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Atlas of eastern Canadian seabirds.

Supplement IV

Hudson and Davis Straits.

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1. Introduction

This manuscript supplement to the CWS 'Atlas of eastern Canadian seabirds' is intended to update the coverage in the 'Atlas' proper. It covers Hudson and Davis Straits, between 60° - 68° N and thus fills the gap between, and partly overlaps the manuscript atlases for Labrador and Baffin Bay (Supplements II and III). It is based on shipboard observations collected by the CWS, and also by MacLaren-Marex Inc. in the course of surveys which they carried out for Esso Resources Ltd., Aquitaine Co. of Canada Ltd., and Canada Cities Service. This supplement is of a very preliminary nature, but the degree of coverage is significantly greater than that in the 'Atlas'; most of the observations were in fact made since the 'Atlas' was published. Even so there are still many gaps to be filled, especially during the winter months.

Estimates of colony sizes are taken from the 'Atlas'. In several cases more recent, unpublished colony surveys have been made (D. N. Nettleship, pers. comm.) However the figures given here are adequate to show the orders of magnitude of the breeding populations at the various sites.

2. Methods

The map of murre chick sightings is non-quantitative, and merely shows the total number of chicks seen in each $\frac{1}{2}^{\circ}$ N x 1° W block. The other pelagic maps show the average numbers of birds seen in each block, under conditions of good visibility, in the course of 10-minute watches from a ship moving at at least 4 knots. These averages are based on very small samples - in most cases, less than 5 watches; bracketed figures are based on only a single watch.

These pelagic maps only show where a species was relatively most abundant. No attempt has been made to translate these figures into absolute estimates of population sizes - this would require a numbers of assumptions and correction factors which would go far beyond the intended scope of this manuscript. However relative indices of distribution are important in assessing the environmental impact of, for example, offshore oil operations.

3. The seabirds of Hudson and Davis Straits

The Hudson/Davis Strait Atlas shows the distributions of the Northern Fulmar Fulmarus glacialis, Black-legged Kittiwake Rissa tridactyla, Thick-billed Murre Uria lomvia and Dovekie Alle alle from April to November + December; there is no coverage for earlier in the year. The distributions of the Greater Shearwater Puffinus gravis in August and Atlantic Puffin Fratercula arctica for August and September are also mapped; there are too few records of these species for other months for it to be worth plotting them. The maps are more or less self-explanatory, but a brief commentary seems in order.

Northern Fulmar: apparently common all year in southern Davis Strait. The concentrations at the entrance to Hudson Strait in August and September are probably related to tide-rips and similar areas of turbulence which bring food up to the surface. Those off northeast Labrador are probably at the "front" which forms at the eastern edge of the Labrador Current.

Greater Shearwater: note the local concentrations off southwest Greenland and northeast Labrador - the latter probably at the "front". Southern Davis Strait is the northern limit

of this species' range in the northwest Atlantic.

Black-legged Kittiwake: note that in August these birds are concentrated in eastern Hudson Strait and off northeast Labrador, in the same areas as the Fulmars and probably for much the same reason.

Thick-billed Murre: the only common seabird in Hudson Strait.

In addition to the colonies shown, they also breed west of the survey area at Cape Pembroke, Coates Island. The birds appear to reach the survey area - off Labrador, at least - in April, earlier than the Dovekies. They withdraw from the offshore areas to the vicinities of their colonies from May to September. The October concentration close inshore off northern Labrador is possibly the northern end of a post-breeding staging area which extends at least as far south as central Labrador; alternatively, there may be separate areas, off northern and central Labrador. The apparent absence of birds in November + December is partly an artefact; we have no coverage for their known wintering areas off west Greenland. The maps do not provide much information about the swimming migration of adults and chicks from Hudson Strait colonies. Note, though, that birds from the Cape Dyer area seem to cross to Greenland, as opposed to going down to Labrador with the Hudson Strait birds.

Dovekie: these birds evidently migrate up/into Davis Strait in May, and return south through the area in October. The nearest colonies of any size are some 500 miles north of the survey area in northwest Greenland, so the birds seen in August in the Cape Dyer area must be non-breeders

or failed breeders. Note the association with pack ice in that area. (The average ice positions are taken from the U.S. Navy Hydrographic Office's 1958 Oceanographic Atlas of the Polar Seas; in later editions of this mini-Atlas, I intend to substitute something more up-to-date.)

Atlantic Puffin: the pelagic distribution of this baffling species in all parts of its range is virtually unknown.

These maps do nothing to solve the mystery.

4. Shipboard/aerial survey comparisons

The aerial surveys which MacLaren-Marex carried out in the summers of 1977^{and 1978}/for the Esso/Aquitaine/Canada Cities consortium covered much the same area as the shipboard observations, and it seems worthwhile making comparisons, at the very simple "eyeball" level. MacLaren's aerial survey maps for those two years are set out, respectively, in Appendix A of their report dated February 1978, and in vol. II, A and B, of their February 1979 report. In general the distribution picture which emerges is very similar to that shown in this mini-Atlas, though the aerial surveys have the advantage of allowing a more thorough, repeated coverage than can be obtained from a ship. Some comments:

Northern Fulmar: the aerial surveys in August and September confirm the concentrations east of Hudson Strait and off northeast Labrador observed from ships, also in 1977.

Black-legged Kittiwake:

The numbers from the aerial surveys seem lower in southern Davis Strait in June 1977, off northeast Labrador and in eastern Hudson Strait in August 1978, and off Hall Peninsula in September 1978, than one would have expected from the "averages"

of the shipboard surveys.

Greater Shearwater: it seems odd that the August 1978 flights should not have seen any off northeast Labrador.

Thick-billed Murre: I would have expected to see more birds close to the "Hantsch" Island colony in May 1978. Murre chicks were later in September 1978 than one would have expected from the shipboard observations - presumably the heavy ice and related conditions which delayed breeding in Lancaster Sound in 1978 also occurred in Hudson Strait. The concentration of birds off northeast Labrador, seen from a ship in October 1977, was confirmed from the air in October 1978.

Dovekie: the aerial survey of August 1977 shows fewer birds off Cape Dyer and more off Loks Land than one would have expected from the shipboard work, but the importance of the ice-edge off Cumberland Sound seems to be confirmed.

Phalaropes: there is too little information for it to be worth preparing maps for shipboard observations, so this is a comment rather than a comparison. The birds seen at c. 60°N 60°W on August 1 1978 fit in with the phalarope concentrations seen several times from ships in that area and at that time of year. The attraction is apparently the "front" at the outer edge of the Labrador Current. Phalaropes have also been reported in large numbers in late July in Grey Strait. It is surprising that none were seen there on the July 23/24 1978 flight, but this, again, may be a reflection of the unusual conditions of the 1978 breeding season.

There is no point in making more detailed comparisons between the results of the two survey techniques without an integrated aircraft/ship survey to intercalibrate the two

Something that is urgently needed.



































































