Arabian Sea Whale Network Newsletter | October 2018



Network News

Back from the blue......

It has been a while since the ASWN published its last newsletter, but anyone following the ASWN website and its news updates will hopefully know that the network and its members have been busy with a range of valuable and exciting work. Following its formation as an informal network during a workshop in January 2015 in Dubai, the network has continued to gain momentum through the individual and collaborative efforts of members, who all strive to better understand and protect whales in the Arabian Sea. Highlights for the ASWN and its members over the past year include:

- The maintenance and regular updating of a membership database, with an email distribution list, which is used for regular exchanges between members of the network as well as a website (https://arabianseawhalenetwork.org/), which is receiving increasing levels of visitor traffic from around the world.
- The completion of the first phase of design and implementation of a regional online data platform in collaboration with Wild Me (http://www.wildme.org/) and Flukebook (Flukebook.org See following pages for more detail).
- The drafting of a detailed proposal for Concerted Action for Arabian Sea humpback whales under the Convention on Migratory Species (CMS), which was passed with wide support from Arabian Sea range states at the CMS COP in October 2017. It is hoped that this Concerted Action can be implemented in conjunction with an IWC Conservation Management Plan (CMP) if progress is made on the latter.
- The facilitation of a four-day workshop on the implementation of the regional data platform with participation from Oman government bodies, research updates from various Arabian Sea range states, an introduction to, and evaluation of the new regional data platform, and discussion of the challenges and opportunities faced by members wishing to engage with fisheries for data collection and whale conservation efforts.
- Improved reporting of incidental sightings of humpback whales throughout the Arabian Sea through social media and other means as a result of significant awareness raising efforts by network members.
- The declaration of two marine protected areas in Pakistan, in which the protection of Arabian Sea humpback whales played a significant role (see news items on the ASWN website for the declaration of the Astola Island MPA and the Indus Canyon MPA). These declarations were the result of research, awareness raising and lobbying by WWF Pakistan and other conservation bodies.
- Increased media attention for Arabian Sea humpback whales in response to the crossing of a tagged whale from the Sultanate of Oman to the southern tip of India and back again. The whale was tagged during a survey conducted under the auspices of the Environment Society of Oman, and followed with great interest by the whole network, including research teams in India, that were mobilized to search for the whale and collect data in the coastal areas that the whale visited.
- The listing of Arabian Sea humpback whales under India's *Recovery Programme for Critically Endangered Species,* a central government programme that will hopefully direct more resources toward whale research and conservation efforts in India.
- The approval of funding for three research projects to be implemented over the next year: 1) the thorough description and sampling of the type specimen for *Megaptera Indica* at the Paris Museum (to be funded by the Marine Mammal Commission), 2) a health and risk assessment of Arabian Sea humpback whales through examination of photographs and drone footage obtained in recent years (funded by the International Whaling Commission) and 3) a comparison of humpback whale song from Oman and India (also funded by the IWC).

Intrigued? Learn more about these and other developments in the following pages!

The ASWN at the IWC

In April-May 2018 the ASWN made a splash at the International Whaling Commission's Scientific Committee meeting in Bled. ASWN members presented multiple papers with updates and information about whale research and conservation efforts in the Arabian Sea. Most of these were presented to the sub-committee that focused on conservation management plans (CMP), although Arabian Sea whales were also discussed in the Southern Hemisphere (SH) subcommittee, the subcommittee on environment and health issues for whales (E), and the subcommittee focusing on photo-identification databases for whale research (PH).

The papers were well received and generated valuable discussion and feedback. The scientific committee commended the work that had been done, and encouraged the continuation of the various research and conservation efforts underway including:

• regional collaboration for research and capacity building;



Some ASWN members at the IWC Scientific Committee meeting in Slovenia, April 2018.

∽flukebook

- work toward a joint CMS-IWC conservation management plan;
- collection of data on whale distribution through Pakistan's crew-based observer programme;
- satellite tagging and threat- and health assessments of humpback whales off the coast of Oman;
- collection of data on whale strandings, sightings, and song off the coast of India;
- more extensive comparison of humpback whale song recorded off the coasts of Oman and India as well as other Indian Ocean regions.

The following links to the papers presented by ASWN members at the meeting:

- SC_67B_CMP_10_rev1_Arabian Sea Whale Network update
- SC_67B_CMP_13_rev1_Update on satellite telemetry studies and first unoccupied aerial vehicle assisted health assessment studies of Arabian Sea humpback whales off the coast of Oman.
- SC_67B_CMP_15_Baleen whale reports from the Eastern Arabian Sea based on interview surveys and stranding reports Update from India 2017-18
- SC_67B_CMP_19_Geographic variation in song indicates both isolation of Arabian Sea humpback whales and presence of Southern Hemisphere whales off Oman
- SC_67B_SH_24_rev1_A new baleen whale song type described for the Western Indian Ocean off Oman and northwest Madagascar
- SC_67B_PH_03_Flukebook for the Arabian Sea Whale Network
- Pakistan: Using a Crew-Based Observer Programme as a Platform of Opportunity for Understanding the Distribution of Whales in the Northern Arabian Sea
- SC_67B_INFO_06_CMS Concerted Action Proposal for Arabian Sea humpback whales
- SC_67B_INFO_07_ASWN Workshop report Managing data for whale conservation
- SC_67B_INFO_50_Humpback whale singing activity off the Goan coast in the Eastern Arabian Sea

ASWN Flukebook – the long-awaited regional data platform

After over a year of development, the ASWN Flukebook regional data platform is ready for launch. Months of development and testing have resulted in a data platform that successfully combines photo identification and automated fluke matching with detailed sightings data collected either opportunistically or during dedicated scientific surveys for cetacean species in the region. The data platform will be open to all ASWN members, who will be given their own user accounts, as well as members of the general public who want to contribute individual photographs or observations. Substantial data sets from India and Oman have already been imported to the new platform, and users have tested its multiple search and export functions to query and analyze cetacean sighting and humbpack whale photoidentification data collected during 17 years of dedicated research in Oman.

This week the newly developed platform was migrated from a test server to the Flukebook server, and the development team is busy designing a user manual, account protocols, and draft data sharing agreements with an aim toward rolling out the platform to members within the next few weeks. Users will be able to maintain control of their own datasets, but engage in collaborative matching exercises between research projects when desired. Users will be able to upload their own bulk datasets using an Excel sheet template, but the Flukebook development team has obtained grants from other sources that will allow them to continually update and improve the user interface. The team is working toward a seamless workstream that would allow researchers to upload data collected in the field using a tablet-based App. As an open-source platform, improvements made by other research groups will also benefit ASWN users, and the new standardized data format will facilitate future matching with other Indian Ocean research groups like IndoCet, who also use Flukebook.

From Our Members

India

Text and images contributed by <u>Dipani Sutaria</u> dipani.sutaria@gmail.com, Abhishek Jamalabad abhishek.jamalabad@gmail.com, and Mihir Sule mihir.sule@gmail.com

Exciting things have been happening in India on the marine mammal front. In October 2017, India offered strong support for the CMS Concerted Action for Arabian Sea humpback whales. In December 2017, India hosted a two-part workshop and training course, aimed to build capacity for marine mammal research and conservation throughout the country. This initiative was the result of Indo-US collaboration involving NOAA Fisheries, the Woods Hole Oceanographic Institution (WHOI), the Centre for Marine Living Resources and Ecology (CMLRE), Ministry of Earth Sciences (MOES), Wildlife Conservation Society, and the National Centre for Biological Sciences (NCBS), India, and the University of Washington, USA.

During the pre-survey classroom lectures participants learned about the basics of species identification, data collection and abundance estimation, and the importance of conducting systematic marine mammal surveys for marine resources management and species conservation. During the nearly three days at sea, trainees received instructions on the methods used to detect and record marine mammal observations at sea, following methods that are widely used globally to determine abundance estimates of marine mammal populations.

Following the workshop, India's network of marine mammal researchers (all members of the ASWN) has continued to update the national database of whale sighting and stranding records (http://www.marinemammals.in/). This database has facilitated the preparation of annual reports on whale sightings and strandings for the IWC SC.

This data, coupled with the outreach and awareness raising efforts of ASWN members in India has also led to the listing of Arabian Sea humpback whales under India's *Recovery Programme for Critically Endangered Species*, a central government programme that will hopefully direct more resources toward whale research and conservation efforts in India. Indeed, recently the Mangrove Cell, a division of the Maharashtra State Forest Department, has submitted a proposal for the protection of the Arabian Sea Humpback Whale as part of the Centre's Recovery Programme for Critically Endangered Species. This would support more research and conservation off the coast of Maharashtra and along the West coast of India where there is mounting evidence for the regular and continued presence of Arabian Sea humpback whales. Luban, the humpback whale satellite tagged off the coast of Oman, travelled to the southern end of the Maharashtra coast before working her way further south and then returning to Oman (see more details on this in the following section on Oman). Research papers and reports on ASHW presence in India's waters can be found here.



NOAA affiliated trainer, Suzanne Yin discusses how to identify different species with Christopher Roy (L) and Chandru Krishnamoorthy (R), while other trainees use the big eye binoculars to search for cetaceans.

UPCOMING EVENTS:

March 2019: Western and Northern Indian Ocean Important Marine Mammal Area workshop.

From 4 to 8 March 2019 the IUCN Marine Mammal Protected Area Task Force will hold a technical workshop to begin the process of identifying important marine mammal areas (IMMAs) in the Western Indian Ocean and Arabian Seas. The venue is still to be determined, and workshop participation will be by invitation only. ASWN members and other interested parties are invited to consider submitting proposals for candidate areas, taking into account the selection criteria used to review candidate areas and the IMMA selection process.



May 4-21, 2019 – International Whaling Commission Scientific Committee, Nairobi

In May 2019 the IWC Scientific Committee meeting will take place in Nairobi, providing an opportunity to focus on the Western and Northern Indian Ocean. As the time draws nearer, we will look carefully at the agenda and hope that ASWN members will be able to present a new selection of reports and updates to build on the work that has been presented at the IWC SC in past years.



December 9-12, 2019 – Biennial Conference of the Society for Marine Mammalogy- Barcelona, Spain

In 2019, the Society for Marine Mammalogy will join together with the European Cetacean Society (ECS) to co-host the world's 2nd World Marine Mammal Science Conference. More details can be found here.

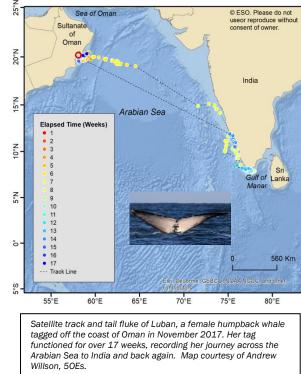
2020 – Indian Ocean Cetacean Symposium – Maldives

ASWN member Dr. Charles Anderson has been working with the government of the Maldives to plan the next Indian Ocean Cetacean Symposium to follow on from the first symposium held in 2009. A report of that first meeting can be found here. Stay tuned for more details.

Oman

Renaissance Whale and Dolphin Project: ESO Satellite Tracking Survey - Nov 2017

In November 2017 the collaborative research team in Oman conducted another three-week long survey to deploy satellite tags on humpback whales. The survey built on previous tagging surveys conducted in Dhofar in March 2014 and 2015, and in the Gulf of Masirah in November-December 2015. Conducted under the auspices of the Environment Society of Oman, the field team involved researchers from Five Oceans Environmental Services and an international team of experts. The survey was successful on many counts, with the deployment of five tags, bringing the total number of tags deployed in Oman from 2014 onward to 14. This round of tagging proved to be especially rewarding, as one of the tagged whales behaved differently to all previously tagged whales that had stayed in the coastal waters of Oman or Yemen. Luban, a female, first identified through photographs taken in the Gulf of Masirah in 2002, surprised all of those watching her satellite transmissions by crossing the Arabian Sea to the coast of India, and then back again, generating lots of press and awareness on both sides of the Arabian Sea. The survey also involved the use of drones for the first time to collect aerial photos and blow samples to be used in health assessments of endangered Arabian Sea humpback whales. The initial results were promising, and the team looks forward to using this technique more in the future. A full research update from the landmark survey can be found here.



ESO Community Outreach and Education Text and photos contributed by Maïa Sarrouf Willson maia.sarrouf willson@eso.org.om

Over the past 12 years, the Environment Society of Oman has worked closely with Five Oceans Environmental Services and international experts to support field research and data analysis to further the understanding



of humpback whales and other whale species off the coast of Oman. The Renaissance Whale and Dolphin Project has resulted in the accumulation of photo ID, genetic, acoustic, behavioural, and satellite tracking data. The ESO believes that to further whale and dolphin conservation in Oman, it is time to use the knowledge that has been gained to focus on awareness raising and promotion of conservation measures at all levels. In 2016 the ESO produced an 8 minute long video focusing on the conservation status of humpback whales. In April 2018, the ESO launched one of its first outreach campaigns in the Musandam Peninsula, providing a series of over 15 presentations and community engagement session with schools, women's associations, fishing communities and marine tour operators. ESO distributed brochures and posters highlighting the conservation needs of whales and dolphins, and discussed the roles that fishermen and tour operators in particular can play in their protection. More of these activities are planned in the coming months.

Multi-Stakeholder Workshop to Promote Responsible Whale and Dolphin Watching in Oman

In August 2018, Oman's Ministry of Environment and Climate Affairs (MECA), the Environment Society of Oman (ESO), Five Oceans Environmental Services (5OES) and the Pacific Whale Foundation (PWF) collaborated to organise a two-day workshop on responsible whale and dolphin watching. The workshop was held in Muscat, Oman, and hosted by the MECA. The 26 invited participants included representatives of the ESO, 5OES, MECA, the Royal Oman Police Costal Guards, the Ministry of Agriculture and Fisheries Wealth, the Ministry of Tourism, the Ministry of Transport and Communication, the Port of Duqm, and Sultan Qaboos University, Marine Science and Fisheries Course. During the two-day workshop, participants were given an overview of how the Industry in Oman evolved from a single operator in 1998 to include multiple operators in several different locations in Oman. Discussions focused on the challenges of finding the balance between fostering a valuable industry that attracts international tourism to Oman and generates income for local communities with the need to protect the whales and dolphins from potentially negative impacts caused by vessels approaching too closely, too quickly, or too frequently. The final sessions of the workshop were dedicated to designing a road map toward more sustainable whale and dolphin watching in Oman. Participants agreed that the initial step for the development of responsible whale and dolphin watching guidelines is the formation of a national planning group/committee that includes multiple stakeholders involved in different aspects of the industry and its management.

Working in Partnership with Stakeholders to Study and Protect Whales in the Arabian Sea Text provided by Robert Baldwin and Andrew Willson of Five Oceans Environmental Services: robert.baldwin@50es.com, andy.willson@50es.com

Five Oceans Environmental Services (5OES) is continuing its work on whales in Oman, where the focus so far has been largely on Arabian Sea humpback whales. Recent surveys have also been conducted by the team along the Red Sea coasts of Saudi Arabia. Most of the work is scientific research which aims to contribute to the growing knowledge base on cetaceans of the region. The 5OES programme additionally includes working with major ports in the region to help better manage threats to whales from ship strikes, working with the oil and gas sector to reduce impacts from seismic surveys associated with hydrocarbon exploration, and working towards ways to enable sustainable whale and dolphin watching tourism, which can both act as a platform for research opportunities and an economic incentive for protection of target species. The 5OES team are always open to collaboration and run an internship programme for interested applicants.

The United Arab Emirates

Text and images provided by Robert Baldwin and Andrew Willson of Five Oceans Environmental Services: robert.baldwin@5oes.com, andy.willson@5oes.com and the Fujairah Whale Research Project

Launched in 2017, the Fujairah Whale Research Project is supported by the Office of His Highness the Crown Prince of the Emirate of Fujairah. The project is a partnership between Five Oceans Environmental Services and the Port of Fujairah, and conducts quarterly surveys from the Port of Fujairah anchorage to as far as 45nm offshore. Vessel surveys have resulted in discovery of three new records for the UAE; the striped dolphin (*Stenella coeruleoalba*), the pantropical spotted dolphin (*S. attenuata*) and the long-beaked common dolphin (*Delphinus delphis tropicalis*). The field team has recently added genetic sampling to its study scope, and has also introduced the use of smart phone apps to simplify data collection. An aerial survey was conducted for the first time in March 2018, allowing greater survey coverage and revealing a fourth new record for the UAE - the rough-toothed dolphin (*Steno bredanensis*). Two sperm whales, a bryde's whale and a blue whale have stranded off the UAE's east coast in the last 5 years with additional reports of the former two species received from members of the local diving and fishing community via the project's social media outreach programme. The next survey, scheduled for November 2018, hopes to make use of a towed hydrophone array system to extend search capabilities for deep diving species such as sperm whales and beaked whales. Photos and videos are available on the project's Facebook page.



During aerial and boat-based surveys, the Fujairah whale project has documented the UAE's first confirmed sightings of spotted dolphins, rough-toothed dolphins (left) and striped dolphins (right). The project has included the collection of acoustic data (centre) as well as distributional and behavioural data. Photos courtesy of the Fujairah whale project.

Iran Text and images contributed by Hamed Moshri moshiri@plan4land.org and Nazanin Mohsenian mohsenian@plan4land.org



Plan for the Land Society in Iran has been conducting monthly boat surveys as part of their humpback dolphin project in the Bushehr province since 2014. From May 2018, they have expanded these surveys to study a newly discovered humpback dolphin population in the Minab wetland and mangrove forests of the Hormozgan province (near the strait of Hormuz).

The team has also been holding participatory workshops on Kish Island to identify threats and weaknesses in conservation marine environments. These workshops have involved different target groups such as marine guards, fishermen, diving clubs and tour operators, boatmen and other marine users. Through these workshops, the team is building up a wide network of individuals who are on the lookout for whales as well as dolphins, and this has yielded some important documented reports of baleen whale sightings and strandings, although no recent confirmed sightings of humpback whales.

Humpback dolphins off the coast of Iran (top) and participatory workshop with marine stakeholders on the Island of Kish (bottom).

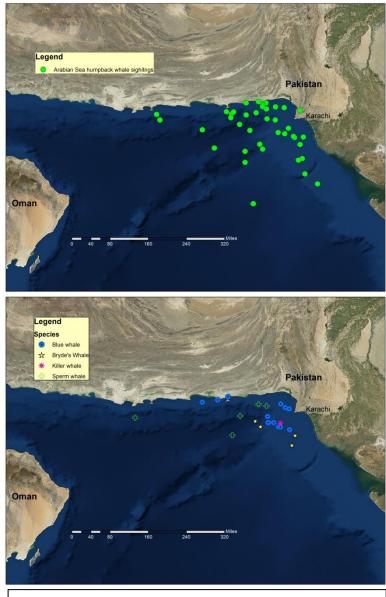
Pakistan Text and images contributed by Moazzam Khan, Rab Nawaz and Umair Shahid – WWF Pakistan ammoazzamkhan@gmail.com; and Muhammad Shoaib Kiani, University of Karachi shoaib.cemb@gmail.com

WWF Pakistan's crew-based observer programme has continued over the past year during which a total of 95 whale sightings were reported, including 42 sightings of Arabian Sea humpback whales, 13 sightings of blue whales, 5 sightings of Bryde's whales, 4 sightings of sperm whales, 1 sighting of killer whales and 30 sightings of baleen whales that could not be identified to species level due to lack of adequate photographic or video evidence.

The data revealed three areas of main concentration: between Ormara and Phor; southwest of Karachi, and the Indus Canyon area. These sightings are extremely valuable and will be used to inform further studies including dedicated acoustic or boat-based cetacean surveys that have been recommended for the area. The observer programme was initiated in 2012 to collect information about catches of tuna and tuna-like species as well as of the bycatch non-target species (including cetaceans) in the tuna gillnet fisheries of Pakistan. Since 2012 the programme has grown to include 85 crews who collect information using a standardized data sheet to record the quantity and species of fish that are caught. The trained crews also record incidents of bycatch of cetaceans and other non-target species, release bycaught animals that are still living, and record whale sightings using cameras or video on their mobile phones. More details on the history and background of the project can be found here.

The data from this programme, together with other environmental data collected by WWF and other conservation bodies has been used to promote the declaration of two marine protected areas: the Astola Island MPA and the Indus Canyon MPA.

The data are also being used to learn more about potential methods to mitigate the bycatch of cetaceans in offshore gillnet fisheries. Dr. Jeremy Kiszka from Florida International University has been working with WWF Pakistan to analyse data from the observed fisheries operations to determine whether setting gillnets deeper below the water surface significantly decreases the incidence of dolphin bycatch in the fisheries. Initial results of the study were presented at the recent meeting of the Indian Ocean Tuna Commission's Working Party on Ecosystems and Bycatch, where the study was well



2017 sighting locations of Arabian humpback whales recorded by fishing crew members trained by WWF Pakistan (top), and of sperm, Bryde's, blue and killer whales(bottom).

received. WWF Pakistan was encouraged to continue this valuable study and the report to the IOTC can be downloaded here.

Maldives Text and images contributed by Charles Anderson_charles.anderson11@btinternet.com



Humpback whale sighted by a dive operator in the Maldives. Photo courtesy of Phoebe Smith.

Humpback Whales are rare in the Maldives, but 2018 is proving to be an exceptional year, with more sightings recorded than ever before reported by a network of dive and tour operators. The combined dataset also shows an increase in the frequency of mother-calf pairs as the season progresses. This, and the timing of these records (all during June to October), strongly suggests that these are Southern Ocean animals. A likely explanation is that as the southwest Indian Ocean population increases in size, its range is also increasing (as already witnessed for example by their relatively recent spread to Reunion). The arrival of animals in the Maldives is therefore not unexpected (even though most sightings are from north of the Equator). If the occurrence of Southern Hemisphere Humpback Whales continues to increase, then Humpback Whale watching may become a reliable and regular activity in the Maldives.

While in past years a few sightings humpback whales were reported from the Maldives during December-January, leading to the suspicion that they belonged to the Arabian Sea population, there have been no recorded sightings in these months in recent years.

News from the neighbours

Although sightings of humpback whales along the coasts of Kenya and Tanzania to date have been consistent with the timing and behaviour expected of Southern Hemisphere populations on breeding grounds rather than a resident Arabian Sea population, as the nearest neighbouring Indian Ocean population to the Arabian Sea, it is important for the ASWN to keep abreast of research and developments in these countries, and to collaborate with research teams there. The recent documentation or whales singing Southern Hemisphere song off the coast of Oman provides evidence that there may be opportunities for exchange between these neighbouring populations.

Tanzania Text provided by Gill Braulik (gillbraulik@downstream.vg)

In June 2018, the beginning of the whale migration in Tanzania, the Tanzania Whale Network was formed. The objective of the group is to coordinate via WhatsApp the sightings of humpback whales across the country. Group membership quickly reached 90 people from all coastal provinces and all islands in the country, and membership includes major dive operators, sport fishers, yacht captains and charter companies, marine ecologists and some government fisheries and marine parks staff. An online Google Form is available for entering sightings, and the WhatsApp records that are being entered into a central database already tally well over 100 animals. Two humpback whale tail fluke photos collected by the group have been entered into Happy Whale. At the end of the whale migration season a short newsletter will be produced summarising the number of reports, the total number of whales reported, monthly sighting rates and the regional distribution of sightings. Watch this space!

> The KMMN reported the first ever footage of competitive male humpback whale behaviour in Watamu, while WMA members recorded the first humpback whale song in Kenya (with a hydrophone provided by the Pierre and Marie Curie University), and contributed video of a pod of killer whales travelling through Watamu Marine Reserve to the records collated by the Northern Indian Ocean Killer Whale Alliance .

> The stranding of a pygmy sperm whale in Watamu Marine

Park and a sperm whale on the south coast of Kenya,

provided an opportunity for team members from the WMA

and the Kenya Wildlife Service to perform necropsies with

online support from an international stranding support team

coordinated by the International Whaling Commission.

Kenya Text by Jane Spilsbury (janespilsbury@watamu.biz) and Mike Mwango'mbe (michael.mwangombe@watamumarine.co.ke)

In Kenya too, a wide network of marine users have been using a WhatsApp group to report and share reports of cetacean sightings during the 2018 humpback whale migration. Divers, guests, students, and fishermen are reporting from new sighting areas from along the Kenyan coast, including Vipingo, Lamu, and Diani, in addition to Watamu and Shimoni where the whales are are usually reported. The group has over 100 members, and is coordinated by the Watamu Marine Association (WMA) working with the national Kenya Marine Mammal Network (KMMN). Humpback whale sighting records have quadrupled in 2018 with reports expecting to exceed 200. A publicity campaign promoting #TwinMigration2018KE connects the simultaneous wildebeest and whale migrations. This has fuelled a growing 'whale fever' in a country where most people are unaware of the existence of whales in its

waters.



Michael Mwango'mbe with a hydrophone, recording humpback whale song from the coast of Kenya that can hopefully be compared with song from the same time period recorded in Oman and India.

What's next?

We are hoping to keep up the momentum with more frequent newsletters in the coming year to highlight members' achievements and new developments in the region. What would YOU like to see in the next issue? Ideas include a section on 'featured members' - with interviews or summaries of projects or achievements by particular members of the network, discussions on particular conservation challenges (e.g. underwater noise, debris, fisheries bycatch), or even quizzes or challenges. Let us know what you would like to see in future issues by writing to ASWN co-coordinator, Gianna Minton: gianna.minton@gmail.com.

The Arabian Sea Whale Network has been formed with support from WWF International, WWF Pakistan, Emirates Nature-WWF, the Marine Mammal Commission, the International Whaling Commission and the Wildlife Conservation Society.

For more information our website:

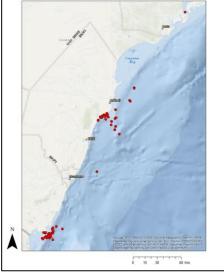
www.arabianseawhalenetwork.org or contact gianna.minton@gmail.com.



0 15 30 50 Km Humpback whale sightings in Kenya from 2012-2017 were limited and focused on

two main study areas, but a new WhatsApp group is facilitating sightings reports from the entire Kenya coastline





Humpback Whale Sightings along Kenva coast 2012-2017







