COMMITTEE ON THE
STATUS OF ENDANGERED
WILDLIFE IN CANADA

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COMITÉ SUR LE STATUT
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DE DISPARITION AU
CANADA

OTTAWA (ONT.) K1A 0H3
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UPDATED STATUS REPORT ON THE IVORY GULL *PAGOPHILA EBURNEA* IN CANADA

BY

ROBERT ALVO

AND

STEWART D. MACDONALD

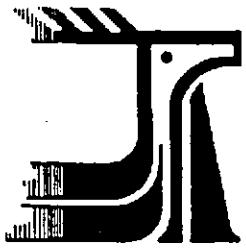
STATUS ASSIGNED IN 1996
VULNERABLE

REASON: RELATIVELY RARE SPECIES WITH FEW BREEDING COLONIES, WITH POTENTIAL THREATS FROM HUMAN DISTURBANCE AND OIL SPILLS.

OCCURRENCE: BRITISH COLUMBIA, MANITOBA, NEWFOUNDLAND, NEW BRUNSWICK, NORTHWEST TERRITORIES, NOVA SCOTIA, ONTARIO AND QUEBEC

COSEWIC - A committee of representatives from federal, provincial and private agencies which assigns national status to species at risk in Canada.

CSEMDC - Un comité de représentants d'organismes fédéraux, provinciaux et privés qui attribue un statut national aux espèces canadiennes en péril.



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SPECIES:	"Species" means an indigenous species, subspecies, variety or geographically defined population of wild fauna and flora.
VULNERABLE: (V)	A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events.
THREATENED: (T)	A species likely to become endangered if limiting factors are not reversed.
ENDANGERED: (E)	A species facing imminent extirpation or extinction.
EXTIRPATED: (XT)	A species no longer existing in the wild in Canada, but occurring elsewhere.
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NOT AT RISK: (NAR)	A species that has been evaluated and found to be not at risk.
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Population Size and Trend

The Ivory Gull (Pagophila eburnea) was assigned "vulnerable" status in Canada by COSEWIC in 1979 (MacDonald and Cooper 1979). At that time it was known that:

- A survey of the Canadian breeding records from 1819 to 1979 indicated that all breeding places reported prior to 1971 were abandoned (Figure 1) except for occasional, isolated nests (MacDonald and Macpherson 1962; MacDonald and Cooper 1979); it was not known whether this reflected a true population decline or whether Ivory Gulls exhibit little fidelity to breeding sites (Haney 1993).

- A decline in the population size and numbers of active colonies in Spitzbergen, Norway (78°N 20°E) had been well documented (Birkenmajer 1969).

- The only active Canadian colonies were on Seymour Island (76°48'N 101°16'W) (near Bathurst Island) (MacDonald 1976) and southeastern Ellesmere Island (77°N 80°W) (Frisch and Morgan 1979); a third, but unconfirmed, breeding area, was thought to exist on the Brodeur Peninsula (72°N 88°W) of Baffin Island (MacDonald and Cooper 1979).

- The population in the Canadian Arctic was estimated at about 2,000 individuals (MacDonald 1974).

- Its far ranging and nomadic habits probably gave an exaggerated impression of the Ivory Gull's abundance, and the size of the population was difficult to determine.

- Specialized nesting requirements and an intolerance to disturbance on the nesting grounds make the Ivory Gull vulnerable to human activities and the encroachment of technology in the exploitation of Arctic resources; the Seymour Island colony is located at the edge of the Sverdrup Basin, where oil and natural gas interests are concentrated (MacDonald and Cooper 1979).

Several studies conducted since the first status report provide information that sheds some more light on the status of the Ivory Gull in Canada. Two small colonies of Ivory Gulls were discovered on the northwest portion of the Brodeur Peninsula (73°N 89°W) (Reed and Dupuis 1983), finally confirming nesting on the Brodeur Peninsula, an area long suspected of harbouring breeding Ivory Gulls (Renaud et al. 1979). This is further evidence of Ivory Gull fidelity to nesting areas. One of the colonies had 30 adults, and the other, 18. The presence of flightless young confirmed breeding (Reed and Dupuis 1983).

Four small colonies containing a total of about 90 individuals were found on eastern Devon Island (75°N 81°W) (Frisch 1983). Based on their similarity to known breeding places of the Ivory Gull on Ellesmere Island, all four sites are believed to be sites of nesting colonies -- the first to be reported from Devon Island (Frisch 1983).

Breeding was finally confirmed for the Meighen Island area, on the reefs of Perley Island (80°11'N 99°15'W) (Thomas and MacDonald 1987).

In the colonies located on the western edge of the Brodeur Peninsula, many more birds in adult plumage were present than expected from the number of nests, indicating that some birds in adult plumage were not breeding (Thomas and MacDonald 1987), as was the case at all colonies visited by S.D. MacDonald (pers. comm.).

Immature (less than one-year-old) birds were not seen at any of the colonies or on adjacent waters, as is consistent with observations on other Arctic gull species, and their location during summer remains unknown (Thomas and MacDonald 1987).

None of the colour-marked adults at Grise Fiord (76°35'N 83°14'W), a spring congregation area for adults, has been observed during the breeding colony surveys, indicating that the Grise Fiord birds must belong to a colony or colonies as yet undiscovered (Thomas and MacDonald 1987).

Banding records indicate that Ivory Gulls are long-lived (> 15 years), as are most gull species (Thomas and MacDonald 1987).

Aerial surveys conducted in the eastern Canadian High Arctic from 1981 to 1985 to determine the distribution and size of breeding populations led to the suggestion that there is a single Canadian population whose adult cohort contains over 2,400 birds -- this figure excludes immature and young-of-the-year cohorts (Thomas and MacDonald 1987). All the above-mentioned information was taken into account by Thomas and MacDonald (1987) when estimating the size of the Canadian population.

Roughly 35,000 Ivory Gulls (presumably including all age groups (Thomas and MacDonald 1987)) were estimated from aerial censuses over Davis Strait between Canada and Greenland (65°N 57°W) in March (Orr and Parsons 1982). The large discrepancy between this number and a breeding estimate for Arctic Canada (ca. 2,000 individuals (MacDonald 1974)), suggests either that a considerable proportion of the Ivory Gulls wintering in the northwest Atlantic breed outside North America, such as in Greenland or the European Arctic, or that North American breeding populations are much larger than currently estimated (Orr and Parsons 1982). The fact that the movement of Ivory Gulls at Point Barrow (71°23'N 156°30'W) Alaska in autumn may be first eastward and then westward (as is the case

with Ross's Gull) (Divoky et al. 1988), should assist in directing further research into the year-round distribution of this species.

Habitat

Ivory Gull colonies are frequently found adjacent to polynias, limited areas where the sea is kept ice free in winter by upwelling currents deflected from a shallow bottom. These marine "oases" provide conditions that attract invertebrates, fish, seabirds, seals and polar bears, and are important feeding areas for Ivory Gulls (Brown and Nettleship 1981). It would be useful to determine how polynias might be affected in the future by global warming, and how Ivory Gulls might, in turn, be affected. Global warming and its associated climatic changes could potentially affect pressure on Ivory Gull colonies by such predators as the Arctic Fox (Alopex lagopus) by changing the timing of the formation and elimination of ice bridges to nesting islands. Ivory Gulls breeding on Seymour Island, for example, lose all their nests in some years when a fox can reach the island (MacDonald 1976).

For the time being, however, there seems to be plenty of potential breeding habitat, including vast areas that have not been surveyed for Ivory Gulls. The colonies on the nunataks (eroded granite or other rock outcrops) of Ellesmere Island, the limestone plateaus of the Brodeur Peninsula and Seymour Island, and the gravel-covered ice islands of Meighen Island reflect the versatility of this species in regard to nesting terrain. For a number of reasons, further reports of breeding Ivory Gull colonies can be expected (Thomas and MacDonald 1987).

Nest site fidelity can be very variable, probably due to environmental circumstances that foster successful and regular production of young. The Seymour Island colony is probably very old as evidenced by old nests of Ivory Gulls partly overgrown by moss. Some colonies on nunataks have quite lush vegetation on the rocky nesting ledges. This could occur only through continued use by Ivory Gulls. Plant materials brought to these desolate sites by the breeding birds during nest building, dropped or uneaten food, and fecal accumulation at the nest site all foster and support these plant communities. This is evidence of nest site fidelity of Ivory Gulls in suitable circumstances.

Evaluation and Proposed Status

Because the total world population may comprise only a few tens of thousands, this species deserves continued monitoring and protection. It is registered as a Category 3 (rare) species in the Red Data Book of the former U.S.S.R. (Haney 1993).

Despite the accumulation of considerable data on Arctic Canadian breeding colony locations and sizes since the distribution of the first COSEWIC report (MacDonald and Cooper 1979), the estimated

adult population is still roughly the same -- now 2,400. We therefore recommend keeping the COSEWIC status as "vulnerable". "Threatened" status is not warranted because no evidence exists to suggest that the Ivory Gull is likely to become endangered.

Information obtained while attempting to answer the following questions could be used to reassess the status of this species in the future:

- Where are the breeding colonies of the large number of Ivory Gulls that appear in Davis Strait, at Pond Inlet, Resolute Bay and at Grise Fiord in spring?
- What is the total Arctic Canadian population? Where are the colonies?
- What proportion of the populations of adult plumage birds does not breed? Why?
- Where do immature birds spend their first summer? What is their population size?
- Given that all Canadian breeding sites found before 1971 subsequently disappeared, how stable are the currently known sites?
- Given that Ivory Gulls are long-lived, is current reproductive success sufficient to maintain the population?
- What plans are there for resource development in areas known and suspected to be important for the various age groups at different times of year?
- What are the potential effects of global warming on the Ivory Gull?

References

Birkenmajer, K. 1969. Observations on Ivory Gull Pagophila eburnea (Phipps) in south Vestspitsbergen. Acta Ornithologica (Warsaw) 11: 461-476.

Brown, R.G.B. and D.N. Nettleship. 1981. The biological significance of polynyas to arctic colonial seabirds. In: Stirling, I., and Cleator, H., eds. Polynyas in the Canadian Arctic. Canadian Wildlife Service Occasional Paper No. 45: 59-65.

Divoky, G. J., G.A. Sanger, S.A. Hatch, and J.C. Haney. 1988. Fall migration of Ross' Gull (Rhodostethia rosea) in Alaskan Chukchi and Beaufort Seas. OCS Study MMS 88-0023. 119 pp.

Frisch, T. 1983. Ivory Gull colonies on the Devon Island ice cap, Arctic Canada. Arctic 36(4): 370-371.

Frisch, T. and W.C. Morgan. 1979. Ivory Gull colonies in southeastern Ellesmere Island, Arctic Canada. Canadian Field-Naturalist 93(2): 173-174.

Haney, J.C. 1993. A closer look: Ivory Gull. Birding (October 1993): 330-338.

MacDonald, S.D. 1974. A proposal to establish a Migratory Bird Sanctuary at Seymour Island, N.W.T. Unpublished report. 4 p.

MacDonald, S.D. 1976. Phantoms of the polar pack ice. Audubon 78(3): 2-19.

MacDonald, S.D. and C. Cooper. 1979. Status report on the Ivory Gull (Pagophila eburnea). Committee on the Status of Endangered Wildlife in Canada (COSEWIC) status report. 20 p.

MacDonald, S.D. and A.H. Macpherson. 1962. Breeding places of the Ivory Gull in Arctic Canada. Bulletin of the National Museum of Canada No. 183. 1962: 111-117.

Orr, C.D. and J.L. Parsons. 1982. Ivory Gulls, Pagophila eburnea, and ice edges in Davis Strait and the Labrador Sea. Canadian Field-Naturalist 96(3): 323-328.

Reed, A. and P. Dupuis. 1983. Ivory Gulls, (Pagophila eburnea), nesting on the Brodeur Peninsula, Baffin Island, N.W.T. Canadian Field-Naturalist 97(3): 332.

Renaud, W.E., S.R. Johnson, and P.D. Hollingdale. 1979. Breeding birds of Arctic Bay, Baffin Island, N.W.T., with notes on the biogeographic significance of the avifauna. Arctic 32(2): 122-134.

Thomas, V.G. and S.D. MacDonald. 1987. The breeding distribution

and current population status of the Ivory Gull in Canada. Arctic 40 (3): 211-218.

Acknowledgements

Funding for this report was provided by the Canadian Wildlife Service. We thank the following people for providing information on the status of the Ivory Gull in their jurisdiction:

Newfoundland: Joe Brazil, Troy Wellicome.

PEI: Rosemary Curley.

Nova Scotia: Sherman Boates, David Nettleship.

New Brunswick: Pat Kehoe, Rod Cumberland, Bruce Johnson.

Quebec: Yves Aubry, Jacques Larivée, Michel Huot, Pierre Laporte, Guy Jolicoeur.

Ontario: Ross James, Irene Bowman, George van Drunen, Paul Prevett, Richard Pratt.

Manitoba: Bob Nero, Peter Taylor, Bob Jones, Jim Duncan.

Saskatchewan: Jeff Keith, Dale Hjertaas, Al Smith.

Alberta: Roger Edwards.

BC: Bill Harper, Gary Kaiser, Syd Cannings.

NWT: Chris Shank, Bob Bromley, Vicky Johnston, Chris O'Brien.

Yukon: David Mossop.

Others people who provided information are: Michel Gosselin, Colleen Hyslop, Barry Hughson, Theresa Aniskowicz, Sarah Climenhaga, Chris Haney, George Divoky, Tony Erskine, and Joe Jehl.

Figure 1. Known breeding sites of the Ivory Gull in Canada -- past and present.