



THE IUCN RED LIST
OF THREATENED SPECIES™



Pandion haliaetus (Osprey)

European Red List of Birds

Supplementary Material

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

Contents

- Reported national population sizes and trends
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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.

Pandion haliaetus (Osprey)

Table 1. Reported national breeding population size and trends in Europe¹.

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	
Armenia	4–6	<1	2013–2018	complete	?		2007–2018	deficient	?		2003–2018	deficient	
Belarus	120–180	1	2010–2018	partial	0	-10 to 10	2012–2019	expert	?		1980–2019	deficient	
Bulgaria	0	<1	2005–2018	partial	?		2001–2018	expert	-	-100	1980–2018	expert	
Denmark	5	<1	2017	complete	+		2006–2017	expert	?		1980–2017	complete	
Estonia	90–100	<1	2013–2017	complete	+	50 to 100	2006–2017	complete	+	50 to 100	1980–2017	complete	
Finland	1200–1500	12	2013–2018	complete	+	4 to 17	2007–2018	complete	+	59 to 79	1982–2018	complete	
France	70–100	<1	2013–2017	complete	+	77 to 130	2005–2017	complete	+	731 to 1041	1980–2017	complete	
Germany	700–750	6	2012–2016	complete	+		2004–2016	expert	+	181 to 1000	1980–2016	expert	
Latvia	220–240	2	2018–2018	complete	?	-9 to 259	2012–2018	complete	+	332 to 345	1980–2018	complete	
Lithuania	40–70	<1	2013–2018	partial	0		2013–2018	partial	+	10 to 50	1980–2018	partial	
Moldova		<1	2014–2017	deficient	?			deficient	?		1990–2018	deficient	
Norway	400–600	4	2013–2018	complete	?		2013–2018	deficient	+	100 to 300	1980–2018	complete	
Poland	24–39	<1	2013–2018	complete	-		2007–2018	complete	-	-20 to 0	1980–2018	complete	
Portugal	5	<1	2018	complete	+		2015–2018	complete	?				
Russia	3000–5000	34	2008–2018	partial	+	0	2008–2018	expert	+	0	1980–2018	partial	
Spain	37–42	<1	2013–2018	complete	+	31 to 46	2007–2018	complete	+	23 to 48	1985–2018	complete	
ES: Canary Is	2–5	<1	2018	complete	-	-50 to -30	2007–2018	partial	-		1980–2018	partial	
Sweden	3400–4700	36	2013–2018	partial	0	-30 to 25	2007–2018	complete	+	30 to 70	1980–2018	partial	
Turkey	0–10	<1	2002–2012	partial	?		2008–2019	deficient	?		1980–2013	deficient	
Ukraine	1	<1	2013–2018	complete	0	0	2009–2018	complete	0	0	1996–2019	complete	
United Kingdom	230	2	2012–2016	complete	+		2001–2016	complete	+		1978–2016	complete	
EU28	6000–7800	61											
Europe	9600–13600	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) Deficient: 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.

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Table 2. Reported national wintering population sizes and trends in Europe¹. 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	0–2	<1	2007–2018	complete	0	0	2007–2018	complete	0	0	1980–2018	complete	
Italy	45–60	22	2013–2015	partial	0		2009–2015	partial	+	110 to 145	1991–2015	partial	
Portugal	150–200	78	2013–2018	partial	+		2007–2018	partial	+		1980–2018	partial	
EU28	190–260	100											
Europe	190–260	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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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) Deficient: insufficient or no data available.

⁵ The robustness of regional trends to the effects of any missing or incomplete data was tested using plausible scenarios, based on other sources of information, including any other reported information, recent national Red Lists, scientific literature, other publications and consultation with relevant experts.

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

⁷ Trend magnitudes are rounded to the nearest integer.

Trend maps

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

KEY

- | | |
|---|----------------------------------|
| ▲ Large increase ($\geq 50\%$) | ▼ Large decrease ($\geq 50\%$) |
| ▲ Moderate increase (20–49%) | ▼ Moderate decrease (20–49%) |
| ▲ Small increase (<20%) | ▼ Small decrease (<20%) |
| ↑ Increase of unknown magnitude | ↓ Decrease of unknown magnitude |
| ■ Stable or fluctuating | |
| □ Unknown | |
| ○ Present (no population or trend data) | |
| ✗ Extinct since 1980 | |

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

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

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

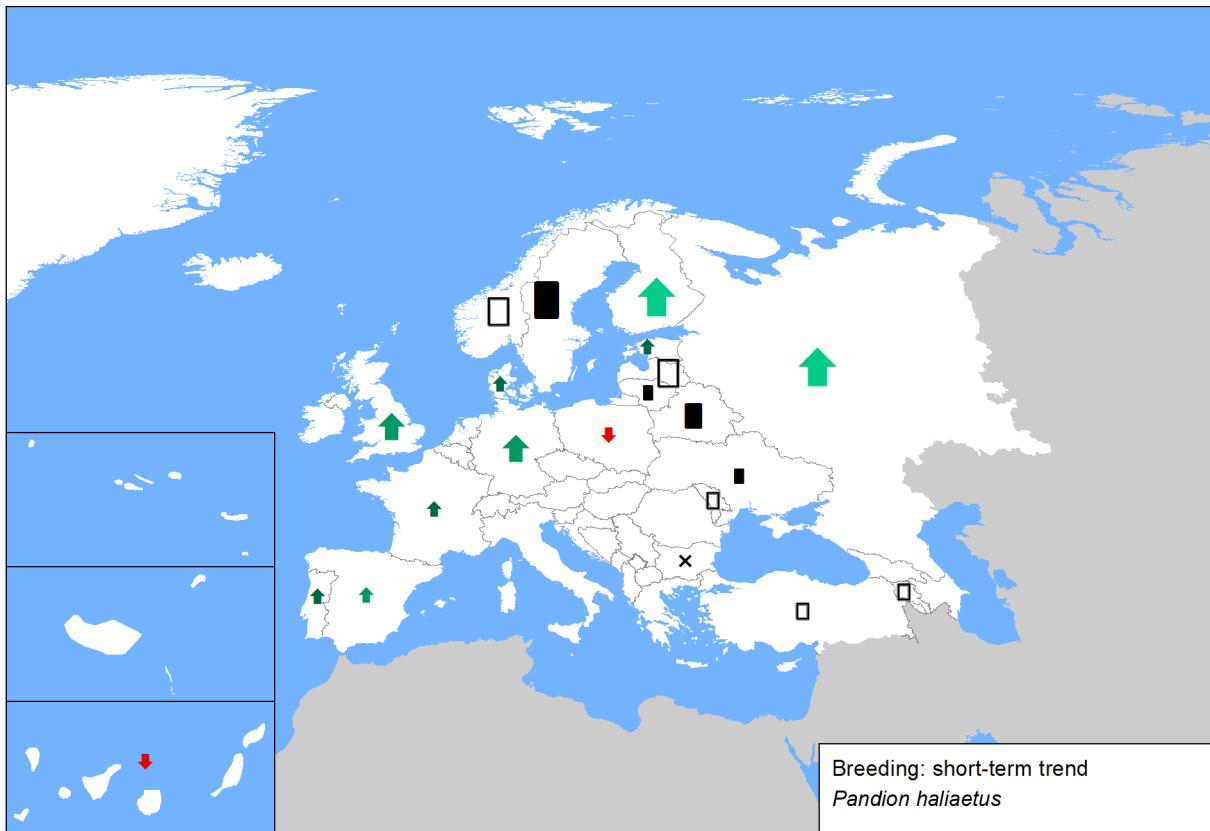


Figure 2. Breeding population sizes and long-term trends across Europe.

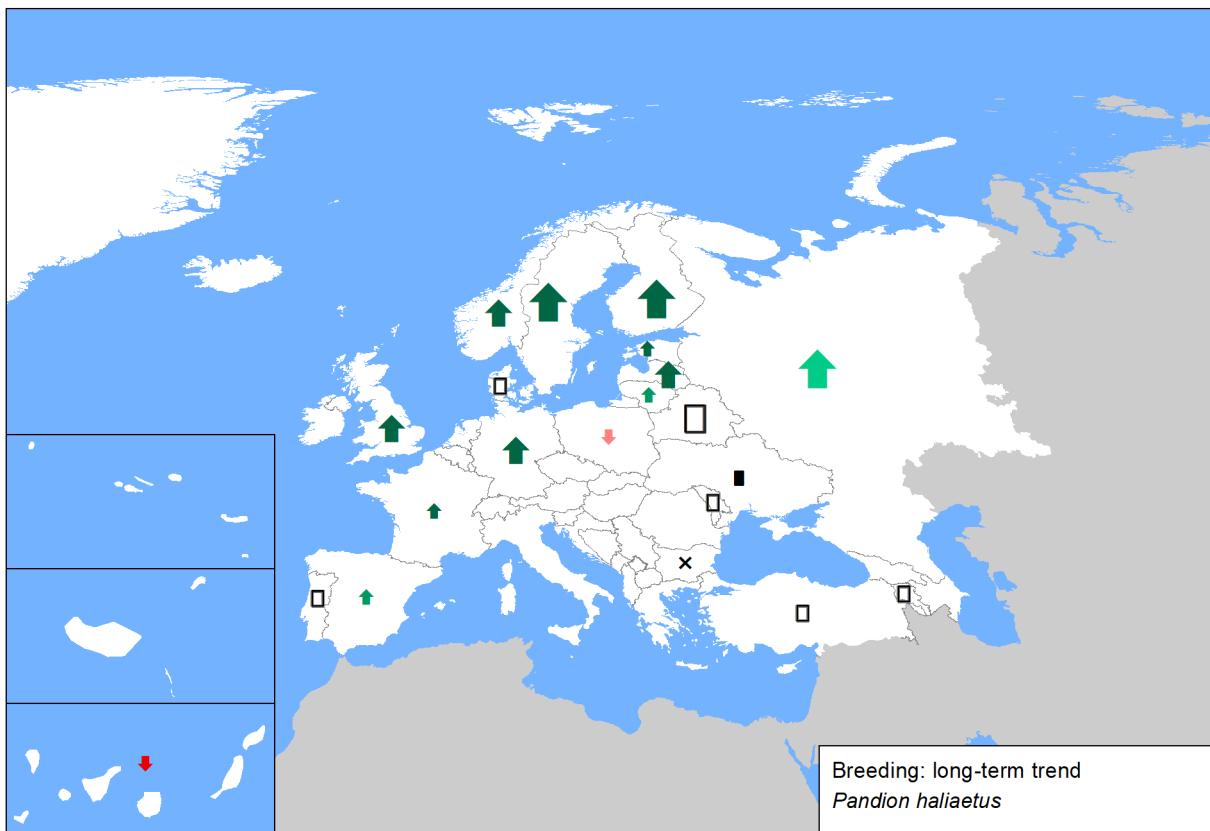


Figure 3. Reported wintering population sizes and short-term trends across Europe. Note that some countries within the species' wintering range did not report any data.

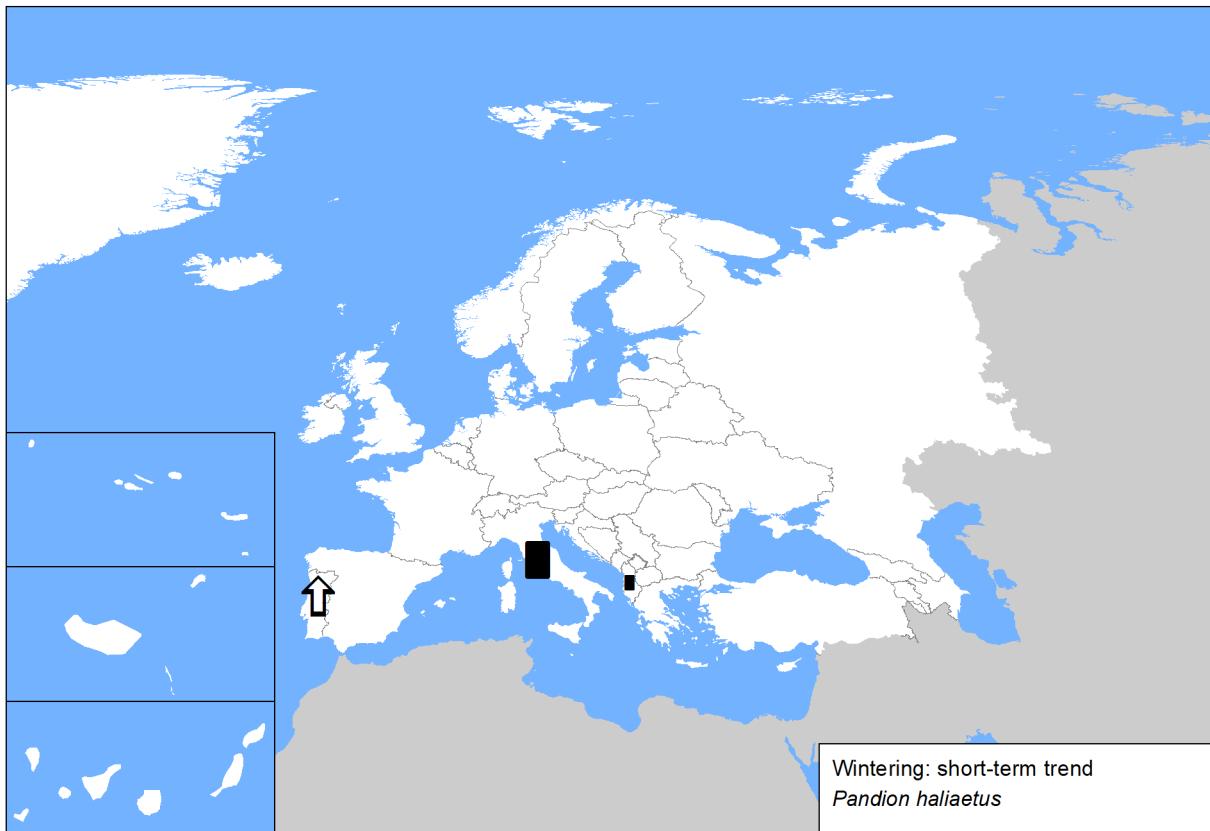
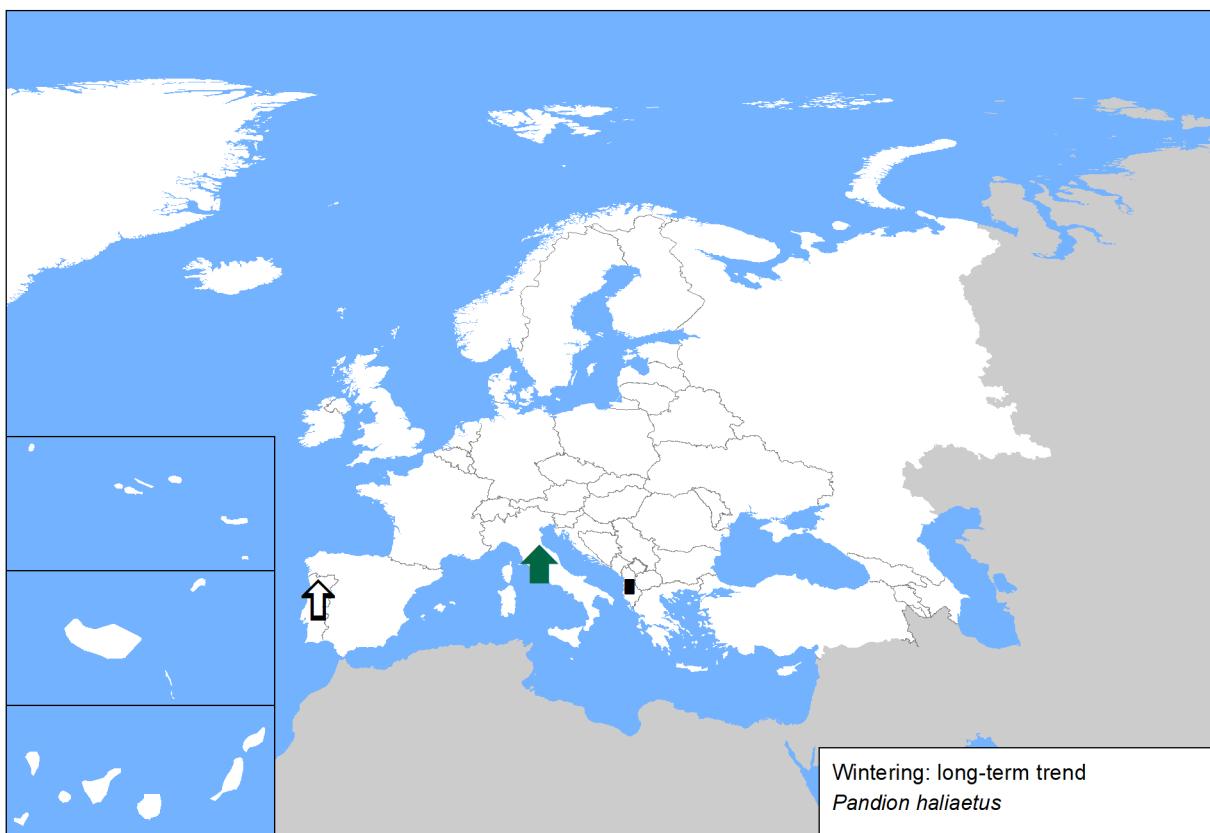


Figure 4. Reported wintering population sizes and long-term trends across Europe. Note that some countries within the species' wintering range did not report any data.



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Sources

Albania

Winter population size: Bino pers. obs.

Winter short-term trend: Bino et al. 2018

Winter long-term trend: Bino et al. 2018

Armenia

Breeding population size: TSE NGO

Breeding short-term trend: TSE (2020) The Atlas of the Breeding Birds in Armenia. In preparation.

Breeding long-term trend: TSE (2020) The Atlas of the Breeding Birds in Armenia. In preparation.

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: Alexey K. Tishechkin & Vladimir V Ivanovsky Status and breeding performance of the Osprey Pandion haliaetus //Ornis Fennica. V. 69, No3. – 1992. – P.149-154

Bulgaria

Breeding population size: Iankov P (ed.) (2007) Atlas of Breeding Birds in Bulgaria. Bulgarian Society for the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB, 679 pp.; National Art. 12 reporting database 2013-2018; Golemansky V. (ed.) 2011. Red Data Book of Bulgaria. Vol. 2, Animals. [Http://e-ecodb.bas.bg/rdb/en/vol2/](http://e-ecodb.bas.bg/rdb/en/vol2/) BIRDS OF PREY DATA BASE (2013) held by Institute of Biodiversity and Ecosystem Research - Bulgarian Academy of Sciences

Breeding short-term trend: Iankov P (ed.) (2007) Atlas of Breeding Birds in Bulgaria. Bulgarian Society for the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB, 679 pp.; National Art. 12 reporting database 2013-2018; Golemansky V. (ed.) 2011. Red Data Book of Bulgaria. Vol. 2, Animals. [Http://e-ecodb.bas.bg/rdb/en/vol2/](http://e-ecodb.bas.bg/rdb/en/vol2/) BIRDS OF PREY DATA BASE (2013) held by Institute of Biodiversity and Ecosystem Research - Bulgarian Academy of Sciences

Breeding long-term trend: Nankinov, D. 1998. Nesting and migration of Osprey, *Pandion haliaetus* (L.) (Aves: Falconiformes) in Bulgaria. – Cristal (Zool.), 5: 3–13. Botev, B. (ed.) 1985. Red Data Book of Bulgaria, Vol. 2, Animals, Sofia, BAS, 183 p. Iankov P (ed.) (2007) Atlas of Breeding Birds in Bulgaria. Bulgarian Society for the Protection of Birds, Conservation Series, Book 10. Sofia, BSPB, 679 pp. Golemansky V. (ed.) 2011. Red Data Book of Bulgaria. Vol. 2, Animals. [Http://e-ecodb.bas.bg/rdb/en/vol2/](http://e-ecodb.bas.bg/rdb/en/vol2/) BIRDS OF PREY DATA BASE (2013) held by Institute of Biodiversity and Ecosystem Research - Bulgarian Academy of Sciences

Denmark

Breeding population size: Nielsen, R.D., Holm, T.E., Clausen, P., Bregnalle. 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/>

Breeding short-term trend: Nielsen, R.D., Holm, T.E., Clausen, P., Bregnalle. 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/>

Breeding long-term trend: DOF "projekt Ørn" short term: Increasing but very small population Data insufficient to calculate trend in long period.

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

Finland

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

Breeding short-term trend: Meller, K., Björklund, H., Saurola, P. & Valkama, J. 2019: Kuuma kesä suosi haukkoja — myyräkato masensi pöllöjä. – Linnut-vuosikirja 2018: 80-95. (in Finnish with English summary). Björklund, H., Saurola, P. & Valkama, J. 2018: Breeding and population trends of common raptors and owls in Finland in 2017. – Linnut-vuosikirja 2017: 56–69. (in Finnish with English summary).

Breeding long-term trend: Meller, K., Björklund, H., Saurola, P. & Valkama, J. 2019: Kuuma kesä suosi haukkoja — myyräkato masensi pöllöjä. – Linnut-vuosikirja 2018: 80-95. (in Finnish with English summary). Björklund, H., Saurola, P. & Valkama, J. 2018: Breeding and population trends of common raptors and owls in Finland in 2017. – Linnut-vuosikirja 2017: 56–69. (in Finnish with English summary).

France

Breeding population size: Guillaumin S., Buzzi T., David F., Degals E., Delage F., Grissier P., Hirtz M., Joubert B., Kobierzycki E., Lavarec L., Lecuyer P., Maurit P., Michelat D., Mionnet A., Muller Y., Nadal R., Orabi P., Pilard P., Razin M., Scher O. & Tariel Y. 2017. Les Cahiers de la Surveillance Rapaces - Année 2016. , LPO68 p. <http://rapaces.lpo.fr/sites/default/files/mission-rapaces/37/cahiers-surveillance2016.pdf>; Desallais M., Dessort A., Vogler H., Boyer M., Buzzi T., David F., Giraud L., Joubert B., Michelat D., Mionnet A., Muller Y., Nadal R., Orabi P., Pacteau C., Pliard P., Riols C., Scher O. & Tariel Y. 2018. Les Cahiers de la Surveillance Rapaces - Année 2017. , LPO64 p. http://rapaces.lpo.fr/sites/default/files/mission-rapaces/37/cahiers_surveillance_2017.pdf; Munoz M. Buzz T., David F., Degals E., Delage F., Grissier P., Hirtz M., Joubert B., Kobierzycki E., Lavarec L., Lecuyer P., Maurit P., Michelat D., Mionnet A., Muller Y., Nadal R., Orabi P., Pilard P., Razin M., Scher O. & Tariel Y. 2015. Les Cahiers de la Surveillance Rapaces - Année 2014. , LPO68 p. <http://rapaces.lpo.fr/sites/default/files/mission-rapaces/37/cahierssurveillance2014.pdf>; Collard B., David F., Lavarec L., Philippe Lecuyer, Nadal R., Orabi P., Pilard P., Tariel Y. & Razin M. 2014. Les Cahiers de la Surveillance Rapaces - Année 2013. , LPO60 p. <http://rapaces.lpo.fr/sites/default/files/mission-rapaces/36/cahiers-surveillance-2013-vd.pdf>; de Hemptinne S., Buzzi T., Champion V., David F., Joubert B., Kobierzycki E., Lavarec L., Michelat D., Muller Y., Nadal R., Pacteau C., Pilard P., Riols C., Scher O., Tariel Y. & Wahl R. 2016. Les Cahiers de la Surveillance Rapaces - Année 2015. , LPO76 p. <http://rapaces.lpo.fr/sites/default/files/busards/3491/lescahiersdelasurveillance2015.pdf>

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France

Breeding short-term trend: Desallais M., Dessort A., Vogler H., Boyer M., Buzzi T., David F., Giraud L., Joubert B., Michelat D., Mionnet A., Muller Y., Nadal R., Orabi P., Pacteau C., Pliard P., Riols C., Scher O. & Tariel Y. 2018. Les Cahiers de la Surveillance Rapaces - Année 2017. , LPO64 p. http://rapaces.lpo.fr/sites/default/files/mission-rapaces/37/cahiers_surveillance_2017.pdf; Nadal R. & Tariel Y. 2008. Le Balbuzard pécheur (*Pandion haliaetus*) Plan national de restauration 2008 - 2012. , LPO - BirdLife France101 p. https://www.ecologique-solidaire.gouv.fr/sites/default/files/PNA_Balbuzard-pecheur_2008-2012.pdf

Breeding long-term trend: Desallais M., Dessort A., Vogler H., Boyer M., Buzzi T., David F., Giraud L., Joubert B., Michelat D., Mionnet A., Muller Y., Nadal R., Orabi P., Pacteau C., Pliard P., Riols C., Scher O. & Tariel Y. 2018. Les Cahiers de la Surveillance Rapaces - Année 2017. , LPO64 p. http://rapaces.lpo.fr/sites/default/files/mission-rapaces/37/cahiers_surveillance_2017.pdf; Nadal R. & Tariel Y. 2008. Le Balbuzard pécheur (*Pandion haliaetus*) Plan national de restauration 2008 - 2012. , LPO - BirdLife France101 p. https://www.ecologique-solidaire.gouv.fr/sites/default/files/PNA_Balbuzard-pecheur_2008-2012.pdf

Germany

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

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

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

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 acquatici 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: Kalvāns A. 2018. Osprey monitoring in Latvia. Final report for the year 2018 (in Latvian). Latvia's State Forests.

Breeding short-term trend: Avotins jun., A., Reihmanis, J. 2018. [Background monitoring scheme for Birds of Prey and Owls in Latvia. Final report for the year 2018.] (in Latvian) Latvian Ornithological society

Breeding long-term trend: Priednieks J., Strazds M., Strazds A., Petrins A. 1989. Latvian Breeding Bird Atlas 1980-1984. Riga: Zinatne Kalvāns A. 2018. Osprey monitoring in Latvia. Final report for the year 2018 (in Latvian). Latvia's State Forests.

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)

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

Moldova

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

Norway

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

Breeding long-term trend: Shimmings, P. & Øien, I.J. 2015. Bestandsestimator for norske hekkefugler. NOF Rapport 2-2015. 268 pp.

Poland

Breeding population size: State Environmental Monitoring / Chief Inspectorate of Environmental Protection (survey: MRY – Osprey Census)

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

Breeding long-term trend: Tomiałojć L., Stawarczyk T. 2003. Awifauna Polski: rozmieszczenie, liczebność i zmiany. PTSP "pro Natura"; Mizera T. 2009. Sytuacja rybołowa Pandion haliaetus w Polsce na początku XXI wieku. Studia i Materiały CEPL 22: 45-55; Chodkiewicz T., Neubauer G.,

Portugal

Breeding population size: "Palma, L. (2018) Reintrodução da Águia-pesqueira (*Pandion haliaetus*) em Portugal.Relatório Final 2011-2018; Palma L., Safara J., Dias A., Ferreira J., Mirinha M., Beja P. (CIBIO – Research Centre in Biodiversity and Genetic Resources, Porto University, Portugal).The Portuguese Osprey Reintroduction Project: Achievements, Lessons and Perspectives"

Breeding short-term trend: Palma, L. (2018) Reintrodução da Águia-pesqueira (*Pandion haliaetus*) em Portugal.Relatório Final 2011-2018; Palma L., Safara J., Dias A., Ferreira J., Mirinha M., Beja P. (CIBIO – Research Centre in Biodiversity and Genetic Resources, Porto University, Portugal).The Portuguese Osprey Reintroduction Project: Achievements, Lessons and Perspectives

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Portugal

Winter population size: Censo Nacional da Águia-pesqueira (2017) <http://www.avesdeportugal.info/panhalcenso.html>; eBird (2019). eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: <http://www.ebird.org/portugal/home>. (Accessed: October 22, 2018)]

Winter short-term trend: Data from PortugalAves/eBird for the period 2007-2018 was used to calculate species trends. All calculations were run in RStudio (2018) with the package rTrim; (RStudio Team (2018). RStudio: Integrated Development for R. RStudio, Inc., Boston, MA URL <http://www.RStudio.com>)

Winter long-term trend: Relatório nacional artº12º (2008-2012); Censo Nacional da Águia-pesqueira (2017) <http://www.avesdeportugal.info/panhalcenso.html>; eBird (2019). eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: <http://www.ebird.org/portugal/home>. (Accessed: October 22, 2018)]

Russia

Breeding population size: Voltzit & Kalyakin 2013-2019; Database of the project on Atlas of breeding birds of European Russia; Belik et al. 2012; Belik 2014

Breeding short-term trend: Babushkin & Kuznetsov 2013; Sharikon et al. 2019; Melnikov 2017

Breeding long-term trend: Babushkin & Kuznetsov 2013; Melnikov 2017; Bakka & Kiseleva 2013; Melnikov et al. 2009; Pchelintsev 2012

Spain

Breeding population size: Información procedente de las Comunidades Autónomas. SEO/BirdLife (2019). Programas de seguimiento y grupos de trabajo de SEO/BirdLife 2018. SEO/BirdLife. Madrid. (<https://doi.org/10.31170/0073>) Triay, R. & Siverio, M. (Eds.). (2008). El águila pescadora en España. Población en 2008 y método de censo. SEO/BirdLife. Madrid. 78pp. (https://www.miteco.gob.es/es/biodiversidad/temas/inventarios-nacionales/29_aguila_pescadora_tcm30-208048.pdf)

Breeding short-term trend: Información procedente de las Comunidades Autónomas. SEO/BirdLife (2019). Programas de seguimiento y grupos de trabajo de SEO/BirdLife 2018. SEO/BirdLife. Madrid. (<https://doi.org/10.31170/0073>) Triay, R. & Siverio, M. (Eds.). (2008). El águila pescadora en España. Población en 2008 y método de censo. SEO/BirdLife. Madrid. 78pp. (https://www.miteco.gob.es/es/biodiversidad/temas/inventarios-nacionales/29_aguila_pescadora_tcm30-208048.pdf)

Breeding long-term trend: Información procedente de las Comunidades Autónomas. Martí, R. & del Moral, J.C. (Eds.) (2003). Atlas de las Aves Reproductoras de España. Dirección General de Conservación de la Naturaleza- Sociedad Española de Ornitología. Madrid, 733 pp. (https://www.miteco.gob.es/es/biodiversidad/temas/inventarios-nacionales/inventario-especies-terrestres/inventario-nacional-de-biodiversidad/ieet_aves_atlas.aspx) SEO/BirdLife (2019). Programas de seguimiento y grupos de trabajo de SEO/BirdLife 2018. SEO/BirdLife. Madrid. (<https://doi.org/10.31170/0073>) Triay, R. & Siverio, M. (Eds.). (2008). El águila pescadora en España. Población en 2008 y método de censo. SEO/BirdLife. Madrid. 78pp. (https://www.miteco.gob.es/es/biodiversidad/temas/inventarios-nacionales/29_aguila_pescadora_tcm30-208048.pdf)

ES: Canary Is

Breeding population size: Martín-Carbajal, J. & Siverio, M. (2017). Implementando acciones de manejo del águila pescadora *Pandion haliaetus* en las islas Canarias: actuaciones para facilitar el seguimiento de sus nidos en Tenerife y La Gomera. Dirección General de Protección de la Naturaleza del Gobierno de Canarias-Fondo Europeo de Desarrollo Regional (FEDER), UE. Informe inédito. Siverio, M., Siverio, F. & Rodríguez, B. (2018). Valores de referencia sobre el estado de conservación de la población de águila pescadora en Canarias al inicio del Plan de Conservación. Dirección General de Protección de la Naturaleza del Gobierno de Canarias-Fondo Europeo de Desarrollo Regional (FEDER), UE. Informe inédito.

Breeding short-term trend: Anónimo. 2007. Memoria del seguimiento poblacional de *Pandion haliaetus*. Gobierno de Canarias. 45 pp. Lorenzo, J.A. (2007) (Ed). Atlas de las Aves Nidificantes en el Archipiélago Canario (1997-2003). Dirección General de Conservación de la Naturaleza-Sociedad Española de Ornitología. Madrid. 520 pp. Martín-Carbajal, J. & Siverio, M. (2017). Implementando acciones de manejo del águila pescadora *Pandion haliaetus* en las islas Canarias: actuaciones para facilitar el seguimiento de sus nidos en Tenerife y La Gomera. Dirección General de Protección de la Naturaleza del Gobierno de Canarias-Fondo Europeo de Desarrollo Regional (FEDER), UE. Informe inédito. Siverio, M. (2008). El águila pescadora en Canarias. En, R. Triay y M. Siverio (eds.): El águila pescadora en España. Población en 2008 y método de censo, pp. 20-39. SEO/BirdLife. Madrid. Siverio, M. (2008). Águila Pescadora *Pandion haliaetus*: Islas Canarias. Seguimiento de poblaciones de especies amenazadas 2008. Gobierno de Canarias. 35 pp. Siverio, M., Siverio, F. & Rodríguez, B. (2018). Valores de referencia sobre el estado de conservación de la población de águila pescadora en Canarias al inicio del Plan de Conservación. Dirección General de Protección de la Naturaleza del Gobierno de Canarias-Fondo Europeo de Desarrollo Regional (FEDER), UE. Informe inédito. Trujillo, D. & Gallardo, T. (2010). Nidos artificiales para el guincho son ubicados en Fuerteventura y Lobos. Quercus, 294: 13. Trujillo, D. & Rodríguez, M.A. (2007). Águilas pescadoras en nidos artificiales crían con éxito en El Hierro. Quercus, 261: 10.

Breeding long-term trend: Anónimo. 2007. Memoria del seguimiento poblacional de *Pandion haliaetus*. Gobierno de Canarias. 45 pp. Fariña Martín, B. (2003). Águila Pescadora *Pandion haliaetus*: Tenerife. Seguimiento de poblaciones de especies amenazadas 2003. Gobierno de Canarias. 15 pp. Lorenzo, J.A. (2007) (Ed). Atlas de las Aves Nidificantes en el Archipiélago Canario (1997-2003). Dirección General de Conservación de la Naturaleza-Sociedad Española de Ornitología. Madrid. 520 pp. Madroño, A., González, C. & Atienza, J.C. (Eds.). (2004). Libro Rojo de las Aves de España. Dirección General para la Biodiversidad-SEO/BirdLife, Madrid. 452 pp. (https://www.miteco.gob.es/es/biodiversidad/temas/inventarios-nacionales/lrcmpletoparaweb_tcm30-207942.pdf) Martín, A. & Lorenzo, J.A. (2001). Aves del Archipiélago Canario. Francisco Lemus Editor. La Laguna. 787 pp. Martín-Carbajal, J. & Siverio, M. (2017). Implementando acciones de manejo del águila pescadora *Pandion haliaetus* en las islas Canarias: actuaciones para facilitar el seguimiento de sus nidos en Tenerife y La Gomera. Dirección General de Protección de la Naturaleza del Gobierno de Canarias-Fondo Europeo de Desarrollo Regional (FEDER), UE. Informe inédito. Moreno Martín, A. 2002. Águila Pescadora *Pandion haliaetus*: La Gomera. Seguimiento de poblaciones de especies amenazadas 2002. Gobierno de Canarias. 30 pp. Moreno Martín, A. (2002). Águila Pescadora *Pandion haliaetus*: Lanzarote e isletos. Seguimiento de poblaciones de especies amenazadas 2002. Gobierno de Canarias. 34 pp. Moreno Martín, A. (2002). Águila Pescadora *Pandion haliaetus*: El Hierro. Seguimiento de poblaciones de especies amenazadas 2002. Gobierno de Canarias. 24 pp. Siverio, M. (2008). El águila pescadora en Canarias. En, R. Triay y M. Siverio (eds.): El águila pescadora en España. Población en 2008 y método de censo, pp. 20-39. SEO/BirdLife. Madrid. Siverio, M. (2008). Águila Pescadora *Pandion haliaetus*: Islas Canarias. Seguimiento de poblaciones de especies amenazadas 2008. Gobierno de Canarias. 35 pp. Siverio, M., Siverio, F. & Rodríguez, B. (2018). Valores de referencia sobre el estado de conservación de la población de águila pescadora en Canarias al inicio del Plan de Conservación. Dirección General de Protección de la Naturaleza del Gobierno de Canarias-Fondo Europeo de Desarrollo Regional (FEDER), UE. Informe inédito. Trujillo, D. & Gallardo, T. (2010). Nidos artificiales para el guincho son ubicados en Fuerteventura y Lobos. Quercus, 294: 13. Trujillo, D. & Rodríguez, M.A. (2007). Águilas pescadoras en nidos artificiales crían con éxito en El Hierro. Quercus, 261: 10.

Sweden

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

Breeding short-term trend: Svensk fågeltaxering - Swedish Bird Survey, Migration counts Falsterbo

Breeding long-term trend: Svensk fågeltaxering - Swedish Bird Survey, Migration counts Falsterbo

Turkey

Breeding population size: Murat Bozdoğan, Ferdi Akarsu, Soner Bekir personal communication (2019), Kusbanks Bird Database (Ebird) Kirwan G.M., Boyla K. A., Castell P., Demirci B., Özen M., Welch H., Marlow T., 2008, Birds of Turkey. Londra, Christopher Helm, 978-1-4081-0475-

Ukraine

Breeding population size: non-published data

Breeding short-term trend: non-published data

Breeding long-term trend: 1. Гавриль Г.Г., Химін М.В. Скопа // Червона книга України. Тваринний світ. - К., 1996. С. 417. 2. Клєстов М.Л. Скопа // Червона книга України. Тваринний світ. - К., 2009. С. 417.

United Kingdom

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

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

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

Bibliography

- Billerman, S.M., Keeney, B.K., Rodewald, P.G. and Schulenberg, T.S. (eds). 2020. Birds of the World. Cornell Laboratory of Ornithology, Ithaca.
- Bird, J. P., Martin, R., Akçakaya, H. R., Gilroy, J., Burfield, I. J., Garnett, S. G., Symes, A., Taylor, J., Sekercioglu, Ç. H. and Butchart, S. H. M. 2020. Generation lengths of the world's birds and their implications for extinction risk. *Conservation Biology* 34(5): 1252-1261. DOI: 10.1111/cobi.13486.
- Butcher, G. S.; Niven, D. K. 2007. Combining data from the Christmas bird count and the breeding bird survey to determine the continental status and trends of North American birds.
- Butler, C.J. 2003. The disproportionate effect of global warming on the arrival dates of short-distance migratory birds in North America. *Ibis* 145: 484-495.
- Christidis, L. and Boles, W.E. 1994. The Taxonomy and Species of Birds of Australia and its Territories. Royal Australasian Ornithologists' Union, Melbourne.
- Christidis, L. and Boles, W.E. 2008. Systematics and Taxonomy of Australian Birds. CSIRO Publishing, Collingwood, Australia.
- Edwards, S. V.; Kingan, S. B.; Calkins, J. D.; Balakrishnan, C. N.; Jennings, W. B.; Swanson, W. J.; Sorenson, M. D. 2005. Speciation in birds: Genes, geography, and sexual selection. *Proceedings of the National Academy of Sciences of the United States of America* 102: 6550-6557.
- Ferguson-Lees, J. and Christie, D.A. 2001. *Raptors of the World*. Christopher Helm, London.
- STRIX. 2012. Developing and testing the methodology for assessing and mapping the sensitivity of migratory birds to wind energy development. BirdLife International, Cambridge.
- Sibley, C.G. and Monroe, B.L. 1990. Distribution and Taxonomy of Birds of the World. Yale University Press, New Haven, USA.
- Sibley, C.G. and Monroe, B.L. 1993. A supplement to 'Distribution and Taxonomy of Birds of the World'. Yale University Press, New Haven, USA.
- Snow, D.W. and Perrins, C.M. 1998. The Birds of the Western Palearctic, Volume 2: Passerines. Oxford University Press, Oxford.
- Solonen, T. 2008. Large-scale climatic phenomena and timing of breeding in a local population of the Osprey *Pandion haliaetus* in southern Finland. *Journal of Ornithology* 149: 229-235.
- Tucker, G.M. and Heath, M.F. 1994. *Birds in Europe: Their Conservation Status*. BirdLife International, Cambridge, U.K.
- del Hoyo, J., Elliott, A. and Sargatal, J. (eds). 1994. *Handbook of the Birds of the World*, vol. 2: New World Vultures to Guineafowl. Lynx Edicions, Barcelona, Spain.