

Kenya Marine Mammal Network

NEWSLETTER ISSUE 4

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IN THIS ISSUE:

Sightings 2011- 2013

At least 100
resident Bottlenose Dolphins in the
Watamu MPA

Amazing Humpback Whale season 2013

New discoveries on Hump-back Dolphins in the Western Indian Ocean

KMMN photos

Land Based
Studies in Watamu

East Africa
Synchronized
Whale Watching Day

Interview with 10
Dr. Bernard
Fulanda and
Dr. Nina
Wambiji

KMMN Col- 12 laborators

The Kenya Marine Mammal Network

Welcome to the **fourth issue** of the KMMN newsletter!

A great step in the Future of Dolphin and Whale

Conservation in Kenya - the Kenya Marine Mammal Network held the very first conference in Mombasa. An energising positive event with contributions from Kenya Wildlife Service, Kenya Marine & Fisheries Research Institute, National Environment Management Authority, GVI Kenya Shimoni, Watamu and Kisite Operators, Watamu Marine Association, WWF Kenya Country Office, and Kenyatta University.



The group discussed conservation matters, capacity building and extending the network to involve more people and include other migratory species. Special threats were also highlighted for endangered species like the dugong, sperm whale and vunerable species like humpback dolphins. Thank you for your help in improving and expanding the Network: KWS-Coast Assistant Director Arthur Tuda, Warden Korir, Lynn Njeri Njuguna, Warden Gamoe, Warden Wambua, Jillo Katello, KMFRI - Dr Nina Wambiji, Gladys Okemwa, NEMA - James Kamula, Watamu Operators - Justin Kitsao and Fazal Omar, KIBOA - Omar Mshamanga, GVI - Zeno Wijtten, Thalia Pereira, Hannah Bailey, Sergi Pérez, WMA - Steve Trott, Jane Spilsbury, WWF - Mike Olendo, Lillian Mulupi, Hassan and Hadija and Kenyatta University students Cheruiyot Mutai and Japheth Mussila.













Sightings 2011 - 2013

Sightings reported 2011-2013

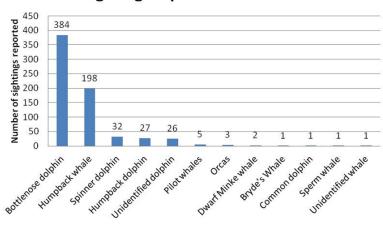


Figure 1 and 2 — A total of 681 sightings reported from May 2011 to September 2013. Below, the endangered IP humpback dolphin, a mother and calf.



Since the Kenya Marine Mammal Network was established in May 2011 until September 2013 a total of 681 sightings were reported from 45 collaborators.

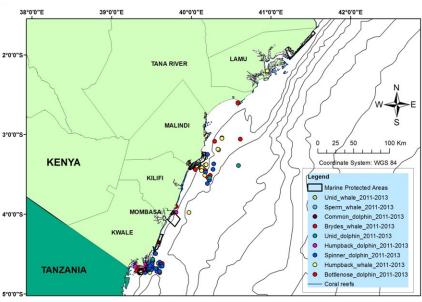
The reports came from Shimoni (South coast) to Watamu (North coast) and the most sighted locations were: Watamu-Malindi (364 sightings) and Kwale (305). A total of 12 cetacean species were spotted, being the Indo-Pacific Bottlenose Dolphin and Humpback Whale the most sighted species (Fig. 1). Based on the IUCN Red List of Threatened Species, six of these species are classified as "Data deficient", three as "Least concern", one as "Near Threatened" and two as "Vulnerable" (http://www.iucnredlist.org/).

It is important to notice that although high diversity of marine mammal species were seen along the coast, very few sightings were reported for the endangered IP humpback dolphin. Only 27 sighting in three years. And most of them on the south coast.

Common name	Scientific name	2011	2012	2013	TOTAL	IUCN Status
IP bottlenose dolphin	Tursiops aduncus	71	191	122	384	Data deficient
Humpback whale	Megaptera novaeangliae	5	77	116	198	Least concern
Spinner dolphin	Stenella longirostris	1	23	8	32	Data deficient
IP humbpack dolphin	Sousa plumbea	4	11	12	27	Near Threatened
Unidentified dolphin		0	26	0	26	
Short-finned pilot whale	Globicephala macrorhynchus	0	4	1	5	Data deficient
Orcas - Killer whale	Orcinus orca	2	1	0	3	Data deficient
Dwarf minke whale	Balaenoptera acutorostrata	0	0	2	2	Least concern
Bryde's whale	Balaenoptera edeni	0	0	1	1	Data deficient
Common dolphin	Delphinus capensis	1	0	0	1	Data deficient
Sperm whale	Physeter macrocephalus	0	1	0	1	Vulnerable
Unidentified whale		0	1	0	1	
Dugong	Dugong dugon	0	0	0	0	Vulnerable
		84	335	262	681	



Sightings 2011 - 2013



As the network expands, it will help to monitor marine mammal populations and create an opportunity for anyone to contribute directly to cetacean research, appreciate and learn about marine mammals and their environment.

Figure 1 - Marine Mammal distribution along the Kenya coast (2011-2013)

Figure 2 - IP bottlenose dolphin distribution.

The IP bottlenose dolphin was mainly reported around the Marine Protected Areas (Kisite-Mpunguti and Watamu-Malindi MPA), which these animals use for socializing, feeding and resting. It is probable that the offshore sightings belong to the common bottlenose dolphin species, which has a preference for deeper 4000-5-5 waters.

KENYA

TANA RIVER

LAMU

W

E

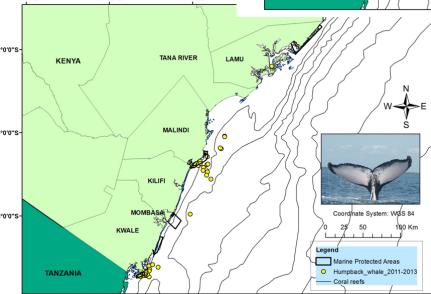
Coordinate System: WGS 84
0 25 50 100 Km

Legend

Marine Protected Areas

Bottlenose_dolphin_2011-2013

Coral reefs



Humpback whales were seen on their migration through Kisite and Watamu. High numbers of animals were reported by deep sea fishermen on the Watamu Banks (71 sightings) and around "The Rips" (14 sightings).

Figure 3 - Humpback Whale distribution

At least 100 resident Bottlenose Dolphins

in the Watamu Marine Protected Area



The development of **Watamu Marine Association's Indo-Pacific Bottlenose Dolphin photo-identification catalogue** is nearing its final stages of completion after more than 7 months, during which time more than 4000 photographs of dorsal fins were analysed. These photographs comprised several research seasons from 2010 to 2012.

Jane Spilsbury and Emmanuelle Leveque take photograhs of the dolphin's dorsal fins for identification of individuals.

Photo-identification remains the primary tool in mark-recapture analysis and the basis upon which all further research is conducted when studying cetacean populations. Each dorsal fin on a bottlenose dolphin is as unique as a human's fingerprint. Identifying individuals means that an individual's sex, health status, habitat usage and social interactions can be tracked over long periods of time.

The catalogue was developed as part of a continued expertise exchange and collaborative exercise between Kenya Marine Mammal Network (KMMN) partners GVI and WMA.



originally thought to have around 80 resident bottlenose dolphins, the development of a new improved catalogue has revealed that there are more residents than previously thought. With 100 dolphins identified, and more yet to be added, this catalogue is an exciting new addition of resources to the WMA dolphin research team.



Amazing Humpback whale Season 2013!

As the Humpback Whale migration season started this year, reports from fishermen came flooding in from July through to October in the Watamu National Marine Protected Re-

serve.



The local dingy fishermen who brave the ocean in the Kusi monsoon season kept a careful eye out for the whales which travel north from the Antarctic to breed and give birth and were rewarded by sightings of 1 to 25 humpback whales per day. With almost 80 reports from the local fishermen alone (not counting the sports fishermen reports) this was an exceptional year, with everyone declaring that they had never seen so many whales in Watamu, since they were first noticed 16 years ago.

The Watamu Marine Association whale hotline was almost off the hook, especially during July and August, and on East Africa's Synchronized Whale Watching Day when WMA had reports of 38 animals. With reports of very young calves and mothers, also it seems that Watamu is a safe haven for humpback whales.

To thank and celebrate the faces behind the whale reports -Watamu Marine Association presented certificates and t shirts to the reporting crews. We give thanks to these fishermen who are contributing to the national KMMN database and helping with marine mammal conservation. Including Mohamed Athman, Hassan Makame, Mohamed Omar, Ishmail Athman, and Feiswal Lali plus coordinators Athman Abdalah and Michael Gilbert Mwang'mbe.



"With almost 80 reports from the local fishermen alone (not counting the sports fishermen reports) this was an exceptional year, with everyone declaring that they had never seen so many whales in Watamu. since they were first noticed 16

New discoveries on the humpback dolphin populations along the Western Indian Ocean



According to the study published by Dr. Martín Mendez (Wildlife Conservation Society/American Museum of Natural History) in *Molecular Ecology* — which looked at the dolphins' physical features (including over 180 skulls) as well as their mitochondrial and nuclear DNA (235 samples) — the world's humpback dolphins should be split into four distinct species: the Atlantic humpback dolphins (*Sousa teuszii*) found off the coast of West Africa; *Sousa plumbea* found in the western and central Indian Ocean; *Sousa chinesis* found in the eastern Indian and western Pacific Oceans; and the new species off the coast of Australia (Fig. 1)

Humpback dolphins

– named for a peculiar
hump just below the
dorsal fin – belong to the
dolphin genus Sousa.

These animals measure from 1.8 to 2.6 meters in length and range from dark gray to pink or white in color. They are found along the west coast of Africa throughout the Indian and Pacific oceans to the coasts of Australia.

Humpback dolphins are considered 'vulnerable' (*S. teuszii*) and 'near threatened' (*S. chinensis*), both with decreasing population trends in the IUCN Red List . However, *S. chinesis* comes close to qualifying for vulnerable and should be reassessed following a taxonomic assessment of the genus, especially considering the implications of *S. chinensis* potentially being subdivided into multiple species. Moreover, recent population-level analyses of mtDNA control region data uncovered further variation within *S. plumbea* in the form of significant genetic structure between the populations in Oman - Tanzania and an assemblage formed by South Africa and Mozambique due to environmental boundaries (Mendez et al. 2011)

Based on this information, it is important to study the number of humpback dolphins remaining in Kenya. So far, GVI has a photo-id catalogue for humpback dolphins with only 30 individuals. And over the 8 years that GVI has been studying marine mammals in Kisite-Mpunguti Marine Protected Area, the number of humpback dolphin sightings has decreased over the years. Dr. Martín Mendez also highlights the importance of studying this population on his article, "we suggest that attention also be paid to the evolutionary and ecological uniqueness of populations that are clearly divergent, such as those in the central and western Indian Ocean. To continue filling taxonomic gaps of Sousa in this geographical region, we recommend increased and targeted sampling efforts and additional analy-

ses of multiple lines of evidence of their evolutionary uniqueness"

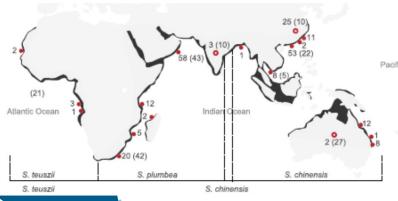


Fig 1, from Mendez, Martin, et al. "Integrating multiple lines of evidence to better understand the evolutionary divergence of humpback dolphins along their entire distribution range: a new dolphin species in Australian waters?." *Molecular ecology* (2013). http://onlinelibrary.wiley.com/doi/10.1111/mec.12535/abstract









KMMN photos

Humpback whales were the stars this season! The first sightings arrived in July and until November we had regular reports from these amazing animals all along the Kenya coast. They featured in an article from the latest SWARA - East African Wild Life Society quarterly magazine on the recent humpback whale migration and sightings along the East Africa coastline. These spectacular photos show how they breached spectacularly out of the water. On the bottom (left) a bottlenose dolphin feeds on a scrawled file fish (Aluterus scriptus) in Kisiti Mpunguti MPA and we had our very first report of a Dwarf Minke Whale (Balaenoptera acutorostrata subsp.)





A volunteer participates in the new
Watamu Land Based
Survey Program.

If anyone is interested in whale watching tours on the ocean in 2014 — please contact Hemingways Watamu, or Watamu Marine Association for more information.

Contact:
Hemingways Watamu
0722205917
and WMA 0720781782

Land-based studies in Watamu

Do you want to join us in Whale Research? Spot Humpback Whales from the Shore in Watamu was the call from The Watamu Marine Association this July. Watamu piloted the first ever land based surveys with volunteers from a number of conservation organisations including Local Ocean Trust and A Rocha Kenya in Watamu.

Using methods adapted from the East African Team led by Dr Matt Richmond the surveys were a great success. Situated on Kiluli Island in the Marine Park this 20 metre high vantage point offers 180 degrees vision south and north of the Park. During twice weekly surveys the whale research teams spotted up to 7 whales per survey breaching and performing tail up dives. Whales are frequently sighted off Watamu's shores by visitors and residents. It is thought that the whales travel close to shore as the inland tropical reefs protect young whales and mothers vulnerable to predators in the open ocean which is ideal for scientific surveys. Following the success of the WMA pilot study, **African Fund for Endangered Wildlife** are supporting Kenyan students who will collect data in a new Watamu Land Based Survey Program in 2014 during next years migration.

Watamu Marine Association wishes to thank all the participants in the WMA Whale Research Project including Richard Bennett, resident marine biologist, for his regular land reports from the Blue Lagoon Headland, plus recruiting the local children. Also special thanks to Thomas Achira of Kwanza Estates who provided the perfect land based viewing site on Kilulu island. Also worthy of note is that Hassan Makame and star reporter, reported 3 whale sharks (the largest fish) out of season and predicts an increase in numbers of these animals which have reduced in recent years.





GVI Participates in the East Africa Synchronised Whale Watching Day 2013

As part of GVI's continuing commitment towards collaborative efforts and support of other cetacean research initiatives, the marine team once again this year took part in the Synchronised Whale Watching Day (SWWD) on the 10th August, organised by the East Africa Humpback Whale Network. The collaborative effort aims to gain an accurate count and idea of distribution of humpback whales along the entire eastern edge of the African continent in order to identify population abundance and migration routes.

The weather was on the whale spotters side. The day dawned clear with a light breeze and almost dead calm sea conditions. Participants everywhere turned their eyes to the ocean to attempt to sight the humpback



whale, a seasonal visitor to Kenya's coastline. The GVI team took advantage of such favourable conditions and extended the survey day in order to get the best count of humpback whales possible. The 7.5 hour boat survey covered a huge amount of water off the edge of the continental slope, from Funzi Bay, past Nyuli Reef and Upper Mpunguti towards the Mako Kokwe reef at the very edge of the Kisite-Mpunguti Marine Protected Area.

Over the course of the day, the team sighted several splashes on the horizon, potentially indicating at least three whales about 15km offshore. Late in the morning two adult whales, were sighted off Upper Mpunguti, heading into deeper waters. Most of the survey area remained clear of whales until the very end of the day, when two whales were sighted by their blows off Nyuli Reef. Overall, it was a successful day, with a maximum count of 7 whales on Kenya's south coast, and a conservative count of 4.

Location	Country	Numbers on 10 th August	Comments
Watamu area	N Kenya	35	All day.
Vipingo	Kenya	?	
Kisite-Mpunguti	S Kenya	4	7:30 – 15:30. A quieter day than usual
Sea Eagle Point, Tanga	N Tanzania	12	Six pods numbers in each uncertain
Tanga-Pangani	N Tanzania	?	
Maziwe Island	N Tanzania	?	
Mnemba Island	ZNZ Tanzania	1	
Chumbe Island	ZNZ Tanzania	0	
Off Bongoyo Island	Tanzania	1	Morning only.
Ras Dege, Dar es Salaam	Tanzania	303	Endless whales! All day.
Mafia Island	Tanzania	?	
Fanjove Island	Tanzania	7	
Mikindani Bay	S Tanzania	?	
Mnazi Bay	S Tanzania	?	
Vamizi Island	N Mozambique	?	
Zavora	S Mozambique	?	
Tofo	S Mozambique	211	All day.
Ponta do Ouro	S Mozambique	0	Rained out. Very few the next day
	TOTAL	574	

Above, Chloe Corne and Thalia Pereira during a whale sighting.

SWWD 2013 — Saturday 10th August. Sightings reported from the West Indian Ocean. A total of 574 whales were spotted that day, and 303 reports came from Dar es

Interview with Dr. Bernerd Fulanda



Dr. Fulanda is a Kenyan Fisheries Scientist & Marine Ecologist by training. Holds a B.Sc. (Fisheries) -MOI University, Kenya; M.Sc. (Environmental Sciences) from the UNESCO-IHE, Delft-The Netherlands; M.Sc. (Fisheries & Oceanography), Kagoshima University and a Ph.D (Marine Resource Science - fisheries). He has worked in the State Department of Fisheries as Fisheries Officer (Research & Development) (1997-2000); and then at the National Aquaculture Development and Training Centre (2000-2004) before joining the Kenya Marine & Fisheries Research Institute as a Research Scientist under the fisheries program (2005-2013). In October 2013 he

joined Pwani University as a lecturer in the Department of Biological Sciences, School of Pure and Applied Sciences. His association with the KMFRI still remains strong with collaborations in marine and fisheries research, student internships, workshops and training in coastal and marine resource management and aquatic sciences.

1 - What do you think about the Kenya Marine Mammal Network?

First and foremost, the KMMN presents an important forum for collection and sharing of data on the marine mammal species within Kenya and Indian Ocean waters of the Eastern coast of Africa whose populations have greatly fluctuated with some species under serious threat of fishery by-catch, marine pollution and habitat degradation and other activities including tourism associated damage.

Secondly, the network depends on indirect research approaches to collect data including opportunistic species data collection from non-scientific vessels and individuals who regularly frequent the waters where the marine mammals occur, presenting a great opportunity for data collection especially in resource-poor nations such as Kenya where financing of research remains low. Such an approach can therefore avail data over several decades, sustainably, with minimal costs. The KMMN therefore remains a very crucial partner in the effort to conserve and manage our marine and coastal resources especially in the recreational sector including tourism.

2- How were the KMFRI surveys around Ungwana Bay where marine mammal data was collected?

The Kenya Marine and Fisheries Research Institute conducts various studies within the Malindi-Ungwana Bay using leased vessels or by deployment of observers onboard the commercial fishing vessels operating within the bay, notably the bottom prawn trawlers and the small and medium pelagic fishery fishing vessels including purse seiners. Over the last decade, KMFRI has been lucky to have two fisheries research projects within the coastal and marine waters of Kenya: the just concluded SWIOPF and the currently running KCDP project. In these surveys, the focus has been on assessment of the levels of target catch, by-catch as well as the occurrence of marine turtles and cetaceans including dolphins in bycatch from the Malindi-Ungwana Bay fishing grounds. Additionally, data on sighting of marine cetaceans, referencing of the sighting location etc. is continuously recorded during the surveys, although specific data on e.g. cetacean behaviour, characteristics etc. may be lacking due to shortage of trained scientists on cetacean behaviour and habits within the feeding grounds.

"Such an approach (KMMN) can therefore avail data over several decades. sustainably, with minimal costs. The KMMN therefore remains a very crucial partner in the effort to conserve and manage our marine and coastal resources especially in the recreational sector including tourism. "



3- What is KMFRI doing towards marine mammal conservation?

KMFRI is a state corporation whose mission is to contribute to the management and sustainable exploitation of aquatic resources through multidisciplinary and collaborative research in both marine and fresh-water aquatic systems. In its effort to contribute to the conservation of marine mammals as well as enhance sustainable exploitation of the coastal and marine resources, KMFRI conducts extensive studies on ecology and conservation of endangered marine species (turtles, mammals, sharks, seabirds) through the KMFRI Fisheries, and the Marine Environment and Ecology Programs and, together with the State Department of Fisheries.

4-Are you involved on any other marine mammal project?

Although not actively involved on a daily engagement, I work closely with the other organization which providing research space for our undergraduate and graduate students in the Coastal & Marine Resource Management (CMRM) Course)- KU Mombasa Campus, and the Pwani University Marine Biology & Fisheries programs. Our collaborating organizations include the Watamu Marine Association (WMA), the Watamu Turtle Watch (WTW) and various private ventures including the Sport fishing companies and Community Marine Conservation initiatives and CBOs.

Interview with Dr. Nina Wambiji



Dr. Nina Wambiji is a Research Officer at Kenya Marine and Fisheries Research Institute (KMFRI), Mombasa, Kenya. She holds a Ph.D in Marine Environmental Sciences (Fish Physiology) from the University of the Ryukyus-Okinawa-Japan. She is interested in fish ecology and physiology, marine invertebrates and developed a passion for dolphins when she was a research Assistant in the MASMA Sustainable Dolphin Tourism in East Africa project, conducting boat based surveys on distribution, behaviour and abundance of dolphins in Kizimkazi area-Menai bay, Zanzibar in 2005. Currently she is the Marine mammal contact person for KMFRI. This involves receiving stranding and bycatch reports, and participating in awareness and education.

1- Why is it important to protect marine mammals?

They are beautiful creatures that take long to develop or reproduce. They do not occur everywhere thus wherever they are sighted and noted to be resistant, sanctuaries or total protection of that area should be ensured. The survival rates can be hampered if humans do not check their impacts through anthropogenic activities. I think KMMN is a good initiative that when owned by all stakeholders will lead to the conservation of our marine mammals. It creates awareness to the Kenyan masses on the beautiful marine resources that we have and also to the outside world on what Kenya has to offer for interested marine researchers, tourists and conservationists.

2. How is the fisheries-marine mammal interaction along the Kenyan coast?

I think it occurs in some areas and we may not have the data to confirm this. I also think for the migratory species this is possible.

3. What is the involvement of KMFRI with the Kenya Marine Mammal Network?

KMFRI and I specifically, is interested in creation of awareness of our magnificent marine mammals to the Kenyan people. KMFRI as an institution can partner with KMMN to do some research, analyze available data, publish and create awareness to a wider audience.

4. Have you ever participated in other marine mammal projects?

Yes, I have participated in the Menai Bay dolphin project in Zanzibar and I created links with GVI when they first came to Kenya.

Thank you both for your collaboration!

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KMMN Collaborators

The following people provided valuable contribution to the Kenya Marine Mammal Network:

Shikami Kennedy (Fisheries officer), John Karungo (Fisheries Observer), Kathryn Wheatley (Marine Mammal Observer - FAR Limited), Hassan Makame, Ishmail Athman, Fazwal Lali and Althman Lali (Watamu BMU), Callum Looman, Abraham, Billy Sadiki, Richard Bennett, Mohamed Fadhili, Pete Darnborough, Mohammed Athman, Phil Revett, Rob Hellier, Stuart Simpson, Sander Der Haring (Buccaneer Diving), Christian Koellnberger (Diving the Crab), Hemingways Fishing Centre, Steve Webb, Steve George, Rob Coverdale; Jane Spilsbury and Steve Trott (Watamu Marine Association) and the WMA Volunteer Research Team, all members of the Watamu Boat Operators, Simon Hemphill (Sea adventures Ltd. and Kenya Association of Sea Anglers KASA), Louis and John van Aardt (Kizingo), Sergi Perez, Chloe Corne, Thalia Pereira, Zeno Wijtten, Inês Gomes, Mohamed Ahmed and all the volunteers (GVI), Dr. Nina Wambiji (KMFRI), Dr. Bernerd Fulanda (KMFRI), Dr. Mohamed Omar Said (KWS), KWS Kisite park warden John Wambua and KWS Assistant Director Coast Arthur Tuda, Warden Richard Lemarkat (KWS), Warden Dickson Korir (KWS) Jilo Katello (KWS) and KWS researcher Lynn Njuguna . The WMA Research Program is supported by the African Fund for Endangered Wildlife (Kenya).

Thank you very much! Asanteni sana!



KENYA MARINE MAMMAL NETWORK

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