

Phalacrocorax carbo (Great Cormorant)

European Red List of Birds

Supplementary Material

The European Union (EU27) 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 2013-14. 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 (2015).

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Recommended citation

BirdLife International (2015) European Red List of Birds. Luxembourg: Office for Official Publications of the European Communities.

Further information

<http://www.birdlife.org/datazone/info/euroredlist>

<http://www.birdlife.org/europe-and-central-asia/european-red-list-birds-0>

<http://www.iucnredlist.org/initiatives/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.

Phalacrocorax carbo (Great Cormorant)

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

Country (or territory) ²	Population estimate				Short-term population trend ⁴				Long-term population trend ⁴				Subspecific population (where relevant)
	Size (pairs) ³	Europe (%)	Year(s)	Quality	Direction ⁵	Magnitude (%) ⁶	Year(s)	Quality	Direction ⁵	Magnitude (%) ⁶	Year(s)	Quality	
Albania	0	<1	2002-2012		?				-	80-100	1980-2012	poor	P. c. sinensis
Armenia	0-60	<1	2002-2012	good	?				?				P. c. sinensis
Austria	85-260	<1	2008-2012	good	+	10-500	2001-2012	good					P. c. sinensis
Azerbaijan	2,000-4,000	1	1996-2000	medium	?				?				P. c. sinensis
Belarus	3,000-3,500	1	2012	good	+	131-133	2001-2012	medium	+	37400-43650	1980-2012	medium	P. c. sinensis
Belgium	1,554-1,705	<1	2008-2012	good	+	19-103	2000-2012	good	?				P. c. sinensis
Bosnia & HG	100-200	<1	2010-2014	good	+	5-10	2001-2012	good	+	70-80	1980-2013	medium	P. c. sinensis
Bulgaria	2,600-2,800	1	2005-2012	medium	+	5-10	2000-2012	medium	+	30-50	1980-2012	medium	P. c. sinensis
Croatia	1,516-1,583	<1	2012	good	F	30-40	2001-2012	good	+	300-500	1980-2012	good	P. c. sinensis
Czech Rep.	200-232	<1	2001-2003	good	?				-	70	1985-2003	medium	P. c. sinensis
Denmark	25,189-39,906	7	2004-2011	good	-	33-50	2000-2011	good	+	1000-10000	1980-2011	good	P. c. sinensis
DK: Greenland	5,000-10,000	2	2000-2012	medium	+	1-5	2000-2012	poor	+	50-100	1980-2012	poor	P. c. carbo
Estonia	13,000-14,000	3	2008-2012	good	+	20-50	2001-2012	good	+	50-70	1980-2012	good	P. c. sinensis
Finland	17,258	4	2012	good	+	2369	2001-2012	good	+	172480	1996-2012	good	P. c. sinensis
France	5,124-5,246	1	2009-2011	good	+	150-200	2000-2011	good	+	70000	1981-2011	good	P. c. sinensis
France	1,973-1,996	<1	2009-2010	good	F	0	1997-2010	good	+	130	1980-2010	good	P. c. carbo, North-west Europe
Georgia	Present	<1			?				?				P. c. sinensis
Germany	22,000-26,000	5	2005-2009	good	+	40-69	1998-2009	good	+	589-1130	1985-2009	good	P. c. sinensis
Greece	6,980	2	2012	good	+	75	1999-2012	good	+	600	1990-2012	good	P. c. sinensis
Hungary	2,500-2,600	1	2012	good	-	20	2000-2012	good	F	0	1980-2012	medium	P. c. sinensis
Iceland	4,100	1	2008	good	+	10-29	2002-2008	good	+	10-29	1994-2008	good	P. c. carbo
Rep. Ireland	4,366	1	2012	medium	0	0	2002-2012	medium	+	10	1987-2012	medium	P. c. carbo, North-west Europe
Italy	3,050-3,220	1	2011	good	+	200	2001-2011	good	+	1300	1989-2011	good	P. c. sinensis
Latvia	2,634-3,106	1	2012	good	+	608	2000-2012	good	+	1449-2490	1994-2012	good	P. c. sinensis
Lithuania	5,000-6,000	1	2008-2012	good	+	100-140	2001-2012	good	+	499900-599900	1985-2012	good	P. c. sinensis
FYRO Macedonia	1,100-1,300	<1	2001-2012	good	0	0	2001-2012	medium	?				P. c. sinensis
Moldova	200-300	<1	2000-2010	medium	-	5-10	2000-2010	medium	F	0	1980-2010	medium	P. c. sinensis
Montenegro	2,300-2,500	1	2002-2012	good	0	0	2002-2012	good	?				P. c. sinensis
Netherlands	20,500-24,750	5	2008-2011	good	0	0	2002-2011	good	+	205-212	1980-2011	good	P. c. sinensis
Norway	16,100	4	2013	good	-	15-25	2002-2013	good	F	0	1974-2013	good	P. c. carbo
Norway	2,500	1	2013	medium	+		2003-2013	good	+		2003-2013	good	P. c. sinensis
Poland	25,800	6	2013-2013	good	+	70	2000-2013	good	+	1650	1981-2013	good	P. c. sinensis

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Country (or territory) ²	Population estimate				Short-term population trend ⁴				Long-term population trend ⁴				Subspecific population (where relevant)
	Size (pairs) ³	Europe (%)	Year(s)	Quality	Direction ⁵	Magnitude (%) ⁶	Year(s)	Quality	Direction ⁵	Magnitude (%) ⁶	Year(s)	Quality	
Romania	12,000-20,000	3	2008-2013	medium	+	0-19	2000-2012	medium	+	0-19	1980-2012	medium	P. c. sinensis
Russia	65,000-120,000	20	2008-2012	medium	+	5-30	2000-2012	good	+	5-30	1980-2012	medium	P. c. sinensis
Russia	2,800-3,200	1	2000-2010	medium	+	5-15	2000-2012	medium	+	10-30	1980-2012	good	P. c. carbo
Serbia	1,870-1,980	<1	2012	good	+	30	2000-2012	medium	+	30	1980-2012	medium	P. c. sinensis
Slovakia	50-100	<1	2002-2012	good	-	25-50	2000-2012	good	-	40-50	1980-2012	good	P. c. sinensis
Spain	532	<1	2007	good	0	0	1998-2011	medium	+		1980-2011	medium	P. c. sinensis
Sweden	40,000	9	2008-2012	good	+	10-40	2001-2012	good	+	35000-45000	1980-2012	good	P. c. sinensis
Switzerland	1,037	<1	2012	good	+	50000	2001-2012	good	?				P. c. sinensis
Turkey	4,000-6,000	1	2013	medium	+	0-19	2000-2012	poor	+	30-49	1990-2013	good	P. c. sinensis
Ukraine	65,000-75,000	16	2000	medium	+	10-20	1998-2010	medium	+	20-40	1980-2010	medium	P. c. sinensis
United Kingdom	9,000	2	1998-2002	good	-	10-14	1999-2011	good	+	10	1986-2000	good	P. c. carbo, North-west Europe
United Kingdom	2,361	1	2008	good	+	24	1999-2011	good	+	15500	1981-2011	good	P. c. sinensis
EU27	224,000-258,000	53			Increasing								
Europe	401,000-512,000	100			Increasing								

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 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.

⁵ Trend directions are reported as: increasing (+); decreasing (-); stable (0); fluctuating (F); or unknown (?).

⁶ Trend magnitudes are rounded to the nearest integer.

Phalacrocorax carbo (Great Cormorant)

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 ⁴				Long-term population trend ⁴				Subspecific population (where relevant)
	Size (individuals) ³	Europe (%)	Year(s)	Quality	Direction ⁵	Magnitude (%) ⁶	Year(s)	Quality	Direction ⁵	Magnitude (%) ⁶	Year(s)	Quality	
Albania	1,000-2,400	<1	2002-2012	medium	0	0	2002-2012	medium	0	0	1980-2012	poor	
Andorra	0-20	<1	2001	medium	?				?				
Armenia	3-301	<1	2003-2013	good	?				?				
Azerbaijan	5,000-10,000	1	1996-2002	medium	?				?				
Belarus	5-20	<1	2009-2013	good	0	0	2000-2012	medium	?				
Belgium	7,138-9,017	1	2008-2012	good	+	2-4	2001-2012	good	+	4-5	1992-2012	good	
Bosnia & HG	3,000-6,000	1	2008-2013	medium	F	10-20	2000-2013	medium	?				
Bulgaria	4,700-24,000	2	2008-2012	medium	+	10-30	2000-2012	medium	+	30-70	1980-2012	medium	
Croatia	12,000-20,000	2	2011	medium	?				?				
Denmark	24,000	4	2008	medium	+	25-50	2000-2011	medium	+	25-50	1980-2011	medium	
DK: Faroe Is	0-10	<1	1992	medium	?				?				
DK: Greenland	20,000-40,000	4	2000-2012	poor	+	1-5	2000-2012	poor	+	50-100	1980-2012	poor	
Estonia	100-300	<1	2008-2012	good	0	0-10	2001-2012	good	+	20-50	1980-2012	good	
France	80,000-90,000	13	2010-2011	good	F	0	2000-2011	good	+		1980-2011	good	
France	8,000-12,000	1	2010-2011	poor	?				+		1980-2012	poor	
Georgia	7,548	1	2002	good	?				?				
Germany	58,000	9	2000-2005	good	+	2-80	1997-2009	good	+	149-324	1984-2009	good	
Germany	Present	<1	2012		?				?				
Greece	23,896-55,313	6	2007-2013	good	+	92	2004-2013	good	?			good	
Iceland	Present	<1	2012		?				?				
Rep. Ireland	8,720	1	2006-2011	good	F	0	1999-2011	good	+	14	1987-2011	medium	
Luxembourg	350-450	<1	2008-2012	good	F	0-30	2000-2012	good	+	3500-4500	1984-2012	good	
FYRO Macedonia	500-2,000	<1	2001-2012	medium	0	0	2001-2012	medium	+	≥200	1980-2012	medium	
Moldova	4-60	<1	2000-2010	medium	F	0	2000-2010	medium	F	0	1980-2010	medium	
Montenegro	1,500-15,000	1	2003-2012	good	+		2003-2012	good	+		1991-2012	good	
Netherlands	27,814-34,172	5	2006-2010	good	+	56-148	2000-2011	good	+	646-1091	1981-2011	good	
Norway	110,000	17	1994-2003	medium	?				?				
Poland	10,000-20,000	2	2008-2012	medium	0	0	2003-2012	good	+	10-70	1985-2012	medium	
Portugal	14,600	2	2013	good	+	220-240	2001-2012	medium	+	700-800	1980-2012	medium	
Romania	10,000-30,000	3	2008-2013	medium	-	5-10	2000-2013	medium	?				
Serbia	10,000-20,000	2	2008-2012	medium	+	10-15	2000-2012	good	+		1980-2012	poor	

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Country (or territory) ²	Population estimate				Short-term population trend ⁴				Long-term population trend ⁴				Subspecific population (where relevant)
	Size (individuals) ³	Europe (%)	Year(s)	Quality	Direction ⁵	Magnitude (%) ⁶	Year(s)	Quality	Direction ⁵	Magnitude (%) ⁶	Year(s)	Quality	
Slovakia	9,000-9,500	1	2011	medium	+	80-200	2000-2012	medium	+	600-1000	1980-2012	poor	
Slovenia	2,500-5,000	1	2008-2012	medium	-	3-10	2001-2012	good	+	100-400	1980-2012	medium	
Spain	49,323-55,927	8	2008-2010	good	+		2000-2010	good	+	9	1980-2010	good	
Switzerland	3,927-4,888	1	2008-2012	good	-	6-12	2001-2012	good	+	20-22	1980-2012	good	
Turkey	11,591-55,439	4	2002-2012	medium	F	0	2002-2012	poor	?				
Ukraine	800-2,000	<1	1998-2009	medium	F	10-20	1998-2009	medium	F	20-40	1980-2009	medium	
United Kingdom	41,000	6	2004-2008	medium	0	0	1999-2010	good	+	61	1987-2010	medium	
United Kingdom	5,000-10,000	1	2008	poor	?				?				
EU27	384,000-502,000	65			Increasing								
Europe	571,000-798,000	100			Increasing								

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

⁶ 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.

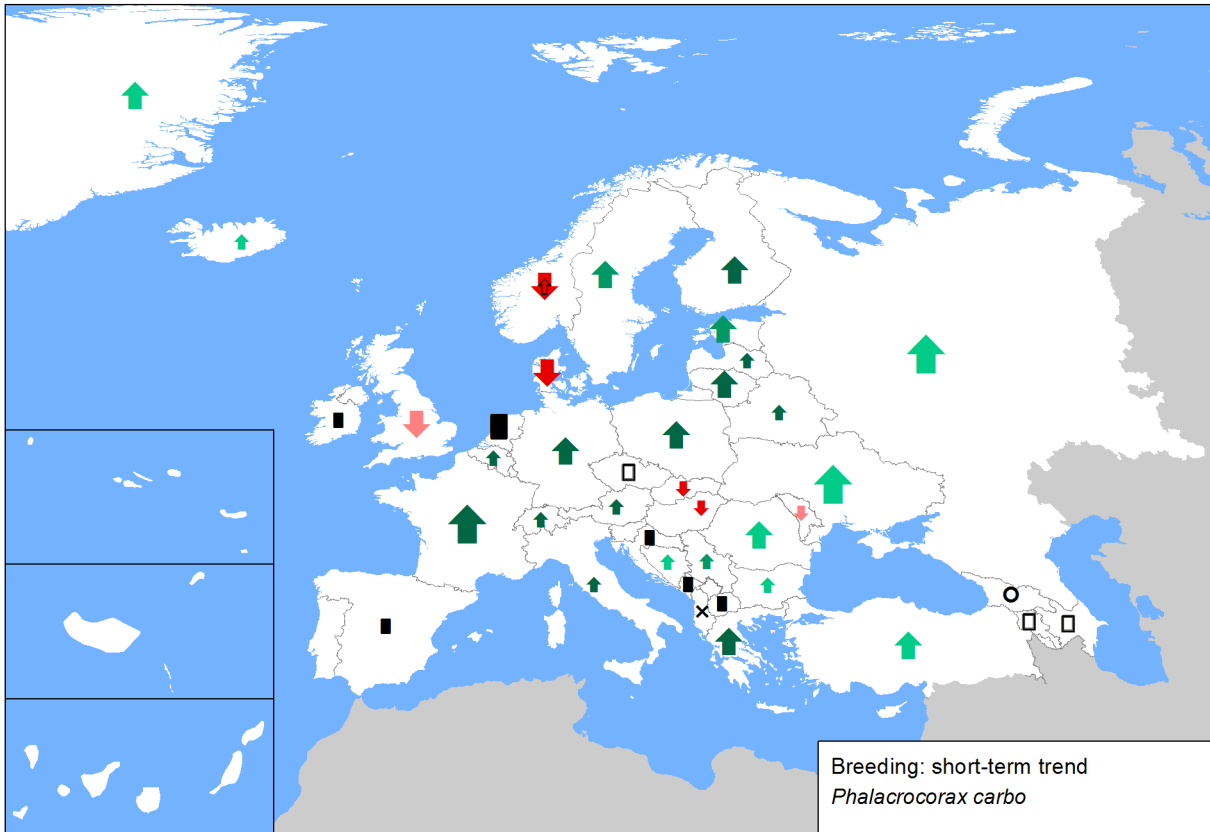


Figure 2. Breeding population sizes and long-term trends across Europe.

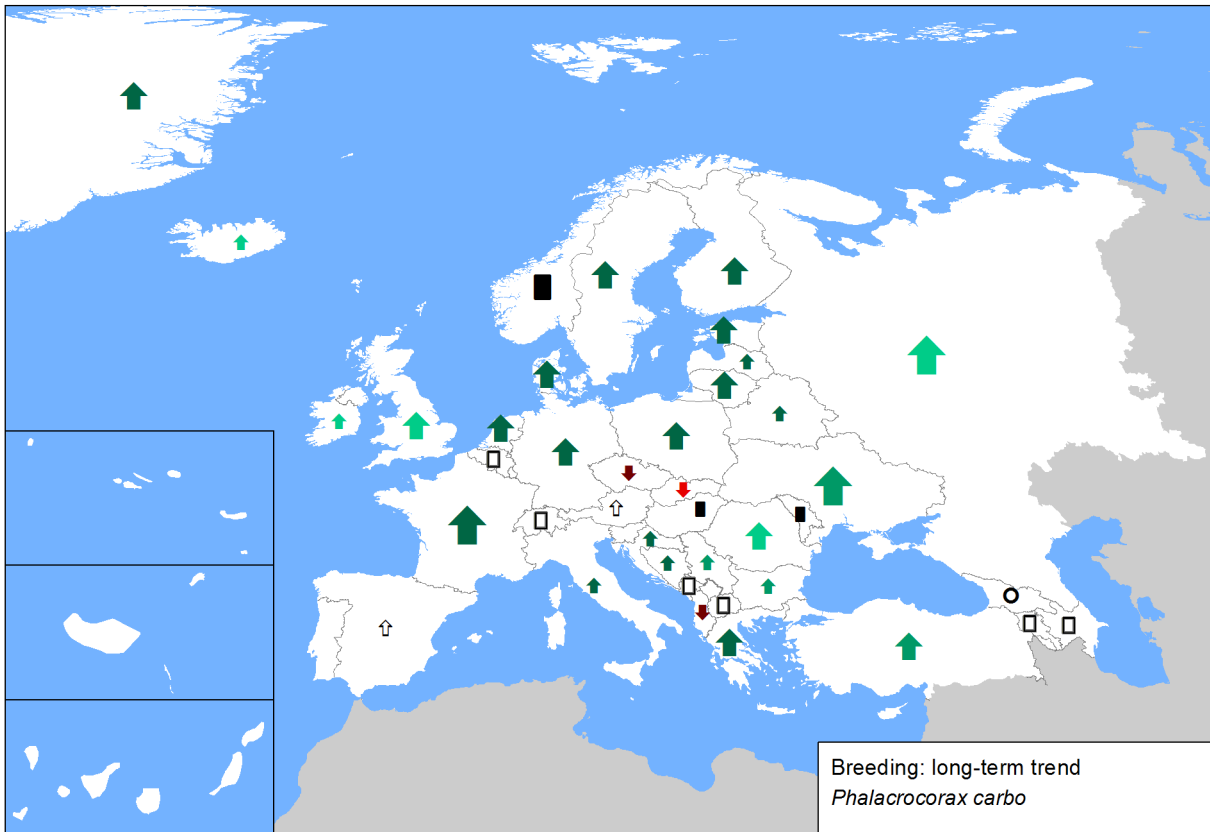


Figure 3. Reported wintering population sizes and short-term trends across Europe. Note that some countries within the species' wintering range did not report any data.

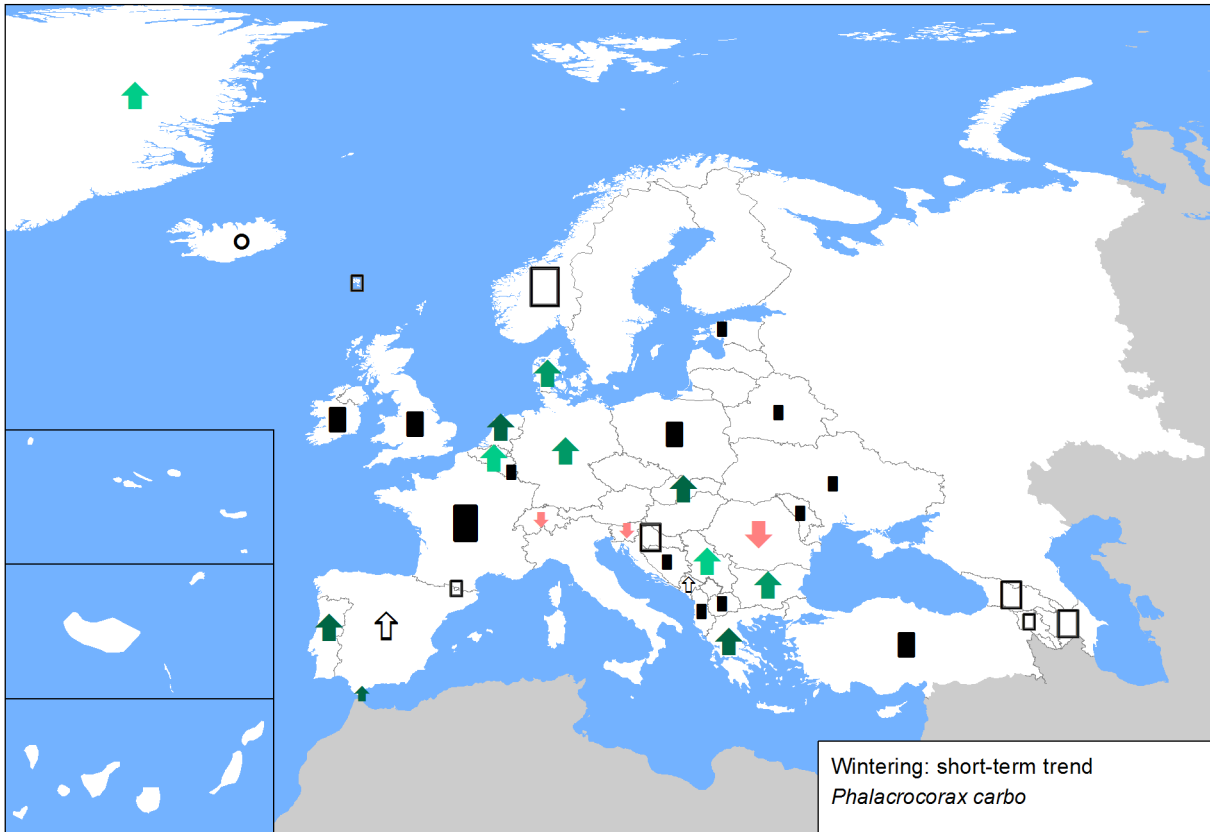
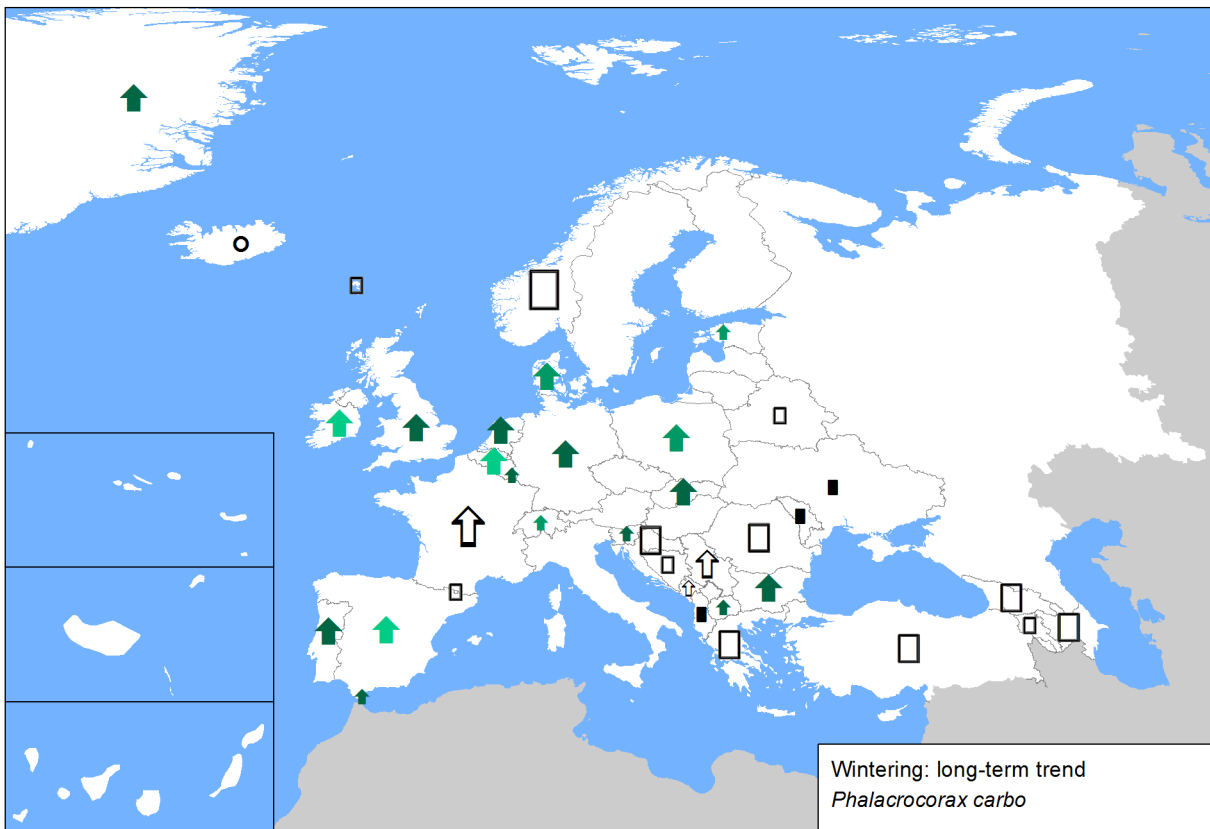


Figure 4. Reported wintering population sizes and long-term trends across Europe. Note that some countries within the species' wintering range did not report any data.



Sources

Albania: *P. c. sinensis*

Breeding population size: Bino pers. obs.
Breeding long-term trend: Bino pers. obs.
Winter population size: Bino pers. obs.
Winter short-term trend: Bino pers. obs.
Winter long-term trend: Bino pers. obs.

Andorra: *P. c. sinensis*

Winter population size: BirdLife International 2004
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Armenia: *P. c. sinensis*

Winter population size: ASPB IWC counts
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Armenia: *P. c. sinensis*

Breeding population size: The Red Book of Animals of the Republic of Armenia, 2010. Second edition; Balyan L., Margaryan N and Ghasabyan M. 2008. The importance of ecology and nature protection in the sustainable development perspectives. Yerevan State University, p. 78.
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Austria: *P. c. sinensis*

Breeding population size: T. Zuna-Kratky et al. unpublished data, Niederer 2012, E. Nemeth unpublished data, Nemeth & Dvorak (2012), Niederer, W. (2011): Der Kormoran im Naturschutzgebiet Rheindelta - Jahresbericht 2011. Naturschutzverein Rheindelta, Hard. 35 pp. Zuna-Kratky, T., M. Schmidt & J. Pöhacker (2010): Die Situation der Fischfresser-Kolonien in den March-Thaya-Auen in den Jahren 2009-2010. Verein AURING. Hohenau. 8 pp.
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Breeding long-term trend: New breeder since 2001;

Azerbaijan: *P. c. sinensis*

Breeding population size: BirdLife International 2004
Winter population size: BirdLife International 2004

Belarus: *P. c. sinensis*

Breeding population size: Samusenko, I. 2013: Status of the breeding population of Great Cormorants in Belarus in 2012. – In: Bregnballe, T., Lynch, J., Parz-Gollner, R., Marion, L., Volponi, S., Paquet, J.-Y. & van Eerden, M.R. (eds.) 2013. National reports from the 2012 breeding census of Great Cormorants <i>Phalacrocorax carbo</i> in parts of the Western Palearctic. IUCN-Wetlands International Cormorant Research Group Report. Technical Report from DCE – Danish Centre for Environment and Energy, Aarhus University. No. 22: 14-18.
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Winter population size: Bogdanovich I.A. - personal communication
Winter short-term trend: Bogdanovich I.A. - personal communication
Winter long-term trend: Bogdanovich I.A. - personal communication

Belgium: *P. c. sinensis*

Breeding population size: DEVOS, K. & PAQUET, J.-Y. (2013): Status of the breeding population of Great Cormorants in Belgium in 2012. in BREGNBALLE, T., LYNCH, J., PARZ-GOLLNER, R., MARION, L., VOLPONI, S., PAQUET, J.-Y. & VAN EERDEN, M.R.: National reports from the 2012 breeding census of Great Cormorants <i>Phalacrocorax carbo</i> in parts of the Western Palearctic. IUCN-Wetlands International Cormorant Research Group, Aarhus University, DCE, Danish Centre for Environment and Energy, Aarhus, Denmark: 19-22.
Breeding short-term trend: specific annual census
Breeding long-term trend: Comparison between 2008-2012 estimate and Devillers, 1989 (Atlas of the Belgian Breeding Bird) population estimate
Winter population size: waterbird database INBO + Aves
Winter short-term trend: waterbird database INBO and Aves
Winter long-term trend: waterbird database INBO and Aves

Phalacrocorax carbo (Great Cormorant)

Bosnia and Herzegovina: *P. c. sinensis*

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Finland: *P. c. sinensis*

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France: *P. c. sinensis*

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Georgia: *P. c. sinensis*

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Germany: *P. c. sinensis*

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Iceland: *P. c. carbo*

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Italy: *P. c. sinensis*

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Breeding short-term trend: Volponi et al. 2011. How many Great Cormorants *Phalacrocorax carbo* breed in Italy? Results from the 2011 national colony census. 8th International Conference on Cormorants (Medemblick, NL). Bregnballe T., Volponi S. van Eerden M., van Rijn S. and Lorentsen S-H. 2011. Status of the breeding population of Great Cormorants *Phalacrocorax carbo* in the Western Palearctic in 2006. Pp. 8-20 in Proc. 7th Intern. Conf. On Cormorants

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Latvia: *P. c. sinensis*

Breeding population size: Millers, K., 2013: Status of the breeding population of Great Cormorants in Latvia in 2012. – In: Bregnballe, T., Lynch, J., Parz-Gollner, R., Marion, L., Volponi, S., Paquet, J-Y. & van Eerden, M.R. (eds.) 2013. National reports from the 2012 breeding census of Great Cormorants *Phalacrocorax carbo* in parts of the Western Palearctic. IUCN-Wetlands International Cormorant Research Group Report. Technical Report from DCE – Danish Centre for Environment and Energy, Aarhus University. No. 22: 65-68. <http://dce2.au.dk/pub/TR22.pdf>

Breeding short-term trend: Kerus V. 2011. Latvijas ligzdojoso putnu stavokla parmainas laika no 1980. līdz 2010. gadam. Promocijas darbs. Riga: Latvijas Universitate
Millers, K., 2013: Status of the breeding population of Great Cormorants in Latvia in 2012. – In: Bregnballe, T., Lynch, J., Parz-Gollner, R., Marion, L., Volponi, S., Paquet, J-Y. & van Eerden, M.R. (eds.) 2013. National reports from the 2012 breeding census of Great Cormorants *Phalacrocorax carbo* in parts of the Western Palearctic. IUCN-Wetlands International Cormorant Research Group Report. Technical Report from DCE – Danish Centre for Environment and Energy, Aarhus University. No. 22: 65-68. <http://dce2.au.dk/pub/TR22.pdf>

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Lithuania: *P. c. sinensis*

Breeding population size: Expert working group of the Lithuanian Ornithological Society (lod@birdlife.lt) Jusys, V., Karalius, S., Raudonikis, L. 2012. Lietuvos paukščių pažinimo vadovas. Kaunas: „Lututė“, 288 p.

Breeding short-term trend: Expert working group of the Lithuanian Ornithological Society (lod@birdlife.lt) Jusys, V., Karalius, S., Raudonikis, L. 2012. Lietuvos paukščių pažinimo vadovas. Kaunas: „Lututė“, 288 p. Kurlavičius, P. (ed.) 2006. Lietuvos perinčių paukščių atlasas. Kaunas: „Lututė“, 256 p. Raudonikis L. 2004. Lithuania. In: Birds in Europe: population estimates, trends, and conservation status. BirdLife International, BirdLife Conservation Series No12, Cambridge, UK.

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Luxembourg: *P. c. sinensis*

Winter population size: LUXOR (2013): NATUR&EMWELT - BIRD-DATABASE, LUXEMBOURG Recorder (2013): database, Musée national d'histoire naturelle, Luxembourg Proess R., T. Keller, P. Lorgé (2009): Der Kormoran *Phalacrocorax carbo sinensis* in Luxemburg. Regulus Wissenschaftliche Berichte, 24: 1-21 (<http://www.luxnatur.lu/publi/wb24001021.pdf>)

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The Former Yugoslav Republic of Macedonia: *P. c. sinensis*

Breeding population size: Oliver Avramoski and Andon Bojadzi, unpublished data.

Breeding short-term trend: Oliver Avramoski and Andon Bojadzi, unpublished data.

Winter population size: Wetlands International database and unpublished data of the Macedonian Ecological Society

Winter short-term trend: Wetlands International database and unpublished data of the Macedonian Ecological Society

Winter long-term trend: Wetlands International database and unpublished data of the Macedonian Ecological Society

Moldova: *P. c. sinensis*

Breeding population size: The Atlas of the Breeding Birds of Republic of Moldova. 2010. 100p.

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Breeding long-term trend: Burfield I., Bommel van F., Birds in Europe. Population estimates, trends and conservation status. BirdLife International. Oxford, 2004. 374p. Cojan C. Particularitățile biologice și etologice ale avifaunei acvatice și semiacvatice din bazinul Prutului Inferior. Teza de doctorat. Chișinău. 2010. 172p.

Winter population size: Winter assessment of water birds in Moldova

Winter short-term trend: Манторов О., Визир И., Особенности зимовки и весеннего пролета водоплавающих и околоводных птиц на среднем Днестре в период 2006-2007 годов. Diversitatea, valorificarea rațională și protecția lumii animale. 2009: 66-68 Cojan C. Particularitățile biologice și etologice ale avifaunei acvatice și semiacvatice din bazinul Prutului Inferior. Teza de doctorat. Chișinău. 2010. 172p.

Phalacrocorax carbo (Great Cormorant)

Moldova: *P. c. sinensis*

Winter long-term trend: Штирбу В. И. Современное состояние фауны водно-болотных птиц в Молдове и практические меры по ее увеличению/ Экология и охрана птиц и млекопитающих. Кишинев. Штиинца. 1992. P 80-92 Манторов О., Визир И., Особенности зимовки и весеннего пролета водоплавающих и околоводных птиц на среднем Днестре в период 2006-2007 годов. Diversitatea, valorificarea rațională și protecția lumii animale. 2009: 66-68 Cojan C. Particularitățile biologice și etologice ale avifaunei acvatice și semiacvatice din bazinul Prutului Inferior. Teza de doctorat. Chișinău. 2010. 172p.

Montenegro: *P. c. sinensis*

Breeding population size: Vizi, A (2013): Status of the breeding population of Great Cormorants in Montenegro in 2012. IN: National Reports from the 2012 breeding census of Great Cormorants *Phalacrocorax carbo* in parts of the Western Palearctic. IUCN-Wetlands International Cormorant Research Group Report. Archus University N 22:72-74

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

Winter population size: IWC reports (2003-2012): Dubak, Vešović, N., Jovičević, M., Vizi O., Vizi, A.

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

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

Netherlands: *P. c. sinensis*

Breeding population size: NEM, Sovon en CBS (Boele et al. 2011-2013, van Dijk et al 2010)

Breeding short-term trend: NEM, Sovon en CBS, Boele et al. (2013)

Breeding long-term trend: Sovon

Winter population size: Hornman et al 2012, Poot et al 2013

Winter short-term trend: NEM (Sovon, RWS, CBS), Hornman et al 2013

Winter long-term trend: NEM (Sovon, RWS, CBS), Hornman et al 2013

Norway: *P. c. carbo*

Breeding population size: The Norwegian Monitoring programme for seabirds, Svein-Håkon Lorentsen pers.comm.

Breeding short-term trend: The Norwegian Monitoring programme for seabirds, Svein-Håkon Lorentsen pers.comm.

Breeding long-term trend: The Norwegian Monitoring programme for seabirds, Svein-Håkon Lorentsen pers.comm.

Norway: *P. c. carbo* and *sinensis*

Winter population size: Svorkmo-Lundberg, T., Bakken, V., Helberg, M., Mørk, K., Røer, J.E. & Sæbø, S. 2006. Norsk Vinterfugl Atlas. Fuglenes utbredelse, bestandsstørrelse og økologi vinterstid. Norsk Ornitologisk Forening, Trondheim. 496 pp.

Norway: *P. c. sinensis*

Breeding population size: The Norwegian Monitoring programme for seabirds, Svein-Håkon Lorentsen pers.comm.

Breeding short-term trend: the Norwegian Monitoring programme for seabirds, Svein-Håkon Lorentsen pers.comm.

Breeding long-term trend: The Norwegian Monitoring programme for seabirds, Svein-Håkon Lorentsen pers.comm.

Poland: *P. c. sinensis*

Breeding population size: Krzywosz T., Piotr Traczuk P. 2013. Populacja lęgowa kormorana czarnego *Phalacrocorax carbo* w Polsce w 2013 r. Komunikaty Rybackie Nr 4 (135)/2013: 12-36; National expert: Szymon Bzoma Waterbird Research Group KULING ul. Startowa 7a/13 80-461 Gdańsk Poland, szymbz@poczta.onet.pl

Breeding short-term trend: Krzywosz T., Piotr Traczuk P. 2013. Populacja lęgowa kormorana czarnego *Phalacrocorax carbo* w Polsce w 2013 r. Komunikaty Rybackie Nr 4 (135)/2013: 12-36; Tomiałojć L. & Stawarczyk T. 2003. Awifauna Polski: rozmieszczenie, liczebność i zmiany. PTPP "pro Natura", Wrocław

Breeding long-term trend: Krzywosz T., Piotr Traczuk P. 2013. Populacja lęgowa kormorana czarnego *Phalacrocorax carbo* w Polsce w 2013 r. Komunikaty Rybackie Nr 4 (135)/2013: 12-36; Tomiałojć L. & Stawarczyk T. 2003. Awifauna Polski: rozmieszczenie, liczebność i zmiany. PTPP "pro Natura", Wrocław

Winter population size: MZPW: Meissner W., Chodkiewicz T., Bzoma Sz., Brewka B., Woźniak B. 2012. Monitoring ptaków zimujących. Sprawozdanie dla GIOŚ. OTOP (source: http://monitoringptakow.gios.gov.pl/raporty?file=files/pliki/raporty_faza3/RaportMPP3_etap8_zad2%264_zima2012.pdf); Ławicki Ł., Czeraszewicz R., Guentzel S., Jasiński M., Kajzer Z., Kaliciuk J., Oleksiak A. 2008. Zimowanie ptaków wodnych na Pomorzu Zachodnim w latach 2002–2008. Not. Orn. 49: 235–244; Meissner W., Typiak J., Kośmicki A., Bzoma S. 2009. Liczebność ptaków wodnych na Zatoce Gdańskiej w okresie maj 2007–kwiecień 2008. Not. Orn. 50: 65–70

Winter short-term trend: van Eerden M., Marion L., Parz-Gollner R. 2011. Results of the Pan-European census of wintering Great Cormorants in Europe, January 2003. Ss. 21-32. W: Van Eerden M.R., van Rijn S., Keller V. (eds.). Proceedings 7th International Conference on Cormorants, Villeneuve, Switzerland, 23-26 November 2005. Wetlands International-IUCN Cormorant Research Group, Lelystad.

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Portugal: *P. c. sinensis*

Winter population size: Censo nacional de corvo-marinho *Phalacrocorax carbo* em 2013. Relatório não publicado, SPEA.

Winter short-term trend: Programa Nacional de Monitorização de Aves Aquáticas Invernantes

Winter long-term trend: Programa Nacional de Monitorização de Aves Aquáticas Invernantes

Romania: *P. c. sinensis*

Breeding population size: SOR database

Phalacrocorax carbo (Great Cormorant)

Romania: *P. c. sinensis*

Breeding short-term trend: BirLife International (2004) Birds in Europe: population estimates, trends and conservation status. Cambridge, UK Papp T., Fântână C. – editori 2008, Ariele de Importanță Avifaunistică din România, Publicație Comună a Societății Ornitologice Române și a Asociației „Grupul Milvus” BirLife International (2004) Birds in Europe: population estimates, trends and conservation status. Cambridge, UK Papp T., Fântână C. – editori 2008, Ariele de Importanță Avifaunistică din România, Publicație Comună a Societății Ornitologice Române și a Asociației „Grupul Milvus”
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Winter population size: International Waterbird Census, Romania SOR Database Milvus Database
Winter short-term trend: International Waterbird Census, Romania SOR Database Milvus Database
Winter long-term trend: International Waterbird Census, Romania SOR Database Milvus Database

Russia: *P. c. carbo*

Breeding population size: Bianki V.V., Kohanov V.D., Koryakin A.S., Krasnov Yu.V., Paneva T.D., Tatarinkova I.P., Chemyakin R.G., Shklyarevich F.N., Shutova E.V. 1993. Birds of Kola-White Sea Region. - Russian Ornithological Magazine, express-issue, 22 (4): 491-586 (in Russian). Krasnov, Yu.V., Matishov, G.G., Galaktionov, K.V., Savinova, T.N. 1995. The colonial seabirds of Murman. St. Petersburg: Nauka Publishers, 224 pp. (In Russian). Krasnov Yu.V., Gavrilov M.V., Ström H., Shavykin A.A. 2008. About late-summer distribution of birds in Kolguev Islands and the factors determining it. - Ornitologia, 35: 83-96 (in Russian). Semashko V.Yu., Cherenkov A.E., Tertitskiy G.M. 2012. Recent numbers of marine and water birds in the islands of Onega Bay and tendencies of their changes. – Ecology of sea birds of White Sea. Apatity, KSC RAS: 140-168 (in Russian). Anker-Nilssen, T., Bakken, V., Strøm, H., Golovkin, A.N., Bianki, V.V. & Tatarinkova, I.P. (eds.) 2000. The status of marine birds breeding in the Barents Sea region. Norsk Polarinstittutt, Rapport nr. 113. Bakken, V. (ed.) 2000. Seabird Colony Databases of the Barents Sea Region and the Kara Sea. Norsk Polarinstittutt Rapportserie Nr 115.
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Breeding long-term trend: Koryakin A.S. 2012. Monitoring of sea birds in Kandalaksha Bay of the White Sea (1967-2010). – Zoological Journal, 91, no.7: 800-808 (in Russian). Krasnov Yu.V., Gavrilov M.V., Ström H., Shavykin A.A. 2008. About late-summer distribution of birds in Kolguev Islands and the factors determining it. - Ornitologia, 35: 83-96 (in Russian). Semashko V.Yu., Cherenkov A.E., Tertitskiy G.M. 2012. Recent numbers of marine and water birds in the islands of Onega Bay and tendencies of their changes. – Ecology of sea birds of White Sea. Apatity, KSC RAS: 140-168 (in Russian). Anker-Nilssen, T., Bakken, V., Strøm, H., Golovkin, A.N., Bianki, V.V. & Tatarinkova, I.P. (eds.) 2000. The status of marine birds breeding in the Barents Sea region. Norsk Polarinstittutt, Rapport nr. 113. Bakken, V. (ed.) 2000. Seabird Colony Databases of the Barents Sea Region and the Kara Sea. Norsk Polarinstittutt Rapportserie Nr 115.

Russia: *P. c. sinensis*

Breeding population size: Rusanov G.M., Litvinova N.A., Gavrilov N.N., Bondarev D.V., Litvinov K.V. 2012. Current condition of colonies of Pelecaniformes and Ciconiiformes and problems of their protection in Volga Delta. - Strepet 10 (1): 60-77 (in Russian). Belik V.P. 2005. Cadastre of breeding avifauna of South Russia. Strepet 3, no. 1-2: 5-37 (in Russian). Lohman Yu.V., Emtyl M.H., Donets I.I., Lohman A.O., Karbach V.A., Gozhko A.A. 2010. Tendencies of increase of Cormorant's numbers in West Ciscaucasia. – Ornithology in Northern Eurasia. Materials of the XIIIth International Ornithological Conference of Northern Eurasia. Abstracts of papers. Orenburg, Publishing House of the Orenburg State Pedagogical University: 194-195 (in Russian). Belik V.P., unpublished. vpbelik@mail.ru
Breeding short-term trend: Lohman Yu.V., Emtyl M.H., Donets I.I., Lohman A.O., Karbach V.A., Gozhko A.A. 2010. Tendencies of increase of Cormorant's numbers in West Ciscaucasia. – Ornithology in Northern Eurasia. Materials of the XIIIth International Ornithological Conference of Northern Eurasia. Abstracts of papers. Orenburg, Publishing House of the Orenburg State Pedagogical University: 194-195 (in Russian). Kouzov S.A. 2007. The Great Cormorant <i>Phalacrocorax carbo</i> on Kurgalsky peninsula: moving-in history and features of biology. - Russian Ornithological Magazine, express-issue 16 (349): 339-365 (in Russian).
Breeding long-term trend: Lohman Yu.V., Emtyl M.H., Donets I.I., Lohman A.O., Karbach V.A., Gozhko A.A. 2010. Tendencies of increase of Cormorant's numbers in West Ciscaucasia. – Ornithology in Northern Eurasia. Materials of the XIIIth International Ornithological Conference of Northern Eurasia. Abstracts of papers. Orenburg, Publishing House of the Orenburg State Pedagogical University: 194-195 (in Russian). Belik V.P. et al. 2003. Recent population trends of breeding birds in the Southern Russia. - Strepet 1: 10-30 (in Russian). Kouzov S.A. 2007. The Great Cormorant <i>Phalacrocorax carbo</i> on Kurgalsky peninsula: moving-in history and features of biology. - Russian Ornithological Magazine, express-issue 16 (349): 339-365 (in Russian).

Serbia: *P. c. sinensis*

Breeding population size: BPSSS (2014) Unpublished data
Breeding short-term trend: BPSSS (2014) Unpublished data
Breeding long-term trend: BPSSS (2014) Unpublished data
Winter population size: Šćiban M, Đapčić D, Sekereš O, Đorđević I, Ružič M, Stanković D, Radišić D, Gergelj J, Janković M, Radaković M, Rudić B, Agošton A, Dajović M. & Simić D. (2011): Rezultati Međunarodnog cenzusa ptica vodenih staništa u Srbiji 2012. godine. Ciconia 20: 120–1
Winter short-term trend: Šćiban M, Đapčić D, Sekereš O, Đorđević I, Ružič M, Stanković D, Radišić D, Gergelj J, Janković M, Radaković M, Rudić B, Agošton A, Dajović M. & Simić D. (2011): Rezultati Međunarodnog cenzusa ptica vodenih staništa u Srbiji 2012. godine. Ciconia 20: 120–1
Winter long-term trend: BPSSS (2014) Unpublished data

Slovakia: *P. c. sinensis*

Breeding population size: Ridzoň, J., Darolová, A. Karaska, D., Fulín, M.
Breeding short-term trend: Ridzoň, J., Darolová, A. Karaska, D., Fulín, M.
Breeding long-term trend: Ridzoň, J., Darolová, A. Karaska, D., Fulín, M.
Winter population size: 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: 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.

Phalacrocorax carbo (Great Cormorant)

Slovakia: *P. c. sinensis*

Winter long-term trend: 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.

Slovenia: *P. c. sinensis*

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