52000	5	2014-2018	complete	+	15 to 35	2007-2018	complete	+	160 to 240	1980-2018	complete	
Sweden	1000–10000	<1	2013-2018	complete	?		2007-2018	complete	?		1980-2018	complete	
Switzerland	3	<1	2015-2019	complete	-	-99 to -98	2008-2019	complete	-	-85 to -79	1980-2019	complete	
Turkey	0–5	<1	2013-2019	complete	?		2008-2019	expert	?		1980-2019	expert	
Ukraine	50–250	<1	2014-2017	partial	?		2007-2018	partial	?		1980-2018	partial	
United Kingdom	230	<1	2016-2017	complete	-		2005-2016	complete	-		1981-2016	complete	
United Kingdom		<1	2012-2016	deficient	?		2012-2016	deficient	?		2012-2016	deficient	
EU28	703000–970000	100											
Europe	**703000–971000**	**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.
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[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.

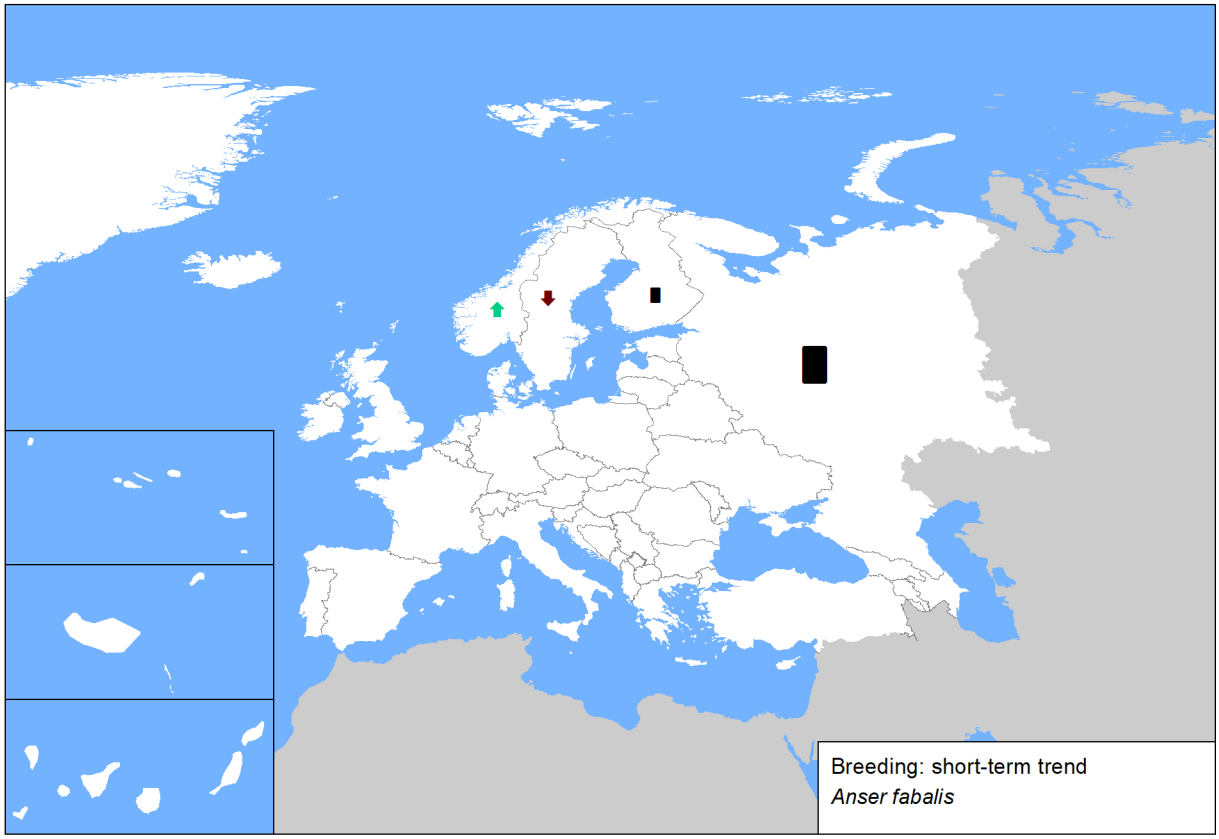


Figure 2. Breeding population sizes and long-term trends across Europe.

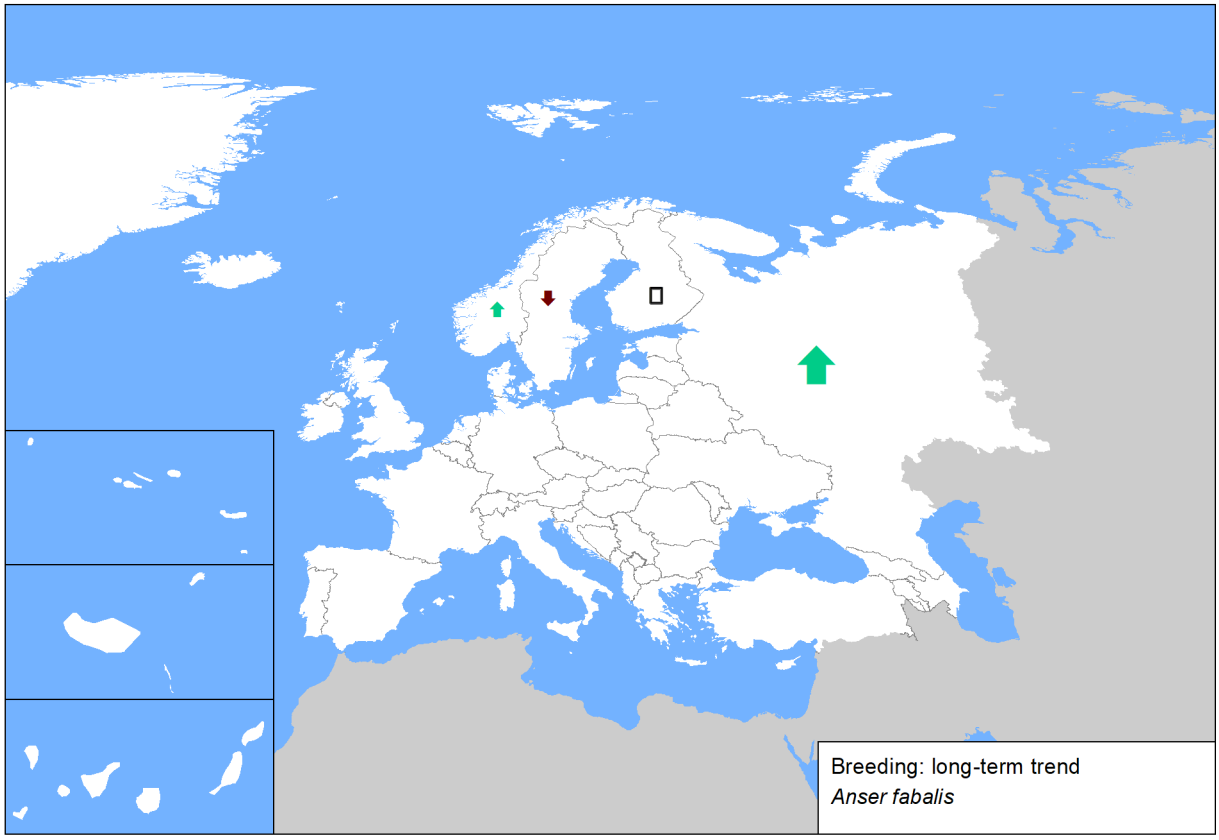


Figure 3. Reported wintering population sizes and short-term trends across Europe. Note that some countries within the species' wintering range did not report any data.

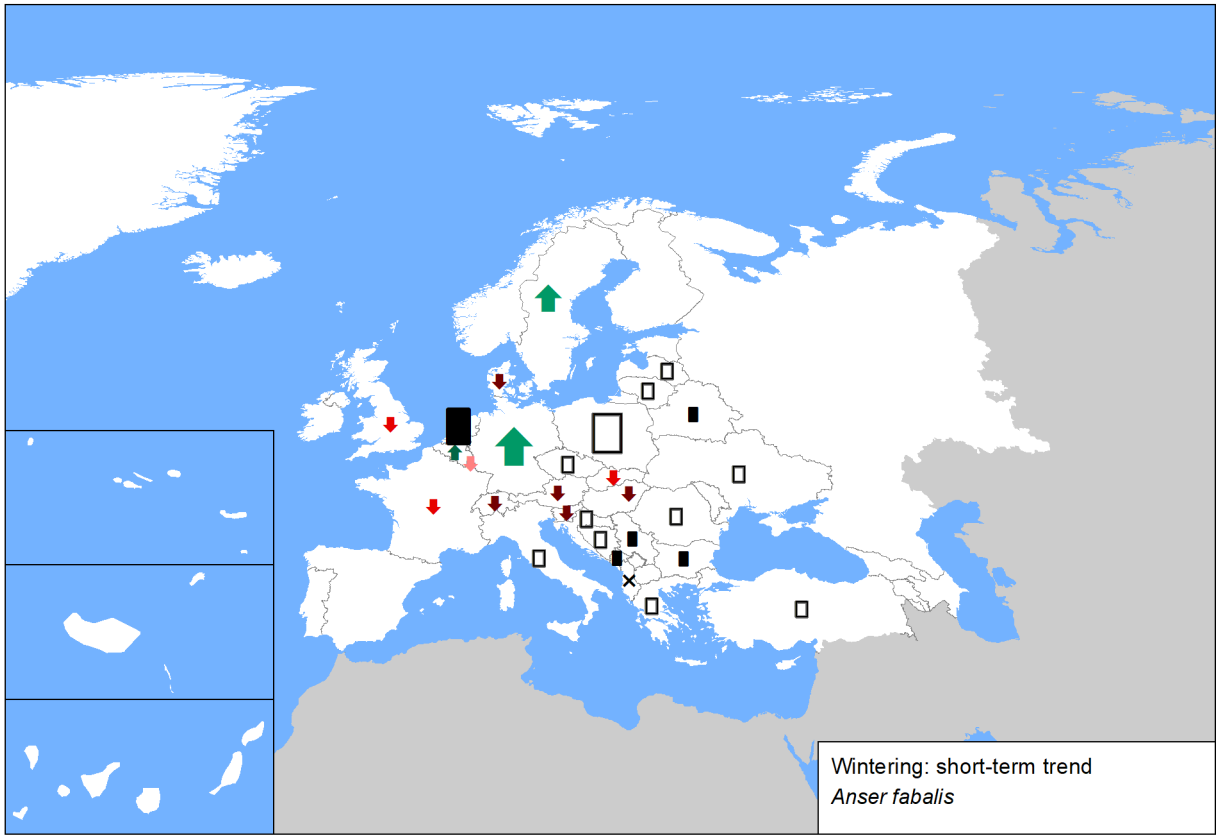
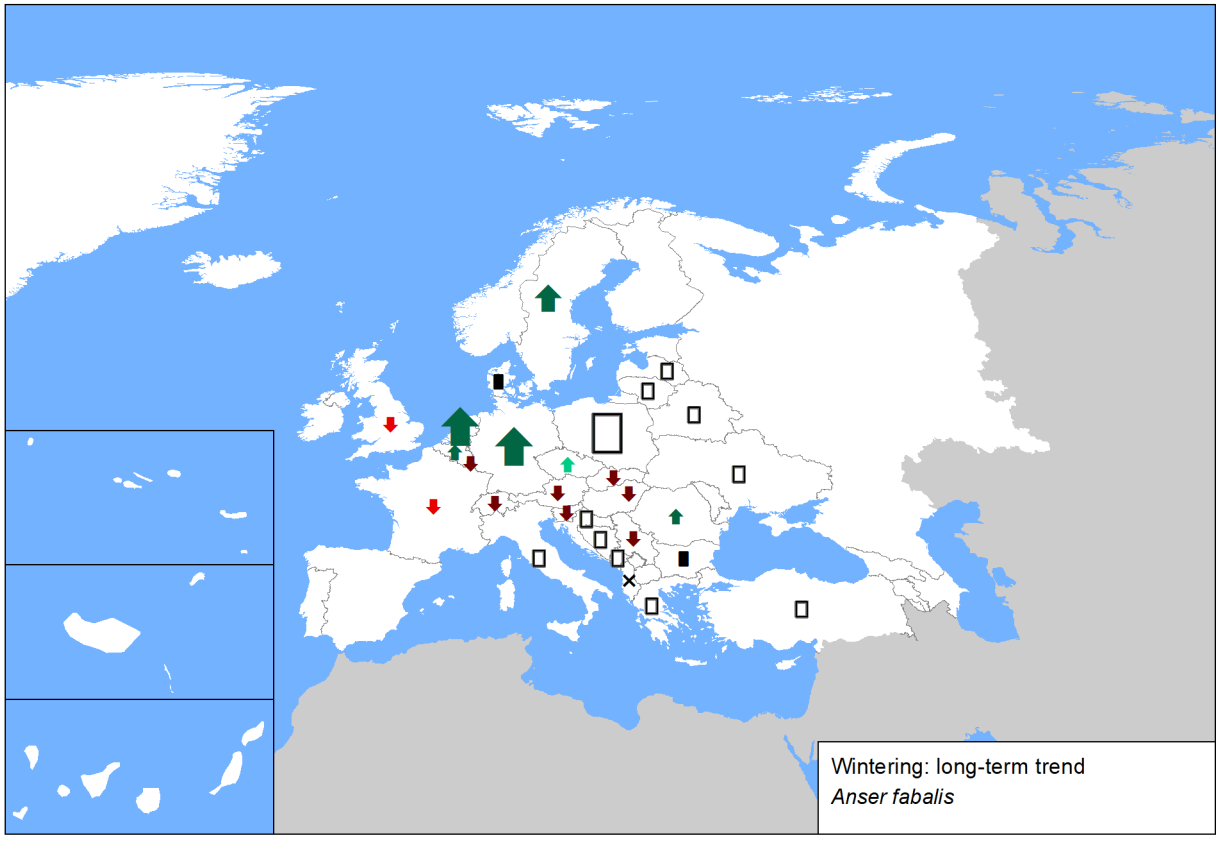


Figure 4. Reported wintering population sizes and long-term trends across Europe. Note that some countries within the species' wintering range did not report any data.



Sources

Albania

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

Austria: A. f. rossicus

Winter population size: BirdLife Austria, unpublished data from www.ornitho.at, BirdLife Austria, unpublished data from goose monitoring in the Neusiedler See area
Winter short-term trend: BirdLife Austria, unpublished data from www.ornitho.at, BirdLife Austria, unpublished data from goose monitoring in the Neusiedler See area
Winter long-term trend: BirdLife Austria, unpublished data from www.ornitho.at, BirdLife Austria, unpublished data from goose monitoring in the Neusiedler See area

Belarus

Winter population size: Bogdanovich I.A. - personal communication
Winter short-term trend: Bogdanovich I.A. - personal communication

Belgium: A. f. fabalis

Winter population size: Waterbird database INBO
Winter short-term trend: Waterbird database INBO & Aves
Winter long-term trend: Waterbird database INBO & Aves

Belgium: A. f. rossicus

Winter population size: Waterbird database INBO
Winter short-term trend: Waterbird database INBO & Aves
Winter long-term trend: Waterbird database INBO & Aves

Bosnia and Herzegovina

Winter population size: based on IWC reports-all reports published in magazine Bilten mreže posmatrača ptica (www.ptice.ba)
Winter short-term trend: based on IWC reports-all reports published in magazine Bilten mreže posmatrača ptica (www.ptice.ba)
Winter long-term trend: There are no qualitative data before 2005 to make estimates

Bulgaria: A. f. rossicus

Winter population size: Wetlands International (2019): Submitted IWC data for Bulgaria for period 2013-2018.; National Art. 12 reporting database 2013-2018; National workshop of experts, Sofia 27-29.8.2019.
Winter short-term trend: Data from Mid-winter count of waterfowl; National Art. 12 reporting database 2013-2018; BSPB Bird Database; Kostadinova, I., S. Dereliev 2001 Results from the Mid-Winter Counts of Waterbirds in Bulgaria for the Period 1997-2001. BSPB Conservation Series, Book 3, BSPB, Sofia, 96 pp. Michev T., Profirov L. 2003. Mid-Winter Numbers of Waterbirds in Bulgaria (1977-2001). Pensoft, Sofia, 160 pp.; Dimitrov, M., T. Michev, L. Profirov, K. Nyagolov. 2005. Waterbirds of Bourgas Wetlands: Results and Evaluation of the Monthly Waterbirds Monitoring 1996-2002. Bulgarian Biodiversity Foundation and Publ. House Pensoft, Sofia, 160 pp.;
Winter long-term trend: Kostadinova, I., S. Dereliev 2001 Results from the Mid-Winter Counts of Waterbirds in Bulgaria for the Period 1997-2001. BSPB Conservation Series, Book 3, BSPB, Sofia, 96 pp. Michev T., Profirov L. 2003. Mid-Winter Numbers of Waterbirds in Bulgaria (1977-2001). Pensoft, Sofia, 160 pp. BSPB Bird Database Nankinov, D., S. Simeonov, T. Michev, B. Ivanov. 1997. The Fauna of Bulgaria. Vol. 26. AVES. Part II. BAS Press, Pensoft. Sofia. 428 pp. (in Bulgarian with English Summary)

Croatia: A. f. rossicus

Winter population size: No data available.
Winter short-term trend: No data available.
Winter long-term trend: No data available.

Czechia: A. f. fabalis

Winter population size: Waterbird numbers were recorded in mid-January by regular citizen-science monitoring programme - the International Waterbird Census (IWC) – see Gilissen et al. 2002, Wetlands International 2006, Wetlands International 2019. Hundreds of volunteer birdwatchers conduct the mid-January counts on predetermined dates and sites each year, aiming to maximize synchrony (Gilissen et al. 2002, Musil et al. 2011, Musilová et al. 2014). The estimation of population size was calculated by Trends and Indices for Monitoring data (TRIM) software (Statistics Netherlands version 3.52, Pannekoek and Van Strien, 2005). 'Time Totals' values of the data (i.e. the actual count values plus the numbers of birds estimated by the TRIM software) for all 1155 sites included in the analysis were used to generate total estimates of the range of numbers of the waterbird species wintering in the Czech Republic between 2015 and 2019. We use the range (min–max) of population estimates due to the effect of between-year variation in numbers because of variable climatic conditions (Musil et al. 2008, Musilová et al. 2018). Gilissen N, Haanstra L, Delany S, Boere G, Hagemeijer W (2002) Numbers and distribution of wintering waterbirds in the Western Palearctic and Southwest Asia in 1987, 1988 and 1999. Results from the International Waterbird Census. Wetlands International Global Series No. 11, Wetlands International, Wageningen, The Netherlands. Musil P, Darolová A, Jureček J, Musilová Z, Podhrázský M, Slabeyová K (2008) The long-term trends in numbers of wintering geese in the Czech Republic and Slovakia in 1991–2007. Tichodroma 20: 61–67. Musil P, Musilová Z, Fuchs R, Poláková S (2011) Long-term changes in numbers and distribution of wintering waterbirds in the Czech Republic, 1966–2008. Bird Study 58: 450–460. Musilová Z, Musil P, Zouhar J, Adam M (2018) Changes in habitat suitability influence non-breeding distribution of waterbirds in central Europe. Ibis: 160: 582–596. Musilová Z, Musil P, Zouhar J, Bejček V, Šťastný K, Hudec K (2014) Numbers of wintering waterbirds in the Czech Republic: long-term and spatial-scale approaches to assess population size. Bird Study 61: 321–331.

Czechia: A. f. fabalis

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

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

Czechia: A. f. rossicus

Winter population size: Waterbird numbers were recorded in mid-January by regular citizen-science monitoring programme - the International Waterbird Census (IWC) – see Gilissen et al. 2002, Wetlands International 2006, Wetlands International 2019. Hundreds of volunteer birdwatchers conduct the mid-January counts on predetermined dates and sites each year, aiming to maximize synchrony (Gilissen et al. 2002, Musil et al. 2011, Musilová et al. 2014). The estimation of population size was calculated by Trends and Indices for Monitoring data (TRIM) software (Statistics Netherlands version 3.52, Pannekoek and Van Strien, 2005). 'Time Totals' values of the data (i.e. the actual count values plus the numbers of birds estimated by the TRIM software) for all 1155 sites included in the analysis were used to generate total estimates of the range of numbers of the waterbird species wintering in the Czech Republic between 2015 and 2019. We use the range (min–max) of population estimates due to the effect of between-year variation in numbers because of variable climatic conditions (Musil et al. 2008, Musilová et al. 2018). Gilissen N, Haanstra L, Delany S, Boere G, Hagemeijer W (2002) Numbers and distribution of wintering waterbirds in the Western Palearctic and Southwest Asia in 1987, 1988 and 1999. Results from the International Waterbird Census. Wetlands International Global Series No. 11, Wetlands International, Wageningen, The Netherlands. Musil P, Darolová A, Jureček J, Musilová Z, Podhrázský M, Slabeyová K (2008) The long-term trends in numbers of wintering geese in the Czech Republic and Slovakia in 1991–2007. Tichodroma 20: 61–67. Musil P, Musilová Z, Fuchs R, Poláková S (2011) Long-term changes in numbers and distribution of wintering waterbirds in the Czech Republic, 1966–2008. Bird Study 58: 450–460. Musilová Z, Musil P, Zouhar J, Adam M (2018) Changes in habitat suitability influence non-breeding distribution of waterbirds in central Europe. Ibis: 160: 582–596. Musilová Z, Musil P, Zouhar J, Bejček V, Šťastný K, Hudec K (2014) Numbers of wintering waterbirds in the Czech Republic: long-term and spatial-scale approaches to assess population size. Bird Study 61: 321–331.

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

Czechia: A. f. rossicus

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

Denmark: A. f. fabalis

Winter population size: Nielsen, R.D., Holm, T.E., Clausen, P., Bregnballe. T., Clausen, K.K., Petersen, I.K., Sterup, J., Balsby, T.J.S., Pedersen, C.L., Mikkelsen, P. & Bladt, J. (2019). Fugle 2012-2017. NOVANA. Aarhus Universitet, DCE – Nationalt Center for Miljø og Energi. - Videnskabelig rapport nr. 314. http://dce2.au.dk/pub/SR314.pdf and http://novana.au.dk/fugle/

Winter short-term trend: Nielsen, R.D., Holm, T.E., Clausen, P., Bregnballe. T., Clausen, K.K., Petersen, I.K., Sterup, J., Balsby, T.J.S., Pedersen, C.L., Mikkelsen, P. & Bladt, J. (2019). Fugle 2012-2017. NOVANA. Aarhus Universitet, DCE – Nationalt Center for Miljø og Energi. - Videnskabelig rapport nr. 314. http://dce2.au.dk/pub/SR314.pdf and http://novana.au.dk/fugle/

Winter long-term trend: Haas, F. & Nilsson, L. (2018). Inventeringar av rastande och övervintrande sjöfåglar, och gäss i Sverige. Årsrapport för 2017/2018. - Biologiska institutionen, Lunds Universitet. Nielsen, R.D., Holm, T.E., Clausen, P., Bregnballe. T., Clausen, K.K., Petersen, I.K., Sterup, J., Balsby, T.J.S., Pedersen, C.L., Mikkelsen, P. & Bladt, J. (2019). Fugle 2012-2017. NOVANA. Aarhus Universitet, DCE – Nationalt Center for Miljø og Energi. - Videnskabelig rapport nr. 314. http://dce2.au.dk/pub/SR314.pdf and http://novana.au.dk/fugle/

Denmark: A. f. rossicus

Winter population size: Nielsen, R.D., Holm, T.E., Clausen, P., Bregnballe. T., Clausen, K.K., Petersen, I.K., Sterup, J., Balsby, T.J.S., Pedersen, C.L., Mikkelsen, P. & Bladt, J. (2019). Fugle 2012-2017. NOVANA. Aarhus Universitet, DCE – Nationalt Center for Miljø og Energi. - Videnskabelig rapport nr. 314. http://dce2.au.dk/pub/SR314.pdf and http://novana.au.dk/fugle/

Winter short-term trend: Kleefstra R., Hornman M., Bregnballe T., Frikke J., Günther K., Hälterlein B., Körber P., Ludwig J., Scheiffarth G. (2019). Trends of Migratory and Wintering Waterbirds in the Wadden Sea 1987/1988 - 2016/2017. Wadden Sea Ecosystem No. 39. Common Wadden Sea Secretariat, Joint Monitoring Group of Migratory Birds in the Wadden Sea, Wilhelmshaven, Germany. Nielsen, R.D., Holm, T.E., Clausen, P., Bregnballe. T., Clausen, K.K., Petersen, I.K., Sterup, J., Balsby, T.J.S., Pedersen, C.L., Mikkelsen, P. & Bladt, J. (2019). Fugle 2012-2017. NOVANA. Aarhus Universitet, DCE – Nationalt Center for Miljø og Energi. - Videnskabelig rapport nr. 314. http://dce2.au.dk/pub/SR314.pdf and http://novana.au.dk/fugle/

Winter long-term trend: Olsen, K.M. (1990). To former af sædgås forekommer i Danmark. - Dansk Ornitologisk Forenings Tidsskrift 84: 91-93. Nielsen, R.D., Holm, T.E., Clausen, P., Bregnballe. T., Clausen, K.K., Petersen, I.K., Sterup, J., Balsby, T.J.S., Pedersen, C.L., Mikkelsen, P. & Bladt, J. (2019). Fugle 2012-2017. NOVANA. Aarhus Universitet, DCE – Nationalt Center for Miljø og Energi. - Videnskabelig rapport nr. 314. http://dce2.au.dk/pub/SR314.pdf and http://novana.au.dk/fugle/

Finland: fabalis

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: There is no recent population estimate or monitoring, so the expert estimate reported here is derived by combining information from multiple indirect sources, such data from Finnish line transects, breeding distribution (as compared to old distribution) and trends in number of birds on migration and wintering areas (of which Finnish birds are a part).

Breeding long-term trend: There are no monitoring data that would allow to estimate the long-term trend.

France: A. f. rossicus

Winter population size: . Gaudard C., Quaintenne G. & Dupuis J. (2019) Comptage des Oiseaux d'eau à la mi-janvier en France. Résultats 2018 du comptage Wetlands International. pp. 24 (& Annexes pp. 104). LPO BirdLife France - Service Connaissance, Wetlands International, Ministère de la Transition écologique et solidaire, Rochefort, France. .

Winter short-term trend: . Quaintenne G. & Gaudard C. (2018) Analyses de tendances oiseaux d'eau recensés en France à la mi-janvier 1980-2017. Rapport technique préalable à la rédaction de la synthèse Wetlands de Gaudard et al. (2018), pp. 53. Ligue Pour la Protection des Oiseaux, BirdLife France - Wetlands International, Rochefort, France..

Winter long-term trend: . Quaintenne G. & Gaudard C. (2018) Analyses de tendances oiseaux d'eau recensés en France à la mi-janvier 1980-2017. Rapport technique préalable à la rédaction de la synthèse Wetlands de Gaudard et al. (2018), pp. 53. Ligue Pour la Protection des Oiseaux, BirdLife France - Wetlands International, Rochefort, France..

Germany: A. f. fabalis

Winter population size: Dachverband Deutscher Avifaunisten e.V. (http://www.dda-web.de)

Winter short-term trend: Dachverband Deutscher Avifaunisten e.V. (http://www.dda-web.de)

Winter long-term trend: Dachverband Deutscher Avifaunisten e.V. (http://www.dda-web.de)

Germany: A. f. rossicus

Winter population size: Dachverband Deutscher Avifaunisten e.V. (http://www.dda-web.de)

Germany: A. f. rossicus

Winter short-term trend: Dachverband Deutscher Avifaunisten e.V. (http://www.dda-web.de)
Winter long-term trend: Dachverband Deutscher Avifaunisten e.V. (http://www.dda-web.de)

Greece: A. f. rossicus

Winter population size: no data available
Winter short-term trend: no data available
Winter long-term trend: no data available

Hungary: A. f. rossicus

Winter population size: Expert opinions Faragó S. (2017): Magyar Vízivad Közlemény No. 29. Soproni Egyetem Kiadó, 304 p. Hungarian Waterfowl Monitoring database National Park Directorates' databases
Winter short-term trend: Expert opinions Faragó S. (2017): Magyar Vízivad Közlemények No. 29. Soproni Egyetem Kiadó, 304 p. Hungarian Waterfowl Monitoring database National Park Directorates' databases
Winter long-term trend: Expert opinions Faragó, S. (2006): A vonuló vízivad populációk fenntartásának alapjai Magyarországon. Doktori Értekezés. Mellékletek, 305 pp. Faragó S. (2017): Magyar Vízivad Közlemények No. 29. Soproni Egyetem Kiadó, 304 p. Hungarian Waterfowl Monitoring database National Park Directorates' databases

Italy: A. f. rossicus

Winter population size: ISPRA-IWC Database
Winter short-term trend: ISPRA-IWC Database - Zenatello M., Baccetti N., Borghesi F., 2014. Risultati dei censimenti degli uccelli acquativi svernanti in Italia. Distribuzione, stima e trend delle popolazioni nel 2001-2010. ISPRA, Serie Rapporti, 206/2014, pp: 24-28.
Winter long-term trend: ISPRA-IWC Database; Baccetti N, Dall'Antonia P, Magagnoli P, Melega L, Serra L, Soldatini C, Zenatello M 2002. Risultati dei censimenti degli uccelli acquatici svernanti in Italia: distribuzione, stima e trend delle popolazioni nel 1991-2000. Biol. Cons. Fauna 111: 19-20.

Latvia: A. f. fabalis

Winter population size: http://www.putni.lv/ansfab.htm
Winter short-term trend: No data available.
Winter long-term trend: No data available.

Latvia: A. f. rossicus

Winter population size: Aunins A., Stipniece A. 2016. [Waterfowl counts at the seacoast. Final report for the year 2016.] (in Latvian). Latvian Ornithological society Stipniece A. 2018. [Waterfowl counts in inland water bodies. Final report for the year 2018.] (in Latvian). Latvian Ornithological society http://www.putni.lv/ansfab.htm
Winter short-term trend: Stipniece A. 2018. [Waterfowl counts in inland water bodies. Final report for the year 2018.] (in Latvian). Latvian Ornithological society
Winter long-term trend: Stipniece A. 2018. [Waterfowl counts in inland water bodies. Final report for the year 2018.] (in Latvian). Latvian Ornithological society

Lithuania: A. f. fabalis

Winter population size: Castren K. 2014. Birds of the Curonian Spit. Vilnius: Petro Ofsetas. 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.
Winter short-term trend: Castren K. 2014. Birds of the Curonian Spit. Vilnius: Petro Ofsetas. 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.
Winter long-term trend: Logminas, V. (ed.). 1991. Lietuvos fauna: paukščiai. Vilnius: „Mokslas". OMPO Vilnius. 2002. Migratory Birds of the Western Palearctic. Vilnius: MOS. 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. Castren K. 2014. Birds of the Curonian Spit. Vilnius: Petro Ofsetas.

Lithuania: A. f. rossicus

Winter population size: Castren K. 2014. Birds of the Curonian Spit. Vilnius: Petro Ofsetas. 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.
Winter short-term trend: Castren K. 2014. Birds of the Curonian Spit. Vilnius: Petro Ofsetas. 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.
Winter long-term trend: Logminas, V. (ed.). 1991. Lietuvos fauna: paukščiai. Vilnius: „Mokslas". OMPO Vilnius. 2002. Migratory Birds of the Western Palearctic. Vilnius: MOS. 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. Castren K. 2014. Birds of the Curonian Spit. Vilnius: Petro Ofsetas.

Luxembourg: A. f. rossicus

Winter population size: Ornitho.lu (2018): online database natur&ëmwelt asbl & Dachverband Deutscher Avifaunisten (DDA) e.V.; Luxembourg; Luxembourg Lorgé P., E. Melchior (2016): Die Vögel Luxemburgs. Natur&ëmwelt Luxembourg. ISBN: 978-2-919920-01-3
Winter short-term trend: Ornitho.lu (2018): online database natur&ëmwelt asbl & Dachverband Deutscher Avifaunisten (DDA) e.V.; Luxembourg; Luxembourg Lorgé P., E. Melchior (2016): Die Vögel Luxemburgs. Natur&ëmwelt Luxembourg. ISBN: 978-2-919920-01-3
Winter long-term trend: Ornitho.lu (2018): online database natur&ëmwelt asbl & Dachverband Deutscher Avifaunisten (DDA) e.V.; Luxembourg; Luxembourg Lorgé P., E. Melchior (2016): Die Vögel Luxemburgs. Natur&ëmwelt Luxembourg. ISBN: 978-2-919920-01-3

Montenegro

Winter population size: IWC reports (2013-2018): Dubak, Vešović, N., Jovićević, M., Vizi O., Vizi,A.

Netherlands: A. f. fabalis

Winter population size: NEM waterbird monitoring scheme (Sovon, RWS, CBS, provincies)
Winter short-term trend: NEM waterbird monitoring scheme (Sovon, RWS, CBS, provincies)
Winter long-term trend: NEM waterbird monitoring scheme (Sovon, RWS, CBS, provincies)

Netherlands: A. f. rossicus

Winter population size: NEM waterbird monitoring scheme (Sovon, RWS, CBS, provincies)
Winter short-term trend: NEM waterbird monitoring scheme (Sovon, RWS, CBS, provincies)
Winter long-term trend: NEM waterbird monitoring scheme (Sovon, RWS, CBS, provincies)

Norway: A. f. fabalis, North-east Europe/North-west Europe

Breeding population size: Shimmings P. & Øien, I.J. 2015. Bestandsestimater og trender for norske hekkefugler. NOF-rapport 2015-2.
Breeding long-term trend: (a) Shimmings P. & Øien, I.J. 2015. Bestandsestimater og trender for norske hekkefugler. NOF-rapport 2015-2. (b) BirdLife Norway Bean Goose Project

Norway: A. f. rossicus, West & Central Siberia/NE & SW Europe

Breeding population size: Shimmings P. & Øien, I.J. 2015. Bestandsestimater og trender for norske hekkefugler. NOF-rapport 2015-2.
Breeding short-term trend: Shimmings P. & Øien, I.J. 2015. Bestandsestimater og trender for norske hekkefugler. NOF-rapport 2015-2.
Breeding long-term trend: (a) Shimmings P. & Øien, I.J. 2015. Bestandsestimater og trender for norske hekkefugler. NOF-rapport 2015-2. (b) BirdLife Norway Bean Goose Project

Poland: A. f. fabalis

Winter population size: State Environmental Monitoring / Chief Inspectorate of Environmental Protection (survey: MNG – Geese Survey)
Winter short-term trend: Chief Inspectorate of Environmental Protection & Polish Society for the Protection of Birds (OTOP) / BirdLife Poland
Winter long-term trend: Chief Inspectorate of Environmental Protection & Polish Society for the Protection of Birds (OTOP) / BirdLife Poland

Poland: A. f. rossicus

Winter population size: State Environmental Monitoring / Chief Inspectorate of Environmental Protection (survey: MNG – Geese Survey)
Winter short-term trend: State Environmental Monitoring / Chief Inspectorate of Environmental Protection (survey: MNG)
Winter long-term trend: Chief Inspectorate of Environmental Protection & Polish Society for the Protection of Birds (OTOP) / BirdLife Poland

Romania: A. f. rossicus

Winter population size: Todorov, E. (2020). National monitoring scheme of wintering geese in South-east Romania. Retrieved June 19, 2020 from Romanian Ornithological Society electronic database, http://pasaridinromania.sor.ro/.
Winter short-term trend: Birdlife International (2004). Birds in Europe: population estimates, trends and conservation status. Cambridge, UK: Birdlife International. Conservation series, No.12 Birdlife International/European Bird Census Council (2000). European birds population: estimates and trends. Cambridge, UK: Birdlife International. Conservation series, No.10 Tucker, G. M. & Heath, M.F. (1994) Birds in Europe: their conservation status. Cambridge, UK: BirdLife International (BirdLife Conservation Series No. 3).
Winter long-term trend: Birdlife International (2004). Birds in Europe: population estimates, trends and conservation status. Cambridge, UK: Birdlife International. Conservation series, No.12 Birdlife International/European Bird Census Council (2000). European birds population: estimates and trends. Cambridge, UK: Birdlife International. Conservation series, No.10 Tucker, G. M. & Heath, M.F. (1994) Birds in Europe: their conservation status. Cambridge, UK: BirdLife International (BirdLife Conservation Series No. 3).

Russia: A. f. fabalis, North-east Europe/North-west Europe

Breeding population size: Rozenfeld in press; Rozenfeld et al. 2018; CAFF 2018
Breeding short-term trend: Rozenfeld in press; Rozenfeld et al. 2018;
Breeding long-term trend: International Single Species Action Plan for the Taiga Bean Goose Population Anser fabalis fabalis 2013; Rozenfel S,B., expert opinion. rozenfeldbro@mail.ru; CAFF 2018

Russia: A. f. rossicus, West & Central Siberia/NE & SW Europe

Breeding population size: Glazov in press
Breeding short-term trend: Kondratiev et al. 2012; Morosov V.V., expert opinion. piskulka@rambler.ru
Breeding long-term trend: Krivenko & Vinogradov 2008; CAFF 2018

Serbia

Winter population size: IWC database
Winter short-term trend: IWC database
Winter long-term trend: IWC database; Bioras database http://www.bioras.petnica.rs/home.php

Slovakia: A. f. rossicus

Winter population size: Coordinatory group for reporting 2019. Slabeyová K., Ridzoň J., Karaska D., Topercer J. & Darolová A. 2011: Správa zo zimného sčítania vodného vtáctva na Slovensku 2009/10, SOS/BirdLife Slovensko, Bratislava, 160 s.
Winter short-term trend: Coordinatory group for reporting 2019, AVES-Symfony Database 2013-2018, KIMS Database 2013-2018. Slabeyová K., Ridzoň J., Karaska D., Topercer J. & Darolová A. 2011: Správa zo zimného sčítania vodného vtáctva na Slovensku 2009/10, SOS/BirdLife Slovensko, Bratislava, 160 s. http://www.vtaky.sk/
Winter long-term trend: Coordinatory group for reporting 2019, AVES-Symfony Database 2013-2018, KIMS Database 2013-2018. Slabeyová K., Ridzoň J., Karaska D., Topercer J. & Darolová A. 2011: Správa zo zimného sčítania vodného vtáctva na Slovensku 2009/10, SOS/BirdLife Slovensko, Bratislava, 160 s. http://www.vtaky.sk/

Slovenia: A. f. rossicus

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