# *Mergus serrator* (Red-breasted Merganser)

## European Red List of Birds

## Supplementary Material

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

**Contents**



**Recommended citation**

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

**Further information**

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

**Data requests and feedback**

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

*Mergus serrator* (Red-breasted Merganser)

**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] | |
| Belarus | 4–9 | <1 | 2010-2018 | partial | 0 | -10 to 10 | 2012-2019 | expert | 0 | 0 | 1980-2019 | expert | |
| Denmark | 2600–2700 | 3 | 2017 | partial | - | -66 to -31 | 2006-2017 | complete | - | -70 to -43 | 1987-2017 | complete | |
| DK: Faroe Is | 150 | <1 | 1995 | expert | ? | | | | ? | | | | |
| DK: Greenland | 1000–10000 | 3 | 2018 | expert | ? | | 2007-2018 | deficient | ? | | 1989-2018 | deficient | |
| Estonia | 300–500 | <1 | 2013-2017 | expert | 0 | 41 to 80 | 2006-2017 | expert | - | -58 to 15 | 1980-2017 | expert | |
| Finland | 22300–41600 | 32 | 2013-2018 | complete | - | -44 to 0 | 2007-2018 | complete | 0 | -11 to 55 | 1986-2018 | complete | |
| France | 4–5 | <1 | 2016-2017 | complete | + | | 2007-2017 | complete | F | -19 to 208 | 1993-2017 | complete | |
| Germany | 340 | <1 | 2016-2016 | complete | 0 | -9 to -4 | 2004-2016 | complete | 0 | | 1980-2016 | expert | |
| Iceland | 2000–4000 | 3 | 1990 | partial | + | | 2002-2014 | partial | + | | 1980-2014 | partial | |
| Rep. Ireland | 300–1000 | <1 | 2008-2011 | expert | - | | 1995-2011 | partial | ? | | 1980-2011 | deficient | |
| Latvia | 0–1 | <1 | 2013-2018 | expert | 0 | | 2012-2018 | expert | ? | | 1980-2018 | deficient | |
| Lithuania | 0–5 | <1 | 2013-2018 | partial | 0 | | 2013-2018 | partial | - | | 1980-2018 | partial | |
| Netherlands | 50–80 | <1 | 2013-2017 | complete | 0 | -38 to 16 | 2006-2017 | complete | + | 2650 to 5800 | 1980-2017 | complete | |
| Norway | 10000–30000 | 18 | 2013-2018 | expert | ? | | 2013-2018 | deficient | ? | | 1980-2018 | partial | |
| Poland | 0 | <1 | 2013-2018 | complete | ? | | 2007-2018 | deficient | - | -100 | 1980-2018 | expert | |
| Russia | 13000–22500 | 17 | 2008-2018 | partial | ? | | 2008-2018 | deficient | - | 0 | 1980-2018 | partial | |
| Sweden | 17000–26000 | 21 | 2013-2018 | partial | 0 | -37 to 12 | 2007-2018 | partial | + | 10 to 30 | 1980-2018 | partial | |
| Switzerland | 2 | <1 | 2013–2016 | complete | F | | 2007-2018 | complete | F | | 1990-2018 | complete | |
| Ukraine | 80–110 | <1 | 2010-2018 | partial | - | | 2010-2018 | partial | - | | 1980-2018 | partial | |
| United Kingdom | 1600–1700 | 2 | 2008-2011 | partial | ? | | 2004-2018 | deficient | + | | 1991-2013 | complete | |
| EU28 | 44600–73900 | 59 | | | | | | | | | | | |
| **Europe** | **70900–141000** | **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 | 60–180 | <1 | 2007-2018 | complete | - | -40 | 2007-2018 | complete | - | -42 to 20 | 1980-2018 | complete | |
| Azerbaijan | 250–1000 | <1 | 1996-2019 | partial | ? | | 2010-2019 | partial | ? | | 1980-2019 | expert | |
| Belarus | | <1 | 2013-2018 | partial | ? | 0 | 2000-2012 | deficient | ? | | | | |
| Belgium | 3–8 | <1 | 2013-2018 | complete | - | -94 to -80 | 2007-2018 | complete | - | -98 to -94 | 1992-2018 | complete | |
| Bosnia & HG | 2 | <1 | 2015-2018 | complete | ? | | 2007-2018 | deficient | ? | | 1980-2018 | deficient | |
| Bulgaria | 120–200 | <1 | 2013-2018 | complete | - | -20 to -5 | 2000-2018 | complete | - | -70 to -20 | 1980-2018 | complete | |
| Croatia | 430–450 | <1 | 2013-2018 | expert | ? | | 2007-2018 | deficient | ? | | 1980-2018 | deficient | |
| Cyprus | 0–4 | <1 | 2013-2018 | partial | - | -64 to 0 | 2007-2018 | partial | + | 10 to 50 | 1980-2018 | expert | |
| Czechia | 0–17 | <1 | 2015-2019 | complete | ? | | 2008-2019 | complete | ? | | 1980-2019 | complete | |
| Denmark | 49500 | 36 | 2013-2016 | complete | 0 | | 2006-2017 | complete | 0 | | 1980-2016 | complete | |
| DK: Faroe Is | 100–500 | <1 | 1992 | | ? | | | | ? | | | | |
| DK: Greenland | 5000–20000 | 7 | 2017 | complete | ? | | 2007-2018 | deficient | ? | | 1989-2018 | deficient | |
| Estonia | 500–2500 | <1 | 2013-2017 | complete | 0 | 0 to 20 | 2006-2017 | complete | + | 20 to 50 | 1980-2017 | complete | |
| Finland | 140–320 | <1 | 2014-2018 | complete | + | 51 to 72 | 2007-2018 | complete | 0 | -39 to 16 | 1980-2018 | complete | |
| France | 2700–3200 | 2 | 2013-2018 | complete | - | -36 to -11 | 2007-2018 | complete | 0 | -14 to 5 | 1980-2017 | complete | |
| Georgia | 2–9 | <1 | 2017-2018 | partial | ? | | | | ? | | | | |
| Germany | 9500 | 7 | 2011-2016 | complete | + | 10 to 40 | 2003-2016 | complete | 0 | -30 to 40 | 1980-2016 | complete | |
| Greece | 180–450 | <1 | 2013-2018 | partial | 0 | | 2007-2018 | partial | + | | 1980-2018 | partial | |
| Iceland | 5000–15200 | 6 | 2018 | complete | + | | 2002-2014 | partial | + | | 1980-2014 | partial | |
| Rep. Ireland | 1900–2000 | 1 | 2011-2016 | complete | - | | 2004-2016 | complete | + | | 1987-2016 | partial | |
| Italy | 1100–1400 | <1 | 2013-2015 | partial | 0 | | 2009-2015 | partial | - | -30 to -10 | 1991-2015 | partial | |
| Latvia | 70–210 | <1 | 2016-2018 | complete | ? | -89 to 113 | 2009-2018 | complete | ? | -76 to 30 | 1991-2018 | complete | |
| North Macedonia | 1–5 | <1 | 2013-2018 | complete | 0 | | 2010-2019 | complete | 0 | | 1988-2018 | complete | |
| Malta | 10–18 | <1 | 2017-2018 | expert | - | | 2008-2018 | expert | - | | 1980-2018 | expert | |
| Moldova | 10–40 | <1 | 2018-2019 | partial | F | | 2007-2018 | partial | 0 | | 1990-2018 | expert | |
| Montenegro | 2 | <1 | 2013-2018 | expert | 0 | | 2007-2018 | expert | ? | | | | |
| Netherlands | 4900–8900 | 5 | 2013-2017 | complete | 0 | -38 to 19 | 2006-2017 | complete | 0 | -26 to 40 | 1981-2017 | complete | |
| Norway | 10000–30000 | 13 | 1994-2018 | partial | ? | | 2013-2018 | deficient | ? | | 1980-2018 | deficient | |
| Poland | 1000–6700 | 2 | 2013-2018 | complete | ? | -42 to 23 | 2011-2018 | complete | ? | | 1980-2018 | deficient | |
| Portugal | 1–70 | <1 | 2013-2018 | complete | ? | -100 to 483 | 2007-2018 | complete | - | | 1988-2018 | partial | |
| Romania | 4–200 | <1 | 2013-2018 | partial | ? | -10 to 19 | 2013-2018 | complete | ? | -1 to 7 | 2000-2018 | partial | |

**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] | |
| Serbia | 5–30 | <1 | 2013-2018 | complete | F | | 2013-2018 | complete | ? | | 1980-2018 | deficient | |
| Slovenia | 15–60 | <1 | 2013-2018 | complete | - | | 2007-2018 | complete | - | -80 to -70 | 1980-2018 | expert | |
| Spain | 160–310 | <1 | 2013-2018 | partial | - | -89 to 0 | 2007-2018 | partial | - | | 1980-2018 | partial | |
| Sweden | 4000–17000 | 7 | 2013-2018 | complete | - | -28 to -1 | 2007-2018 | complete | + | 104 to 137 | 1980-2018 | complete | |
| Switzerland | 27–70 | <1 | 2015-2019 | complete | - | -37 to -6 | 2008-2019 | complete | + | 223 to 333 | 1980-2019 | complete | |
| Turkey | 90–220 | <1 | 2013-2019 | complete | ? | | 2008-2019 | deficient | ? | | 1980-2019 | deficient | |
| Ukraine | 1400–1800 | 1 | 2014-2017 | partial | - | | 2007-2018 | partial | F | | 1980-2018 | partial | |
| United Kingdom | 10900–11000 | 8 | 2012-2016 | complete | - | | 2005-2016 | complete | + | | 1980-2016 | complete | |
| EU28 | 87300–114000 | 72 | | | | | | | | | | | |
| **Europe** | **109000–183000** | **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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[5] The robustness of regional trends to the effects of any missing or incomplete data was tested using plausible scenarios, based on other sources of information, including any other reported information, recent national Red Lists, scientific literature, other publications and consultation with relevant experts.
[6] Trend directions are reported as: increasing (+); decreasing (-); stable (0); fluctuating (F); or unknown (?).
[7] Trend magnitudes are rounded to the nearest integer.

# Trend maps

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

**KEY**

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

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

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

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

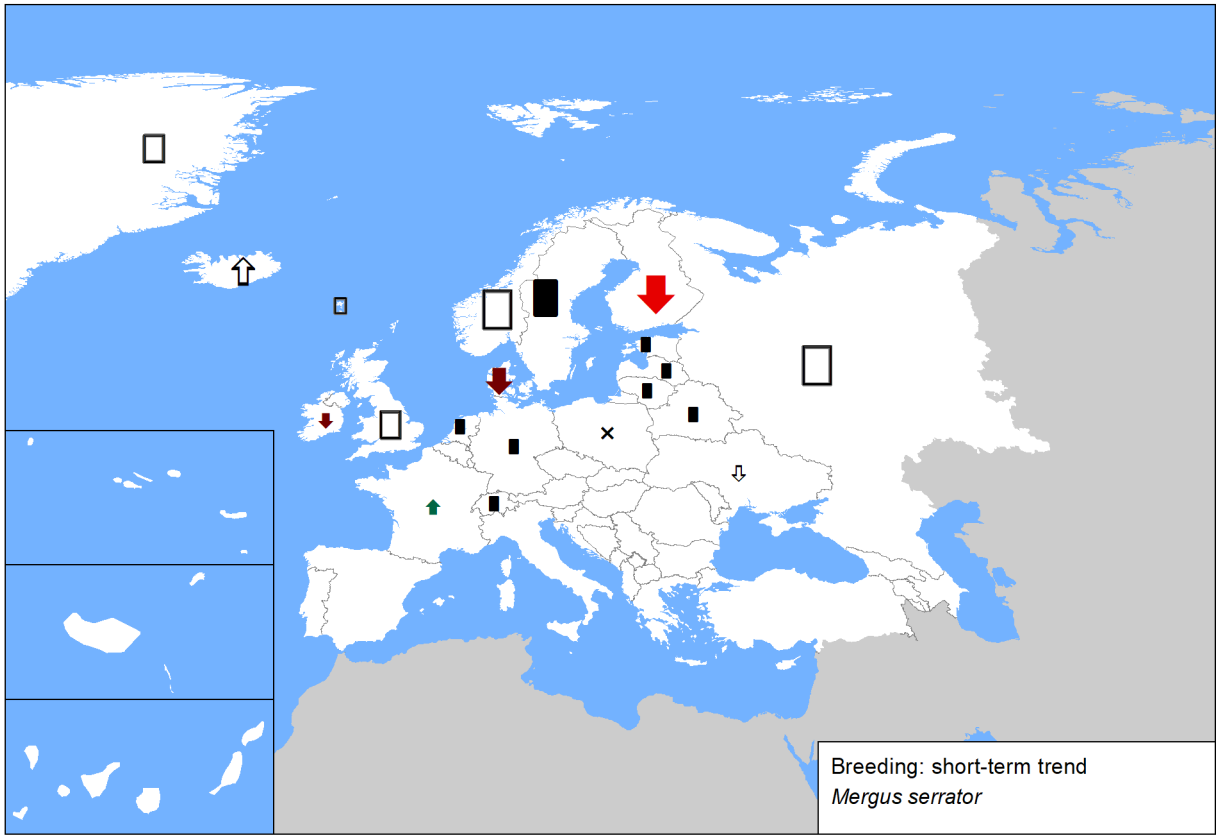



**Figure 2.** Breeding population sizes and long-term trends across Europe.

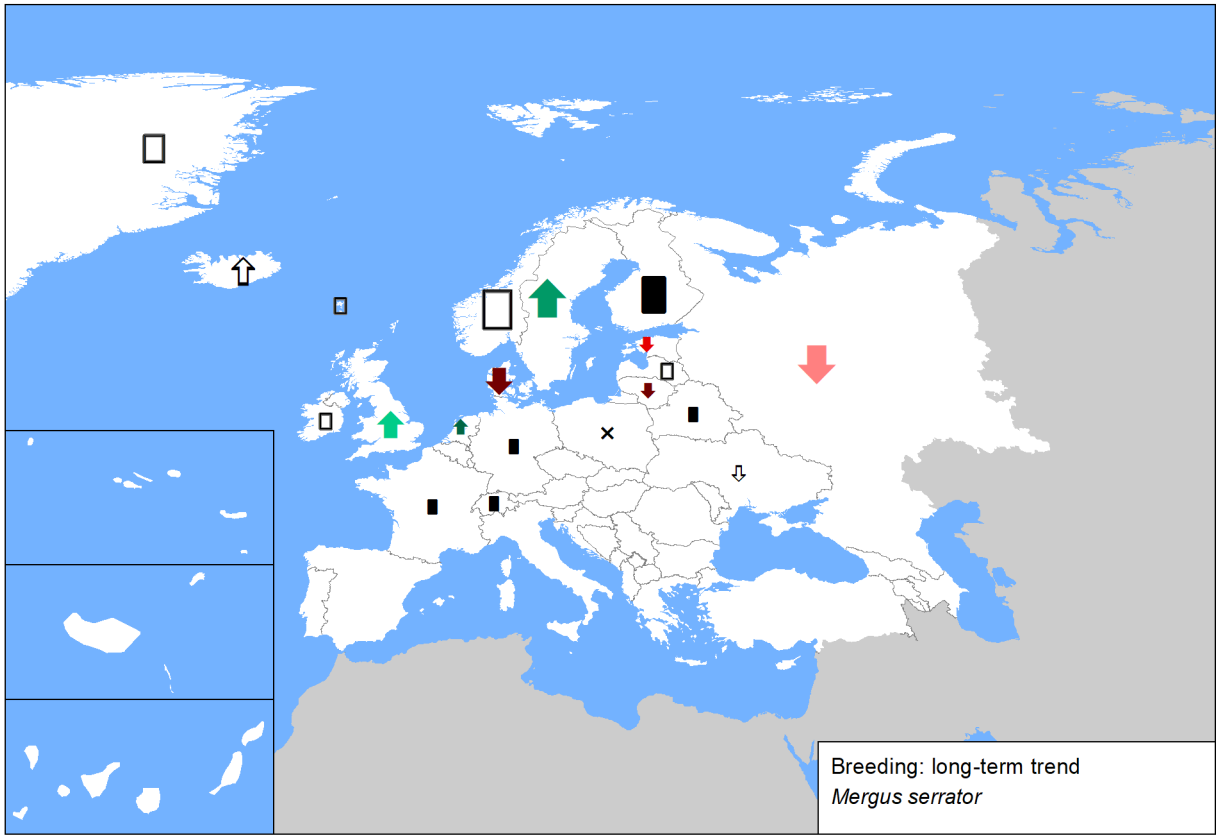


**Figure 3.** Reported wintering population sizes and short-term trends across Europe. Note that some countries within the species' wintering range did not report any data.

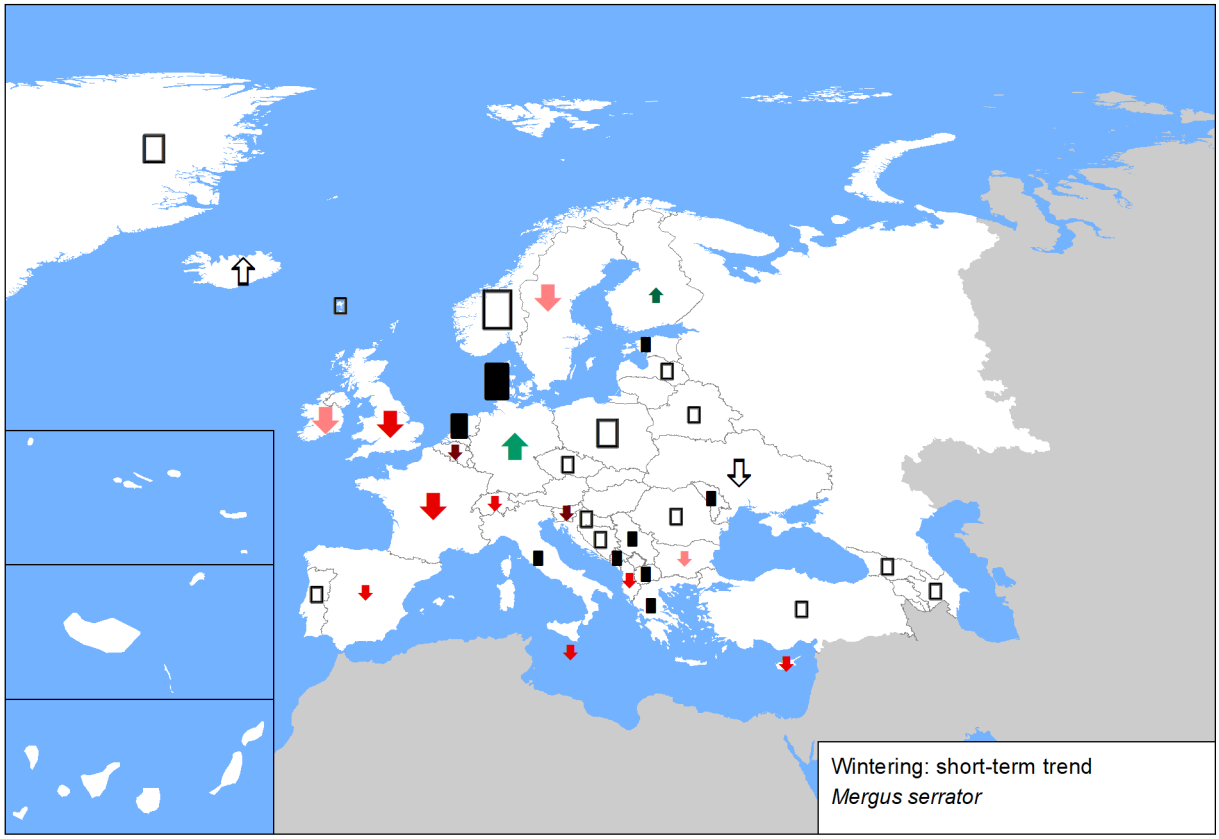
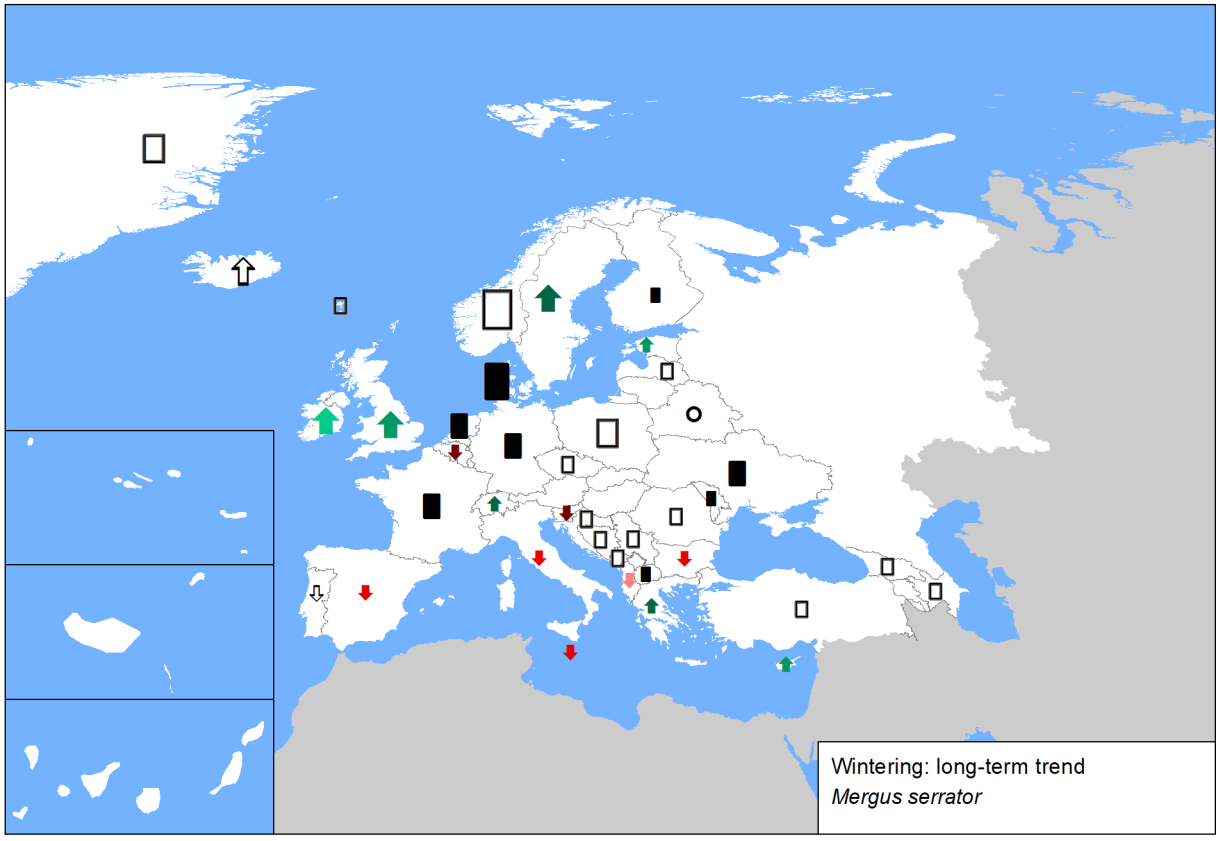



**Figure 4.** Reported wintering population sizes and long-term trends across Europe. Note that some countries within the species' wintering range did not report any data.



# Sources

## Albania

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

## Azerbaijan

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|---|
| **Winter population size:** AOS data base |
| **Winter short-term trend:** AOS Data Base |
| **Winter long-term trend:** AOS Data Base |

## Belarus

| |
|---|
| **Breeding population size:** Research work of the National Academy of Sciences of the Republic of Belarus "Dynamics and predictive assessment of changes in the state of populations of the main resource and biocenotically most important bird species in Belarus" |
| **Breeding long-term trend:** Bogdanovich I.A. - personal communication |
| **Winter population size:** Bogdanovich I.A. - personal communication |
| **Winter short-term trend:** Bogdanovich I.A. - personal communication |

## Belgium

| |
|---|
| **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

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|---|
| **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

| |
|---|
| **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:** BSPB GIS related ornithological database; National Art. 12 reporting database 2013-2018; |
| **Winter long-term trend:** BSPB GIS related ornithological database; Michev, T., L. Profirov. 2003. Midwinter Numbers of Waterbirds in Bulgaria (1977-2001). Results from 25 years of mid-winter count carried out at the most important Bulgarian Wetlands. Publ. House Pensoft, Sofia, 160 pp.; |

## Croatia

| |
|---|
| **Winter population size:** Dumbović Mazal V., Pintar V., Zadravec M. (2019): Prvo izvješće o brojnosti i rasprostranjenosti ptica u Hrvatskoj sukladno odredbama Direktive o pticama. |
| **Winter short-term trend:** Dumbović Mazal V., Pintar V., Zadravec M. (2019): Prvo izvješće o brojnosti i rasprostranjenosti ptica u Hrvatskoj sukladno odredbama Direktive o pticama. |
| **Winter long-term trend:** Dumbović Mazal V., Pintar V., Zadravec M. (2019): Prvo izvješće o brojnosti i rasprostranjenosti ptica u Hrvatskoj sukladno odredbama Direktive o pticama. |

## Cyprus

| |
|---|
| **Winter population size:** Birdwatching records reported in BirdLife Cyprus annual reports (2014). |
| **Winter short-term trend:** Birdwatching records reported in BirdLife Cyprus annual reports (2014). |
| **Winter long-term trend:** Birdwatching records reported in BirdLife Cyprus annual reports. |

## Czechia

| |
|---|
| **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. |

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## Czechia

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**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

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

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

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

**Winter population size:** Joensen, A. H. (1973). Moult Migration and Wingfeather Moult of Seaducks in Denmark. Danish Review of Game Biology 8 (4). 42 pp. 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:** 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/

## DK: Faroe Is

**Breeding population size:** BirdLife International (2004) Birds in Europe: population estimates, trends and conservation status. BirdLife International, Cambridge, UK.

**Winter population size:** BirdLife International 2004

## DK: Greenland

**Winter population size:** Merkel et al. submitted. Status of wintering seabirds off Southwest Greenland, 2017

## Estonia

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

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

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

**Winter population size:** Estonian Working Group on Bird Status and Numbers

**Winter short-term trend:** Estonian Working Group on Bird Status and Numbers

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

*Mergus serrator* (Red-breasted Merganser)

## Finland

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| **Breeding population size:** Previous estimate 25000-35000 based on inland data (and estimating an additional 8720 in archipelago (2006-2012) 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:** Waterfowl monitoring schemes of Finnish Museum of Natural History (LUOMUS) and Natural Resources Institute Finland (LUKE; previously Fisheries and Game Research Institute RKTL). Finnish archipelago bird census (organized by Finnish Environment Institute SYKE, Metsähallitus and Natural Resources Institute Finland Luke). Laaksonen, T., Lehikoinen, A., Pöysä, H., Sirkiä, P. & Ikonen, K. 2019: Sisävesien vesilintujen kannanvaihtelut 1986-2018. – Linnut-vuosikirja 2018:46-55. Below, A., Mikkola-Roos, M., Kurvinen, L. & Lehikoinen, A. 2019: Saaristolintukantojen kehitys vuosina 1980–2018. – Linnut-vuosikirja 2018: 56-67. |
| **Breeding long-term trend:** Waterfowl monitoring schemes of Finnish Museum of Natural History (LUOMUS) and Natural Resources Institute Finland (LUKE; previously Fisheries and Game Research Institute RKTL). Finnish archipelago bird census (organized by Finnish Environment Institute SYKE, Metsähallitus and Natural Resources Institute Finland Luke). Laaksonen, T., Lehikoinen, A., Pöysä, H., Sirkiä, P. & Ikonen, K. 2019: Sisävesien vesilintujen kannanvaihtelut 1986-2018. – Linnut-vuosikirja 2018:46-55. Below, A., Mikkola-Roos, M., Kurvinen, L. & Lehikoinen, A. 2019: Saaristolintukantojen kehitys vuosina 1980–2018. – Linnut-vuosikirja 2018: 56-67. |
| **Winter population size:** BirdLife Finland 2019: Tiira bird observation database. |
| **Winter short-term trend:** BirdLife Finland 2019: Tiira bird observation database. |
| **Winter long-term trend:** Winter bird censuses of the Finnish Museum of Natural History, University of Helsinki. |

## France

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| **Breeding population size:** Debout G. & Gallien F. 2018. Harle huppé - Mergus serrator. in Quaintenne & les Coordinateurs-espèce (2018) Les oiseaux nicheurs rares et menacés en France en 2015. Ornithos 25-2, p. 57-91 |
| **Breeding short-term trend:** Debout G. & Gallien F. 2018. Harle huppé - Mergus serrator. in Quaintenne & les Coordinateurs-espèce (2018) Les oiseaux nicheurs rares et menacés en France en 2015. Ornithos 25-2, p. 57-91 ; Debout G. & Gallien F. 2008. Harle huppé - Mergus serrator. in Riegel & les coordinateurs-espèce (2008) Les oiseaux nicheurs rares et menacés en France en 2007. Ornithos 15-3, p. 153-180 |
| **Breeding long-term trend:** Debout G. 2009. Nouvel Atlas des Oiseaux Nicheurs de Normandie 2003-2005. , GONm Groupe Ornithologique Normand448 p. ; Debout G. & Gallien F. 2018. Harle huppé - Mergus serrator. in Quaintenne & les Coordinateurs-espèce (2018) Les oiseaux nicheurs rares et menacés en France en 2015. Ornithos 25-2, p. 57-91 ; Debout G. & Gallien F. 2008. Harle huppé - Mergus serrator. in Riegel & les coordinateurs-espèce (2008) Les oiseaux nicheurs rares et menacés en France en 2007. Ornithos 15-3, p. 153-180 |
| **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.. |

## Georgia

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| **Winter population size:** Zurab Gurgenidze Zurab.Gurgenidze@Sabuko.ge; observation.org |

## Germany

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| **Breeding population size:** Monitoring seltener Brutvögel (http://www.dda-web.de/index.php?cat=monitoring&subcat=ga&subsubcat=kontakt) |
| **Breeding short-term trend:** Monitoring seltener Brutvögel (http://www.dda-web.de/index.php?cat=monitoring&subcat=ga&subsubcat=kontakt) |
| **Breeding long-term trend:** Gerlach et al. (in Vorb.): Vögel in Deutschland – 2019. Dachverband Deutscher Avifaunisten, Bundesamt für Naturschutz und Länderarbeitsgemeinschaft der Vogelschutzwarten, Münster. |
| **Winter population size:** Dachverband Deutscher Avifaunisten e.V. und Forschungs- und Technologiezentrum Westküste, Universität Kiel |
| **Winter short-term trend:** Dachverband Deutscher Avifaunisten e.V. und Forschungs- und Technologiezentrum Westküste, Universität Kiel |
| **Winter long-term trend:** Dachverband Deutscher Avifaunisten e.V. (http://www.dda-web.de) |

## Greece

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| **Winter population size:** 1) Δημαλέξης, Τα., Καστρίτης, Θ., Γρίβας, Κ., Μανωλόπουλος, Α., Καρδακάρη, Ν., Κακαλής, Λ., Ξηρουχάκης, Σ., Τσαϊτουρίδης, Χ., Papazoglou, C. & Barov, B. 2009. Προσδιορισμός συμβατών δραστηριοτήτων σε σχέση με τα είδη χαρακτηρισμού των Ζωνών Ειδικής Προστασίας της ορνιθοπανίδας. Παραδοτέο 8. Οδηγός οικολογικών απαιτήσεων, απειλών και ενδεδειγμένων μέτρων για τα είδη χαρακτηρισμού. 2) Βλάχος Χ., Μπίρτσας Π., Θωμαΐδης Χ., Χατζηνίκος Ε., Μποντζώρλος Β., Μπραζιώτης Σ., Κόντος Κ., Βλαχάκη Δ., Δεδουσοπούλου Ε., Κιούσης Δ., Ξένος Α., Στεφάνου Λ.Μ., Κασάμπαλης Δ., και Μελικώκη Κ. (Συντονιστές έκδοσης). 2015. Γ' Φάση της Μελέτης 9 «Εποπτεία και Αξιολόγηση της Κατάστασης Διατήρησης Ειδών Ορνιθοπανίδας στην Ελλάδα» ΥΠΑΠΕΝ, Αθήνα, Σύμπραξη Γραφείων Μελετών «"Φ.ΦΑΣΟΥΛΑΣ-Ν.ΜΑΝΤΖΙΟΣ" Ε.Ε. – ΡΟΔΟΥΛΑ ΚΩΝΣΤΑΝΤΙΝΙΔΟΥ ΤΟΥ ΓΕΩΡΓΙΟΥ – "ΑΘ.ΤΖΑΚΟΠΟΥΛΟΣ ΚΑΙ ΣΙΑ" Ε.Ε.», Θεσσαλονίκη. 3) Midwinter Counts Database (1967 - 2019), Hellenic Ornithological Society 4) BirdLife International (2017). European birds of conservation concern: populations, trends and national responsibilities. Cambridge. UK: BirdLife Internationa. ISBN 978-1-912086-00-9, 5) Portolou, D., Bourdakis, S., Vlachos, C., Kastritis, T., and Dimalexis. T. (eds.) 2009. Important Bird Areas of Greece: Priority sites for conservation. Hellenic Ornithological Society. Athens. |
| **Winter short-term trend:** 1) Midwinter Counts Database (1967 - 2019), Hellenic Ornithological Society 2) BirdLife International (2017). European birds of conservation concern: populations, trends and national responsibilities. Cambridge. UK: BirdLife Internationa. ISBN 978-1-912086-00-9, 3) Portolou, D., Bourdakis, S., Vlachos, C., Kastritis, T., and Dimalexis. T. (eds.) 2009. Important Bird Areas of Greece: Priority sites for conservation. Hellenic Ornithological Society. Athens. |

*Mergus serrator* (Red-breasted Merganser)

## Greece

**Winter 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). 3) Δημαλέξης, Τ., Καστρίτης, Θ., Γρίβας, Κ., Μανωλόπουλος, Α., Καρδακάρη, Ν., Κακαλής, Λ., Ξηρουχάκης, Σ., Τσαϊτουρίδης, Χ., Papazoglou, C. & Barov, B. 2009. Προσδιορισμός συμβατών δραστηριοτήτων σε σχέση με τα είδη χαρακτηρισμού των Ζωνών Ειδικής Προστασίας της ορνιθοπανίδας. Παραδοτέο 8. Οδηγός οικολογικών απαιτήσεων, απειλών και ενδεδειγμένων μέτρων για τα είδη χαρακτηρισμού. 4) Βλάχος Χ., Μπίρτσας Π., Θωμαΐδης Χ., Χατζηνίκος Ε., Μποντζώρλος Β., Μπραζιώτης Σ., Κόντος Κ., Βλαχάκη Δ., Δεδουσοπούλου Ε., Κιούσης Δ., Ξένος Α., Στεφάνου Λ.Μ., Κασάμπαλης Δ., και Μελικώκη Κ. (Συντονιστές έκδοσης). 2015. Γ' Φάση της Μελέτης 9 «Εποπτεία και Αξιολόγηση της Κατάστασης Διατήρησης Ειδών Ορνιθοπανίδας στην Ελλάδα» ΥΠΑΠΕΝ, Αθήνα, Σύμπραξη Γραφείων Μελετών «"Φ.ΦΑΣΟΥΛΑΣ-Ν.ΜΑΝΤΖΙΟΣ" Ε.Ε. – ΡΟΔΟΥΛΑ ΚΩΝΣΤΑΝΤΙΝΙΔΟΥ ΤΟΥ ΓΕΩΡΓΙΟΥ – "ΑΘ.ΤΖΑΚΟΠΟΥΛΟΣ ΚΑΙ ΣΙΑ" Ε.Ε.», Θεσσαλονίκη.

## Iceland

**Breeding population size:** Arnþór Garðarsson 2009. Fjöldi æðarfugls,hávellu, toppandar og stokkandar á grunnsævi að vetri. Bliki 30: 49-54.

**Breeding short-term trend:** Mid-winter bird counts, 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:** Arnþór Garðarsson 2009. Fjöldi æðarfugls,hávellu, toppandar og stokkandar á grunnsævi að vetri. Bliki 30: 49-54.

**Winter short-term trend:** Icelandic Institute of Natural History 2018. Red list of Icelandic Birds. Red-breasted Merganser. https://www.ni.is/node/27138 (mid-winter indicies).

**Winter long-term trend:** Icelandic Institute of Natural History 2018. Red list of Icelandic Birds. Red-breasted Merganser. https://www.ni.is/node/27138 (mid-winter indicies).

## Republic of Ireland

**Breeding population size:** BirdLife International (2004) Birds in Europe: population estimates, trends and conservation status. Cambridge, UK: BirdLife International. (BirdLife Conservation Series No. 12). Gittings T. (1995). The status of the Common Scoter Melanitta nigra in Ireland. Report on the 1995 All-Ireland Common Scoter Survey. Unpublished Report for the Irish Wildbird Conservancy. Hunt, J., Heffernan, M.L., McLoughlin, D., Benson, C. & Huxley, C. (2013) The breeding status of Common Scoter, Melanitta nigra in Ireland, 2012. Irish Wildlife Manuals, No. 66. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Ireland.

**Breeding short-term trend:** Gittings T. (1995). The status of the Common Scoter Melanitta nigra in Ireland. Report on the 1995 All-Ireland Common Scoter Survey. Unpublished Report for the Irish Wildbird Conservancy. Hunt, J., Heffernan, M.L., McLoughlin, D., Benson, C. & Huxley, C. (2013) The breeding status of Common Scoter, Melanitta nigra in Ireland, 2012. Irish Wildlife Manuals, No. 66. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Ireland.

**Breeding long-term trend:** Balmer, D., Gillings, S., Caffrey, B., Swan, B., Downie, I. & Fuller, R. (2013) Bird Atlas 2007-11 The breeding and wintering birds of Britain and Ireland. British Trust for Ornithology. Sharrock, J.T.R. (1976) The Atlas of Breeding Birds in Britain and Ireland. T. & AD Poyser.

**Winter population size:** Burke, B., Lewis, L. J., Fitzgerald, N., Frost, T., Austin, G. & Tierney, T. D. (2018) Estimates of waterbird numbers wintering in Ireland, 2011/12 – 2015/16. Irish Birds 11, 1-12.

**Winter short-term trend:** Lewis, L. J., Burke, B., Fitzgerald, N., Tierney, T. D. & Kelly, S. (2019) Irish Wetland Bird Survey: Waterbird Status and Distribution 2009/10-2015/16. Irish Wildlife Manuals, No. 106. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.

**Winter long-term trend:** Lewis, L. J., Burke, B., Fitzgerald, N., Tierney, T. D. & Kelly, S. (2019) Irish Wetland Bird Survey: Waterbird Status and Distribution 2009/10-2015/16. Irish Wildlife Manuals, No. 106. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.

## Italy

**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

**Breeding population size:** Unpublished data for European Breeding Bird Atlas (2013-2017); Expert: Andris Dekants, andris.dekants@lob.lv

**Breeding short-term trend:** Unpublished data for European Breeding Bird Atlas (2013-2017); Expert: Andris Dekants, andris.dekants@lob.lv http://www.putni.lv/merser.htm

**Breeding long-term trend:** No data available.

**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

**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

**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. Ministry of Environment of the Republic of Lithuania. 2016-2018. Leidinio "Lietuvos raudonoji knyga" parengimo paslaugos (Red data book of Lithuania). (Agreement No VPS-2016-104-ES)

**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. Ministry of Environment of the Republic of Lithuania. 2016-2018. Leidinio "Lietuvos raudonoji knyga" parengimo paslaugos (Red data book of Lithuania). (Agreement No VPS-2016-104-ES)

## Lithuania

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| **Breeding long-term trend:** Logminas, V. (ed.). 1991. Lietuvos fauna: paukščiai. Vilnius: „Mokslas“. Kurlavičius, P. (ed.) 2006. Lietuvos perinčių paukščių atlasas. Kaunas: „Lututė“. Expert working group of the Lithuanian Ornithological Society (lod@birdlife.lt) BirdLife International/European Bird Cencus Council. 2000. European bird populations: estimates and trends. Cambridge, UK: BirdLife International (BirdLife Conservation Series No. 10). Raudonikis L. 2004. Important Bird Areas of the European Union Importance in Lithuania. Lithuanian Ornithological Society & Institute of Ecology of Vilnius University. Lutute, Vilnius. Jusys, V., Karalius, S., Raudonikis, L. 2012. Lietuvos paukščių pažinimo vadovas. Kaunas: „Lututė“. Ministry of Environment of the Republic of Lithuania. 2012. Status and trends of bird populations (Article 12, Birds Directive 2009/147/EC) National Summary 2008-2012 Lithuania. Expert working group of the Lithuanian Ornithological Society (lod@birdlife.lt) 2015-2018. Lietuvos perinčių paukščių atlaso duomenų bazė (Lithuanian Breeding Birds Atlas Database). Vilnius. Ministry of Environment of the Republic of Lithuania. 2016-2018. Leidinio "Lietuvos raudonoji knyga" parengimo paslaugos (Red data book of Lithuania). (Agreement No VPS-2016-104-ES) |

## North Macedonia

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| **Winter population size:** unpublished IWC data of the Macedonian Ecological Society |
| **Winter short-term trend:** unpublished IWC data of the Macedonian Ecological Society |
| **Winter long-term trend:** Micevski, B. (1991). Faunistical analysis and structure of Dojran Lake winter ornithofauna. God. zb., Biol. 43–44: 65–73; Micevski, B. (1999). Winter census of the waterfowl on the Macedonian part of Ohrid Lake in January 1998 (with structural, dietary and evaluation analyses. In: Special issues of Macedonian Ecological Society. pp. 313–323. MES.; Micevski, B. (1992). Structural and faunistical characteristics of the Prespa Lake winter ornithofauna. God. zb., Biol. 45: 51–55; Micevski, B., Schneider, M. (1997). Winter census of waterfowl in Macedonian part of Prespa Lake in January 1997 (with structural, dietary and evaluation analyses). In: Towards Integrated Conservation and Sustainable Development of Transboundary Macro and Micro Prespa Lakes pp. 160–164. Towards Integrated Conservation and Sustainable Development of Transboundary Macro and Micro Prespa Lakes. Preservation and Protection of Natural Environment in Albania, Korcha, Albania.; Micevski, B. (1996). Ohrid Lake winter ornitofauna (Faunistical and Structural Characteristics). God. Zb., Biol. 49: 85–93; Fremuth, W., Bino, T., Bego, F., Jorgo, G., Micevski, B., Anastasovski, V., Tzvetkov, T., Hristov, I., Schneider-Jacoby, M., Shumka, S. (2000). Four years of simultaneous wintering waterbird census at the Ohrid and Prespa Lakes 1997-2000. In: Grupche, Lj. & Kungulovski, Gj. (eds.). Proceedings of the International Symposium ‘Sustainable development of Prespa Region’ pp. 28–38. Macedonian Ecological Society; Catsadorakis, G., Aleksi, P., Avramoski, O., Bino, T., Bojadzi, A., Brajanoski, Z., Fremuth, W., Kazoglou, Y., Koutseri, I., Logotheti, A., Malakou, M., Nikolaou, H., Nikolaou, L., Putilin, K., Shumka, S., Uzunova, D., Velevski, M. (2013). Waterbirds wintering at the Prespa lakes as revealed by simultaneous counts in the three adjoining littoral states. Macedonian Journal of Ecology and Environment 15(1): 23–31; unpublished IWC data of the Macedonian Ecological Society |

## Malta

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| **Winter population size:** Birdlife Malta (Unpublished data) |
| **Winter short-term trend:** BirdLife International (2017)European birds of conservation concern:populations, trends and national responsibilitiesCambridge, UK: BirdLife International |
| **Winter long-term trend:** BirdLife International (2017)European birds of conservation concern:populations, trends and national responsibilitiesCambridge, UK: BirdLife International |

## Moldova

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| **Winter population size:** International Waterbird Census |
| **Winter short-term trend:** SPPN expert opinion (sppn.moldova@gmail.com) |
| **Winter long-term trend:** SPPN expert opinion (sppn.moldova@gmail.com) |

## Montenegro

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

## Netherlands

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| **Breeding population size:** Sovon NEM (Sovon, CBS and provincies) and Bird atlas (Sovon 2018) |
| **Breeding short-term trend:** NEM (Sovon, RWS, CBS, provincies) |
| **Breeding long-term trend:** Sovon |
| **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

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| **Breeding population size:** Shimmings P. & Øien, I.J. 2015. Bestandsestimater og trender for norske hekkefugler. NOF-rapport 2015-2. |
| **Breeding short-term trend:** Siland Mergus serrator, unpublished factsheet BirdLife Norway |
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| **Winter population size:** (a) Siland Mergus serrator, unpublished factsheet BirdLife Norway, (b) Svorkmo-Lundberg, T., Bakken, V., Helberg, M., Mørk, K., Røer, J.E. & Sæbø, S. 2006. Norsk VinterfuglAtlas. Fuglenes utbredelse, bestandsstørrelse og økologi vinterstid. Norsk Ornitologisk Forening, Trondheim. 496 pp. |
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## Poland

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| **Breeding population size:** The Polish Avifaunistic Commission http://komisjafaunistyczna.pl/ |
| **Breeding short-term trend:** Chief Inspectorate of Environmental Protection & Polish Society for the Protection of Birds (OTOP) / BirdLife Poland |
| **Breeding long-term trend:** Stawarczyk T., Cofta T., Kajzer Z., Lontkowski J., Sikora A. 2017. Rzadkie Ptaki Polski. Studio B&W Wojciech Janecki, Sosnowiec |
| **Winter population size:** State Environmental Monitoring / Chief Inspectorate of Environmental Protection (survey: MZPW – Wintering Waterbird Survey & MZPM – Wintering Seabirds Survey) |
| **Winter short-term trend:** State Environmental Monitoring / Chief Inspectorate of Environmental Protection (survey: MZPW) |
| **Winter long-term trend:** Chief Inspectorate of Environmental Protection & Polish Society for the Protection of Birds (OTOP) / BirdLife Poland |

## Portugal

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| **Winter population size:** Programa Nacional de Monitorização de Aves Aquáticas Invernantes |
| **Winter short-term trend:** Programa Nacional de Monitorização de Aves Aquáticas Invernantes |
| **Winter long-term trend:** Sousa J (2002b). Tendências populacionais de aves aquáticas. Relatório de estudo integrado no Projecto do Instituto da Conservação da Natureza "Livro Vermelho dos Vertebrados de Portugal - Revisão"/Programa Operacional do Ambiente, não publicado.; Programa Nacional de Monitorização de Aves Aquáticas Invernantes |

## Romania

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| **Winter population size:** International Waterbird Census, Romania, Ornitodata (Romanian Ornithological Society) Database, OpenBirdMaps (Milvus Group) Database |
| **Winter short-term trend:** International Waterbird Census, Romania, Ornitodata (Romanian Ornithological Society) Database, OpenBirdMaps (Milvus Group) Database |
| **Winter long-term trend:** International Waterbird Census, Romania, Ornitodata (Romanian Ornithological Society) Database, OpenBirdMaps (Milvus Group) Database |

## Russia

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| **Breeding population size:** Voltzit & Kalyakin 2013-2019; Database of the project on Atlas of breeding birds of European Russia |
| **Breeding long-term trend:** Mineev 2003; Bianki et al. 2004; Gilyazov 2012 |

## Serbia

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| **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 |

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## Sweden

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## Switzerland

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## Turkey

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| **Winter population size:** Ebird Datebase and Midwinter Fowl Counts (2013-2018), Birdlife Estimate |
| **Winter short-term trend:** Midwinter bird counts 2012-2019 |
| **Winter long-term trend:** Midwinter bird counts 1980-2019 and Historical Records come from OSME and other midwinter counts |

## Ukraine

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| **Breeding population size:** Atlas work, non-published data |
| **Winter population size:** Plyusch, S.O., Moskalenko, Yu.O. 2018. The records of bird species listed in Red Data Book of Ukraine in non-breeding gatherings on the waters of Chernomorsky biosphere reserve in 2007-2017. In Materials to the 4th edition of Red Data Book of Ukraine. Animals. Kyiv, 133-162 (in Ukr.). (Ser. Conservation Biology in Ukraine. Iss. 7., vol. 2). |

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| **Breeding long-term trend:** BBS |
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