

SUBMISSION TO THE
NUNAVUT WILDLIFE MANAGEMENT BOARD
March 2015

FOR

Information: X

Decision:

Issue: 2013 High Arctic Cetacean Survey Results – Baffin Bay Narwhal Abundance Estimates

Background:

Fisheries and Oceans Canada (DFO), with participation of Nunavut Inuit organizations and Inuit survey observers, conducted an aerial survey of the Baffin Bay narwhal population in the Canadian High Arctic in August 2013. This is the first time that an aerial survey has included the entire known range of Baffin Bay narwhals during one summer. Both visual and photographic methods were used in this aerial survey of the summer ranges of the four known Baffin Bay narwhal stocks. In addition, narwhal in Jones Sound and Smith Sound were surveyed for the first time (Fig. 1).

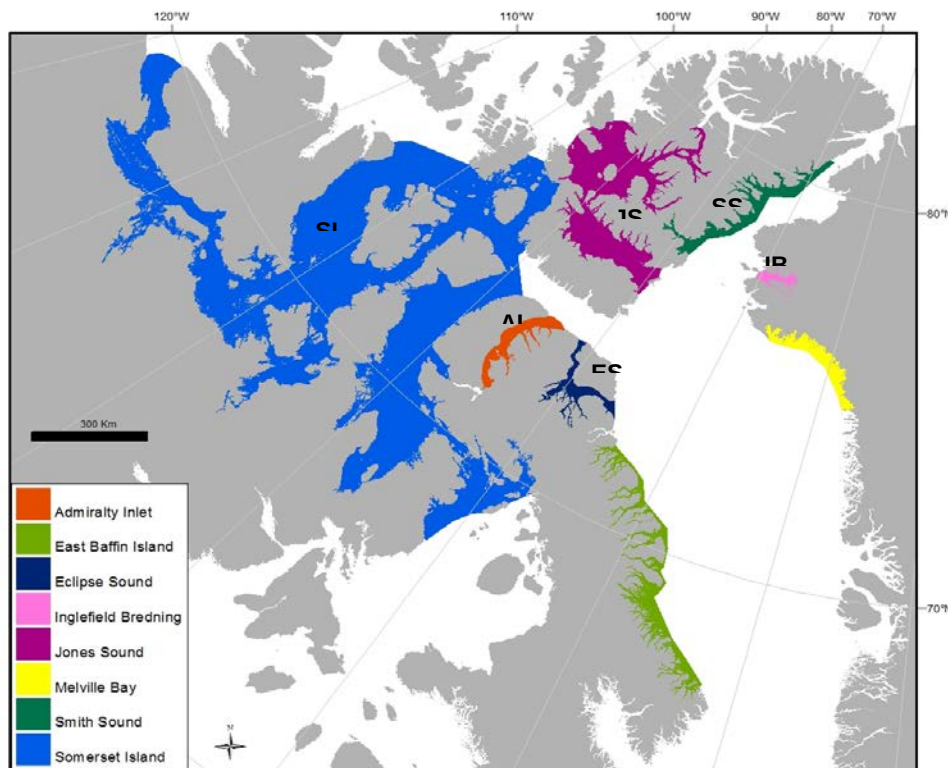


Figure 1. Map of narwhal summer aggregations of the Baffin Bay population (JCNB 2012).

The 2013 aerial survey produced an abundance estimate 141,909 (95% confidence limits [C. L.]: 102,464 – 196,536) for the Canadian component of the four known Baffin Bay narwhal stocks, and for narwhal aggregations in Jones Sound and Smith Sound. At this time, abundance estimates are based only on the visual component of the survey. They are corrected to account for perception bias (caused by observers missing narwhals present at the surface) and for availability bias (when diving narwhals are not visible near the surface). The results of the photographic component of the survey will be available after the necessary statistical assumptions have been appropriately assessed. Final approval of the 2013 visual survey results is expected by April 2015, after which a DFO Science Advice Report will be published by the Canadian Science Advisory Secretariat (CSAS).

Based on the 2013 aerial survey abundance estimates, and assuming fidelity of narwhals to specific summering areas, DFO has updated the sustainable harvest recommendation for each of the four Baffin Bay narwhal stocks, and to recommend a sustainable harvest level for narwhals summering in Jones Sound and Smith Sound. This information is presented as a Total Allowable Landed Catch (“TALC”) recommendation in the following table:

Narwhal Stock	Management Unit	Previous Abundance (95% C. L., year)	2013 Abundance (95% C. L.)	2013 PBR	2013 TALC
Somerset Island	SI	45,358 (23,397 to 87,932; 1996)	49,768 (32,945 – 75,182)	842	658
Admiralty Inlet	AI	18,049 (11,613 to 28,053; 2010)	35,043 (14,188 – 86,553)	498	389
Eclipse Sound	ES	20,225 (9,471 to 37,096 ; 2004)	10,489 (6,342 – 17,347)	171	134
East Baffin Island	EBI	10,073 (5,333 to 17,474; 2003)	17,555 (8,473 – 36,373)	264	206
Unknown	Jones Sound	n/a	12,694 (6,324 – 25,481)	97	76
Unknown	Smith Sound	n/a	16,360 (3,833 – 69,836)	99	77

The 2013 abundance estimates for the Admiralty Inlet and Eclipse Sound narwhal stocks differ substantially from previous survey estimates.

Recommendations:

The NWMB review the 2013 abundance estimates and associated TALC recommendations for the four summering stocks of the Baffin Bay narwhal population, and for narwhals distributed within Jones Sound and Smith Sound.

Prepared by: DFO Science – Central & Arctic and Quebec Regions

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