

**7th Meeting of the Sessional Committee of the
CMS Scientific Council (ScC-SC7)**

Bonn, Germany, 17 – 20 September 2024

UNEP/CMS/ScC-SC7/Doc.6.2.1

ROLE OF CETACEANS IN ECOSYSTEM FUNCTIONING

(Prepared by the Secretariat)

Summary:

This document responds to CMS Decision 14.75 *Role of Cetaceans in Ecosystem Functioning*. The report by the International Whaling Commission (IWC) on the 2nd IWC-CMS Workshop on Cetacean Ecosystem Functioning, which took place from 14 to 16 November 2023, is available in UNEP/CMS/ScC-SC7/Inf.6.2.1.

ROLE OF CETACEANS IN ECOSYSTEM FUNCTIONING

Background

1. Whales, dolphins and porpoises make significant contributions to ecosystems that benefit the natural environment and people. The International Whaling Commission (IWC) has adopted two relevant Resolutions: Cetaceans and Their Contributions to Ecosystem Functioning (2016-3) and Resolution 2018-2, encouraging collaboration with CMS and other international organizations to jointly advance this work.
2. In response to IWC Res.2018-2 and CMS Decision 13.83 d), IWC and CMS co-hosted a workshop in 2021 on cetacean ecosystem functioning to consider existing research and identify knowledge gaps. A rapid literature review identified numerous studies published over recent years that contribute to our understanding of cetacean ecosystem functioning. Many of these research needs identified during the IWC-CMS workshop have progressed, however substantial gaps remained.¹
3. In 2022, the IWC Conservation Committee Workshop on Socio-Economic Values of the Contribution of Cetaceans to Ecosystem Functioning² reviewed analytical valuation methods and assessed their possible application under a cetaceans and ecosystem functioning framework.
4. The second joint IWC-CMS workshop was held on 14-16 November 2023 in the CMS Secretariat premises in Bonn, Germany. The areas of focus for the workshop were: (1) quantifying spatial difference in cetacean ecosystem functioning, focusing on environments with regional ecosystem characteristics; and (2) quantifying temporal changes in cetacean ecosystem functioning, comparing pre-whaling and current populations, and identifying gaps in information and knowledge. Participants to the workshop comprised ecologists, cetacean scientists, ecosystem modellers and economists, given the socioeconomic analysis of the ecosystem functions of cetaceans that the IWC Conservation Committee is due to complete.
5. CMS COP14 adopted the following Decisions on this issue:

14.74 Directed to the Scientific Council

The Scientific Council is requested to, through the Aquatic Mammals Working Group, provide advice and input with regards to expanding the work on the role of cetaceans in ecosystem functioning in close collaboration with the IWC.

14.75 Directed to the Secretariat

The Secretariat shall:

- a) *continue to liaise with the IWC Secretariat regarding work on the role of cetaceans in ecosystem functioning; and*
- b) *report on the outcomes of the second joint IWC-CMS workshop on cetacean ecosystem functioning to the next meeting of the Sessional Committee of the Scientific Council.*

¹ IWC/SC/69B/EM/02

² IWC/CC/68/REP/SEVCEF/01

Outcomes of the second workshop

6. The results of the second workshop included input from ecological modelling and on socioeconomics from small working groups as well as more general matters (see the report in UNEP/CMS/ScC-SC7/Inf.6.2.1). The general recommendations were:
 - a) The question of how the indirect whale carbon pathways operate across vertical and horizontal spatial scales needs to be addressed, both as to whether the associated mechanisms are operating (nutrient cycling; carbon fixation, export and sequestration), and if so, what is the contribution of whales relative to other ecosystem components.
 - b) Develop a framework illustrating the causal linkages between the ecosystem services to which cetaceans contribute (e.g., climate regulation, nutrient cycling contributing to primary productivity, habitat provisioning), cetacean functions in the ecosystem and the potential values to beneficiaries.³
7. The workshop reviewed the terms of reference for a pilot project and agreed that the consultancy should focus on three main tasks: (1) creating a research framework to assess cetaceans' economic role in marine ecosystem services; (2) applying relevant models with ecological and economic data to specific populations or areas as a case study; and (3) providing guidelines on using economic valuations to influence whale conservation and management through market or policy developments.
8. It was also clarified that the economists, selected through a tender process, would choose the specific population or area with the best data on whale abundance and biomass estimates. They could elect to focus on multiple populations or areas, and to collaborate with ecologists knowledgeable about the selected populations or areas for the analysis.
9. The IWC SC in their recent meeting (SC69B, 22 April – 3 May 2024) had differing views on whether it was necessary, before starting the pilot project, to determine the relative contributions of cetaceans compared to other marine species to the ecosystem functions in the selected areas. This meeting agreed to establish an Intersessional Correspondence Group (ICG) to develop a prioritised list of research needs which will then be discussed at the next IWC SC meeting (SC70). The list would consider the degree to which knowledge gaps are being addressed and the potential importance of various processes to ecosystem functioning of cetaceans.
10. Based on the results of the two joint IWC-CMS workshops on cetaceans and ecosystem functions, the IWC SC69B agreed the following recommendations:

Attention: SC, R

 - a) *The Committee **recommends** that existing models, including multi-species models, and any newly developed models should continue to be used by researchers to develop more robust estimates of pre- and post-commercial whaling abundance in all oceanographic regions and, particularly, in those regions where estimates are non-existent or based on incomplete or inadequate data.*
 - b) *The Committee **recognises** that there remains a need to utilise the results from the two IWC-CMS co-hosted workshops and endeavours and, in collaboration with scientists and other stakeholders with relevant expertise, develop intersessionally a prioritised list of research needs for consideration at SC70.*

³ Report of the IWC Scientific Committee 2024 (SC69B).

Attention: SC, CC, R

- c) *The Committee **recommends** that existing and newly developed ecosystem based models be utilised by the scientific community to improve understanding of the full suite of ecosystem functions (e.g., nutrient cycling, carbon sequestration, biodiversity (associated with whale falls), predator/prey dynamics and habitat provisioning) of cetaceans (large and small) as well as lower trophic level organisms to explore the relative contributions of a variety of marine organisms to ecosystem functions both temporally (across time) and spatially (across oceanographic regions).*

Attention: S, SC, R

- d) *The Committee **recommends** that scientists, research coalitions and consortiums engaged in the study of the ecosystem functioning of cetaceans, if seeking funding from international/national funding institutions or philanthropic institutions, consider seeking a letter of endorsement from the IWC Secretariat to advance research in line with the workstreams of the Committee and that will address the knowledge/data gaps previously identified by the Committee.*

Attention: S, CMS

- e) *The Committee **recognises** the progress made during previous workshops on cetacean ecosystem functioning and **recommends** that the Secretariat continue to liaise with the CMS Secretariat to share information that addresses the knowledge/data gaps identified and, if hosting future workshops/symposia on this subject, to consider inviting collaboration from the CMS Secretariat and other international organisations (e.g., CCAMLR).*

Attention: SM

- f) *The Committee **recognises** the growing evidence documenting the role of small cetaceans in ecosystem functioning, notes that more research/data are necessary to fully quantify the role of small cetaceans in ecosystem functioning and encourages members of the Small Cetaceans Subcommittee to join the Ecosystem Modelling Subcommittee to advance joint interests in this matter.*

Attention: CC, SC-CC, CG

- g) *The Committee **notes** information from the CC ICG on cetaceans and ecosystem functioning of the status of the pilot project to assess the socio-economic valuation of the ecosystem functions of cetaceans consistent with the ToR and the tender developed for this project. The Committee strongly **encourages** the involvement of relevant cetacean experts in this work.*

Recommended actions

11. The Sessional Committee is recommended to:

- a) Note the outcomes presented above and the report of the 2nd IWC-CMS Workshop on Cetacean Ecosystem Functioning, contained in UNEP/CMS/ScC-SC7/Inf.6.2.1; and
- b) Through the Aquatic Mammals Working Group, provide advice and input with regards to expanding the work on the role of cetaceans in ecosystem functioning in close collaboration with the IWC.