

## SPECIES INFORMATION SHEET

## *Cephus grylle*

English name: <b>Black guillemot</b>	Scientific name: <b><i>Cephus grylle</i></b>	
Taxonomical group: Class: Aves Order: Charadriiformes Family: Alcidae	Species authority: Linnaeus, 1758	
Subspecies, Variations, Synonyms: <i>Cephus grylle grylle</i> (inner Baltic population) <i>Cephus grylle arcticus</i> (Kattegat population)	Generation length: 9 years	
Past and current threats (Habitats Directive article 17 codes): Breeding: Alien species (I02), Native species (I01), Hunting (F03.01, F03.02.02), Contaminant pollution (H03.02) Wintering: Oil spills (H03.01), Bycatch (F03.02.05), Mining & quarrying (C01.01), Construction (C03.03, D03.03), Water traffic (D03.02)	Future threats (Habitats Directive article 17 codes): Breeding: Alien species (I02), Native species (I01), Hunting (F03.01), Contaminant pollution (H03.02) Wintering: Oil spills (H03.01), Bycatch (F03.02.05), Mining & quarrying (C01.01), Construction (C03.03, D03.03), Water traffic (D03.02)	
IUCN Criteria breeding: <i>Cephus grylle grylle</i> : <b>A2ab</b> <i>Cephus grylle arcticus</i> : –	<b>HELCOM Red List Category breeding:</b>	
	<i>Cephus grylle grylle</i>	<b>NT</b> <b>Near Threatened</b>
	<i>Cephus grylle arcticus</i>	<b>LC</b> <b>Least Concern</b>
IUCN Criteria wintering: <i>Cephus grylle grylle</i> : <b>A2ab</b> <i>Cephus grylle arcticus</i> : <b>D2</b>	<b>HELCOM Red List Category wintering:</b>	
	<i>Cephus grylle grylle</i>	<b>NT</b> <b>Near Threatened</b>
	<i>Cephus grylle arcticus</i>	<b>VU</b> <b>Vulnerable</b>
Global / European IUCN Red List Category LC / LC	Habitats Directive: no	
Red List status in HELCOM countries: Denmark: LC, Estonia: VU, Finland: LC, Germany: “particularly protected” under the Federal Species Protection Decree (Bundesartenschutzverordnung)/–, Latvia: –, Lithuania: –, Poland: –, Russia: –, Sweden: NT (breeding)		

### Range description and general trends

The black guillemot breeds circumpolar in Arctic waters and also occurs in boreal and sub-Arctic areas in the Atlantic region, with the breeding range stretching along the coastlines of the North Pacific, Arctic North America, Greenland, the Eurasian Arctic archipelagos and Northwest Europe (Bauer et al. 2005, Gaston & Jones 1998). The species is a widespread breeder of coastal areas of northern Europe, which constitutes >50% of its global breeding range. The European breeding population consists of >130 000 breeding pairs (bp). The species underwent a moderate decline between 1970 and 1990, but increased, fluctuated or was stable across most of its European range (BirdLife International 2004). There are 5 subspecies recognized, two of them (*C. grylle grylle* and *C. grylle arcticus*) breeding in the Baltic Sea area. The Baltic population counts about 19 000–22 500 bp. Black guillemots winter mostly in the vicinity of their breeding grounds. Occasionally wintering birds can be found up to the Atlantic coast of France (Bauer et al. 2005).

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### Distribution and status in the Baltic Sea region

In the Baltic Sea area, black guillemots occur with two distinct populations, which are assumed to belong to two different subspecies. The Baltic population *Cephus grylle grylle* breeds at the Swedish east coast, in Finland, St Petersburg region of Russia, and Estonia. This breeding population covers an extensive range, and the species is very dispersed during the breeding season. The birds are very sedentary and often overwinter in the vicinity of their breeding grounds. This at least applies to adult birds, whereas immatures frequently migrate and winter further offshore. In hard winters, all guillemots are forced to move into offshore areas in the southern Baltic Sea when the waters in the northern parts freeze up.

In the west, the Atlantic population *Cephus grylle arcticus* stretches into the Baltic Sea area, breeding in the Danish Kattegat and on the Swedish west coast. These birds mainly winter in the north-western Kattegat. Only immatures make short movements (Durinck et al. 1994).

### Breeding

The **Swedish** breeding population consists of about 7 500–10 000 bp; about 6 300–8 800 belong to the subspecies *C. grylle grylle*, which breeds in the inner Baltic. About 1 250 bp belong to the subspecies *C. grylle arcticus*, which breeds along the Swedish west coast. However, of the Swedish west coast population, about 600 bp are breeding in the Skagerrak outside the Helsinki Convention area, and 650 bp within the Helsinki Convention area in the Kattegat (M. Tjernberg, pers. comm.). The species is missing in Skåne, Blekinge, southern part of Småland, and on Öland; it is rare in Östergötland (10 pairs). The trend has been declining with 15–30% from 1980–2010; it is categorized as NT in the Swedish Red List (Ottvall et al. 2009, ArtDatabanken 2011, Ottosson et al. 2012).

**Finland** hosts currently about 11 000 bp. The species has declined markedly during the last decade. It was still estimated at 17 000–20 000 bp in the 1990s (Hario & Rintala 2011, Väisänen et al. 2011).

The **St Petersburg region of Russia** and **Estonia** host only a small proportion of the Baltic population, both regions together < 150 bp (Elts et al. 2009).

In **Denmark**, the black guillemot is breeding in the Kattegat. The numbers have increased from 950–1 150 bp in 2000/2001 (BirdLife International 2004) to at least 2 050 in 2010 (Bregnballe & Asbirk 2011). The majority is breeding at Hirsholmene (ca. 1300 bp) and Deget (ca. 200 bp), i.e. off the coast of Frederikshavn in NW Kattegat.

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Table 1: Population numbers of the nominate subspecies *Cepphus grylle grylle* in the Baltic Sea area. For population trends 0=stable, -=decreasing, +=increasing, ?=unknown.

Country	Population size		Short-term population trend (10 years)	Long-term population trend (50 years)
	Breeding pairs	Year		
Sweden	6 300 – 8 800	2012	-	-
Finland	11 000	2001–2011	-	+
Estonia	20–40	2003–2008	0	0
Russia PET	50–100	2009	-	?
<b>Baltic Sea</b>	<b>17 400 – 19 900</b>			

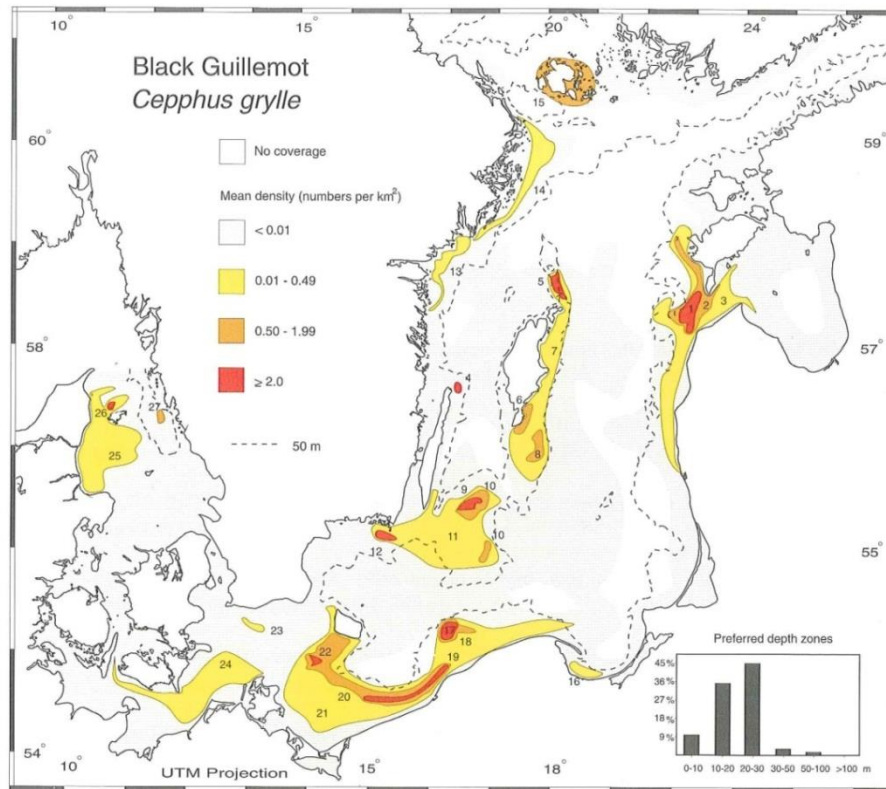
Table 1: Population numbers of the Kattegat population of *Cepphus grylle arcticus*. For population trends +=increasing, ?=unknown.

Country	Population size		Short-term population trend (10 years)	Long-term population trend (50 years)
	Breeding pairs	Year		
Sweden	650	2012	?	?
Denmark	2 050	2010	+	+
<b>Baltic Sea</b>	<b>2 700</b>			

**Wintering**

Comprehensive information on the winter distribution of black guillemots exists only from the early 1990s. According to Durinck et al. (1994), the most important wintering area stretches from the Rønne Bank southward to the Pomeranian Bay and eastward along the Polish coast to the Slupsk Bank. Other important areas are the Irbe Strait, the Midsjö Banks area and the sea off the east coast of Gotland (Map 1). The small Kattegat population mainly winters in the northern Kattegat. However, birds in the western part of the Baltic Sea can belong to both subspecies.

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Map 1. Distribution and density of wintering black guillemots (*Cephus grylle*) in the Baltic Sea, 1988–1993. The histogram shows the proportion of birds recorded in different depth zones during the surveys. From Durinck et al. (1994).

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## Distribution map



Map 2: Breeding distribution of black guillemots in the Baltic Sea area.



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### Habitat and ecology

The breeding habitat of the black guillemot is the archipelago areas in Sweden, Finland, St. Petersburg region of Russia, and Estonia where they breed on rocky, gravelly or sandy islets and on low cliffs. Breeding colonies often comprise only a few pairs, but some may contain several hundred pairs (Grell 1998). In the Kattegat, the species breeds along the Swedish west coast and on Danish islands, especially at Hirsholmene.

In winter, black guillemots are distributed closer inshore or in shallower water than other auk species but may be forced further offshore by ice coverage. In the Baltic Sea, the main habitats during winter are offshore banks and shallow sublittoral areas with gravelly sediments holding a water depth of less than 25 m (Durinck et al. 1994). Black guillemots mainly feed on small benthic or benthopelagic fish and invertebrates, especially crustaceans (Durinck et al. 1994, Mendel et al. 2008).

### Description of major threats

During the breeding season, mortality from native and non-native mammalian **predators** is the main threat to black guillemots, in Sweden above all by mink *Mustela vison*. Besides, the **availability of food and nesting habitats** also limit the size of breeding populations. Such factors may explain the relatively small colony sizes observed throughout much of the black guillemots' range. Furthermore, black guillemots are at greater risk than other alcids from the biological magnification of **pollutants** in the food chain, as a consequence of their inshore and bottom-feeding habits (<http://birds.audubon.org/species/blagui1>). In the past, **direct persecution** and the **collection of eggs** led to a severe population decline, e.g. in Denmark (Grell 1998). At present, **hunting** continues to be a significant factor in Scandinavia (Mendel et al. 2008).

In the wintering areas, various pressures were identified that have possibly caused or at least contributed to the observed declines:

In the Baltic wintering areas, intense **gillnet fisheries** impose a high risk of entanglement and drowning for diving bird species. Gillnet fisheries are mainly operated in shallow coastal areas and on offshore grounds and may thus overlap with the resting and feeding areas of black guillemots. According to Žydelis et al. (2009), hundreds of black guillemots are caught annually in gill nets in the Baltic Sea, predominately in Estonian, Lithuanian, Polish and Swedish waters. Black guillemots spend large proportions of time swimming on the water and the winter distribution in the Baltic Sea is concentrated to a few main areas. The species is thus highly vulnerable to **oil pollution** in these areas. The decimating effects of crude-oil spills on black guillemot colonies, including those at Denmark's Kattegat, have been clearly demonstrated. In 1991 an oil spill near the Shetland Islands killed about 1,700 guillemots, equivalent to 14% of Shetland's population. Although the disturbance distance of black guillemots with regard to vessels is only moderate, the birds usually take flight when a ship is approaching (FTZ Büsum unpubl. data). This pronounced sensitivity to **ship traffic** may cause the birds to avoid busy shipping lanes and thus influence the distribution of black guillemots. Even in less frequently sailed areas, ship traffic may cause fragmentation and loss of suitable feeding and resting habitats. Due to the pronounced sensitivity of black guillemots with regard to ship traffic, **offshore wind farms** and associated ship movements are likely to scare birds and thus may entail fragmentation and loss of habitats. In their wintering areas at sea, black guillemots mostly move by swimming, but are assumed to fly between different resting sites. Their manoeuvrability in flight is only moderate. Hence, the species is at risk of colliding with offshore wind turbines and other obstacles, especially in unfavourable conditions with poor visibility (Mendel et al. 2008). Information on the diet of black guillemots in the Baltic Sea is scarce, but they are likely to feed on benthopelagic prey like small fish species and crustaceans (FTZ Büsum unpubl. data; see also Madsen 1957). Thus, the **reduction or destruction of bottom habitats** of their favorite prey species e.g. by sand and gravel extraction or by dredging activities for shipping channels and coastal development may decrease the food availability for the species.

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### Assessment justification

#### Breeding

The nominate subspecies *Cephus grylle grylle* has been declining in its main breeding areas, i.e. Sweden and Finland. The decline in Sweden during 3 generations (27 years) is more than 15, but less than 30%. The most recent figures for Finland even indicate a decline of more than 30%. However, for the total population the decline is most likely less than 30%; the species is classified as NT according to the criterion A2ab.

The population of *Cephus grylle arcticus* in the Danish Kattegat and at the Swedish west coast has been increasing. Different to the classification of the wintering population the breeding sites are more scattered and numerous, the criterion D2 is not met; the subspecies hence is classified as LC.

#### Wintering

Information on the population size of birds wintering in the Baltic Sea is scarce. However, black guillemots usually winter near their breeding grounds and thus the winter population can be assessed according to the development of the breeding population. Also the **Baltic population** of black guillemots *Cephus grylle grylle* is assumed to winter in the Baltic Sea only, and thus the development of winter population comes along with the development of the breeding population, which was assessed *Near Threatened* (see above). Accordingly, the winter population of *Cephus grylle grylle* is also classified NT.

The **Atlantic population** *Cephus grylle arcticus* mainly winters in the northern Kattegat area in the vicinity of the breeding areas in the Danish Kattegat and on the Swedish west coast. In accordance with the increasing breeding population in Denmark, where highest breeding numbers in the Kattegat area are found, the winter population is supposed to be increasing, too, and hence the species does not approach the threshold for NT under criteria A and C. As the winter distribution is restricted to the northern Kattegat area, the species meets the threshold for *Vulnerable* under the range size criterion (extent of occurrence <20 000 km<sup>2</sup>), combined with a low number of locations. However, none of the other conditions (declining or fluctuating range size, habitat extent/quality, or population size) is fulfilled, hence the species does not classify for a Red List category under criterion B. The area of occupancy exceeds 4 000 km<sup>2</sup> (see Durinck et al. 1994) and thus does not approach the threshold for a Red List category, either. However, due to the low number of wintering locations (probably < 6, see Durinck et al. 1994), there is an imaginable threat that can make the species capable of becoming CR or RE within a very short time, e.g. an oil spill in the northern Kattegat area. Accordingly, the species is classified as *Vulnerable* under criterion D2.

### Recommendations for actions to conserve the species

Restoration of local breeding populations can be encouraged by controlling predators, and by providing artificial nest sites, particularly where this is a limiting factor. The latter has been a successful measure e.g. in the breeding population on Cooper Island, Alaska (see <http://birds.audubon.org/species/blagui1>). In the wintering areas, measures to reduce by-catch (e.g. reduction or even ban of setnet fishery in the most important wintering areas), and measures to reduce oil pollution are the most important actions to conserve the species. Furthermore, important feeding habitats need to be protected, e.g. against substrate extractions or dredging activities.

### Common names

Denmark: tejst, Estonia: krüüsel, Finland: riskilä, Germany: Gryllteiste, Latvia: melnais alks, Lithuania: taiste, Poland: nurnik, Russia: Обыкновенный чистик, Sweden: tobisgrissla

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### References

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