OSPAR COMMISSION

Background Document for Ivory gull *Pagophila eburnea*

Biodiversity Series

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OSPAR Convention

The Convention for the Protection of the Marine Environment of the North-East Atlantic (the “OSPAR Convention”) was opened for signature at the Ministerial Meeting of the former Oslo and Paris Commissions in Paris on 22 September 1992. The Convention entered into force on 25 March 1998. It has been ratified by Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom and approved by the European Community and Spain.

Convention OSPAR

La Convention pour la protection du milieu marin de l'Atlantique du Nord-Est, dite Convention OSPAR, a été ouverte à la signature à la réunion ministérielle des anciennes Commissions d'Oslo et de Paris, à Paris le 22 septembre 1992. La Convention est entrée en vigueur le 25 mars 1998. La Convention a été ratifiée par l'Allemagne, la Belgique, le Danemark, la Finlande, la France, l’Irlande, l’Islande, le Luxembourg, la Norvège, les Pays-Bas, le Portugal, le Royaume-Uni de Grande Bretagne et d’Irlande du Nord, la Suède et la Suisse et approuvée par la Communauté européenne et l’Espagne.

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This report has been prepared by Dr Nigel Varty and Kate Tanner for BirdLife International as lead party for the Ivory gull

Photo cover page: Ivory gull: Wikipedia

Contents

Background Document for Ivory gull *Pagophila eburnea* **3**
Executive Summary 3
Récapitulatif 3
1. Background Information 3
Name of species 3
Ecology and breeding biology 3
2. Original Evaluation against the Texel-Faial selection criteria 4
List of OSPAR Regions and Dinter biogeographic zones where the species occurs 4
List of OSPAR Regions and Dinter biogeographic zones where the species is under threat and/or in decline 4
Original evaluation against the Texel-Faial criteria for which the species was included on the OSPAR List 4
3. Current status of the species 4
Distribution in OSPAR maritime area 4
Population (current/trends/future prospects) 5
Condition (current/trends/future prospects) 6
Limitations in knowledge 6
4. Evaluation of threats and impacts 6
5. Existing Management measures 7
6. Conclusion on overall status 8
7. What action should be taken at an OSPAR level? 8
Action/measures that OSPAR could take, subject to OSPAR agreement 8
Brief summary of the proposed monitoring system 10
Annex 1: Overview of data and information provided by Contracting Parties **11**
Annex 2: References **13**

Background Document for Ivory gull *Pagophila eburnea*

Executive Summary

This background document on the Ivory gull - *Pagophila eburnea* has been developed by OSPAR following the inclusion of this species on the OSPAR List of threatened and/or declining species and habitats (OSPAR other agreement 2008-6). The document provides a compilation of the reviews and assessments that have been prepared concerning this species since the agreement to include it in the OSPAR List in 2008. The original evaluation used to justify the inclusion of *Pagophila eburnea* in the OSPAR List is followed by an assessment of the most recent information on its status (distribution, population, condition) and key threats prepared during 2008-2009. Chapter 7 provides recommendations for the actions and measures that could be taken to improve the conservation status of the species. On the basis of these recommendations, OSPAR will continue its work to ensure the protection of *Pagophila eburnea*, where necessary in cooperation with other organisations. This document may be updated to reflect further developments.

Récapitulatif

Le présent document de fond sur la *Mouette blanche* a été élaboré par OSPAR à la suite de l'inclusion de cette espèce dans la liste OSPAR des espèces et habitats menacés et/ou en déclin. Ce document comporte une compilation des revues et des évaluations concernant cette espèce qui ont été préparées depuis qu'il a été convenu de l'inclure dans la Liste OSPAR en 2008. L'évaluation d'origine permettant de justifier l'inclusion de la *Mouette blanche* dans la Liste OSPAR est suivie d'une évaluation des informations les plus récentes sur son statut (distribution, population, condition) et des menaces clés, préparée en 2008-2009. Le chapitre 7 recommande des actions et mesures à prendre éventuellement afin d'améliorer l'état de conservation de l'espèce. OSPAR poursuivra ses travaux, en se fondant sur ces recommandations, afin de s'assurer de la protection de la *Mouette blanche*, le cas échéant en coopération avec d'autres organisations. Le présent document pourra être actualisé pour tenir compte de nouvelles avancées.

1. Background Information

Name of species

Pagophila eburnea, Ivory Gull.

Ecology and breeding biology

The species breeds mainly on inaccessible cliffs, and low rocks or flat shorelines[1], foraging on broken ice fields.Outside the breeding season, it normally avoids ice-free waters, being closely associated with pack-ice, and favouring areas with 70 – 90% ice cover near the ice edge. It feeds mainly on fish, shrimps, shellfish, algae, carrion, offal and animal faeces.

[1] In Canada, colonies are often found on rocky promontories surrounded by glaciers. These are called nunataks (ICES, 2007).

2. Original Evaluation against the Texel-Faial selection criteria

List of OSPAR Regions and Dinter biogeographic zones where the species occurs

OSPAR Region I

Dinter biogeographic zones: Cold-temperate waters, Cold-Arctic waters, Cold-temperate pelagic waters, Northeast Greenland Shelf (incl. NEWP), High Arctic Maritime, Barents Sea

List of OSPAR Regions and Dinter biogeographic zones where the species is under threat and/or in decline

All where it occurs

Original evaluation against the Texel-Faial criteria for which the species was included on the OSPAR List

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

Global/regional importance. *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.

Rarity. At the time of the listing, its OSPAR breeding population was considered small and susceptible to the risks that affect small populations, and the species was provisionally evaluated as rare.

Decline. Its OSPAR breeding population was believed to have undergone a large decline between1970 – 1990. The species declined in Svalbard during 1990 – 2000, but trend data were not available for its key populations in Greenland (or Russia).

Sensitivity. At the time of listing the species was considered very sensitive due to small numbers breeding at a very limited number of locations within the OSPAR area It was also considered to have 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 associated with the pack-ice zone for much of the year, avoiding ice-free waters, and is therefore likely to be vulnerable to climate change. In addition, the species extensive use of seal and whale blubber makes it particularly sensitive to heavy-metal contamination.

Threats. *Pagophila eburnea* was considered to be principally threatened by future climate change – in particular by the prospect of climate warming in the Arctic – and also by pollution from heavy metals.

3. Current status of the species

Distribution in OSPAR maritime area

Pagophila eburnea has a near-circumpolar distribution in the Arctic seas and pack-ice, breeding from north Canada through Greenland (to Denmark), Svalbard (to Norway) and islands off northern Russia, such as Franz Josef Land and parts of Novaya Zemlya, with Europe accounting for less than a quarter of its global breeding range and the OSPAR Region even less; within OSPAR it is confined to Region I.

It breeds between late June and August (although most pairs do not lay until early July, and some pairs may not breed if food conditions are unfavourable) in colonies of 5 – 60 pairs (rarely more than 100 pairs) (del Hoyo *et al.,* 1996). It departs from the breeding grounds between August and October,

returning late February to early June (Olsen and Larsson, 2004). Outside of the breeding season the species is weakly gregarious, occurring singly or in small flocks of up to 20 individuals (Snow and Perrins 1998). Ivory Gulls probably migrate far from their breeding areas, although few data exist. Significant numbers also gather in the spring at hooded seal *Pagophilus groenlandicus* whelping sites, where they feed on carrion and discarded placenta (del Hoyo *et al.,* 1996).

Population (current/trends/future prospects)

The global population is estimated at 15 000 – 25 000 individuals, although it may be larger (BirdLife International, 2008). The OSPAR breeding population of *Pagophila eburnea* is small. BirdLife International, (2004) gave an estimate of 500 – 1000 pairs for Greenland[2] and 50 – 200 pairs on Svalbard, giving a combined total of 550 – 1200 pairs. The figure for the OSPAR Region was considered lower as the number for Greenland includes western Greenland, outside of the OSPAR Region. However, more recent estimates of populations at the known breeding sites suggest 500 – 1000 birds at 13 colonies in eastern and north-east Greenland (see Figure 1). It should be noted that there is no recent information for most of the Ivory Gull colonies in north and east Greenland, and what information exists may be outdated (colonies may no longer be occupied).

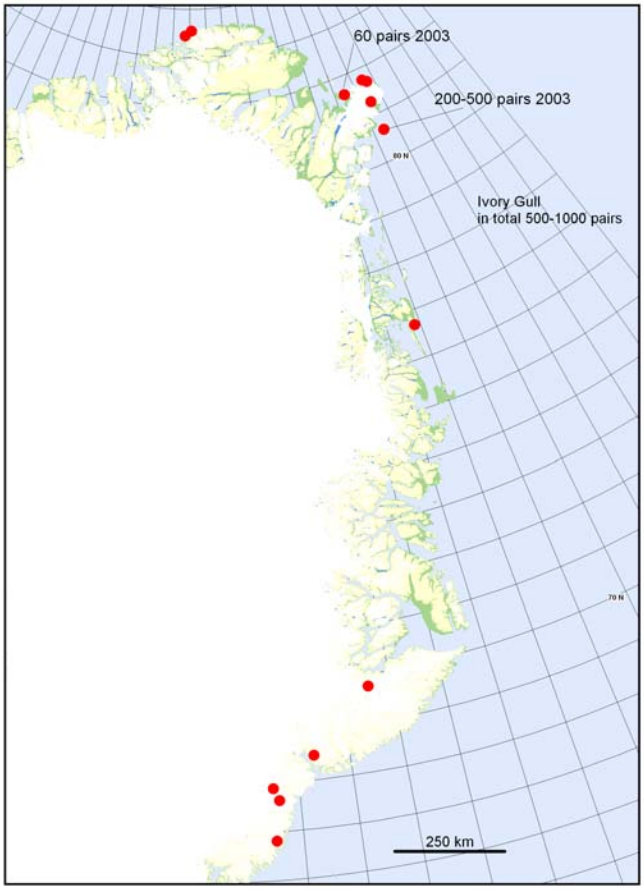
Some birds also breed on the western islands of Franz Josef Land that fall just within the OSPAR Region I (Bakken and Tertitski, 2000). Data from Victoria Island, Franz Josef Land, suggested that around 750 breeding pairs occurred in one colony in the 1990s (Bakken and Tertitski, 2000), but breeding has apparently recently ceased on Victoria Island (M. Gavrilo *in litt.,* 2007) although other Russian populations are considered stable. Therefore, estimates using best available knowledge suggest that there are no more than 2000 – 3000 breeding pairs in the Arctic regions of the OSPAR Region.

The European breeding population of this species (estimated at as few as 3100) underwent a large decline over the period 1970 – 1990, mostly due to decreases in population in European Arctic Russia (Tucker and 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 and Heath, 1994), and many colonies disappeared as early as the 1950s or before (Dalgety, 1932; Bateson and Plowright, 1959; Løvenskiold, 1964). It is claimed that the species declined in Svalbard over the period 1990 – 2000, by up to 19% (BirdLife International, 2004). The largest known colony in Svalbard was discovered on Kvitoya in 1931, where it was estimated that 400 pairs were breeding. This area has been revisited but there have been no observations of breeding *P. eburnea* since (Bakken and Tertitski, 2000). Trend data are 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, although the 500 – 1000 or so birds nesting in east and north Greenland appear to be relatively stable (Olivier Gilg, quoted in Krajik, 2003). Outside of the OSPAR Region there have also been significant declines[3].

[2] An estimated 250 pairs were thought to breed in north east Greenland, within the OSPAR Area (del Hoyo *et al.*, 1996).

[3] Aerial surveys between Canada and Greenland in 1978-79 gave estimates of up to 35 000+ (Orr *et al.,* 1982) and del Hoyo *et al.* (1996) estimated possibly 25 000 pairs (75 000 individuals). Studies clearly show that Ivory Gull populations in Canada have declined dramatically over the past 20 or more years (e.g. Chardine *et al.,* 2004; Mallory *et al.,* 2003). The North American breeding population has been put at >2400 adults (>3,600 individuals Kushlan *et al.,* 2002), and recent surveys have revealed Canadian populations have fallen from 2,400 birds in 1987 to 500-700 birds in 2002 – 2003 (Hess, 2004). This represents an 80% decline in that period across the Canadian breeding range in all three known nesting habitat types (Gilchrist and Mallory, 2005). Birds have disappeared from 13 known and 3 suspected breeding colony sites.

Figure 1. Known breeding colonies of Ivory Gull in east and north-east Greenland (provided by David Boertmann and Olivier Gilg)



Condition (current/trends/future prospects)

There is no information on breeding success and condition of *P. eburnea* within the OSPAR region.

Limitations in knowledge

P. eburnea has been poorly researched until recently, and monitoring of colonies is problematic because unlike most other colonial seabirds, the birds may not use the same colonies each year, perhaps to keep predators off their trail, and many colonies are located far inland and difficult to detect. Analysing trends based on colony counts is problematic due to these inter-annual fluctuations and the unknown number of remote breeding sites.

However, although poorly documented, there is considered sufficient evidence to indicate a real decline in the OSPAR Region, and the adverse impact of pollutants and human-induced climate change on Arctic wildlife in general is serious cause for concern for this species.

4. Evaluation of threats and impacts

The species is thought to be declining due to changes in conditions on its staging or wintering areas (*e.g.* more severe winters, changing sea-ice distribution and thickness), including loss of habitat due to retreating Arctic sea ice in the face of continued, human-induced climate change (Gilchrist and Mallory 2005). Satellite data indicate a continuation of the 2.7 ± 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 ± 2.4% per decade since 1979 (Lemke et al., 2007). This constitutes a major threat of potential habitat loss for *P. eburnea*. In addition, as the extent of ice decreases and the Arctic Ocean becomes more navigable, industrial shipping and exploration for oil and minerals (including diamond exploration in some parts of its range) are increasing and so the species is at increased risk of oiling at sea and disturbance at its breeding colonies. Birds at the breeding colonies may also be threatened by disturbance in the nesting areas by over flights by aircraft and the increasing numbers of tourists to the Arctic. Reduced food availability and disturbance in the nesting areas are major factors that reduce breeding success (Tomkovich, 1986).

This species is also vulnerable to heavy metal contamination due to the gulls' habit of scavenging seal carcasses, whale blubber, blood, and dung, which puts them high on the food chain[4]. 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). More recently, results from contaminant studies of Ivory Gull eggs from Svalbard and the Russian Arctic have shown high levels of organohalen contaminants compared to eggs from other seabird species throughout the Arctic (Miljeteig *et al,* 2008). Moreover, the studies indicated effects from this contamination on vitamin content and eggshell thickness. The authors concluded that these high levels are likely to influence the Ivory Gull. Eggshell thinning in particular was highlighted as of potential concern for the population status.

The species is illegally hunted in some parts of its range, e.g. north-west Greenland (Gilchrist and Mallory, 2005), where most birds breeding in the OSPAR Region seem to spend the winter period (Olivier Gilg, Hallvard Strøm and Maria Gavrilo, *in litt.,* 2008). The Artic Fox *Alopex lagopus* and the Polar Bear *Ursus maritimus* are predators of eggs and chicks and domestic dogs are also important near settlements. These predators can consume more than 70% of the clutches (Syroechkovski and Lappo, 1994), or even destroy entire colonies in some years (Olivier Gilg, *in litt.,* 2008).

5. Existing Management measures

The species is listed as globally 'Near Threatened' on the IUCN Red List (IUCN, 2007), is listed under Appendix II of the Bern Convention and has been given a SPEC category 3 rating[5] by BirdLife International (2004) (also SPEC 3 in 1994 evaluation). However, it is thought that it is likely to suffer further declines as it seems to be particularly sensitive to climate change effects (being dependent upon the vanishing Arctic pack-ice)[6], which may need to be reassessed in the near future.

In Greenland, seabird breeding sites are protected, and shooting and other disturbing activities are not allowed within 200 meters of a colony (David Boertmann in litt., 2008). Bird hunting is covered under Home Rule Order no. 5 of 29 February 2008, which gives the relevant hunting seasons (available from http://www.lovgivning.gl/gh.gl-love/dk/2008/bkg/bkg_nr_05-2008_dk.htm). Illegal hunting of seabirds

[4] For example, concentrations of total mercury in eggs of Ivory Gulls collected from Seymour Island, Canada, have steadily increased since 1976 to levels which are now among the highest measured in seabirds (Braune *et al* 2006), which may have had a long-term effect on breeding productivity (C. Miljeteig *in litt.* to BirdLife, 2007, and G. Gilchrist pers. comm. cited in ICES 2007). Although it is agreed that climate change and warming of the Arctic is a significant long-term threat to this species mercury contamination may be ranked above this, at least in Canada, and in the shorter term.

[5] Species whose global populations are not concentrated in Europe, but which have an Unfavourable conservation status in Europe.

[6] Outside of OSPAR, the species is currently listed as Endangered by the Committee on Endangered Species in Canada (COSEWIC) and is being considered for listing under the Canadian Species at Risk Act.

does occur but due to the remoteness of the *P.eburnea* colonies there is little threat to them, at least on and near the breeding grounds.

The CBird working group of the Conservation of Arctic Flora and Fauna (CAFF[7]) have recently produced a 'International Ivory Gull Conservation Strategy and Action Plan' (Gilchrist *et al.*, 2008). This aims to facilitate circumpolar implementation of initiatives to conserve and protect the Ivory Gull in the circumpolar Arctic, and sets out twenty specific actions to achieve this goal. Currently, there are no specific conservation measures directed at this species.

Most of the known colonies in Greenland are located within the north and north-east Greenland National Park. *P. eburnea* has been recorded at three IBAs - Henrik Krøyer Holme and Kilen (north-east Greenland) and north-east Svalbard Nature Reserve (Heath and Evans, 2000).

6. Conclusion on overall status

The total OSPAR breeding population for this species is small, and restricted to a small number of locations in Greenland, Svalbard and the westernmost areas of Franz Josef Land. Therefore, 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). In addition, the species breeds in only 3 IBAs within the OSPAR area: 100% of the IBA breeding population can be found within fewer than 10 sites. Furthermore, there is evidence for a decline in the OSPAR population of this species, and the species is sensitive to threats including climate change (due to its dependence on pack ice in the Arctic) and environmental pollution (due to its scavenging behaviour putting it at risk of bioaccumulation of certain pollutants). The species does receive some protection (e.g. from hunting in Greenland) and is the subject of a recently-published conservation strategy under CAFF – however there are currently no specific conservation measures for the Ivory Gull. This species therefore continues to qualify under the OSPAR criteria, due to its small population size within the OSPAR Area, limited number of breeding locations, decline, and likelihood of it suffering further declines due to threats including climate change, environmental pollution, and lack of directed conservation management activity.

7. What action should be taken at an OSPAR level?

Action/measures that OSPAR could take, subject to OSPAR agreement

OSPAR Actions

Communication: OSPAR should contact the Arctic Council (CAFF), the Intergovernmental Maritime Organisation and authorities in non-OSPAR states with significant populations, such as Canada, Russia, USA, to:

a. notify them of the listing under OSPAR, threats facing the species, and the willingness of OSPAR to co-operate in developing conservation measures;

b. request information on the effectiveness of any measures taken for the protection of this species.

c. highlight the need for protection from predation at breeding sites;

[7] CAFF is the Biodiversity Working Group of the Arctic Council (see http://arcticportal.org/en/caff/).

Awareness raising: OSPAR should work with relevant Contracting Parties (see Table 2 below) to raise awareness of status and threats to the species among both management authorities and general public[8].

Monitoring and Assessment: OSPAR should work with relevant Contracting Parties to facilitate development of a monitoring and assessment strategy for *P. eburnea* for the OSPAR Area, involving relevant international authorities, and deliver to national contacts. This should build upon the starting point provided below and needs to be informed by research addressing the needs in the following paragraph. OSPAR's work on coordination of assessment and monitoring should address this need.

Further research: OSPAR should emphasise to relevant scientific funding bodies the following research needs with respect to *P. eburnea:*

a. to locate the most important breeding colonies throughout the OSPAR Region,

b. to determine which colonies are most used, how much annual numbers vary, whether the gulls shift breeding locations (e.g. through monitoring colour-ringed birds or satellite tracking), and;

c. to clarify the true magnitude of declines in the breeding areas;

d. further research into causes of decline especially link to climate change and poisoning from bioaccumulation of toxic pollutants.

Actions/measures for relevant Contracting Parties

OSPAR should recommend that relevant Contracting Parties undertake the following actions and measures, and establish a mechanism by which Contracting Parties report back on the implementation of these actions and measures, and the implementation of the monitoring and assessment strategy, so that the progress can be evaluated in conjunction with the future assessment of the status of the species:

a. MPAs: increase protection of sites known to be important to this species, particularly the three IBAs where the species is known to occur (including protection from predation at breeding colonies);

b, Conservation Action Plan: promote, support and implement CAFF 'International Ivory Gull Conservation Strategy and Action Plan'.

c. Monitoring and Assessment: develop and implement the above monitoring and assessment strategy in the OSPAR area.

[8] This could perhaps best be achieved, at least initially, through a brochure and accompanying web site that lists all OSPAR Listed features, the threats they face, and recommended conservation actions.

Table 1: Summary of key threats and existing protection for *Pagophila eburnea*

Key threats	Loss of habitat due to climate change Contamination by man-made pollutants, especially mercury Predation by Artic Foxes, Polar Bears and domestic dogs Disturbance at breeding sites due to mineral prospecting and increased shipping	
Relevant Contracting Parties	Denmark, Norway	
Other responsible authorities	Arctic Council – especially CAFF Working Group IMO Non-OSPAR governments with important populations, namely Canada, Russia.	
Already protected? **Measures adequate?**	Bern Convention Appendix II IUCN Red List (2007) – listed as 'Near Threatened' National protection in Denmark, and hunting regulated in Greenland CAFF *Draft Conservation Strategy of the Ivory Gull* (due end 2008)	Not aware of specific measures taken to protect this species.

Brief summary of the proposed monitoring system

Past and present monitoring efforts. Russian and Norwegian fieldwork largely stopped for lack of funds in the mid-1990s, but started again some years ago (Hallvard Strom and Maria Gavrilo *in litt.,* 2008). Results from population surveys, satellite tracking, and contaminant studies are due to be published within the next year. In Greenland, the Arctic Ecology Research Group ("GREA" – France) has been studying the species since 2003 and satellite tracking *P.eburnea* individuals since 2007 (Olivier Gilg *in litt.,* 2008). The National Environmental Research Institute, Dept. Arctic Environment, in Denmark undertakes bird surveys in Eastern and Northern Greenland (David Boertmann *in litt.,* 2008).

There is no coordinated monitoring scheme for the whole of the species' range and this needs to be designed (methodology agreed) and implemented. OSPAR could play an important part in helping to design, promote and coordinate the collection of information on the numbers, distribution and activities of *P.eburnea* and threats faced by the species, both between OSPAR partners and over the whole of the species' range through CAFF (via their Ivory Gull Conservation Strategy and Action Plan).

Annex 1: Overview of data and information provided by Contracting Parties

Contracting Party	**Feature occurs in CP's Maritime Area***	**OSPAR nominated Contact Point (in bold), or other contributor providing information**	**Contribution made to the assessment (e.g. data/information provided, national reports, references or weblinks)**
Belgium	Vagrant		
Denmark	Yes (North and East Greenland)	David Boertmann, National Environmental Research Institute, Denmark dmb@dmu.dk	Information on population numbers, breeding colony distribution, threats, monitoring and current legal protection in Greenland provided. Ivory Gulls breeding in north and east Greenland winter in the Labrador Sea along the edges of the drift ice (Orr and Parsons, 1982; Hjort, 1976; Gilg et al., in litt., 2008 – see http://www.seaturtle.org/tracking/?project_id=233). Recent estimates of populations at the known breeding suggest 500-1,000 birds at 13 colonies (see Figure 1 above).
European Commission			
Finland	Vagrant		
France	Vagrant		
Germany	Vagrant		
Iceland	Vagrant		
Ireland	Vagrant		
Netherlands	Vagrant		
Norway	Yes (Svalbard)	Hallvard Strøm, Norwegian Polar Institute hallvard.strom@npolar.no Tomas Aarvak, Norwegian Ornithological Society tomas@birdlife.no	Recent information on contaminants in Ivory Gull eggs and the newly published CAFF conservation strategy provided. Gilchrist, G., Strøm, H., Gavrilo, M.V., and Mosbech, A. (2008). International Ivory Gull conservation strategy and action plan. CAFF International Secretariat, Circumpolar Seabird Group (CBird), CAFF Technical Report No. 18. Miljeteig, C., Strøm, H., Gavrilo, M., Skåre, J.U., Jenssen, B.M., and Gabrielsen, G.W. (2008). Organohalens and mercury in Ivory Gull eggs. Norwegian Polar Institute Brief Report Series (Kortrapport) No. 7. ISBN 978-82-7666-245-0. 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. 213 pp.

Portugal	?		
Spain	?		
Sweden	Vagrant		
UK	Vagrant		

* - Information from BirdLife International (2008); '?' signifies occurrence information not available from BirdLife International's database.

Pagophilia eburnea was nominated for inclusion in the OSPAR List in 2007 by BirdLife International.

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