IWC68 Briefing for Commissioners
CETACEAN ECOSYSTEM FUNCTIONING

Summary

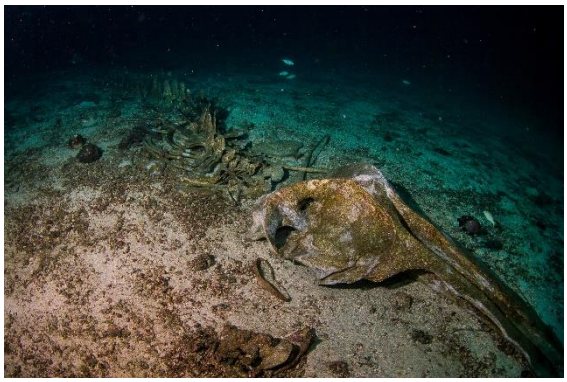
- Since the IWC started its work on cetaceans and their role in ecosystem functioning, new scientific publications and research projects continue to demonstrate the positive association between cetacean activity and climate and biodiversity metrics.
- Ecosystem functioning is only one aspect of the ecosystem services supplied by cetaceans. The value derived from, for example, tourism and the positive impact of marine megafauna on marine food systems, must be integrated to present the full range of their socio-economic value.
- Contracting Governments are encouraged to increase their support and assist in the quantification of all cetacean-derived ecosystem services.

An Overview

The 2022 Intergovernmental Panel on Climate Change (IPCC) report on Impacts, Adaptation and Vulnerability[1] highlights that despite efforts to reduce the risks, climate change is bringing severe and widespread destruction to nature and to billions of humans around the world. The need to mitigate these risks is immediate and without wide ranging, comprehensive, and urgent actions, the world faces multiple, unavoidable, and potentially irreversible impacts within two decades.

The report provides many options for nature's potential to reduce climate risks as nature has a huge capacity to absorb, store and sequester carbon, the primary cause of global temperature rise. As we know from the valuable work done by the International Whaling Commission (IWC) and its Scientific and Conservation Committees, cetaceans are an integral part of a well-functioning marine ecosystem. As the IPCC notes, they have been proposed as a 'blue carbon ecosystem'. They can stimulate the absorption of carbon through phytoplankton fertilisation, store carbon directly in their biomass (and within the more abundant food web as a result of increased productivity) and sequester carbon to the deep sea when they die. The recovery of whale and dolphin populations can provide a genuine, nature-based climate solution, with many additional biodiversity and socio-economic benefits.

Whales can stimulate the absorption of carbon through phytoplankton fertilisation. © Monica Pepe / WDC



They sequester carbon to the deep sea when they die. © shutterstock / Sineenuch J

Within the current global context, it is imperative that nations make decisive and concerted efforts to reduce emissions of greenhouse gases to avert the worst impacts of the climate crisis as nature-based solutions will not be impactful in isolation. In addition to well-known terrestrial solutions, such as tree-planting, every natural process that mitigates the impacts of climate change must be restored. This includes the processes that take place or have their basis in the ocean, which covers 71 percent of planet Earth. Indeed, any further losses to cetacean populations and hence ecosystem functioning, as well as continued anthropogenic impacts that reduce recovery rates, will jeopardise collective global efforts.

Work at IWC to date

The IWC recognised the need to better understand the role of cetaceans in ecosystem functioning by adopting Resolution 2016-3 and 2018-2 and undertook two important work streams through the Scientific and Conservation Committees.

- A 2021 **Scientific Committee workshop**[2] assessed the current level of scientific understanding of the role of cetaceans in ecosystem functioning. The majority of scientific literature published to date shows that whales have a positive impact on ecosystem productivity, carbon sequestration, nutrient circulation, and biodiversity but at a vastly reduced scale in relation to their pre-exploitation numbers. The workshop also highlighted several research gaps, which, if filled, will provide a more robust understanding of the processes and allow better quantifications to be made about the impact of all cetaceans' role in climate and biodiversity recovery.

- A 2022 **Conservation Committee workshop**[3] assessed the current understanding of the role of cetaceans in ecosystem function in relation to its socio-economic value. This is a challenging area as concepts for the valuation of ecosystem services are typically applied to habitats rather than highly mobile species. Many of the traits of cetaceans that support ecosystem functions highlighted by scientists cannot currently be fully valued as the relevant techniques and tools must still be developed. In order to advance this area of work, the Working Group proposes a pilot project to assess the functions and value of a single whale population, rather than trying to apply techniques to global populations for which there is a lack of data.

Recommendations

Contracting Governments are encouraged to support this work and other commitments arising from Resolutions 2016-3 and 2018-2.

- In particular, we strongly recommend that 'Contracting Governments integrate the value of cetaceans' ecological roles into local, regional and global organisations on biodiversity and environment, including climate change and conservation policies', with the urgency that the climate and biodiversity crises demand. For example, governments and NGOs should work together to determine how the ecological functions of cetaceans should be integrated into UNFCCC Nationally Determined Contributions and CBD National Biodiversity Strategies and Action Plans.

- We urge Contracting Governments, NGOs and researchers to work together, and with other stakeholders to secure the funding required to fill the most pertinent knowledge gaps as highlighted by the Scientific Committee and Conservation Committee workshops* and to secure the funding required for the continuation of the Conservation Committee work on socio-economic valuation of ecosystem functioning.

- Contracting Governments should support the Conservation Committee Intersessional Working Group on Cetaceans and Ecosystem Functioning in proceeding with the work on a pilot project to assess the socio-economic values of a single species or population to simplify the valuation methodology.

Finally, there should be agreement amongst Contracting Governments to broaden the scope of focus from large whales to all species of cetaceans – in particular beaked whales, pilot whales and other deep diving species. Emerging science demonstrates the potentially significant impacts of small cetacean species on ecosystem functioning[4,5].

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* WDC has been funding research projects that contribute to filling these research gaps and is very keen to collaborate further to fast-track progress in this area.

References

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