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REPORTS OF SUB-COMMITTEES

Outcome of DE 55

Arctic Shipping and Cetaceans: Recommendations regarding mitigation measures and the development of the mandatory Polar Code

Submitted by the World Wide Fund for Nature (WWF), Friends of the Earth International (FOEI) and the International Fund for Animal Welfare (IFAW)

SUMMARY

Executive summary: The Arctic is home to several cetacean species, as well as considerable shipping activity. Shipping has the potential to pose a threat to Arctic cetacean species, particularly through collisions, which can also cause vessel damage. In this document indicative maps of the summer, winter and migratory habitat of the three Arctic resident cetacean species are presented. Many of the areas identified are subject to considerable marine vessel traffic which is likely to increase in future in view of ice retreat linked to increasing temperatures due to climate change.

It is proposed that the MEPC consider and recommend suitable provisions for the mandatory code for ships operating in polar waters (the "Polar Code") regarding vessel voyage planning and operations in order to avoid interactions, especially collisions, with cetaceans and other marine mammals, or disruption of native subsistence hunting dependent on cetaceans. It is also recommended that all nations with jurisdiction over areas along Arctic shipping routes undertake an analysis of areas under their jurisdiction where the habitats of Arctic cetaceans and traditional native hunting overlap with vessel traffic routes, determine if collision risks rise to levels of particular concern, and, where this is the case, assess what mitigation measures would be appropriate to reduce those risks.

Strategic direction: 5.2

High-level action: 5.2.1

Planned output: 5.2.1.19

Action to be taken: Paragraph 16

Related documents: DE 55/12/21; NAV 57/INF.10 and NAV 57/INF.11

INTRODUCTION

1 Collisions between cetaceans and ships occur worldwide where there is an overlap between cetaceans and vessel activities. Such collisions involve a wide variety of vessel types, including recreational, commercial and governmental vessels. Damage to even large vessels, including bent propellers and propeller shafts and damaged rudders affecting vessel manoeuvrability[1] have resulted from ship strikes with large whales. Vessel collisions can cause cetacean injury or death, and can be a major threat to particularly vulnerable cetacean populations. Implementing measures to avoid interactions between cetaceans and vessels is in the interest of both vessel safety and maintenance, and cetacean conservation.

2 MEPC 59 approved a "Guidance Document for Minimizing the Risk of Ship Strikes with Cetaceans", which provides guidance to Member Governments in reducing and minimizing the risk of ship strikes of cetaceans, sets forth important general principles that should be taken into account, and possible actions that may be taken to reduce such risk (MEPC.1/Circ.674).

3 At DE 55, the environmental organisations FOEI, IFAW, WWF and Pacific Environment submitted a document (DE 55/12/21) on Arctic Voyage planning and cetaceans. The DE Sub-Committee, in its draft report for the meeting "decided not to further consider document DE 55/12/21 since it should first be considered by the NAV Sub-Committee, and requested the Secretariat to forward the above outcome to the Committees and relevant bodies for further consideration and/or instruction and input, as appropriate". FOEI, IFAW, WWF and Pacific Environment subsequently submitted document NAV 57/INF.10 on Arctic voyage management and cetaceans to the fifty-seventh session of the Sub-Committee on Safety of Navigation. The document recommended that the NAV Sub-Committee recommend to the DE Sub-Committee any suitable Polar Code provisions regarding vessel voyage planning and operations in order to avoid interactions, especially collisions, with cetaceans and other marine mammals.

4 This document provides additional supporting information for this process, by providing indicative Arctic wide maps of some of the habitats of the three Arctic resident cetaceans, the bowhead whale (*Balaena mysticetus)*, a baleen whale, and two toothed whale species, the narwhal (*Monodon monoceros)* and the beluga (*Delphinapterus leucas).* Other species of cetacean enter Arctic waters for some of their annual lifecycle, and would also be susceptible to vessel related impacts, including collisions.

ARCTIC CETACEAN HABITATS AND ARCTIC SHIPPING

5 The seasonal distribution of the beluga, narwhal and bowhead whale is presented in maps 1, 2 and 3. Data was collected from both published and unpublished documents and the maps were verified through expert review.

6 It is important to note that these maps are not comprehensive. Whilst there is a significant body of literature for certain areas, such as the Canadian Arctic and West Greenland waters, limited information was available for other areas. Information is most limited on the winter distributions of all three species due to difficult survey conditions in the Arctic in winter months. In addition, these maps document only those summer, winter and migration habitats that are currently known along with the broader species distribution as defined by IUCN. Maps 1, 2 and 3 represent generalisations of habitat used by the three

[1] Laist, D.W., Knowlton, W.A.R., Mead, J.G., Collet, A.S. and Podesta M. 2001. Collissions between ships and whales. Marine Mammal Science. 17(1):35-75 http://www.mmc.gov/reports/publications/pdf/shipstrike.pdf

resident Arctic cetaceans. Other papers (particularly those based on satellite telemetry) contain more specific indications of habitat use in particular areas.[2]

7 In maps 1, 2 and 3, seasons are defined as the astronomical seasons, with summer referring to June 21st to September 21st, and winter referring to December 21st to March 21st. However migrations between summer and winter habitats do not always occur exactly between the astronomical season for summer and winter.

8 Map 4 shows shipping traffic in the Arctic for survey year 2004. There is already a considerable level of ship traffic in some Arctic cetacean habitats. As global climate change causes declines in sea ice extent, shipping in the Arctic and other cetacean habitats is expected to increase. Some routes not currently utilized by vessels are expected to become navigable, such as the Northwest Passage, connecting the Atlantic with the Pacific Ocean through Canada's high Arctic. The Lancaster Sound region, in the eastern part of the Northwest Passage, is an important summer habitat and migratory corridor for beluga whales and narwhals.

9 Avoidance of adverse anthropogenic disturbance is particularly important in high use cetacean habitats, as animals may not move elsewhere if disturbance displaces them or disrupts vital biological functions such as feeding, mating or nursing their young.

10 Other efforts have also identified ecologically significant and vulnerable marine areas in the Arctic. IUCN and NRDC have identified 13 "Super" Ecologically and Biologically Significant Areas (EBSAs)[3]. These "Super" EBSAs meet most or all seven of the EBSA criteria, as defined by the Convention on Biological Diversity, and overlap some of the cetacean habitats summarized in this document.

POTENTIAL MITIGATION MEASURES

11 There are several measures that can be taken to avoid the risk of ship strikes. A 2010 joint IWC-ACCOBAMS workshop on reducing collisions between vessels and cetaceans[4] recommended that wherever practical, vessels should be separated from whales using measures such as re-routing or areas/times to be avoided. The workshop agreed that re-routing should be the first option, but recommended that where separating vessels from whales is not practical, measures to reduce speed should be considered. For large whales, it has been shown that the probability of a collision being lethal is reduced at slower speeds, and the risk of a lethal collision is substantially reduced at speeds below 10 knots.[5] Slower speeds may also improve the ability of operators of some types of vessel to take avoiding action (by increasing the amount of time available for maneuvering vessels away from whales), and may also improve the ability of cetaceans to avoid collisions.

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2 For example, see Quakenbush, L. T., Small, R.J. and Citta, J.J. 2010. Satellite tracking of Western Arctic Bowhead Whales. Alaska Department of Fish and Game. OCS Study BOEMRE 2010-033.

3 Speer, L. and Laughlin, T.L. 2011. IUCN/NRDC Workshop to identify areas of ecological and biological significance or vulnerability in the Arctic marine environment. Workshop report. April 7, 2011.

4 The Report of the Joint IWC-ACCOBAMS Workshop on is available at: http://iwcoffice.org/_documents/commission/Ship%20strikes/Ship%20strikes%20workshop%20report%20final.pdf. The recommendations of the workshop will be further discussed at meetings of the International Whaling Commission in June (Scientific Committee) and July (Commission and sub-groups) 2011.

5 Vanderlaan, A.S.M and Taggart, C.M. 2007. Vessel collisions with whales: the probability of lethal injury based on vessel speed. Marine Mammal Science 23(1):144-156. http://www.nero.noaa.gov/shipstrike/doc/Vanderlaan%20and%20Taggart%202007_speed.pdf.

12 It is recommended that all Arctic nations with jurisdiction over areas along Arctic shipping route legs undertake analyses of areas under their jurisdiction where the habitats of Arctic cetaceans overlap with ship traffic routes, and determine if collision risks rise to levels of particular concern. Where significant risks exist, potential mitigation measures to reduce those risks should be identified, assessed and implemented as appropriate. These analyses should consider whether areas of the Arctic should be a priority for designation as Particularly Sensitive Sea Areas (PSSAs), or afforded other IMO-sanctioned protections.

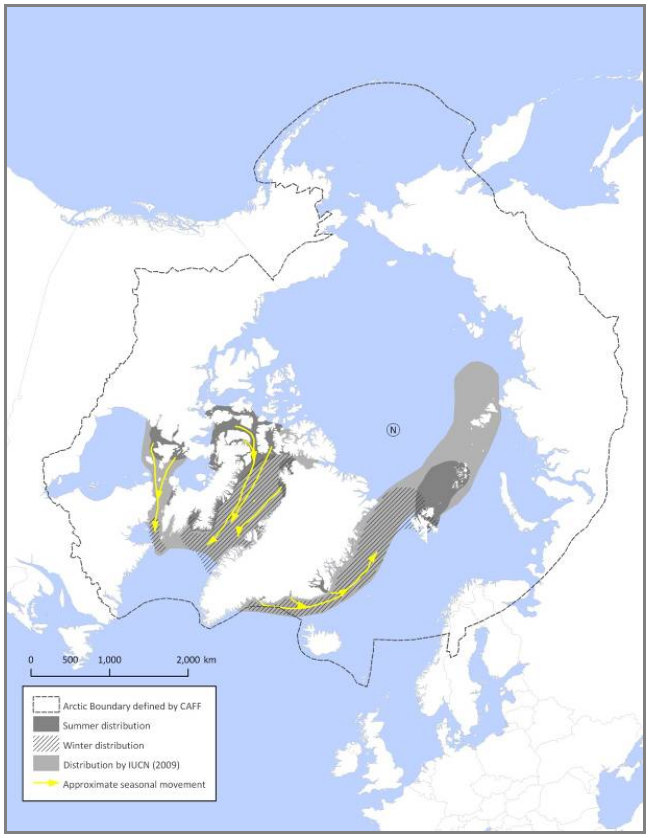
13 Bowhead whales are particularly vulnerable to ship strikes, thus habitats important for bowhead whales should be given priority for such analyses, although consideration should also be given to important habitats for other Arctic cetacean species.

14 Arctic cetaceans are of critical importance to indigenous communities for cultural and subsistence purposes. Therefore analyses should also identify traditional Native hunting areas and consider actions that may be needed to prevent Arctic vessel traffic from disrupting Native hunting practices. All measures should be considered and developed with the full participation and engagement of Arctic indigenous communities.

15 Climate change is likely to have an impact on Arctic cetaceans. All measures to limit interactions between Arctic shipping and cetaceans must consider the impacts of global climate change on resident Arctic cetaceans and their habitats, and Native hunters.

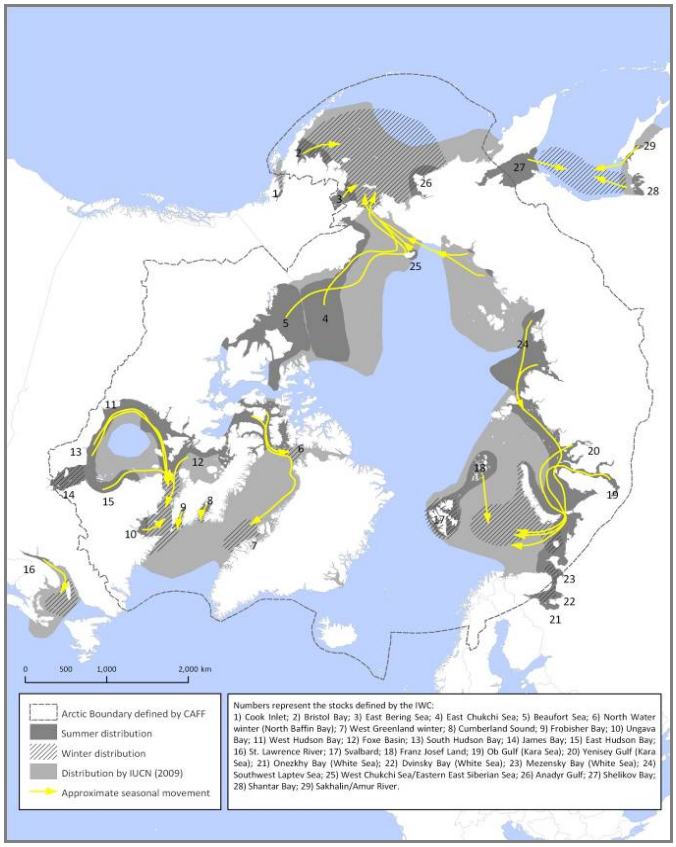
ACTION REQUESTED OF THE COMMITTEE

16 The Committee is invited to note this information and make recommendations on the suitable provisions that should be included in the mandatory code for ships operating in polar waters (the 'Polar Code') regarding vessel voyage planning and operations in order to avoid interactions, especially collisions, with cetaceans and other marine mammals, or disruption of Native subsistence hunting dependent on cetaceans. The International Whaling Commission which has a Ship Strikes Working Group and observer status at the IMO, should be a partner in the above efforts.



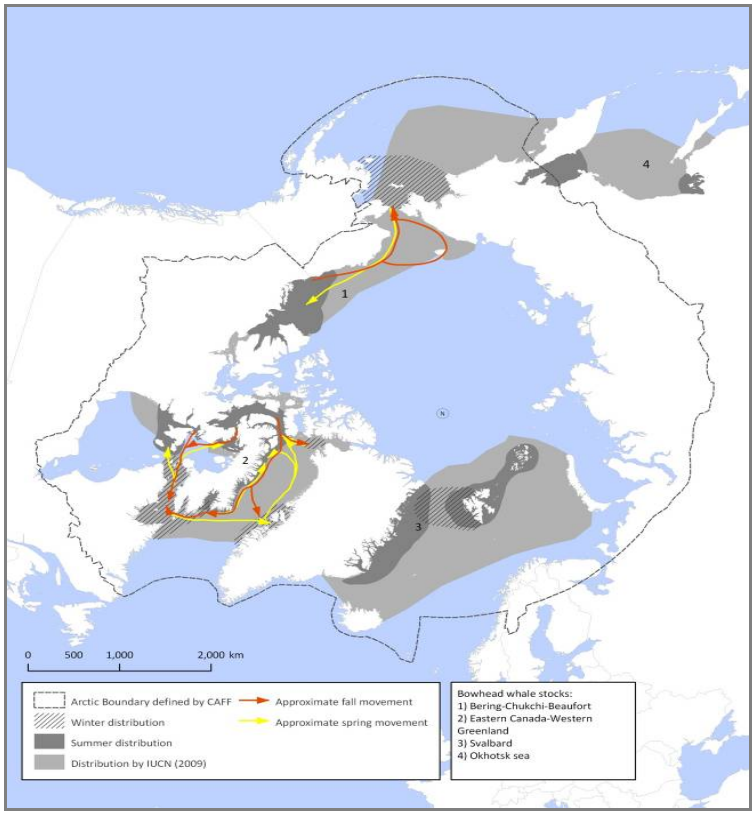
Map 1. This map presents the approximate currently known summer and winter habitats of the white whale. The distribution and movement patterns are generalisations, thus white whales may also occur outside these areas.

References: Bradford et al., 2010; Culik, 2010; Gavrilo and Ershov, 2010; Glazov et al., 2010; Krasnova et al., 2010; Olson and Dinerstein, 2010; Richter-Menge and Overland, 2010; Rugh et al., 2010; Shpak et al., 2010; Stephenson and Hartwig, 2010; Vedenev, 2010; Arctic Council, 2009; CAFF, 2009; Lewis et al., 2009; ESRI, 2008; Ezer et al., 2008; Heide-Jørgensen et al., 2008; Baranov et al., 2006; Belkovich, 2006; Litovka et al., 2006; Angliss and Outlaw, 2005; ESRI, 2005; Hobbs et al., 2005; State Nature Reserve Wrangel Island, 2005; Suydam et al., 2005; COSEWIC, 2004a; Doroshenko, 2002; Larsen, 2001; Lydersen et al., 2001; Moore et al., 2000; Belikov et al., 1998; Brude et al., 1998; Stewart et al., 1995; Laidre, unpubl.; Nammco, unpubl.



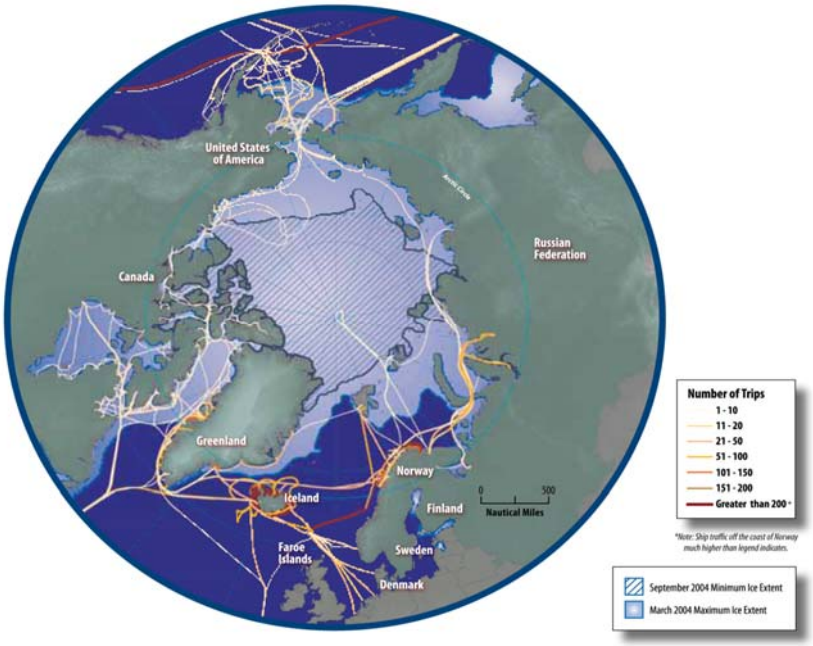
Map 2. This map presents the approximate currently known summer and winter habitats of the Narwhal. The distribution and movement patterns are generalisations, thus narwhals may also occur outside these areas.

References: Gavrilo and Ershov, 2010; Heide-Jørgensen et al., 2010a; Nielsen et al., 2010; Olson and Dinerstein, 2010; Stephenson and Hartwig, 2010; Boertmann et al., 2009; CAFF, 2009; ESRI, 2008; Gorbunov and Belikov, 2008; Heide-Jørgensen et al., 2008; Laidre et al., 2008; Lydersen et al., 2007; Laidre and Heide-Jørgensen, 2005; COSEWIC, 2004b; Heide-Jørgensen and Laidre, 2004; Jensen, 2003; Heide-Jørgensen et al., 2002; Innes et al., 2002; Larsen, 2001; Richard et al., 1998; Stewart et al., 1995.



Map 3. This map presents the approximate currently known summer and winter habitats of the Bowhead whale. The distribution and movement patterns are generalisations, thus bowhead whales may also occur outside these areas.

References: Bradford, 2010; Gavrilo and Ershov, 2010; Heide-Jørgensen et al., 2010b; Ivashchenko and Clapham, 2010; Olson and Dinerstein, 2010; Stephenson and Hartwig, 2010; Vedenev, 2010; Wiig et al., 2010; Boertmann et al., 2009; CAFF, 2009; Clarke and Ferguson, 2009; COSEWIC, 2009; IUCN, 2009; Koski and Miller, 2009; Quakenbush, 2009; Gavrilo and Tretiakov, 2008; Melnikov, 2008; Wiig et al., 2008; Wiig et al., 2007; Moore and Laidre, 2006; ESRI, 2005; Gilg and Born, 2005; Heide-Jørgensen and Laidre, 2004; Heide-Jørgensen et al., 2003; Cosens and Innes, 2000; Richard et al., 1998.



Map 4. Shipping traffic in the Arctic for survey year 2004. *Reference, AMSA, 2009*

References:

For full reference details for the maps, contact Jessica Battle, WWFI International (jbattle@wwf.int.org)