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CONCERTED ACTION FOR THE HUMPBACK WHALES (*Megaptera novaeangliae*) OF THE ARABIAN SEA[1]

Adopted by the Conference of the Parties at its 14th Meeting
(Samarkand, Uzbekistan, February 2024)

The Concerted Action for Humpback Whales of the Arabian Sea was first adopted at the 12th Meeting of the Conference of the Parties (UNEP/CMS/COP12/Concerted Action 12.4) and extended and revised by the 13th Meeting of the Conference of the Parties (COP13) (UNEP/CMS/COP13/Doc.28.1.4 and UNEP/CMS/COP13/Doc.28.1.4/Add.2).

A report on implementation was submitted to the 14th Meeting of the Conference of the Parties (COP14) (UNEP/CMS/COP14/Doc.32.2.3) including a proposal for extension and revision, which was approved by the Parties.

(i). Proponent:

Arabian Sea Whale Network

(ii). Target species, lower taxon or population, or group of taxa with needs in common:

Class: Mammalia
Order: Cetartiodactyla
Infra-Order: Cetacea
Family: Balaenopteridae
Genus: Megaptera
Species: Megaptera novaeangliae
Population: Arabian Sea (sub)population (see the original Concerted Action document)

(iii). Geographical range:

Confirmed range states: India; Islamic Republic of Iran; Iraq; Kuwait; Sultanate of Oman; Pakistan; Qatar; Sri Lanka; United Arab Emirates; Yemen

Possible additional range states: Bahrain, Maldives, Somalia, The Kingdom of Saudi Arabia

(iv). The case for continued action:

Action renewed – as activities were not yet completed, the Concerted Action should be extended for the following triennium.

[1] The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CMS Secretariat (or the United Nations Environment Programme) concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.

PRIORITY ACTIVITIES AND OUTCOMES

Activity	Expected Outcome	Progress as of April 2023	Recommendation for 2023-2026
Addressing knowledge gaps			
The development of a marine mammal reporting **smartphone App** and citizen science tools, to allow the crews of fishing, coast guard and whale-watch vessels and ferries to record and report whale and dolphin observations.	Improved data and models of current humpback whale distribution throughout the Arabian Sea	ASWN members have briefly tested Apps that can be used by tourism companies and members of the public, as well as for research (e.g. Spotter Pro, Whale Alert, Seafari). However, due to COVID and lack of funding to date, none are yet in regular use, or translated into the languages used by range states. Many ASWN partners have created WhatsApp reporting networks to collect reports of cetacean sightings and strandings, resulting in increased reports of cetaceans.	Continue to look for funding and opportunities to expand current WhatsApp reporting networks with Apps that allow industry and the general public to contribute sightings data and photos to be used in research and management (especially for shipping and ship strike risk).
Collaborative **boat-based research** to continue photo-identification studies, collects genetic samples, and identify critical habitat. The involvement of local scientists in this research will build capacity for future conservation in the region.	Improved data on whale distribution, habitat use, population identity and connectivity between regions, and increased number of qualified cetacean researchers in the region.	Boat-based research has continued annually in Oman and coastal surveys for cetaceans are occurring regularly in Iran, Kuwait and the UAE. A vessel-based survey was planned in Pakistan in January 2020, but cancelled due to permitting and security issues. It has been scheduled for November-December 2023 and will cover IMMAs in Pakistan's waters. Funding has not yet been obtained for large-scale collaborative research efforts. However, a systematic cetacean survey took place in the Maldives in April 2022. Furthermore, researchers working in India, Sri Lanka, the Maldives and Chagos have published a review of all available information on humpback whales in the Central Indian Ocean to assess seasonal trends and possible population affiliations. See https://journal.iwc.int/index.php/jcrm/article/view/341	Continue to look for opportunities for collaborative surveys and exchange between ASHW range country research teams.

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Use of **passive acoustic recorders** to detect the presence of whales and monitor human introduced noise in areas that are logistically difficult or dangerous to survey.	Improved understanding of whale distribution in Eastern Arabian Sea (e.g. Gujarat and Rann of Kutch)	Recordings made in Oman in 2012-19 have been analysed and the results have presented at the IWC (Cerchio et al., 2016; Cerchio et al., 2018, Certchio et al 2023). A manuscript on blue whale song recorded offshore from Oman was published with great media attention, and a new PAM effort to record in deep water off Oman commenced in March 2020. Opportunistic recordings have also been analysed from India (Mahanty et al., 2015; Madhusudhana et al., 2018, D'Sousa et al, 2023). Funding and logistics have not yet been in place to conduct larger scale passive acoustic surveys off of Pakistan.	Continue passive acoustic monitoring off of Oman and India and continue to look for funding to start PAM in Pakistani waters. Ensure that funding includes adequate support for analysis as well as equipment, deployment, and data collection.
Genetic analysis of samples collected from strandings and during dedicated whale surveys to determine whether Arabian Sea humpback whales comprise a new subspecies.	Likely designation of ASHW as new species or subspecies, understanding of kinship and relatedness of sampled whales	The type specimen for *Megaptera indica* was sampled at the Paris Museum of Natural History in November 2019. However, issues related to COVID-19 and bureaucracy delayed its shipment from France to New York. This was also a factor in the delay of analysis of additional samples from Oman to better understand taxonomy of ASHW. The sample finally reached the lab in the American Museum of Natural History in May, 2023, and will now be analysed along with samples collected from Oman.	Conduct genetic analysis of Type Specimen of Megaptera Indica and compare with samples collected off of Oman through 2015 to provide taxonomic clarity. Conduct whole genome sequencing (WGS) of all samples collected in Oman through 2023 to address research questions related to kinship, genetic distinctiveness, and inbreeding, etc.

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Collection of data that allows the **assessment of the population's key ecological attributes (KEAs)**, including relative abundance, absolute abundance, health and body condition over time.	Updated KEA measurements for the population	Although not listed as one of the targeted activities in the Concerted Action, the rationale refers to the need to monitor humpback whale health and threats through . An IWC grant facilitated a visual health assessment of all humpback whale images collected off the coast of Oman from 2000 onward. This assessment was published with the Journal of Cetacean Research and Management (Minton et al. 2022), with another follow-up paper describing a new technique for using aerial based images to assess tattoo skin disease-like lesions (Leslie et al. 2023). IWC support also facilitated modelling of abundance and trends for the ASHW population based on photo-identification and genetics data from Oman. Modelling is complete and is awaiting review.	Continue to collect photographs during boat-based fieldwork that allow visual health assessment and scarring analysis, as well as to use drones during fieldwork to assess body condition over time, and to analyse health and body condition in relation to known environmental stressors or threats.
Conduct distribution modelling using telemetry, boat-based observations, and acoustic data to predict whales' (seasonal) habitat use throughout its range and to assess co-occurrence and risk from human activities like shipping and gillnet fishing.	Updated spatially explicit risk assessments to be used in the design of mitigation and management measures	Regional ASHW ecological niche modelling work previously presented to the IWC (Willson et al. 2017) has been updated with results of more recent satellite telemetry work and a refined method. A ship strike risk assessment based on co-occurrence between identified whale habitat and AIS derived shipping traffic density mapping contributed to a WWF report on 'blue corridors', and will be submitted for peer-reviewed publication in the coming months. A new risk assessment was presented to the 2023 meeting of the IWC Scientific Committee (SC/69A/HIM/07).	Continue modelling work undertaken to assess ship-strike risk and apply similar strategies to assess bycatch/entanglement risk.

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Information sharing and awareness raising			
The development of a **regional shared online data platform** to promote standardization, comparability and timely analyses of data collected throughout the region. This will be used to facilitate the creation of sensitivity maps and assist stakeholders in the design of local, national and regional conservation strategies, including protected areas	Improved understanding of ASHW distribution and connectivity between study areas.	Three years of collaborative development between ASWN members, Flukebook, and Indocet, have resulted in the completion of an ASWN online database that uses the Flukebook Platform. This data platform allows uploading, archiving, and analysis of cetacean sightings data, as well as use of 'computer vision' to conduct automated matching of humpback whale tail flukes within, and between research projects in the Arabian Sea and wider Western Indian Ocean. Unfortunately, due to user-interface issues and a lack of photo-identification data from countries other than Oman, the data platform is not used to its full potential.	Assess whether Flukebook.org is improving its User Interface as planned, and whether bulk uploading of data will be possible as planned. If so, support range countries in uploading data. If not, consider alternatives.
An improved **website** that provides a portal to the shared database (see above), informs the general public of whale conservation needs, and provides members with a range of **outreach tools** to engage governments and other stakeholders in their region and involve them in Whale conservation efforts	Increased awareness of ASHW conservation needs among stakeholders	The Arabian Sea Whale Network website has undergone some improvements, and is maintained with updates and news items, as well as a page dedicated to the new data platform. The ASWN has produced an infographic to use in reaching out to stakeholders, as well as three issues of a newsletter. The Environment Society of Oman created a very effective video on ASHW and on ghost nets. However, more could be done to create a wider variety of outreach tools, including power-point presentations, videos, or other tools in multiple languages.	Continue to post updates and resources to website and use email list to stimulate exchange of news and collaboration between ASWN members. Funding will be needed to support communications and coordination, as this is difficult to maintain on a volunteer basis.

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Capacity building and development and implementation of mitigation strategies			
Organization of targeted **regional workshops, meetings and training** opportunities that will involve local and national government agencies as well as young scientists, build capacity and develop multi-stakeholder mitigation strategies and conservation measures in key range states.	More effective stranding/entanglement response leading to better survival of affected cetaceans, improved data on bycatch/entanglement rates throughout the region, increased government participation	A workshop was held in Oman, in January 2018, focusing on the final stages of development of the ASWN Flukebook data platform, as well as the issue of data collection from fisheries in the region. The full workshop report can be downloaded here. Many of the researchers working with Arabian Sea humpback whales were also involved in the IUCN Important Marine Mammal Areas workshop for the Western Indian Ocean and Arabian Seas. While organized with different aims, it also involved opportunities for regional capacity building and stakeholder engagement particularly with the Oman government representatives who were present. A workshop for Oman government and industry stakeholders was held in November 2022 to raise awareness of the conservation needs of ASHW and the potential benefits of participating in a regional CMP.	Continue to identify opportunities to engage relevant government and industry stakeholders to make them aware of the conservation needs of ASHW and the role they can play in designing effective national and regional management measures.
Replication of ship strike mitigation strategies from Oman, and by-catch mitigation from Pakistan to other parts of the Arabian Sea.	Reduced risk of ship strike throughout region, improved chance of survival of entanglement	It is hoped that ASWN participation in the IWC hosted workshop focusing on bycatch in the Indian Ocean, and a possible IWC Pilot project in Pakistan will lead to more effective monitoring, reporting and mitigation of bycatch in the region. ASWN members are also working closely with the IOTC to report results from Pakistan. Development of a region- wide approach to ship strike mitigation is expected to be partly informed by the ship strike risk assessment currently in progress (and discussed in the section on addressing knowledge gaps above).	Continue efforts to find funding to continue the Pakistan crew-based observer programme and associated testing of sub-surface gillnets – and expand to other ASHW range countries. Work with ports and shipping companies to explore and where possible implement measures that reduce ship strike risk and underwater noise from shipping in important ASHW habitat.

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Development of a range-state endorsed regional ASHW Conservation and Management Plan	Regional Conservation and Management Plan to promote long-term coordinated and collaborative conservation and management across the ASHW range participation	This has not yet been achieved. Discussions are still underway between the CMS and the various representatives of the International Whaling Commission and its member states focused on initiating development of an IWC ASHW Conservation Management Plan that if finalized would be jointly endorsed by IWC and CMS. Government-level endorsement from both India and Oman, the only two ASHW range states that are IWC members, remains to be confirmed and discussions are still ongoing.	Organise a regional workshop with ASHW range country CMS and IWC Focal points to draft and implement a regional CMP, supported by a part- or full time Coordinator, and including funding to implement priority actions at national and regional level.