

Nomination

Pagophila eburnea, Ivory Gull



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Geographical extent

OSPAR Regions: I

Biogeographic zones: 2,3,8,18-20

Region & Biogeographic zones specified for decline and/or threat: As above

Pagophila eburnea has a near-circumpolar distribution in the Arctic seas and pack ice, breeding north of the July isotherm of 5°C from north Canada through North and East Greenland, Svalbard and islands off northern Russia, with Europe accounting for less than a quarter of its global breeding range. Its OSPAR breeding population is small. The species breeds mainly on inaccessible cliffs, broken ice fields and low rocks or flat shorelines. Outside the breeding season, it normally avoids ice-free waters, being closely associated with pack ice, favouring areas with 70-90% ice cover near the ice edge. It feeds mainly on fish, shrimps, shellfish, algae, carrion, offal and animal faeces.

Application of the Texel-Faial criteria

P. eburnea was nominated for inclusion on the OSPAR List with particular reference to the regional importance, rarity, decline, and sensitivity criteria, with information also provided on threat.

Global/regional importance

The total OSPAR breeding population for this species is restricted to a small number of locations in Greenland, Svalbard and the westernmost areas of Franz Josef Land. Therefore, *P. eburnea* qualifies under this criterion as a high proportion of the total population of the species in the OSPAR area is restricted to a relatively small number of breeding locations (all within OSPAR Region I).

Data showing the distribution of this species within the IBAs¹ found in the OSPAR Maritime Area² support this conclusion. The occurrence of this species within IBAs is restricted to only three sites: Henrik Krøyer Holme and Kilen (NE Greenland) and North-east Svalbard Nature Reserve (Heath & Evans, 2000).

Rarity

The OSPAR breeding population of *Pagophila eburnea* is small. There are an estimated 550 – 1200 pairs for Greenland and Svalbard (BirdLife International, 2004), but the total for the OSPAR Area will be lower than this estimate as the figures for Greenland include western Greenland, outside of the OSPAR Area. An estimated c.250 pairs can be found in NE Greenland, within the OSPAR Area (del Hoyo *et al.*, 1996). Some birds also breed on the western islands of Franz Josef Land that fall just within the OSPAR area (Bakken & Tertitski, 2000). The latest data from Victoria Island, Franz Josef Land, suggest that around 750 breeding pairs can be found in one colony there (Bakken & Tertitski, 2000). No other recent data are available for colonies in the parts of Franz Josef Land that fall within the OSPAR area. Therefore, estimates using best available knowledge suggest that there are no more than a couple of thousand breeding pairs in the Arctic regions of the OSPAR area.

Decline

The European breeding population of this species underwent a large decline over the period 1970-1990, mostly due to decreases in European Arctic Russia (Tucker & Heath, 1994).

The species possibly declined in Svalbard at this time (many colonies there were reported to hold a hundred or more pairs at the end of the 19th century, but thorough investigations failed to reveal any colonies of this size in more recent years – Tucker & Heath, 1994). However, the species definitely declined in Svalbard over 1990-2000 [by up to 19%] (BirdLife International, 2004). The largest known colony in Svalbard was discovered on Kvitøya in 1931, where it was estimated that 400 pairs were breeding. This area has been visited subsequently without any observations of breeding *P. eburnea* (Bakken & Tertitski, 2000).

Trend data were not available for key populations in Greenland (for the period 1990-2000) so the overall trend for the OSPAR population as a whole remains unknown. However, since 2005 the species has

¹ Important Birds Areas - areas identified by BirdLife International as being of importance for birds.

² Excluding purely terrestrial or inland IBAs.

been listed as Globally 'Near Threatened' on the IUCN Red List, (IUCN, 2007) and is likely to suffer further declines in the future as it will be particularly sensitive to climate change effects (being dependent upon the vanishing Arctic pack ice).

Sensitivity

The species is very sensitive. It has a low *resilience* to adverse effects due to its life history characteristics: the species will not breed if food availability is low in any one year, and it has a relatively slow reproductive rate, laying only 1-2 eggs per clutch (del Hoyo *et al.*, 1996).

P. eburnea is also very easily adversely affected by human activity, being restricted to the pack-ice zone for much of the year, avoiding ice-free waters, and therefore particularly vulnerable to climate change. In addition, their extensive use of seal and whale blubber makes them particularly sensitive to heavy-metal contamination. The species also appears to be sensitive to overflights by aircraft.

Threat

Pagophila eburnea is principally threatened by future climate change – in particular by the prospect of climate warming in the Arctic. This species is confined mostly to the pack-ice zone outside the breeding season. Satellite data indicate a continuation of the $2.7 \pm 0.6\%$ per decade decline in annual mean Arctic sea ice extent since 1978. The decline for summer extent is larger than for winter, with the summer minimum declining at a rate of $7.4 \pm 2.4\%$ per decade since 1979 (Lemke *et al.*, 2007). This constitutes a major threat of potential habitat loss for *P. eburnea*.

This species is also threatened by pollution – for example, it is vulnerable to heavy metal contamination due to its extensive use of seal and whale blubber. A recent paper postulated that the effects of chemical pollutants such as Endocrine Disrupting Chemicals (EDCs) could combine synergistically with those of climate change to threaten Arctic seabirds, such as *P. eburnea* (Jenssen, 2006).

Relevant additional considerations

Sufficiency of data

Evidence of decline in the OSPAR area is available but poorly documented. There is enough evidence about the effects of pollutants and human-induced climate change on Arctic wildlife in general, as well as specifically on the *P. eburnea*, for serious cause for concern about the prospects for this species.

Changes in relation to natural variability
The likely contribution of natural variability to the observed declines has not been determined.

Expert judgement

Expert judgement is required to assess the likely full extent of decline across the OSPAR population for this species, in the face of scant evidence.

ICES Evaluation

The ICES Evaluation of this nomination (ICES 2007) agreed that the species is 'very sensitive'.

Threat and link to human activities

Cross-reference to checklist of human activities in OSPAR MPA guidelines

Category of effect of human impact: Physical – Temperature changes, Noise disturbance, Visual disturbance. Chemical – Synthetic compound contamination, Heavy metal contamination. Biological – Displacement (moving) of species.

The main threats to this species can be clearly linked to human activities as they are due in part to heavy metal and other chemical contamination throughout the Arctic, and in part to habitat loss due to retreating Arctic sea ice in the face of continued, human-induced climate change. Birds at the breeding colonies may also be threatened by disturbance in the nesting areas by aircraft, tourists or by predators such as domestic dogs from nearby human settlements.

Management considerations

The species is listed under Appendix II of the Bern Convention. CAFF (Conservation of Arctic Flora and Fauna) have also produced a CBIRD 'Draft Conservation Strategy of the Ivory Gull' (unpublished report).

Given the significant impact that continued climate change will have on this species, OSPAR should continue to do everything in its power to combat, mitigate the effects of, and prepare for adaptation to future climate change.

The species only breeds in a relatively limited number of locations within the OSPAR area, including only three IBAs (Henrik Krøyer Holme and Kilen, both located in North East Greenland, and North-east Svalbard Nature Reserve). These IBAs should be a priority for international protection. Efforts should be made to locate and protect the most important breeding colonies for this species throughout the OSPAR area. It will be essential to

establish a monitoring system for this species – including if possible not only monitoring numbers of breeding pairs in colonies but also colour ringing birds to document any movements of breeding individuals between different breeding colonies.

Further information

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Useful references:
Bakken, V. and Tertitski, G.M. (2000) Ivory Gull *Pagophila eburnea* pp 104-107 in Anker-Nilssen, T., Bakken, V., Strøm, H., Golovkin, A.N., Bianki, V.V., and Tatarinkova, I.P. (eds.) *The Status of Marine Birds Breeding in the Barents Sea Region* Norsk Polarinstitutt Rapport No. 113.

BirdLife International (2004) *Birds in Europe: population estimates, trends and conservation status*. Cambridge, UK: BirdLife International. (BirdLife Conservation Series no.12).

BirdLife International (2007) Species factsheet: *Pagophila eburnea*. Downloaded from <http://www.birdlife.org>

Del Hoyo, J., Elliott, A., and Sargatal, J. (eds.) (1996). *Handbook of the Birds of the World, Volume 3 (Hoatzin to Auks)*. Barcelona: Lynx Edicions.

Heath, M.F., and Evans, M.I. (eds.) (2000) *Important Bird Areas in Europe: priority sites for conservation*. Cambridge, UK: BirdLife International. (BirdLife Conservation Series No. 8).

ICES (2007) *Report of the Working Group on Seabird Ecology (WGSE), 19–23 March 2007, Barcelona, Spain*. ICES CM 2007/LRC:05. 123 pp.

IUCN (2007) *2007 IUCN Red List of threatened species* www.iucnredlist.org

Jenssen, B.M. (2006) Endocrine-disrupting chemicals and climate-change: a worst case combination for Arctic marine mammals and seabirds? *Env Health Perspectives* **114 Supp. 1**: 76-80.

Lemke, P., Ren, J., Alley, R.B., Allison, I., Carrasco, J., Flato, G., Fujii, Y., Kaser, G., Mote, P., Thomas, R.H. and Zhang, T. (2007) Observations: Changes

in Snow, Ice and Frozen Ground pp 337-384 in Solomon, S., Qin, D., Manning, M., Chen, Z., Marquis, M., Averyt, K.B., Tignor, M. and Miller, H.L. (eds.) *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* Cambridge University Press, Cambridge, UK and New York, NY, USA.

Tucker, G.M. and Evans, M.I. (1997) *Habitats for birds in Europe: a conservation strategy for the wider environment*. Cambridge, UK: BirdLife International (BirdLife Conservation Series no. 6).

Tucker, G.M. and Heath, M.F. (1994) *Birds in Europe: their conservation status*. Cambridge, UK: BirdLife International (BirdLife Conservation Series no. 3).

Wetlands International (2006) *Waterbird Population Estimates – Fourth Edition*. Wageningen, the Netherlands: Wetlands International.