

## SPECIES INFORMATION SHEET

*Branta bernicla hrota* (wintering)

English name: <b>Light-bellied brent goose</b>	Scientific name: <b><i>Branta bernicla hrota</i> (wintering population)</b>	
Taxonomical group: Class: Aves Order: Anseriformes Family: Anatidae	Species authority: Linnaeus, 1758	
Subspecies, Variations, Synonyms: Pale-bellied brent goose; <i>Branta hrota</i>	Generation length: 6.6 years	
Past and current threats (Habitats Directive article 17 codes): Extra-regional threats (XO), Overgrowth of open areas (A04.03), Climate change (M01.07), Eutrophication (H01.05), Other threat factors (Loss of specific habitat features, J03.01), Human disturbance (G01), Fishing (F02.02.05)	Future threats (Habitats Directive article 17 codes): Extra-regional threats (XO), Overgrowth of open areas (A04.03), Climate change (M01.07), Eutrophication (H01.05), Other threat factors (Loss of specific habitat features, J03.01), Human disturbance (G01), Fishing (F02.02.05), Hunting (F03.01)	
IUCN Criteria: <b>B1ab(iii), D2</b>	<b>HELCOM Red List Category:</b>	<b>NT Near Threatened</b>
Global / European IUCN Red List Category LC / VU	EU Birds Directive: Annex II B (DK, DE)	
Protection and Red List status in HELCOM countries: <i>Hunting not allowed in all EU Member States (Annex II B).</i> Denmark: – (on the 1997 Danish Amber List as a species of national responsibility outside the breeding season), Estonia: –, Finland: –, Germany: “particularly protected” under Federal Species Protection Decree (Bundesartenschutzverordnung)/–, Latvia: –, Lithuania: –, Poland: –, Russia: 3 (Rare), Sweden: –		

**Range description and general trends**

The East Atlantic (Svalbard) flyway population of the brent goose, the light-bellied brent goose, breeds in the eastern and northern parts of Svalbard and in northeast Greenland. A few breeding pairs are also found on Franz Josef's Land (Clausen et al. 1999, Pihl et al. 2006). The most important wintering area of the light-bellied brent goose is in Denmark, where the species can be found on a small number of sites in north-west, north- and north-east Jutland and in the northern part of the Danish Wadden Sea. Outside Denmark, Lindisfarne in north-east England is the only other regular staging and wintering site. In severe winters, large numbers of Light-bellied brent geese migrate to the Netherlands. In autumn, 50–75% of the population stay in Denmark and the rest in Lindisfarne, but during spring migration the whole population assembles at a few spring staging sites, which all are in Denmark (Pihl et al. 2006). When shooting was stopped in the 1970s, the population started to increase. It showed a slow but steady population growth from 2 450–4 000 birds in the early 1980s to 4 000–5 000 birds in the early 1990s (Clausen et al. 1999). Since then the population further increased up to 7 600 birds in 2009 (Fox et al. 2010). During the last years, however, the population has been declining due to a combination of a series of poor breeding years in combination with a couple of cold winters and is currently estimated at 6 800 birds (P. Clausen, written).

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Light-bellied brent geese, *Branta bernicla hrota*. Pictures by Kevin K. Clausen

### Distribution and status in the Baltic Sea region

The only wintering site of the light-bellied brent goose in the Baltic Sea region is in Denmark, which is the most important wintering area of the whole flyway population. The birds leave their breeding areas during September and migrate to the winter quarters, where they stay most of the time until their departure in May (Pihl et al. 2006). The Baltic wintering areas are situated along the eastern coast of Jutland (Fig. 1). In winter 2008, about 6 000 birds have been observed during midwinter counts in Denmark, representing about 86% of the flyway population (Petersen et al. 2010).

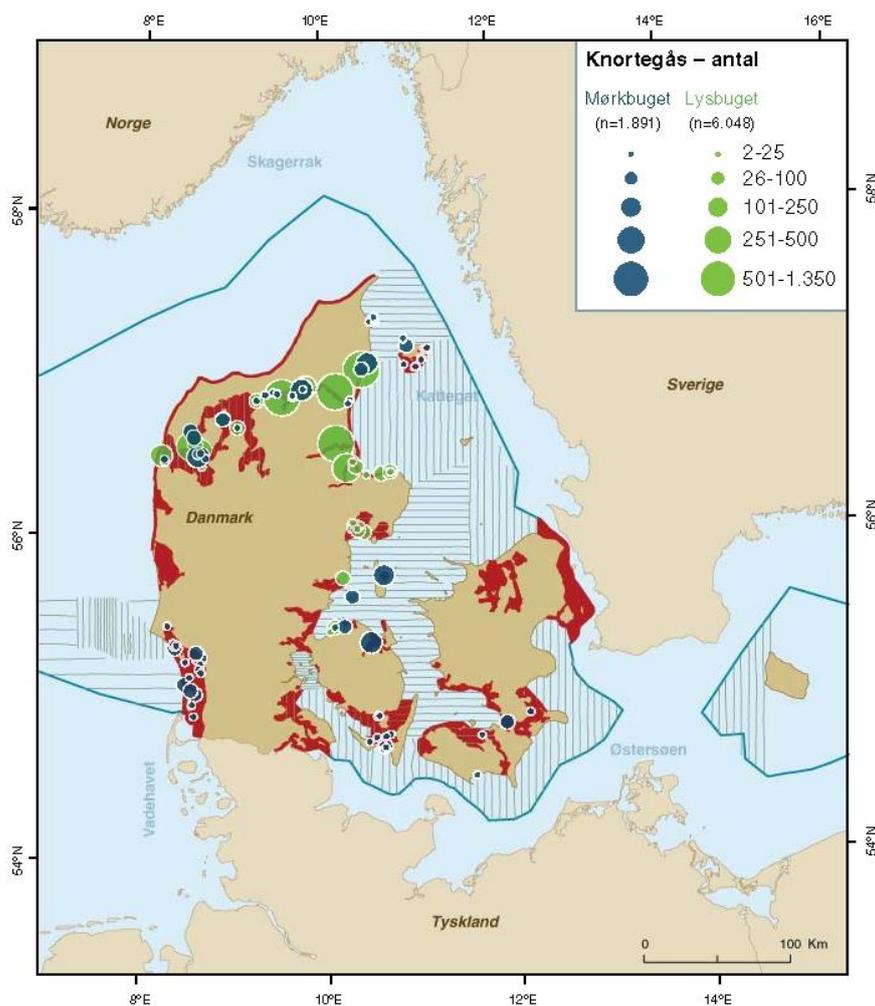


Fig. 1. Abundance and distribution of light-bellied brent goose (*Branta bernicla hrota*; green circles) in its wintering areas in Denmark observed during midwinter counts in 2008. From Petersen et al. (2010).

## Habitat and ecology

The light-bellied brent goose breeds in the high Arctic Tundra in areas with freshwater bodies close to the coast. Outside the breeding season the species is bound to low-coastal areas with dried mud flats and salt marshes suitable for feeding on e.g. eelgrass, green algae and *Salicornia*, and with roosting sites in marine coastal areas or sheltered bays. On the mud flats in the Wadden Sea and in eastern Vendsyssel (north Jutland) the birds feed particularly on a dwarf-Eelgrass species and on *Enteromorpha*. In shallow-water areas on other sites, they primarily feed on Eelgrass, Pondweed and Sea Lettuce. During the last decades, flocks of light-bellied brent geese have increasingly been observed feeding on agricultural land, e.g. on winter crops (wheat and barley) and newly sown spring barley fields (Bauer et al. 2005, Pihl et al. 2006).

## Description of major threats

A high protective status has been given to all areas used by light-bellied brent geese on Svalbard and in Greenland. However, the nesting success of breeding pairs in Svalbard is greatly reduced as a result of predation by Arctic fox *Vulpes lagopus* (Madsen et al. 1992, cited in BirdLife International 2013). In the wintering areas, the light-bellied brent goose has been fully protected from shooting in Lindisfarne since 1954 and in Denmark since 1972. Most of the sites and natural habitats regularly used by the species are protected as Ramsar sites or as Special Bird Protection Areas (SPAs) under the EU Birds Directive (Clausen et al. 1999). The light-bellied brent goose is on the 1997 Danish Amber List categorized as a species of national responsibility outside the breeding season. Hunting and disturbance free reserves have been established in all the SPAs where this species occurs during the open season for other species, supporting the species' needs for undisturbed feeding areas (Pihl et al. 2006). Although many feeding habitats of light-bellied brent goose are protected in Denmark, the species is sensitive to a deterioration of feeding areas. Previously used salt marshes have been abandoned as the salt marsh vegetation became taller and eventually turned to unfavourable plant communities after changes in management practice and a subsequent lack of grazing in these areas. Sea level rises due to climate change threaten to drastically reduce salt marsh habitats important for light-bellied brent goose (Pihl et al. 2006, Clausen et al. in press). *Zostera* beds might be harmed by Blue mussel fisheries, especially in the Limfjord area. The major threat to the *Zostera* and *Ruppia* beds is, however, eutrophication and major declines in *Zostera* in different areas have been believed to be the result of eutrophication (Pihl et al. 2006). In the future, the species may be further threatened by a reduction in food supplies following the return of a disease of *Zostera marina* (see BirdLife International 2013). Besides, the species may be persecuted in its wintering areas by farmers, as conflicts have been arisen due to the increasing use of agricultural land as feeding areas by light-bellied brent geese. Furthermore, the light-bellied brent goose is sensitive to severe winter conditions in combination with depletion or low availability of food resources, and high losses during cold winters have been documented for juvenile birds as well as for adults (Clausen et al. 1998, Clausen et al. 2001).

## Assessment justification

As 80–90% of the total biogeographic population winter in DK, the trend of the total flyway population is supposed to be representative of the Danish (=Baltic) winter population. The Svalbard flyway population showed a steady increase in numbers since the 1970, comprising 2 450–4 000 birds in the early 1980, 4 000–5 000 birds in the early 1990s and 7 600 birds in 2009 (Clausen et al. 1999, Fox et al. 2010). Since then the population further increased up to 7 600 birds in 2009 (Fox et al. 2010). Although the population has recently been declining to 6 800 birds in October 2012 (P. Clausen, written), the population trend over three generations (20 years, according to the Swedish Red List, Tjernberg & Svensson 2007), is affected by the increase of the population since the 1970s, when shooting was stopped. Thus, the species does not qualify for a Red List category under criteria A and C. However, the population of light-bellied brent goose wintering in Denmark is small and restricted. The extent of occurrence is probably < 40 000 km<sup>2</sup>, combined with a low number of known locations and a decline of habitat quality (P. Clausen, written). There are also large fluctuations in the number of individuals, e.g. due to winter conditions (see Petersen et al. 2006, 2010). The species is categorized as Near Threatened

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(NT) according to criterion B1ab(iii). Furthermore, the number of locations in the Baltic Sea area during winter is < 10 (P. Clausen, written; Petersen et al. 2010), thus also classifying the species as Near Threatened under criterion D2.

### Recommendations for actions to conserve the species

Despite the population increase over the last 30 years, the light-bellied brent goose is still one of the smallest goose populations in the world and it is still too early to consider the population secured. The national conservation status in Denmark is assessed as unfavourable-increasing (Pihl et al. 2006). A new assessment of the status of the light-bellied brent goose in Denmark is currently under preparation, but the score of the species will not change (P. Clausen, written). The main breeding areas should be monitored regularly, especially to follow future trends in predation and competition for breeding sites between light-bellied brent geese and the growing barnacle goose population (see Clausen et al. 1999). Site management plans based on careful ecological research should be a priority in the future, especially against the background of climate-change induced effects on feeding habitats (see Clausen et al. in press). The marking/re-sighting program should be continued, aimed at improving the understanding of mortality rates of different age classes in the population, and to provide data for a more thorough analysis of the viability of this small population (Clausen et al. 1999). Feeding areas need to be further protected, e.g. against eutrophication, damage by fisheries or overgrowing due to reduced cattle grazing. As it is known that human disturbances can have negative effects on the energy budget of light-bellied brent geese (Clausen et al. 1999), undisturbed feeding and roosting sites need to be safeguarded.

### Common names

Denmark: lysbuget knortegås, Estonia: lääne-mustlagle, Finland: sepelhanhi, Germany: Hellbäuchige Ringelgans, Latvia: melngalvas zoss ?, Lithuania: paprastoji berniklė, Poland: bernikla jasnobrzucha, Russia: Атлантическая черная казарка, Sweden: ljusbukig prutgås

### References

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