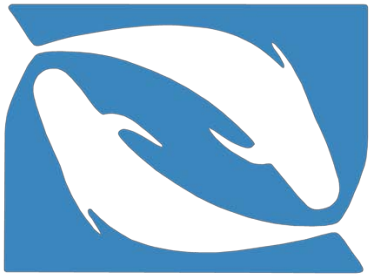

MARINE MAMMAL PROTECTED AREAS TASK FORCE

IUCN SSC Species Survival Commission WCPA World Commission on Protected Areas

GOBI TETHYS since 1986 WDC

Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety
INTERNATIONAL CLIMATE INITIATIVE (IKI)

eulabor institute

WATERREVOLUTION

Important Marine Mammal Area Regional Workshop for the North East Indian Ocean and South East Asian Seas

Kota Kinabalu, Sabah, Malaysia, 12-16 March 2018

FINAL REPORT of the THIRD IMMA WORKSHOP

Contents

This Final Report, along with maps and IMMA background data, is available for download on the IUCN Marine Mammal Task Force website: marinemammalhabitat.org.

Citation: IUCN Marine Mammal Protected Areas Task Force. 2019. Important Marine Mammal Area Regional Workshop for the North East Indian Ocean and South East Asian Seas: Final Report of the Third IMMA Workshop, Kota Kinabalu, Sabah, Malaysia, 12-16 March 2018.

Executive summary[1]

From 12 to 16 March 2018, the IMMA Regional Workshop for the North East Indian Ocean and South East Asian Seas was held in Kota Kinabalu, Sabah, Malaysia, on the island of Borneo, with the primary objective to identify and delineate Important Marine Mammal Areas — IMMAs. These discrete portions of habitat, important for marine mammal species, aim to have the potential to be delineated and managed for conservation. Starting with about 100 draft Areas of Interest (AoI) submitted before and during the meeting, some 44 candidate IMMAs (cIMMAs) were identified and proposed through an expert-based process, utilizing dedicated selection criteria. The criteria were devised by the IUCN Marine Mammal Protected Areas Task Force (the "Task Force") in consultation with the marine mammal science and conservation community. Following the review process, in November 2018, 30 IMMAs were approved with 7 retaining cIMMA status, while other cIMMAs were merged or returned to AoI status. In total, 32 areas will be recognized as AoI in the IMMA e-Atlas (https://www.marinemammalhabitat.org/imma-eatlas/).

This third IMMA Regional Workshop, following the IMMA regional workshops for the Mediterranean (Chania, Greece, 24-28 October 2016) and Pacific Islands (Apia, Samoa, 27-31 March 2017), intends to help provide strategic direction and conservation priorities to the development of area-based marine mammal conservation within the North East Indian Ocean and South East Asian Seas region.

The workshop was attended by 29 experts and observers (Annex I) from 17 countries including Australia, Bangladesh, Cambodia, Hong Kong, India, Indonesia, Malaysia, Myanmar, Netherlands, Philippines, Sri Lanka, Thailand, United States of America, Vietnam, as well as observers from Malaysia (Sabah Parks), Duke University in the USA, the Convention on Migratory Species (CMS Abu Dhabi, UAE office), the Global Ocean Biodiversity Initiative (GOBI) in the United Kingdom and the IMMA Review Panel. In a number of cases, the expert held a main residence in a country other than where the research was done, and a number of experts have worked in multiple countries in the region. Six members of the IMMA secretariat attended from Italy and the UK. The workshop was organised by the Task Force with support from a partner grant

[1] This summary covers the work of the IMMA Regional Workshop for the North East Indian Ocean and South East Asian Seas, held in Kota Kinabalu, Sabah, Malaysia, in March 2018, as well as subsequent review from the independent Review Panel with the tally of IMMAs, cIMMAs and AoI made public in January 2019 and reported in Annexes V and VI.

with GOBI funded by the German government's International Climate Initiative (IKI) and a contribution from Whale and Dolphin Conservation.

The North East Indian Ocean and South East Asian Seas Region, which includes the Coral Triangle, is one of the richest marine biodiversity areas in the world. For the first time, the experts identified cIMMAs for finless porpoises, Indo-Pacific humpback dolphins, Irrawaddy dolphins, Ganges River dolphins, Omura's whales as well as blue whales. The full list of marine mammal species included in the region's IMMAs can be found in the descriptions of each IMMA in the IMMA e-Atlas.

Still, it was recognized that there are substantial data gaps for marine mammals across the region — partly due to the challenges of logistics and funding spread across many species groups.

The five-day workshop was honoured in the opening sessions by the presence of the Permanent Secretary to the Ministry of Tourism, Culture and Environment of Sabah, Malaysia, Yang Berbahagia Datu Rosmadi Datu Sulai. The welcome address and introductory plenary presentations were given by Task Force co-chairs Erich Hoyt and Giuseppe Notarbartolo di Sciara and the IMMA co-ordinator Michael James Tetley. There were a number of plenary discussions throughout the workshop, but the focus was on the breakout groups that were divided on the basis of biogeographic regions called sub-regions (Annex IV), with the task of sorting through the AoI, merging those areas that might be better considered together and discarding a number of AoI for which the case for becoming a cIMMA was weak. In the days that followed, then, the task was to prepare a solid proposal for each cIMMA. As most participants had expertise in multiple sub-regions and had worked together before, many cIMMA submissions were jointly prepared. The cIMMAs were also presented in plenary and thus considered to be a joint result of the workshop.

A number of points emerged from the plenary discussions regarding the IMMA tool including the following:

- It is anticipated that this work can only be repeated in a given region every 8-10 years. However, it will be possible for Areas of Interest (AoI) to be submitted during this period. Anyone can propose an AoI by presenting evidence of marine mammals measured against the criteria and filling out the dedicated form.

- During discussion about the value of modelled habitat to supplement hard data for a cIMMA submission, it was suggested that modelled habitat could be used to help inform where to draw a boundary outside of survey areas in the absence of knowledge, but it could not be the sole basis for proposing an IMMA.

- It was noted that a missing component of the IMMA work to date concerns the highly mobile or migratory species that may use multiple IMMAs or move in and out of IMMAs. The sub-criterion that highlights migration is not sufficient and requires more discussion. The question is: how do we connect IMMAs? A next step may be a corridor designation. Indeed, the Duke Lab is working on addressing this issue and it will be a future topic for debate.

At the close of the workshop, the Task Force opened discussions with the group about knowledge gaps related to marine mammals in the region, followed by a discussion on conservation concerns and the main management issues which should be considered in the planning of the later implementation phase for the region. As part of that phase, one or more cIMMAs are selected and a unit of the Task Force is dispatched to assist with conservation planning on the ground. The Task Force co-chairs described the case study of Palau, based on their visit there in October-November 2017, to investigate and help implement zoning and other conservation recommendations in the nearshore waters of Palau, with the essential collaboration of appropriate government ministries, NGOs and local stakeholders.

Various issues related to implementation came up during the discussion:

- This is a diverse, complex region. In terms of implementation, there is a need to be trans-disciplinary, and to include community efforts. The Task Force's implementation work could show how implementing an IMMA, and meeting the goals of the Task Force, can be accomplished by a community group.

- Many managers are focused on land areas and with so much coastal development, the communities tend to regard MPAs with suspicion or outright dislike, so IMMAs might present a fresh alternative. If countries are adopting marine spatial planning (MSP), then getting the government or planning authority to recognize IMMAs will be crucial. But it's equally important to look beyond governments.

- A regional Task Force group and coordinating committee were set up to further the work of the North East Indian Ocean and South East Asian Seas IMMA workshop. The coordinators are Putu Liza Mustika (Cetasi, Indonesia), Jo Marie Acebes (BALYENA, Philippines), and Fairul Izmal Jamal Hisne (MareCet, Malaysia).

Following the workshop, the next step was to send the selected cIMMAs to the independent review panel to assess whether the criteria were applied correctly and to verify that the evidence provided was sufficient to support the case for each cIMMA. When a cIMMA is approved as an IMMA after peer review, the boundaries and a summary of the supporting evidence are made available on the Task Force website. The AoI identified are then used to assist in highlighting reference areas for further marine mammal research and monitoring to help build an evidence base on which future cIMMAs may be proposed.

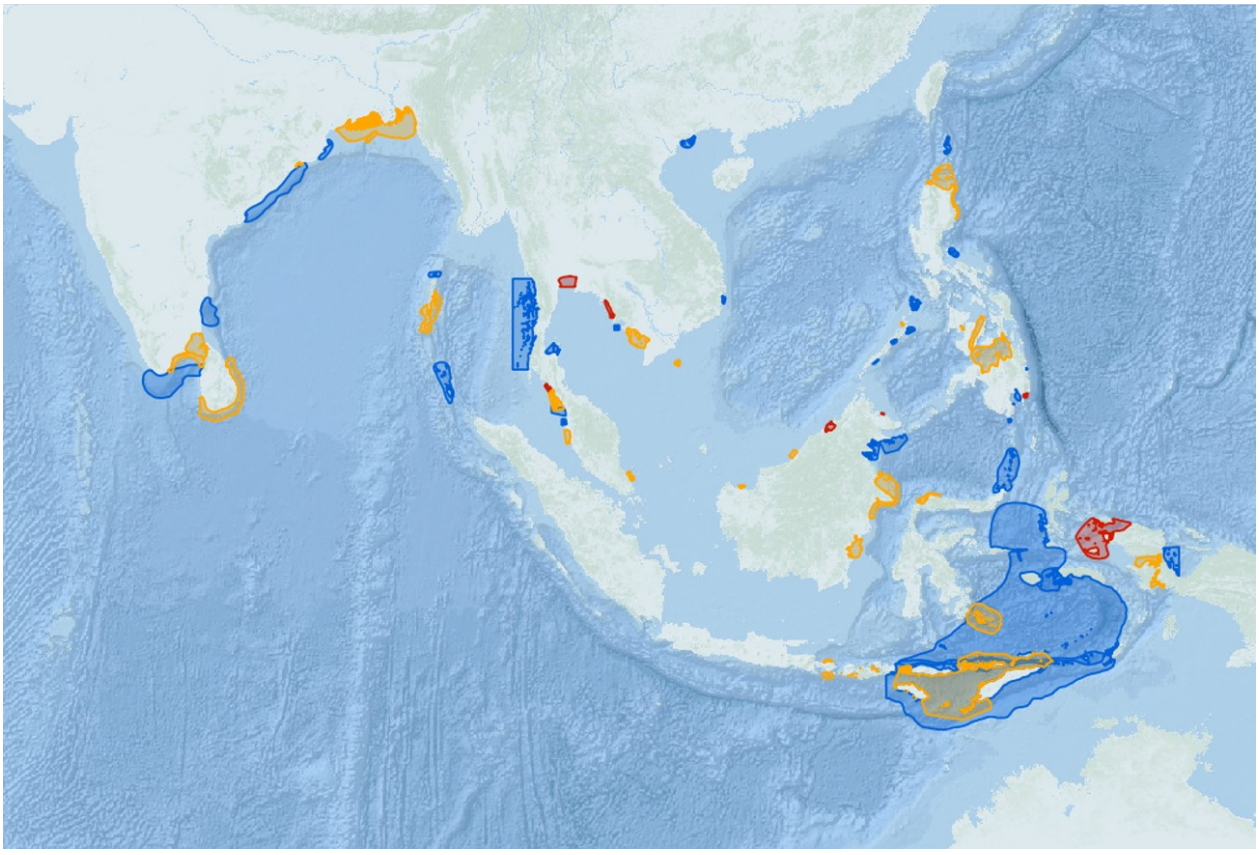

Fig. 1. *30 IMMAs (shown in yellow), 7 cIMMAs (red), and 32 AoI (blue) approved in the North East Indian Ocean and South East Asian Seas Region*

The 30 areas awarded IMMA status and seven areas cIMMA status are as follows[2]:

[2] See Annex V and VI for the complete list of IMMAs, cIMMAs and AoI in the North East Indian Ocean and South East Asian Seas. More information is available in the IMMA e-Atlas at http://www.marinemammalhabitat.org/imma-eatlas

30 IMMAs:

[I] North and West Bay of Bengal (NWBB)
- Chilika Lagoon IMMA
- Coastal Northern Bay of Bengal IMMA
- Sundarbans IMMA
- Swatch-of-No-Ground IMMA
- Gulf of Mannar and Palk Bay IMMA
- South West to Eastern Sri Lanka IMMA

[II] Bay of Bengal and Indian Ocean (BBIO)
Excluded from assessment.

[III] Coral Coast to West Sumatra (CCWS)
- Satun-Langkawi Archipelago IMMA
- Matang Mangroves and Coastal Waters IMMA
- Southern Andaman Islands IMMA

[IV] South China to Java and Gulfs (SCJG)
- Con Dao IMMA
- Kien Giang and Kep Archipelago IMMA
- Mersing Archipelago IMMA
- Kuching Bay IMMA
- Similajau-Kuala Nyalau Coastline IMMA

[V] Philippines and North Borneo (PHNB)
- Bohol Sea IMMA
- Babuyan Marine Corridor IMMA
- Iloilo and Guimaras Straits IMMA
- Malampaya Sound IMMA
- Tañon Strait IMMA

[VI] Sulawesi to Banda Sea (SUBS)
- Berau and East Kutai District, Kalimantan IMMA
- Wakatobi IMMA
- Balikpapan, Adang, Apar Bays IMMA
- Tolitoli IMMA

[VII] South Java and Lesser Sunda (SJLS)
- Buleleng IMMA
- Kaimana, West Papua IMMA
- Savu Sea and Surrounding Areas IMMA
- Eastern Lesser Sunda Islands and Timor Coastal Area IMMA
- Western Lesser Sunda Islands and Sumba Coastal Area IMMA
- Southern Bali Peninsula and Slope IMMA
- Bintuni Bay, West Papua IMMA

7 cIMMAs:

[III] Coral Coast to West Sumatra (CCWS)
- Trang cIMMA

[IV] South China to Java and Gulfs (SCJG)
- Trat Koh Kong cIMMA
- Upper Gulf of Thailand cIMMA

[V] Philippines and North Borneo (PHNB)
- Bay of Brunei cIMMA
- Mayo Bay to Pujada Bay cIMMA
- Lower Kinabatangan Estuarine and Coastal Area cIMMA

[VI] Sulawesi to Banda Sea (SUBS)
- Raja Ampat and Dampier Strait cIMMA

Fig. 2. *Participants of the Third IMMA Workshop in Kota Kinabalu*

Acknowledgments

A big thank you goes to Lindsay Porter for helping at every stage of the process. She took the lead in recommending participants, local arrangements and in helping with logistics, assisted by Ellen Hines. This greatly smoothed the way and allowed us to focus on the task at hand. Travel and other logistics were arranged by the IMMA Secretariat, namely Margherita Zanardelli and Simone Panigada. This report was prepared by Erich Hoyt with contributions from Giuseppe Notarbartolo di Sciara, Michael J. Tetley, Caterina Lanfredi, Simone Panigada and Margherita Zanardelli. The workshop documents, presented at the workshop as a support for IMMA delineation, were prepared by Michael J. Tetley and Caterina Lanfredi, who together also led the mapping efforts during the workshop. Lindsay Porter kindly acted as rapporteur during the meeting, supplemented by Ellen Hines, Margherita Zanardelli and Caterina Lanfredi. Nantarika Chansue had to leave one day early due to family emergency; we are grateful for her contribution. Phil Dearden was invited but was unable to attend at the last minute. We send our best wishes to both and look forward to future collaborations. Our observers contributed hugely to the success of our work: The day one attendance of the Permanent Secretary to the Ministry of Tourism, Culture and Environment in Sabah, Malaysia, Yang Berbahagia Datu Rosmadi Datu Sulai led to informal comments supporting our efforts. He also encouraged us to invite Adam Malik Masidi from Sabah Parks to give contribute to the local Sabah picture for marine mammals. Additional thanks are due to: David Johnson in terms of operational comments, and Bob Brownell for overall knowledge and expertise regarding the species and the region, as well as his

viewpoint through the lens of the IMMA review process. Ellie Heywood enlarged our thinking about how to consider migratory paths as an extension of our IMMA thinking, and also helped with mapping in the sub-regional groups. Donna Kwan contributed her background in dugongs and the CMS process. The SeaSketch platform, and IMMA facility for the collection of pre-workshop AoI proposals, was kindly provided by the McClintock Lab at the Marine Science Institute at the University of California Santa Barbara. Our deepest thanks go to the German International Climate Initiative (IKI) for funding the five southern hemisphere IMMA workshops and three IMMA implementation efforts, and to the Eulabor Institute and to Whale and Dolphin Conservation for timely and crucial supplementary funding, and to GOBI and Seascape Consultants, especially David Johnson and Vikki Gunn, for their superb administration of the overall GOBI-IKI programme.

Introduction and background

About Sabah, location of the third Important Marine Mammal Area (IMMA) Workshop

In the margins of the workshop, Lindsay Porter, who was instrumental in the selection of participants, several of whom are working in the Malaysian side of Borneo, remarked that Sabah has a good history of marine protected area (MPA) management. The recent designation of the Tun Mustapha Marine Protected Area means that Sabah state currently has 7% of its marine habitat protected; this will increase to 10% with the next MPA designation[3]. The longer-term goal is to have 25% of Sabah's marine area protected. Sabah recognises the importance of community engagement and awareness of the ongoing protection of habitats and has made this an integral part of the environmental work conducted in Sabah. During the opening presentations, the workshop was honoured by the presence of the Permanent Secretary to the Ministry of Tourism, Culture and Environment of Sabah, Malaysia, Yang Berbahagia Datu Rosmadi Datu Sulai.

The IUCN Marine Mammal Protected Areas Task Force[4] and the IMMA Initiative

The Important Marine Mammal Area (IMMA) initiative, developed by the IUCN Joint SSC[5]/WCPA[6] Marine Mammal Protected Areas Task Force (the "Task Force"), is modelled on the successful example of the BirdLife International process for determining Important Bird and Biodiversity Areas (IBAs). The intention is that the identification of IMMAs through a consistent expert process, independent of any political and socio-economic concerns, will provide valuable input about marine mammals and their habitat which will contribute to existing national and international conservation initiatives. Yet the application or implementation process is separate from and occurs later than the identification process.

IMMAs are an advisory, expert-based classification. It is important to realize that they have no legal standing as MPAs but are intended to be used in conservation planning by a variety of stakeholders, including *inter alia*, governments, intergovernmental organisations, conservation groups, and the general public. In application, IMMAs may merit specific place-based protection and/or monitoring and, in some cases, reveal

[3] http://www.sabahparks.org.my/index.php/the-parks/tun-mustapha-park-newly-gazetted
[4] IUCN SSC/WCPA Marine Mammal Protected Areas Task Force (https://www.marinemammalhabitat.org/)
[5] Species Survival Commission (www.iucn.org/theme/species/about/species-survival-commission)
[6] World Commission on Protected Areas (https://www.iucn.org/theme/protected-areas/wcpa)

additional zoning opportunities within existing MPAs. By pointing to the presence of marine areas of particular ecological value, IMMAs can serve the function of promoting the conservation of a much wider spectrum of species, biodiversity and ecosystems, well beyond the specific scope of conserving marine mammals.

The identification of IMMAs can also help to spotlight marine areas valuable in terms of biodiversity during the process of marine spatial planning (MSP). IMMAs may become an effective way of building institutional capacity at the international and national levels, to make substantial contributions to the global marine conservation agenda. Marine mammals are indicators of ocean ecosystem health and thus, the identification of IMMAs will support the Convention on Biological Diversity (CBD) marine portfolio of Ecologically or Biologically Significant Areas (EBSAs). EBSAs aim to provide a basis for promoting awareness of marine biodiversity, leading to conservation in specific areas of the world's oceans. IMMAs will also support the creation of Key Biodiversity Areas (KBAs) identified through the IUCN KBA Identification Standard. Finally, IMMAs can contribute to the designation of International Maritime Organisation (IMO) Particularly Sensitive Sea Areas (PSSAs) and other shipping directives related to the threat of ship-strikes of whales and increasing noise in the ocean.

For the period 2016-2021, the Task Force has launched a process to apply criteria to identify a worldwide network of IMMAs and to enhance the prospects for their protection. Regional expert workshops have been focusing on six large marine regions, beginning with the Mediterranean (October 2016), funded by the MAVA Foundation, followed by five workshops in the southern hemisphere funded by the German International Climate Initiative (IKI) through the Global Ocean Biodiversity Initiative (GOBI): Pacific Islands (March 2017), North East Indian Ocean and South East Asian Seas (March 2018), Western Indian Ocean and Arabian Seas (March 2019), Australia-New Zealand Waters and South East Indian Ocean (2020), and finally the South East Tropical and Temperate Pacific Ocean (2021).

Purpose of the IMMA Regional Workshop

The aim of the IMMA Regional Workshop for the North East Indian Ocean and South East Asian Seas was to identify and delineate discrete habitat areas — important for one or more marine mammal species — that have the potential to be managed for conservation. This was achieved through an expert-based process utilizing specially created selection criteria devised by the Task Force, in consultation with the marine mammal science and conservation community (see pp. 6-7). This IMMA Regional

Workshop also aimed to assist in providing strategic direction and conservation priorities to the further development of area-based marine mammal and biodiversity conservation. This included recommendations on how to address conservation concerns in the region through the implementation of IMMAs using appropriate conservation tools.

Process of the IMMA Regional Workshop and Follow-up

The general outline of the workshop programme consisted of:

- a reading session of the IMMA documents including an IMMA Guidance Document and a list of the Areas of Interest (AoI) submitted in advance of the meeting by experts;
- a plenary session to discuss the proposed cIMMAs; and
- multiple working group sessions to select and document the cIMMAs to go forward on a subregional basis that accounts also for species.

The Workshop stands as part of a three-stage process that works toward producing the final IMMAs:

STAGE 1 – Nomination of initial areas of interest (AoI): AoI proposed by experts via a dedicated online system (SeaSketch or other methods) are then summarized in the Areas of Interest (AoI) report. This document is provided to regional experts in order to evaluate the submitted AoI, along with existing marine mammal place-based conservation measures. Participants attending the workshop are also encouraged by the IMMA Coordinator to submit additional AoI by the end of the first day.

STAGE 2 – Development of cIMMAs: participants are invited to use their regional knowledge to develop cIMMAs, based upon their review of AoI submitted in advance or proposed during the workshop. Candidate areas must be AoI first, and only then can they have the chance to graduate to cIMMAs.

There are eight criteria or sub-criteria that are needed to be met in order to select a cIMMA:

Criterion A – Species or Population Vulnerability (based on the IUCN Red List Status)

Criterion B – Distribution and Abundance

Sub-criterion B(i) – Small and Resident Populations: Areas supporting at least one resident population, containing an important proportion of that species or population, that are occupied consistently.

Sub-criterion B(ii) – Aggregations: Areas with underlying qualities that support important concentrations of a species or population.

Criterion C – Key Life Cycle Activities: Areas containing habitat important for the survival and recovery of threatened and declining species.

Sub-criterion C(i) – Reproductive Areas: Areas that are important for a species or population to mate, give birth, and/or care for young until weaning.

Sub-criterion C(ii) – Feeding Areas: Areas and conditions that provide an important nutritional base on which a species or population depends.

Sub-criterion C(iii) – Migration Routes: Areas used for important migration or other movements, often connecting distinct life-cycle areas or the different parts of the year-round range of a non-migratory population.

Criterion D – Special Attributes

Sub-criterion D(i) – Distinctiveness: Areas which sustain populations with important genetic, behavioural or ecologically distinctive characteristics.

Sub-criterion D(ii) – Diversity: Areas containing habitat that supports an important diversity of marine mammal species.

For Sub-criterion Dii, the overall average species richness for the region and IMMA subregions (based on Aquamaps models presented in the Global Reference Points and Niche Model Baseline Indicators in the AoI report) was calculated and adopted as the threshold to define the sub-criterion Dii diversity.

STAGE 3 – Final review and IMMA status qualification: an independent panel chaired by Randall R. Reeves, IUCN Cetacean Specialist Group Chair, reviews the cIMMAs and decides whether they are accepted as IMMAs.

Report of the Workshop

IMMA Workshop Day 1, 12 March 2018

Welcoming Addresses

At the formal opening of the workshop, **Erich Hoyt**, co-chair of the IUCN Marine Mammal Protected Areas Task Force, welcomed the participants with a special thanks to the Permanent Secretary to the Ministry of Tourism, Culture and Environment in Sabah, Malaysia, Yang Berbahagia Datu Rosmadi Datu Sulai, for recognizing our efforts and honouring us with his presence and plans for future engagement[7].

Hoyt emphasized the contrast between this third IMMA regional workshop and the previous two. The Mediterranean is a relatively small area with intense ship traffic and other disturbance; the Pacific Islands region is vast and relatively data poor. The North East Indian Ocean and South East Asian Seas, by comparison, is species-rich in terms of marine mammals and all biodiversity.

The idea for the important marine mammal area, or IMMA, came due to the awareness that the existing MPAs for marine mammals were small and highly coastal and the processes to identify pelagic and high seas areas, for example with the CBD Ecologically or Biologically Significant Area (EBSA) process, were largely unable to incorporate marine mammal data. BirdLife International had a successful programme to identify Important Bird and Biodiversity Areas, IBAs, through a standardized process. It was clear that something similar needed to be done for marine mammals to plug the data gaps, make the data, or expert analysis of the data, accessible in a standardized way, and to ensure that marine mammals were being considered in these global processes.

Hoyt described how he had worked with Notarbartolo di Sciara on identifying “critical habitats” for proposed MPAs in the CMS ACCOBAMS region. In 2007, they joined with a larger group of marine mammal researchers and MPA managers from Brazil, France, Australia, Argentina, among other countries, and various mainly sanctuary managers and researchers from NOAA in the US. They formed the International Committee on Marine Mammal Protected Areas and began organizing the first conference in 2009 in Maui, Hawaii. Subsequent conferences in Martinique and Australia led to the idea of setting up an IUCN Task Force to try to implement MMPA initiatives in a more formal way.

[7] Permanent Secretary Ministry of Tourism, Culture and Environment, Tingkat 6, Blok A, Wisma Tun Fuad Stephens, Karamunsing, 88300, KOTA KINABALU, SABAH (PA Marsiana Leonardus)

At the third International Marine Protected Area Congress in Marseille in October 2013, the Task Force was launched and a workshop was held to scope the IMMA criteria process. It was decided that the criteria for IMMAs should be modelled after and aligned as closely as possible with criteria for EBSAs, KBAs, and IBAs. This alignment was negotiated at subsequent conferences and workshops (e.g., the third International Conference on Marine Mammal Protected Areas held in Australia, and the IUCN Leaders meeting in Abu Dhabi, UAE) and as part of an extensive scientific and public review.

At the end of Hoyt's presentation, he introduced David Johnson, Coordinator of the Global Ocean Biodiversity Initiative (GOBI), who provided a second welcome address to the workshop.

David Johnson considered a number of factors critical to implementing an ecosystem approach:

- the understanding of processes for maintaining the structure and function of ecosystems,
- interactions both within food webs ("multi-species approach") and with the background, and
- maintaining chemical, physical and biological environment parameters consistent with a high level of protection.

The idea of identifying IMMAs is consistent with these factors.

Next Johnson recalled the Census of Marine Life (2000-2010) which had provided a basis for future marine biology research and by noting the critical importance of marine biodiversity, had led Parties to the Convention on Biological Diversity (CBD) to commit to effective conservation of a percentage of each of the world's ecological regions and to a process for describing Ecologically or Biologically Marine Significant Areas (EBSAs).

GOBI was formed in 2008 in response to the adoption of EBSA criteria. GOBI is an international partnership of institutions committed to advancing the scientific basis for conserving biological diversity in the marine environment. In 2016, Germany's International Climate Initiative (IKI) awarded GOBI a grant to support its EBSA-related efforts over five years including not only the IMMA process, but also the development of detailed biogeographies; better understanding of migratory species and routes on the High Seas; a model governance system for the High Seas around the Costa Rica Thermal

Dome; spatial strategies to protect ecosystem structure and function at deep-sea hydrothermal vents; and the development of methodologies to integrate seabird distribution data with EBSA descriptions.

It is intended that GOBI-IKI should provide a link between the scientific community and policy makers, assisting biodiversity conservation efforts and supporting developing countries to achieve their national commitments.

Johnson reported that a CBD expert workshop in December 2017 took note of the potential value of IMMAs to help fill gaps in the EBSA descriptions. The CBD has also discussed "Other Effective Conservation Measures", *in situ* measures other than marine protected areas that could contribute to achieving Aichi Target 11. IMMAs could help position OECMs and inform placement of measures to ensure ecological representativity and well-connected, integrated biodiversity protection.

Finally, Johnson linked the IMMA process with negotiations to agree a new legally binding Implementing Agreement to UNCLOS for Biodiversity Beyond National Jurisdiction. Area-based management tools, including marine protected areas, are among the issues comprising this negotiation. In turn 'life below water', Sustainable Development Goal 14, links the identification of IMMAs to the 2030 Agenda. He said that the IMMA workshops would help provide scientific justification to help governments shape conservation agendas.

After Johnson, Task Force co-chair **Giuseppe Notarbartolo di Sciara** talked more about the Task Force process of creating IMMAs and gave an overview of our work and about contributing to place-based marine mammal conservation through IMMAs. He emphasized that the Task Force was not just trying to do something for marine mammals, but that this was something valuable for place-based conservation in the ocean. However, marine mammals are particularly suitable to receive our attention as they are top marine predators, good umbrella and indicator species, highly visible ambassadors and vulnerable to human activities. The goal was to provide a user-friendly tool for decision-makers, harnessing support from the scientific community.

Notarbartolo di Sciara reminded the audience of the definition of IMMAs, and stressed that they are not MPAs, not identified on the basis of management considerations. He said that identifying IMMAs was an evidence-driven, purely biocentric process based on scientific criteria and the best available science.

The conservation and management initiatives that can use IMMAs include EBSAs (CBD), marine spatial planning (MSP), existing and planned MPAs, and Particularly Sensitive Sea Areas (PSSAs) from the International Maritime Organisation (IMO) and other shipping directives, and Key Biodiversity Areas (KBAs) according to the IUCN standard. He noted the adoption of CMS Resolution 12.13, in 2017, acknowledging IMMAs and requesting parties and range states to identify IMMAs.

Next he talked about the three-stage process for becoming an IMMA, starting with Areas of Interest (AoI) that then become candidate IMMAs (cIMMAs) at the workshops and are sent for peer-review before becoming IMMAs. About 1/3 of the areas proposed were not passed by peer review. The Task Force website (marinemammalhabitat.org) has the IMMAs and AoI displayed on an e-Atlas, and anyone can download a pdf with detailed descriptions of each IMMA, along with shapefiles.

Finally, he showed the map detailing the current IMMA identification programme that is moving across the southern hemisphere with three years left in the process. He highlighted that the overarching aim of the IMMA process is to provide a user-friendly tool for decision-makers that is common to science and management.

Before coffee break, the participants introduced themselves and spoke about their background and affiliations (Annex I). This concluded with the Permanent Secretary introducing himself formally, pointing out several of the participants he knew by name, asking them to tell about their work in Sabah. He then remarked that he thought it was especially important with our IMMA initiative to keep the community informed and involved in protection of the environment. He stayed for the group picture (Fig. 2).

After coffee break, **Michael J. Tetley,** IMMA Co-ordinator and technical organizer for the workshop, introduced himself and went over the week's agenda and meeting guidelines and informed workshop participants of available resources (also available on USB stick) including:

- the Inventory of Knowledge (IoK) document for the North East Indian Ocean and South East Asian Seas Region,

- the Guidance documentation for the IMMA selection criteria and process (March 2018),

- the Areas of Interest (AoI) and candidate IMMA submission review templates (in Microsoft Word format), and

- the Areas of Interest (AoI) document for the Workshop Region.

Tetley went over the documents available to participants. He said that 30 people had submitted data assessment forms (DAFs) providing an overview of the relative level of knowledge available in the sub-regions, the species that can be found, and relevant data sources. He stressed that the IMMA proposals had to be carefully based on the selection criteria. For the diversity criteria (Dii), however, a guideline number has been calculated which is related to the relative richness of the North East Indian Ocean and South East Asian Seas Region. Evidence of presence requires eight species in an AoI, while 14 or more species will automatically pass the diversity criteria, Dii.

As the workshop contained a technical mapping element, it was advised that workshop participants should be able to access and edit common geospatial data, such as shapefiles (.shp) and Keyhole Markup Language (.kml).

The following two free access software mapping programs were recommended:

QGIS : https://www.qgis.org/en/site/forusers/download.html

Google Earth : http://www.google.co.uk/earth/download/ge/agree.html

A short plenary discussion period was then opened. Hoyt and Notarbartolo di Sciara agreed to act as co-chairs of the workshop. Notarbartolo di Sciara stressed that the group should not become bogged down in taxonomy discussions. Knowledge of how a species is classified, is *almost* secondary to the importance of a particular habitat. However, it was noted that taxonomy follows the Society for Marine Mammalogy list[8]. Tetley added that the cIMMA proposal should report any uncertainty with regard to species or taxonomy so that the IMMA Review Panel can assess it. Bob Brownell, observer at the meeting who has served on the Review Panel, reminded participants that, in addition to the focal species for which there is applicable criteria, to list all the species known to an area as secondary species.

After lunch, the plenary continued with Tetley showing a map and outlining the AoI to be considered for cIMMA nomination. These consisted of 30 AoI from the expert submissions, in addition to 17 EBSAs, 21 KBAs and 26 MPAs, all of which contained marine mammal habitat. These AoI were divided into seven sub-regions (Fig. 2). Some AoI overlapped sub-regions but it was stressed that the sub-regions were just for the

[8] https://www.marinemammalscience.org/species-information/list-marine-mammal-species-subspecies/

workshop's convenience in terms of breaking down the overall region and that overlapping AoI could be considered in one sub-region or another. The same with AoI overlapping adjacent regions in the Indian or Pacific ocean. These AoI would either be considered now or reserved for later consideration. Tetley also pointed out the number of AoI that in fact overlapped each other (e.g., parts of EBSAs and/or MPAs that overlapped parts of the AoI expert submissions) and suggested that these might be priority areas to discuss and starting points for the process of working toward cIMMAs.

Reacting to the map displayed, Ellen Hines and Benjamin Kahn both indicated concerns about data disparity and gaps. The co-chairs and Tetley advised that the map is work in progress and only for the workshop. In any case, areas not captured at this stage should not be considered unimportant; indeed, there was still the option to submit AoI in the first two days of the workshop.

Special note was made of Sub-region II, Bay of Bengal and Indian Ocean (BBIO), as the group noted that there were no AoI shown. This sub-region is largely an Area Beyond National Jurisdiction (ABNJ). There was some information from ship transits across the region with various cetacean species identifications (e.g., Ilangakoon & Alling, 2016[9]: *Stenella longirostris, Tursiops truncatus, Globicephala macrorhynchus, Indopacetus pacificus*) but not enough to support criteria for an IMMA or AoI. Despite the data gaps, it was acknowledged that more information might come in future. There was some discussion about whether to simply consider it a data deficient region but the decision was made to reserve further discussion and add it to a future regional workshop such as the Australia-New Zealand waters and South East Pacific Ocean IMMA Workshop in 2020.

Hines wondered if gap analyses could be conducted to help back up any recommendations made and also wondered about networking considerations to link migratory areas. Tetley said that in each region, the Task Force has been helping to set up a regional group to pursue these and other initiatives, and that there would be discussion about this later.

There was discussion then about the value of modelled habitat to supplement hard data. It was suggested that modelled habitat could be used to help inform where to draw a boundary outside of survey areas in the absence of knowledge but it could not

[9] Ilangakoon, A.D., Alling, A.K. 2016. Cetacean sightings, mixed-species assemblages and the easternmost record of *Indopacetus pacificus* from the northern Indian Ocean. Marine Biodiversity Records 9:88 [DOI 10.1186/s41200-016-0097-3]

be the sole basis for proposing an IMMA. As an example, seamount productivity provides confidence in a proposed area that may include or be extended to a seamount. Hines then asked whether threats formed part of the criteria for selection. Hoyt said that this was only appropriate in the later implementation phase of IMMAs when consideration was given to how they could be used. Discussion about threats was planned for the final day of the workshop. In future, it was envisioned that the planned Regional Group could spearhead this work. Notarbartolo di Sciara said that threat maps that could be overlaid on IMMA and AoI maps to inform conservation decisions.

Notarbartolo di Sciara brought up the highly mobile or migratory species that may use multiple IMMAs or move in and out of IMMAs. This component has been missing from work so far. The sub-criterion that looks at migration is not sufficient to cover migration routes and requires more discussion. How do we connect IMMAs? A next step may be a corridor designation. Indeed, Duke Lab is working on addressing this issue and in Greece 2019 (ICMMPA 5 conference) a special session is proposed which will move this specific discussion forward.

Johnson asked about including traditional knowledge. Tetley said that the IMMA process was not considering this specifically but that other processes were. It may be that indigenous groups will not find the format of an IMMA identification workshop suitable as a platform to convey or disseminate traditional knowledge. However, in the Pacific Islands IMMA workshop, some traditional knowledge was used to drive some research. It was acknowledged that if experts in a given region know about traditional knowledge and can distill it, then anything relevant and useful can be incorporated in the IMMA process. Two areas in the region are relevant for traditional knowledge that could inform research, according to Kahn (in eastern Nusa Tengara) and Dipani Sutaria (in the Andaman and Nicobar islands). Sutaria noted that data from video and images collected by indigenous communities formed part of the research database. Tetley said that traditional knowledge could be considered part of the Inventory of Knowledge, but that a distinction should be drawn between current and historical knowledge. Historical traditional knowledge is closer to the category of whaling data which might inform trends in presence or habitat suitability. It was agreed that wording about traditional knowledge could be entered into an annex that outlines the potential value of whaling records (Annex IX). But it was reiterated for emphasis that the selection of IMMAs would never be made *because* of human use or interaction.

A final discussion for the day ensued on whether to base supporting data for IMMAs on stranding events including when unusual or unique species appear. Tetley noted that vagrant species are not used as evidence but can be listed as part of the background discussion text. Smith noted that strandings can come from great distances away. Brownell said, however, that records of fresh strandings such as of beaked whales that happened adjacent to deep canyons could be valid as evidence contributing to a candidate IMMA. Donna Kwan noted that sometimes the only information available about dugongs comes from strandings. Tetley suggested that the living IMMA Guidance document could expand on the value and cautions needed about strandings. Anouk Ilangakoon then asked whether bycatch could be a source of information to inform the IMMA process. Brownell said the problem is pinpointing the location of the bycatch but in cases where the fishery is well known and ideally coastal (rather than high seas), and if the species can be confirmed, it can be useful.

Before breaking for a document-reading period followed by dinner, Tetley showed the proposed break-out groups based on species for the following day's work. It was considered a productive way to start the examination of AoIs leading to cIMMA proposals, by examining if species could meet the criteria — a similar process to that employed at the two previous IMMA workshops. The division consisted of Group 1 – baleen whales (*Balaenoptera* spp.*, Megaptera)*, 2 – dugong, 3 – coastal species (*Tursiops, Grampus, Steno, Lagenodelphis)*, 4 – offshore species (*Stenella*s, *Delphinus*), 5 – coastal and estuary species *Neophocoena, Orcaella),* 6 – blackfish (*Orcinus, Pseudorca, Feresa, Peponocephala, Globicephala),* and 7 – offshore deep divers (*Physeter, Kogia, Ziphius, Mesoplodon, Indopacetus).* Leaders were allocated to species and participants were asked to sign up based on their expertise.

A decision was made not to include freshwater dolphins. Participants acknowledged that the region was important for river dolphins including Irrawaddy dolphins in various rivers in Myanmar, Indonesia, and Bangladesh and with Ganges River dolphins in the Ganges and Sundarbans. At the Marine Mammal Biennial in Halifax, in October 2017, a process for identifying river dolphin IMMAs was identified and it was determined that it would be best if the habitats of freshwater mammals could be examined in a separate workshop devoted to freshwater species. The North East Indian Ocean and South East Asian Seas workshop therefore decided to restrict its work to the coastal and open ocean areas and estuaries only. For more information, see Annex X.

IMMA Workshop Day 2, 13 March 2018

The IMMA Secretariat delayed the opening of the workshop to reconsider plans for Day 2. Overnight, the number of AoI had expanded to more than 100, far more than any other region of the world to date. Because of the large number of AoI to work through, a strategic decision was made to advance straight to a consideration of the AoI. Thus, instead of dividing the workshop into break-out groups based on species, it was divided on the basis of sub-regions. Coordinators were assigned to each sub-region and asked to consider the AoI one by one, determining whether there were overlaps that could be merged, and if the species in each AoI could qualify as a cIMMA based on the criteria. The sub-regions for each break-out group is listed below, as well as on the map (Fig. 2).

BREAKOUT GROUPS – Sub-regions and group facilitators

Sub-region	Group facilitator
[I] North and West Bay of Bengal (NWBB)	Erich Hoyt
[II] Bay of Bengal and Indian Ocean (BBIO)	Excluded from the assessment
[III] Coral Coast to West Sumatra (CCWS)	Margherita Zanardelli
[IV] South China to Java and Gulfs (SCJG)	Michael Tetley
[V] Philippines and North Borneo (PHNB)	Simone Panigada
[VI] Sulawesi to Banda Sea (SUBS)	Giuseppe Notarbartolo di Sciara
[VII] South Java and Lesser Sunda (SJLS)	Caterina Lanfredi

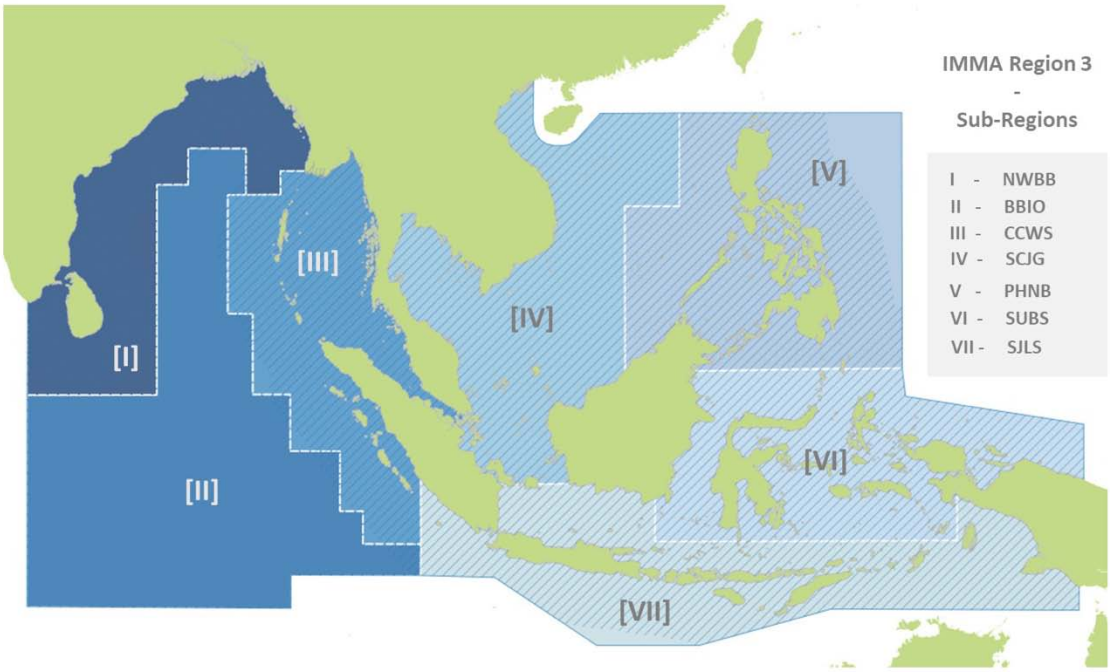

Fig. 2. *IMMA sub-regions used to assist participants with the collation of information relevant to marine mammals for the identification of candidate IMMAs in the North East Indian Ocean and South East Asian Seas Region including [I] NWBB - North and West Bay of Bengal; [II] BBIO - Bay of Bengal and Indian Ocean; [III]*

CCWS - Coral Coast to West Sumatra; [IV] SCJG - South China to Java and Gulfs; [V] PHNB - Philippines and North Borneo; [VI] SUBS - Sulawesi to Banda Sea; and [VII] SJLS - South Java and Lesser Sunda. The aggregated Exclusive Economic Zone (EEZ) for the region is indicated by the hashed line.

At the end of Day 2, the sub-regions reported the AoI that were to be nominated as cIMMAs as well as those due to remain as AoI. These were all presented to Tetley to tabulate them for the following day's work.

IMMA Workshop Day 3, 14 March 2018

In plenary, Tetley gave a short introduction about the boundary drawing and other pointers to encourage the work on filling out the cIMMA nomination forms. First he displayed the list of areas from each sub-region on the screen, and went through them one by one. The goal was for everyone to see each area that would become either a cIMMA or an AoI, to look at the names of each area, and to agree who would be responsible for submitting each cIMMA form. Over the next couple hours before coffee break, each sub-region was discussed in turn, with group comments and questions about each individual submission. The value of having experts in the room who had worked in multiple areas became clear. There was considerable cross fertilization.

A discussion arose about the proposed names for certain areas earmarked as candidate IMMAs or AoI, that they were too general. Brownell complained about "Kuroshio" to refer to a small portion of the sprawling Kuroshio Current. Other areas used the names of national parks or protected areas. Hoyt asked if these areas had the precise boundaries of the proposed cIMMA. This would rarely if ever be the case. The problem with using a formal park or protected area name for an IMMA was that there would be confusion about the IMMA's status and location. Hoyt said that if the boundaries were the same, the name could be used without the park or protected area name, replacing that with "cIMMA" or "AoI" instead. One by one, the draft names were refined.

After coffee break, the remainder of day 3 was devoted to filling out the cIMMA forms for nomination and to refining the boundaries, drawing the maps with the assistance of Tetley and Lanfredi. Everyone worked hard, with many exchanging drafts of their cIMMA descriptions so that others could comment.

At the brief plenary at the end of the day, everyone was thanked and invited to join in the evening meal. The facilitators were asked to report on progress and help remind everyone to try to finish as much as possible the following day so that the workshop could have Day 5 for discussion.

IMMA Workshop Day 4, 15 March 2018

Opening up the penultimate day, Tetley showed the map to chart our progress. He reminded people that the cIMMA forms could be put into Dropbox or on a stick. Both Tetley and Lanfredi moved around the room to work with individual participants to refine the maps and capture the best possible proposal for each cIMMA. After the entire morning spent drafting and mapping, Tetley opened a brief update session in late afternoon to talk more about river dolphins and freshwater environments. He introduced the idea that there could be cooperation with the Ramsar Convention because of their long history working in watersheds. The group agreed to add to the report of the workshop a statement that would include river dolphins and freshwater environments to explain why candidate IMMAs and AoI were not being submitted to cover the known freshwater habitat in the North East Indian Ocean and South East Asian Seas region.

Participants carried on until 19.00, trying to finish their cIMMA proposals, before the dinner arrangements.

IMMA Workshop Day 5, 16 March 2018

Tetley opened the plenary announcing that 46 cIMMAs were submitted or were in the final stages of submission (although this was later revised to 44 cIMMAs). This was the highest number thus far from a region to go forward for review. In addition, 26 AoI were identified as part of this effort, but were considered not robust enough to go forward as cIMMA. Tetley showed the cIMMA and AoI on the map. He explained that the two hatched areas for the Kuroshio and blue whales were deferred to future workshops for consideration. In any case, the Kuroshio had already been captured in the CBD EBSA process. Also, one area in northern Papua New Guinea for humpback and sperm whales needed to go back to the Pacific Islands Region Group before further thought could be given about what to do with it and whether it should go forward as a cIMMA or an AoI. In appreciation of everyone's joint efforts, there was clapping and a general sense of satisfaction in the room. Those who were still refining their submissions were encouraged to continue through the day.

Tetley then turned over the workshop to a presentation by Ellie Heywood on Migratory Connectivity in the Ocean, the so-called MiCO project that she is working on at Duke University in the USA. She explained that her work was one of the seven work packages of the GOBI IKI grant, and was meant to be the glue or connectivity between the various strands. Their work is focusing on synthesized knowledge products using a network model approach. The project includes not only marine mammals, but seabirds, turtles and fish. They have done an extensive literature review which includes sampling methods (e.g., satellite telemetry, mark recapture, stable isotope, passive acoustic monitoring, and genetic sampling), and they see the MiCO system becoming a centralized place to access networking knowledge. They see IMMAs, IBAs, KBAs, and EBSAs as nodes and they are looking at ways to connect the nodes, methods that have informed the nodes and allow the visualization of connectivity. A summary of her presentation is in Annex III.

After lunch, Hoyt and Notarbartolo di Sciara opened the afternoon session. In summary the discussion began by outlining the knowledge gaps for marine mammals in the North East Indian Ocean and South East Asian Seas region, followed by the specific conservation concerns in the region.

Hoyt outlined the **knowledge or data gaps** and pointed out that in other regions, governments such as France had been instrumental in closing EEZ-wide data gaps through clever transect survey plans with substantial funding for aerial flights. This is the level of effort needed in other parts of the world to get a better handle on marine mammal species identification, density and abundance. However, it is particularly difficult and expensive doing high seas surveys. They need to be done by ship, because of the distance from land for small aircraft flights, and ship time is very expensive. Looking at the world picture, one of the few places where extensive surveying was done on the high seas was the Eastern Tropical Pacific because of the tuna dolphin issue and substantial funding from NOAA. Still the group noted that there were serious data gaps. In future, such gaps may be filled by technological fixes such as spotting whales and identifying productive areas by satellite, using military-grade drones to do unmanned surveys, environmental DNA (eDNA) techniques to identify the presence of species, as well as the usual vessel-based transect surveys.

The idea was expressed that IMMAs, as well as EBSAs, will inform Biodiversity Beyond National Jurisdiction (BBNJ). For this reason, it is important for IMMAs to be created on the high seas, but that relies on obtaining a lot more data in offshore waters.

Another challenge is identifying the data that is available and working it into a form that can be used, though noting that the Task Force and the marinemammalhabitat.org website is not a data repository. In some cases, said Notarbartolo di Sciara, there may be ancillary information, for example from productivity. Can we extrapolate marine mammal presence from this? Will it allow us to look for or propose an AoI at least?

The knowledge gaps overall are the result of financial constraints related to surveying areas in a comprehensive way. The logistics of reaching some coastal and offshore areas could be considerable. With sparse funds to go around, the approach has been sometimes to do cursory coverage before having to move on.

Spatially, the main knowledge gap was in the sub-region II Bay of Bengal and Indian Ocean (BBIO), as already noted, partly because this portion of the overall region includes much more of the high seas than anywhere else. There have been at least three surveys across the region and it was agreed that the group would include mention of these in the report to lay the groundwork for future AoI and cIMMA submissions.

Somany Phay expressed the idea that candidate IMMAs should receive some sort of protection under national legislation or some mechanism regardless of what happens in the IMMA process. But Notarbartolo di Sciara stressed that IMMAs should be kept non-political and simply to be used as a tool for decision makers. The advocacy portion of this work should be undertaken by civil society who then help force policymakers to make decisions about protected areas. It's important to keep civil society and science separate. Our mission with IMMAs is to use the best science available to highlight areas that deserve attention. In that way, without advocacy, our work will be more respected.

Next the discussion turned to **conservation concerns** in the region. Some participants suggested that threats were fewer on the high seas compared to coastal areas and thus lesser priority, but others disagreed, pointing out that the free-for-all on the high seas was definitely underway. Various approaches need to be made to address coastal and offshore threats. The UN ABNJ process is supposed to negotiate management and enforcement of provisions for the high seas.

Mustika pointed out a recent WWF bycatch report revealing large numbers of bycatches. Phay pointed out the limitation from most historical data. Planning is often undertaken based on this historical data but it may well have changed considerably.

Brian Smith said the overwhelming threat is bycatch and cautioned against making a long laundry list, as it then becomes easy to address low-hanging fruit, areas that are not so significant but may be easy to obtain. Notarbartolo di Sciara agreed but said let's look at the risks in each type of habitat, coastal and pelagic, with some examples.

The group then provided examples and brief comments first about coastal habitats where marine animals are taking the brunt of anthropogenic activities.

- Bycatch impacts coastal cetacean and dugong but not equally. For example, in Thailand, strandings are 90% from dugong caught largely in gillnets and 10% pathogenic causes, while cetaceans are only 30% fishing gear, 63% pathogenic and 3 to 5% plastics and garbage (debris) in the stomach.

- Overfishing, according to Ponnampalam, can be linked to malnutrition showing up in the body condition and tissues, and by looking at landings of fish.

- Disturbance can be seen in displacement of dugongs from tourist areas with hotels and development but also, for example in Thailand, where speed boats are striking dugong.

- Seismic surveys may be showing up in the large strandings in India, said Kuppusami Sivakumar. Danielle Kreb noted evidence of sperm whale strandings potentially due to seismic activities.

- Ship strikes are occurring notably in the shipping lanes around Sri Lanka with blue and other whales.

- Habitat destruction can be seen in various areas with bottom trawling and dynamite fishing.

- Noise pollution may be occurring with evidence in Kalimantan that animals are shifting habitats as shipping increases.

In pelagic habitats, less is known and there are fewer examples but the pressures may include the following, each of which needs to be explored further with examples if possible:

- Deep sea mining

- Sonar

- Seismic

- Hunting (for bait), for example, in Sri Lanka spinner and other dolphins are hunted and sold in the market for bait.

Tetley said that it's important to distinguish between pressures, risk and threats. Hoyt said it is difficult to quantify these problems in a meaningful way for the overall region. Louisa Ponnampalam suggested relating the pressures, risks and threats to each sub-region and even to the individual cIMMA or AoI, and perhaps note how management might deal with that.

Notarbartolo di Sciara reiterated that this region is exceptional both in the number of candidate IMMAs and the pressures on the environment.

Tetley noted that the data appraisal forms (DAFs) did collect some threat indicators. The Task Force could send another appraisal and collect more information and compare the responses. Krebs and Ponnampalam agreed this was a good idea and Tetley offered to prepare analyses on a sub region basis. Mustika returned to the idea of outlining threats to the cIMMAs themselves. Tetley offered to produce a form to allow everyone to be more specific. The group agreed and Tetley said he would then circulate a cIMMA specific form that could then also be useful for the Regional Group follow up as well as the implementation by the Task Force.

Hoyt and Notarbartolo di Sciara then introduced the idea of **forming a Regional Task Force Group** for the North East Indian Ocean and South East Asian Seas region. Simone Panigada, Mediterranean regional group leader, gave examples of the work of the Mediterranean Regional IMMA Task Force Group. He advised regional coordinators to make a spread sheet with experts for the region and their expertise and invite more people to become part of it. He said that the coordinator needs to get the momentum going and then to maintain it. A specific goal should be to coordinate with the IMMA Secretariat to keep the regional members updated on IMMAs in the region and worldwide, as well as to push ahead with encouraging NGOs, civil society and government implementation activities at the local, national and regional level. But it should also be part of the role of the regional group to keep note of the species, ecosystems and issues in the region over time between workshops, in the lead-up to the next IMMA workshop for that region.

Notarbartolo di Sciara added that the regional group could take prime responsibility for handling AoI submissions and helping to keep track of them and to help ensure they are as good as they can be before the next workshop. Porter suggested that the Task Force Regional Group objectives could be incorporated into their existing group, the South East Asia Marine Mammals (SEAMMAM). Their regular meetings would provide a ready opportunity to meet on IMMA issues. In time there may be funds for the coordinator to organize more activities and produce a yearly report that would be an update on the region. In this case, however, it was proposed (following the meeting) that three people would share the coordinating duties for this region — Mustika, Acebes and Jamal, and this was accepted by the IMMA Secretariat, noting that they work, respectively, in Indonesia, Philippines and Malaysia, and provide a broad area base and knowledge of the region's activities.

After coffee break, Notarbartolo di Sciara fielded comments on the effective use of IMMAs in the North East Indian Ocean and South East Asian Seas Region asking the group to come up with suggestions for the **main management issues and concerns** that could be addressed in planning the implementation expedition, and to, in effect, demonstrate that an IMMA is not just a scientific exercise.

Management concerns in the region include the lack of protection for certain areas under threat. Kreb remarked that IMMAs could be valuable for identifying areas such as East Kalimantan where there are numerous shipping lanes, with unregulated pile driving and reclamation going on, and IMMAs could help make the case for MPA protection. Mustika remarked that having a map showing IMMAs would be valuable for gaining conservation attention. It is also necessary to pay attention to management of tourists and other activities outside MPAs, and sometimes IMMAs could spotlight these areas.

Tetley stressed that having IMMAs is the first step to inform practice and use of areas. It is "best available evidence". Following that, there must be a community stakeholder process to identify how best to use the IMMA tool, in some cases with MPAs, network building and so on. Tetley reminded the group that IMMAs, by themselves, are essentially a layer driven by expert advice and knowledge. An IMMA is a science process whereas an MPA is a multi-stakeholder process. Ponnampalam said that this process would inspire those in the region to better manage the areas identified, to take care of them, but she wonders what it is going to take to make a society-wide change in practice and perceptions to achieve the end goals of protection.

Several asked how we can manage all these uses of the sea, including tourism, community and commercial fishing, and mineral extraction. Hoyt mentioned zoning areas for particular uses and Notarbartolo di Sciara mentioned “pescaturismo” — Mediterranean fishermen taking tourists on board to watch and do some fishing, too. Ecotourists in an IMMA may well encounter whales and dolphins. There is a need to address these problems in fresh ways, working from the ground up, to see what really works.

Hines remarked that this is an incredibly diverse, complex region. In terms of implementation, there is a need to be trans-disciplinary so community groups cannot be discounted. Johnson said that the implementation could focus on a community group, showing how implementation of an IMMA can be accomplished locally. This would be a different example from before, one that fit the region. Mustika wondered about engaging with the Coral Triangle Initiative (CTI) noting that many countries in the region are members and that it drives a lot of action. Could IMMAs be introduced to CTI to consider at next strategic meeting? Mustika added that a lot of management decisions are being driven by NGOs or, for example in Malaysia, the CTI. In that case, it would be necessary to get IMMAs adopted by the CTI. Johnson remarked that EBSAs had not gotten very far in this region in terms of recognition or implementation, but there is discussion within the CBD about how to promote that. Johnson said that it may be that IMMAs could “overtake” EBSAs in terms of impact as IMMAs are not bogged down in the same way by direct government involvement.

Sivakumar and Sutaria noted that, in India, managers are focused on land areas and with so much coastal development, the communities tend not to like MPAs, so IMMAs as they are might present a fresh alternative. Johnson added that if countries are adopting marine spatial planning (MSP), then getting the government or planning authority to recognize IMMAs will be crucial. It’s equally important to look beyond governments. Many projects work with international agencies and thus it can be valuable to have IMMAs recognized by international agencies. Kittiwattanawong thought that IMMAs, because of their international recognition, provide a way forward for Thailand to get international issues raised and to facilitate cooperation with other countries with research on shared populations of marine mammals. This is helped by CMS formal recognition of IMMAs and the CMS resolution asking countries to help implement IMMAs.

Notarbartolo di Sciara summed up the discussion by saying that we clearly know what we want to do with the IMMAs but we don't yet know how exactly to achieve that. On behalf of the Task Force and the IMMA Secretariat, he welcomed further ideas from the group on how to proceed into the implementation of an IMMA. That discussion would go on outside the meeting before a decision is made to choose a place in the region where the Task Force would make a visit and work on an implementation project later in the year.

Hoyt then thanked everyone who helped at the meeting with special recognition for the participants, the IMMA Secretariat including Margherita Zanardelli, Simone Panigada and Caterina Lanfredi, and especially Michael Tetley for his technical expertise in the organisation and for running the heart of the workshop, day by day. Special thanks were given to Lindsay Porter for her assistance in preparing the meeting and suggesting those to be invited, and not least for taking notes throughout the meeting. The community spirit throughout the meeting was truly inspirational — a tribute to the people working here. In many ways it reinvigorated the IMMA Secretariat's enthusiasm for IMMAs, seeing them taken to heart and with such passion. The arrangements were then provided for dinner and entertainment with suggestions for shopping and other essentials before most people were due to leave the following day.

Annexes

Annex I – List of participants

REGIONAL EXPERTS

Jo Marie V. ACEBES
Senior Museum Researcher, Zoology Division
National Museum of the Philippines
P. Burgos St.
Manila 1000, Philippines
Founder & President, BALYENA.ORG
Paseo del Mar, Barangay Pangdan
Jagna 6308, Bohol, Philippines

Nantarika CHANSUE
Veterinary Medical Aquatic Animal Research Center
Faculty of Veterinary Science, Chulalongkorn University
Henri Dunant Rd., Patumwan
Bangkok 10330, Thailand

Yusuf FAJARIYANTO
Marine Spatial Planning Manager, The Nature Conservancy Indonesia Oceans Program
Graha Iskandarsyah 3rd Floor
Jl. Iskandarsyah No 66C
Kebayoran Baru, Jakarta Selatan 12160
Indonesia

Ellen HINES
Estuary and Ocean Science Center (formerly Romberg Tiburon Center)
San Francisco State University
Associate Director and Professor of Geography & Environment
3150 Paradise Dr.
Tiburon, CA 94920 USA

Anoukchika ILANGAKOON
Cetacean Specialist Group
Independent Researcher, Sri Lanka
215 Grandburg Place
Maharagama, Sri Lanka

Fairul Izmal JAMAL HISNE
Vice-Chairperson & Co-Founder
The MareCet Research Organization

Unit 3-1-1, Rumah Bandar Antilla, Jalan Anggerik Malaxis 31/171
Seksyen 31, Kota Kemuning
Shah Alam, 40460, Malaysia

Benjamin KAHN
Director, APEX Environmental
Coral Triangle Oceanic Cetacean Program
Adjunct Research Fellow
Centre of Marine Science and Technology, Curtin University
Perth, WA, Australia

Kongkiat KITTIWATANAWONG
Phuket Marine Biological Center
51 Sakdides Rd
Phuket 83000, Thailand

Danielle KREB
Scientific Program Manager
Yayasan Konservasi RASI (Rare Aquatic Species of Indonesia)
Komplek Pandan Harum Indah Blok C 52
75124 Samarinda
Kalimantan Timur, Indonesia

Kuppusamy SIVAKUMAR
Head & Scientist F
Department of Endangered Species Management
Wildlife Institute of India
P.O. Box. 18
Chandrbani, Dehradun 248001, India

Muhammad Erdi LAZUARDI
Project Leader for Lesser Sunda
WWF-Indonesia
Jl. Sam Ratulangi No. 6,
Kupang, 85228
Nusa Tenggara Timur, Indonesia

Putu Liza MUSTIKA (“Icha”)
Cetacean Sirenian Indonesia
Jl. Kalibaru II/31 Jakarta Utara, Jakarta, Indonesia
James Cook University, College of Business, Law and Governance
Townsville, Queensland, Australia

Cindy PETER
Sarawak Dolphin Project

Institute of Biodiversity and Environmental Conservation
Universiti Malaysia Sarawak (UNIMAS)
94300 Kota Samarahan, Sarawak, Malaysia

Somany PHAY
Deputy Director of the Fisheries Conservation Department of the Fisheries Administration
Government Fisheries Administration Liaison at WWF- Cambodia office
186 Preah Norodom Blvd, Sangkat Tonle Basac, Khan Chamcar Mon,
P.O. Box: 582
Phnom Penh, Cambodia

Louisa PONNAMPALAM
Chairperson & Co-Founder
The MareCet Research Organization
Unit 3-1-1, Rumah Bandar Antilla, Jalan Anggerik Malaxis 31/171
Seksyen 31, Kota Kemuning
Shah Alam, 40460, Malaysia

Alessandro PONZO
Large Marine Vertebrates Research Institute Philippines
Executive Director
Cagulada Compound
6308, Jagna, Bohol, Philippines

Lindsay PORTER
SMRU Asia Pacific
The University of St. Andrews
1802 One MidTown
11 Hoi Shing Road, Tseun Wan West
Hong Kong SAR

Mochamad Iqbal Herwata PUTRA
Marine Megafauna Research Group - Misool Foundation, Savu Sea Program
Larantuka 86213, East Flores, Indonesia

Achmad SAHRI
Marine Animal Ecology Group-Wageningen University & Research
Adjunct Lecturer for Digital Cartography and Coastal Planning at UNISSULA Indonesia
De Elst 1, 6708 WD Wageningen, The Netherlands
Adjunct Lecturer for Digital Cartography & Coastal Planning
Department of Urban & Regional Planning
Islamic University of Sultan Agung (UNISSULA)
Jl. Kaligawe Raya Km.4
50112 Semarang, Indonesia

Brian D. SMITH
Director, WCS Asian Coastal Cetacean Program
Asia Coordinator, IUCN SSC Cetacean Specialist Group
P.O. Box 4554
Arcata, CA 95518 USA

Dipani SUTARIA
Freelance Ecologist, IUCN Cetacean Specialist Group
9, Aranya Farms, Shilaj, Ahmedabad
382115 Gujarat – India
Senior Research Fellow
James Cook University, Australia

Tint TUN
Independent Marine Biologist and Consultant
No. 19, Rm. 301, Mya nan dar housing,
Ward 14, Hlaing Township
Yangon, Myanmar

Long VU
Viet Nam Marine Mammal Network
Zoology Lab, Department of Ecology and Evolutionary Biology
University of Science Ho Chi Minh City
541 Nguyen Duy Trinh, District 2
Ho Chi Minh City, Viet Nam

Observers

Robert L. BROWNELL, Jr.
Senior Scientist
Granite Canyon Laboratory
Southwest Fisheries Science Center
34500 Highway 1
Monterey, CA 93923 USA

Eleanor HEYWOOD
Marine Geospatial Ecology Lab
Duke University
135 Duke Marine Lab Road
Beaufort, NC 28516 USA

David JOHNSON
Coordinator, Global Ocean Biodiversity Initiative (GOBI)
Seascape Consultants Ltd

Jermyns House, Jermyns Ln.
Romsey SO51 0QA United Kingdom

Donna KWAN
CMS Dugong MoU Secretariat
P.O. Box 45553
Abu Dhabi, United Arab Emirates

Adam MALIK BIN MASIDI
Marine Research Officer
Sabah Parks
KK Times Square
88100 Kota Kinabalu
Sabah, Malaysia

Gene-Cedric SALAMAT
Policy Officer - Marine
WWF-Malaysia
6th Floor, CPS Tower, Centre Point Complex
No. 1 Jalan Centre Point
88800 Kota Kinabalu, Sabah, Malaysia

IMMA Secretariat

Erich HOYT
Co-chair, IUCN Marine Mammal Protected Areas Task Force
Whale and Dolphin Conservation
38 St Paul St.
Chippenham, Wiltshire SN15 1LJ United Kingdom

Giuseppe NOTARBARTOLO DI SCIARA
Co-chair, IUCN Marine Mammal Protected Areas Task Force
Tethys Research Institute
Viale G.B. Gadio 2
20121, Milano, Italy

Simone PANIGADA
IUCN Marine Mammal Protected Areas Task Force
President of the Tethys Research Institute
Viale G.B. Gadio 2
20121, Milano, Italy

Michael James TETLEY
IMMA Coordinator
IUCN Marine Mammal Protected Areas Task Force

Isle of Mull, United Kingdom

Caterina LANFREDI
Tethys Research Institute
Viale G.B. Gadio 2
20121, Milano, Italy

Margherita ZANARDELLI
Tethys Research Institute
Viale G.B. Gadio 2
20121, Milano, Italy

Annex II – Workshop agenda

Day 0: 11 March 2018

09:00 – 19:00 Arrival in Kota Kinabalu, Sabah, Malaysia

19:30 – 22:00 Icebreaker reception and dinner

Day 1: 12 March 2018

09:00 – 10:30 Introduction to the IMMA Regional Workshop for the North East Indian Ocean and South East Asian Seas Region

- Welcoming addresses

  Presentation by Erich Hoyt, Co-chair, IUCN Joint SSC/WCPA Marine Mammal Protected Areas Task Force

  Presentation by David Johnson, Coordinator of the Global Ocean Biodiversity Initiative (GOBI)

  Presentation by Giuseppe Notarbartolo di Sciara, Co-chair, IUCN Joint SSC/WCPA Marine Mammal Protected Areas Task Force
- Participant introductions, explanation of the programme
- Adoption of Agenda and Selection of Workshop Chair

10:30 – 11:00 Morning Coffee Break

11:00 – 12:00 Introduction to Important Marine Mammal Areas

- IMMA Selection Criteria, Identification Process and Inventory of Knowledge (IoK) for the North East Indian Ocean and South East Asian Seas Region
  Presentation by Michael Tetley, IMMA Programme Coordinator, IUCN Joint SSC/WCPA Marine Mammal Protected Areas Task Force
- Question and Answer Session

12:00 – 13:30 Lunch

13:30 – 15:00 Areas of Interest (AoI) and Assignment of Working Groups

- Collated AoI for the North East Indian Ocean and South East Asian Seas Region
  Presentation by Michael Tetley, IMMA Programme Coordinator, IUCN Joint SSC/WCPA Marine Mammal Protected Areas Task Force
- PLENARY Discussion on candidate IMMA (cIMMA) options and agreement of AoI list for cIMMA investigation
- Assignment of cIMMA working groups and group facilitators

15:00 – 15:30 Afternoon Coffee Break

15:30 – 19:30 Reading Session

19:30 – 22:00 Informal Dinner

Day 2: 13 March 2018

09:00 – 9:30 Group Facilitators Meeting

9:30 – 10:30 Initial Meeting of Breakout Groups and Session Briefing

10:30 – 11:00 Morning Coffee Break

11:00 – 12:30 BREAKOUT GROUPS SESSION 1 – SPECIES

12:30 – 14:00 Lunch

14:00 – 15:30 BREAKOUT GROUPS SESSION 2 – SPECIES

15:30 – 16:00 Afternoon Coffee Break

16:00 – 17:30 Assessment of cIMMA list (SPECIES)

- Group Facilitator Reports
- PLENARY Discussion

- Agreement on preliminary cIMMA list
- Revised AoI list

19:30 – 22:00 Informal Dinner

Day 3: 14 March 2018

09:00 – 10:30 BREAKOUT GROUPS SESSION 3 - SUBREGIONS

10:30 – 11:00 Morning Coffee Break

11:00 – 12:30 Assessment of cIMMA list (SUBREGIONS)

- Group Facilitator Reports
- PLENARY Discussion
- Agreement on final cIMMA list
- Revised AoI list

12:30 – 14:00 Lunch

14:00 – 16:00 DRAFTING SESSION 1 – cIMMA Standard Submission Forms

16:00 – 16:30 Afternoon Coffee Break

16:30 – 17:30 Review of cIMMA drafting progress

- PLENARY Discussion

19:30 – 22:00 Informal Dinner

Day 4: 15 March 2018

09:00 – 12:30 DRAFTING SESSION 2 – cIMMA Standard Submission Forms (including coffee served between 10:30 – 11:00)

12:30 – 14:00 Lunch

14:00 – 16:00 DRAFTING SESSION 3 – cIMMA Standard Submission Forms (including coffee served between 15:00 – 15:30)

16:00 – 17:30 Review of cIMMA drafting progress

- PLENARY Discussion

19:30 – 22:00 Informal Dinner

Day 5: 16 March 2018

09:00 – 10:30 DRAFTING SESSION 4 – cIMMA Standard Submission Forms

10:30 – 11:00 Morning Coffee Break

11:00 – 12:00 Agreed cIMMA list and next steps for review

- PLENARY Discussion
- Agreement on final cIMMA for review and final AoI list
- Formal Submission of cIMMA standard forms (extendable on to workshop close)

12:00 – 12:30 Migratory Connectivity in the Ocean (MiCO) – Ellie Heywood

12:30 – 14:00 Lunch

14:00 – 15:00 Discussion on the **knowledge gaps** for Marine Mammals in the North East Indian Ocean and South East Asian Seas region
Discussion on the **conservation concerns** for Marine Mammals in the North East Indian Ocean and South East Asian Seas region

- PLENARY Discussion and Recommendations

15:00 – 16:00 Discussion on the formation of a Regional TF Group for the North East Indian Ocean and South East Asian Seas region and examples of the work of the Mediterranean Regional TF Group

- PLENARY Feedback and nomination of the Regional TF Group Coordinator

16:00 – 16:30 Afternoon Coffee break

16:30 – 18:00 Recommendations for the effective use of IMMAs in the North East Indian Ocean and South East Asian Seas Region (Implementation): ask the group to come up with the **main management issues and concerns** that could be addressed in planning the implementation expedition.

- Summary of Recommendations by the Workshop Participants
- Final round-up by Workshop Chairs
- Workshop Closes

20:00 – 23:00 Celebratory Dinner and Drinks

Annex III – Summaries of introductory presentations

ERICH HOYT, Co-chair, IUCN Joint SSC/WCPA Marine Mammal Protected Areas Task Force, and Research Fellow, Whale and Dolphin Conservation

Welcome everyone — colleagues and friends, many of whom we in the Task Force have worked with. I would first like to give a special welcome to the Permanent Secretary to the Ministry of Tourism, Culture and Environment for Sabah, Malaysia, Yang Berbahagia Datu Rosmadi Datu Sulai. Thank you very much for recognizing our efforts here. We are honoured to be here in Sabah and to be able to bring a large group of researchers here today from across the region.

This is the third workshop on important marine mammal areas, IMMAs, and a stark contrast to the previous two. The first workshop in the Mediterranean featured largely threatened marine mammals in a comparatively small area of the world, which has for example 30% of the ship traffic on 1% of the surface area. The second workshop in the Pacific Islands, by contrast, was an absolutely vast area that was relatively data poor, and now here we are in probably the richest area in the world for marine mammals and other species. We certainly have far more AoI than we had in the other two areas. So it will be fascinating to see how many candidate IMMAs we can make. I hope we can truly capture the diversity here.

I want to give you a brief potted history of IMMAs. This goes back to a number of things. I first became aware of the need for a tool like this while I was putting together a book *Marine Protected Areas for Whales, Dolphins and Porpoises* published in 2004 (and updated in 2011) that tried to separate out the few hundred protected marine mammal habitats included in MPAs proposed or existing worldwide. I began realising that there wasn't very much being protected outside of the thin ribbon of coastline.

And then looking at the CBD EBSA effort, I realized that they were making EBSAs without whales and dolphins for the most part but that the bird people with their Important Bird and Biodiversity Areas, the IBAs, were way ahead of us. Fortunately, we found money through Whale and Dolphin Conservation, WDC, the NGO I work for, to start sending Mike Tetley to these workshops as well as getting my colleagues from Russia to participate.

A few years earlier, Task Force co-chair Giuseppe Notarbartolo di Sciara and I had worked together on a number of projects including the effort to get “cetacean critical habitats” defined and identified in the Mediterranean as part of ACCOBAMS.

So Giuseppe and I with others largely from NOAA set up the International Committee on Marine Mammal Protected Areas and helped programme and arrange conferences beginning in 2009 out of which grew the idea of setting up an IUCN Task Force to take our work to international conventions and governments. At the same time, a number of people including Mike Tetley, Kristin Kaschner and Rob Williams, and helped by Randy Reeves, were trying to get a handle on working within a region (variously in the Caribbean, North East Pacific, Eastern Tropical Pacific) and figuring out where were the important areas that needed protecting. And then through meeting Jim Darling, Rob Butler and colleagues in British Columbia, I saw their frustration with the Canadian government in terms of recognizing whale habitat and making MPAs for whales and understood why they wanted to invent a tool to put important cetacean areas on a map, which they were starting to call ICAs. They did this with little fanfare, but made a website to display the result.

Out of all this finally came the idea that we needed an internationally accepted, standardised peer-reviewed process for getting widely disparate data on marine mammals into something that could be used as a conservation tool that would have an international stamp of approval. So Giuseppe, Mike Tetley and I started contacting key people and going to meetings with BirdLife International and the World Conservation Monitoring Centre, the Convention on Migratory Species, Convention on Biological Diversity, and the International Whaling Commission, and attending various conferences to try to see how we could push this initiative forward.

At the IMPAC 3 meeting in Marseille, we had a criteria workshop and formally started the Task Force in 2013. There followed two years of scientific and public consultation to refine the criteria. We had various small grants but then, two years ago, working with the Global Ocean Biodiversity Initiative, we secured five-year funding through the German government International Climate Initiative (GOBI-IKI) as one of seven related work packages, to map the southern hemisphere in the Indian and Pacific oceans. And we’re approaching the halfway point of that process now.

Giuseppe Notarbartolo di Sciara will take up the story from here to tell you about our IMMA workshop process, and David Johnson will talk about the various GOBI-IKI projects and how IMMAs fit in with that.

DAVID JOHNSON, Coordinator of the Global Ocean Biodiversity Initiative (GOBI)

I would like to consider a number of factors critical to implementing an ecosystem approach including:

- understanding of processes for maintaining the structure and function of ecosystems,
- interactions both within food-webs ("multi-species approach") and with the background, and
- maintaining chemical, physical and biological environment parameters consistent with a high level of protection.

The idea of identifying IMMAs is consistent with these factors.

I think it's valuable to mention here the Census of Marine Life, a ten-year scientific initiative (2000-2010) directed at assessing and explaining the diversity, distribution and abundance of life in the oceans. This major effort provided a basis for future marine biology research. Noting the critical importance of marine biodiversity, and inspired by the Earth Summit in 1992 and 2002, Parties to the Convention on Biological Diversity (CBD) had committed to effective conservation of a percentage of each of the world's ecological regions and, through a series of expert workshops, agreed to a process for describing Ecologically or Biologically Marine Significant Areas (EBSAs).

With the support of Germany, the CBD COP9 president, GOBI was formed in 2008 in response to the adoption of EBSA criteria. GOBI is an international partnership of institutions committed to advancing the scientific basis for conserving biological diversity in the marine environment. Partners and collaborators support the EBSA process facilitated by a Secretariat. In 2016, Germany's International Climate Initiative (IKI) awarded GOBI a grant to support its EBSA-related efforts over five years. Six key outputs of GOBI-IKI relate to the collation and analysis of new information to strengthen EBSAs:

- development of detailed biogeographies,
- better understanding of migratory species and migratory routes in Areas Beyond National Jurisdiction,
- a model governance system for High Seas around the Costa Rica Thermal Dome,
- spatial strategies to protect ecosystem structure and function at deep-sea hydrothermal vents,
- development of methodologies to integrate seabird distribution data with EBSA descriptions, and
- identifying networks of IMMAs.

It is intended that GOBI-IKI should assist biodiversity conservation efforts and support developing countries to achieve their national commitments. To that end GOBI provides a link between the scientific community and policy makers. GOBI has also been instrumental in providing a rationale to include new information for existing EBSA descriptions and making the case for new descriptions to fill acknowledged gaps. A CBD expert workshop on this topic in December 2017 took note of the potential value of IMMAs in this context. The CBD has also convened experts to consider "Other Effective Conservation Measures", *in situ* measures other than marine protected areas that could contribute to achieving Aichi Target 11. Again, IMMAs have the potential to help position OECMs and inform placement of measures to ensure key requirements of ecological representativity and well-connected and integrated biodiversity protection.

Finally, I would like to note the association between the IMMA process and negotiations to agree a new legally binding Implementing Agreement to UNCLOS for Biodiversity Beyond National Jurisdiction. Area-based management tools, including marine protected areas, are an agreed element of the package of issues to be part of this negotiation. In turn "life below water", Sustainable Development Goal 14, links the identification of IMMAs to the 2030 Agenda.

GIUSEPPE NOTARBARTOLO DI SCIARA, Co-chair, IUCN Joint SSC/WCPA Marine Mammal Protected Areas Task Force, and Founder, Tethys Research Institute

I'm going to talk about contributing to place-based marine mammal conservation through IMMAs.

The Task Force is not just trying to do something for marine mammals; our efforts here are valuable for place-based conservation in the ocean. However, marine mammals are particularly suitable to receive our attention as they are top marine predators, good umbrella and indicator species, highly visible ambassadors and vulnerable to human activities. The goal is to provide a user-friendly tool for decision-makers, harnessing support from the scientific community.

Important Marine Mammal Areas (IMMAs) are a place-based conservation tool identifying "discrete portions of habitat, important for one or more marine mammal species, that have the potential to be delineated and managed for conservation".

IMMAs are NOT Marine Protected Areas, and are NOT identified on the basis of management considerations.

The identification of IMMAs is an evidence-driven, purely biocentric process based on the application of scientific criteria and on the best available science.

The criteria are classed into four categories consisting of eight criteria or sub-criteria (pp10-11). Only one criterion needs to be met to be proposed as an IMMA, though in practice most successful IMMAs have resulted from at least two criteria or sub-criteria.

The conservation and management initiatives that can use IMMAs include EBSAs (CBD), marine spatial planning (MSP), existing and planned MPAs, IMO PSSAs and other shipping directives, key biodiversity areas (KBAs) according to the IUCN standard. CMS Resolution 12.13, passed in 2017, acknowledges IMMAs and requests parties and range states to identify IMMAs.

The process for IMMA identification has three stages. First there is data collection and collation of information to indicate areas of suitable evidence. In this Stage 1, Areas of Interest (AoI) are identified. In Stage 2, candidate IMMAs (cIMMAs) are regionally proposed and accepted by expert workshops which leads to new analyses of the data. Finally, in Stage 3, the cIMMAs are peer reviewed and if the scientific supporting information is robust and the criteria were applied correctly, they are accepted by an expert panel. Those accepted become IMMAs, others may stay temporarily as cIMMAs pending more information and clarification. Still others revert to AoI with a recognition that there is simply not enough data to meet at least one criterion.

About a third of the areas proposed were not passed by peer review. The Task Force website (marinemammalhabitat.org) has the IMMAs and AoI displayed on an e-Atlas, and you can download a pdf with detailed descriptions of each IMMA, along with shapefiles.

Marine conservation and management initiatives which can utilise products of the IMMA process include:

- Convention on Biological Diversity Ecologically or Biologically Significant Areas (EBSAs);
- Marine Spatial Planning (MSP) and the planning of any human activity at sea that can have negative impact on marine mammal status (e.g., shipping, fishing, industrial and scientific exploration);
- the establishment of Marine Protected Areas (MPAs);
- International Maritime Organisation's Particularly Sensitive Sea Areas (PSSAs) and other designations; and
- Key Biodiversity Areas (KBAs) identified via the IUCN Standard.

IMMA criteria have been designed in order to accommodate the need for streamlining between IMMAs and other related conservation initiatives including EBSAs, KBAs and IBAs.

With Resolution 12.13 (2017) the CMS acknowledges the IMMA criteria and process, requests Parties and invites Range States to identify specific areas where the identification of IMMAs could be beneficial, and invites the CBD, the IMO and IUCN to consider IMMAs as useful contributions for the determination of EBSAs, PSSAs and KBAs.

And this is where we stand with the current IMMA Programme of Work (2016-2021) (see Fig. 3). The first IMMA Workshop was held in Chania, Greece, for the Mediterranean Sea in 2016. In 2017, the Pacific Islands Region Workshop was organized in Samoa. Here we are now in 2018 with the North East Indian Ocean and South East Asian Seas workshop. Next year, 2019, will be the Western Indian Ocean and Arabian Seas, followed by Australia-New Zealand waters and the South East Indian Ocean in 2020 and the South East Tropical and Temperate Pacific Ocean in 2021.

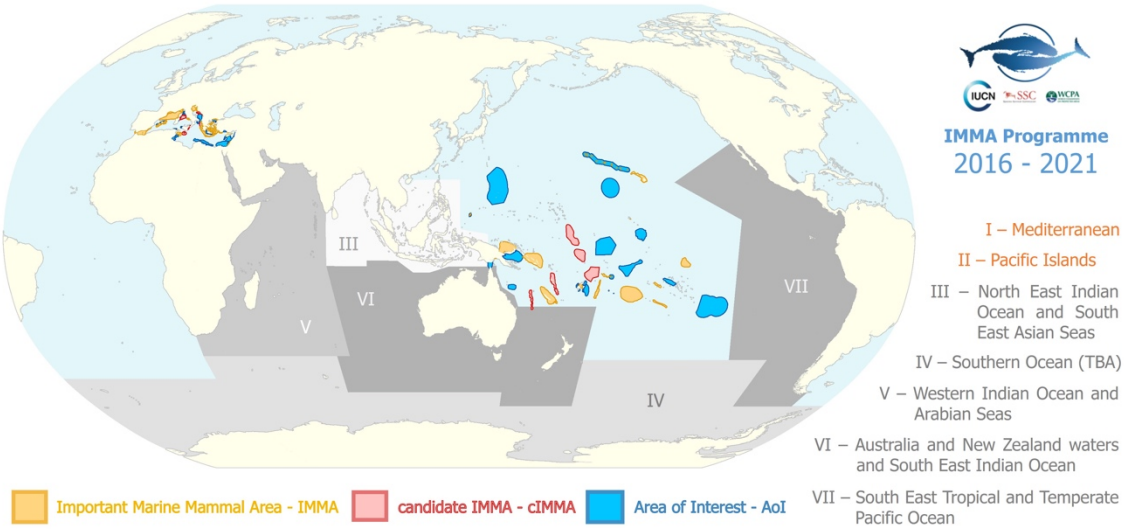

Fig. 3. Current IMMA Programme of Work

Eleanor Heywood, Research Associate, Marine Geospatial Ecology Lab, Duke University, Beaufort, North Carolina, USA

Recent revolutions in animal tracking technology have illuminated the interconnectivity of the world's oceans and interactions between the migratory cycle of many highly migratory species and anthropogenic stressors. How stressors affect individuals at each life history stage, and how these effects may scale up to influence population abundance and species persistence, is a function of migratory connectivity: the geographic linking of individuals and populations throughout their migratory cycles. Declines in the conservation status of migratory marine species has led to calls for knowledge generated from analysis of animal movement data and connectivity to be more effectively incorporated into management and policy frameworks. However, though the quantity of data on marine migratory species has increased dramatically, efforts to synthesize and integrate information on animal movement and connectivity into management and policy fora are nascent.

Ideally, synthesized, integrated, and easily-interpreted knowledge about migratory connectivity would be available for use in management and policy processes. A consortium of scientific organizations (see micosystem.org/partners), is working to develop an open-access online system to describe Migratory Connectivity in the Ocean (MiCO) for marine mammals, sea turtles, seabirds, and fishes that utilize ABNJ for some portion of their annual cycle. We envision an easy to use product that provides actionable integrated and synthesized knowledge in the form of geographically explicit descriptions of area use by migratory species, and network models of marine migratory connectivity, along with effective visualizations, metadata, and background information. Key aspects of this system are that it must: 1) provide value to both data/product contributors, and policy makers and managers; 2) compliment the strengths of existing data repositories and research programs globally; and, 3) integrate information across data types, primary scientific literature and traditional knowledge and expert opinion.

Three approaches will be used to populate the MiCO system including a comprehensive literature review, aggregation of existing data and derived products, and the development of new synthetic products from data contributions. Through a preliminary global review of literature on migratory connectivity, MiCO will provide a new baseline summary of peer-reviewed information on migratory connectivity for more than 200 species. Where knowledge on migratory connectivity has been analyzed and synthesized, MiCO is working to partner with organizations to facilitate the delivery of those products to management organizations and policy processes in a transparent manner with explicit acknowledgement of data contributors through the MiCO system.

The consortium will also develop synthetic and meta-synthetic products to fill knowledge gaps, integrate existing synthetic efforts and provide the most comprehensive products possible within the MiCO system. The success of this endeavor hinges on the ability to complement and add value to existing data, projects,

online repositories and observing systems, and to better incentivize participation by the wider scientific community. To date, active partners include data warehouses, national observing systems, taxa conservation groups, museums, environmental non-governmental organizations, universities, intergovernmental commissions and UN Conventions. MiCO seeks to build on this beginning and invites engagement from others to inform the development of the necessary step-change in marine migratory species conservation. The MiCO process is illustrated in Fig. 4.

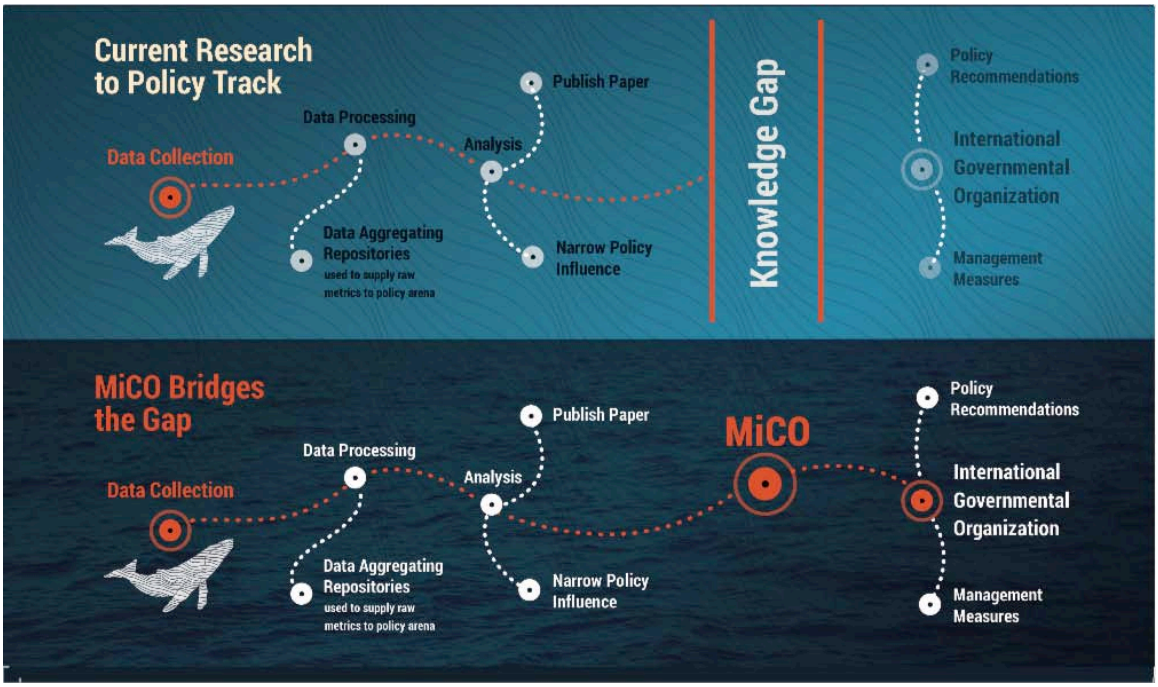

Fig. 4. The Work of the Migratory Connectivity in the Ocean project—MiCO

Annex IV – List of sub-regions and group facilitators

A decision was made to focus on sub-regions due to the large number of AoI. In previous workshops a separate one-day process also considered the AoI by species. In the process of considering sub-regions, of course the relevant species were considered one by one (see Fig. 2 for map).

BREAKOUT GROUPS – Sub-regions

Sub-region	Group facilitator
[I] North and West Bay of Bengal (NWBB)	Erich Hoyt
[II] Bay of Bengal and Indian Ocean (BBIO)	Excluded from the assessment
[III] Coral Coast to West Sumatra (CCWS)	Margherita Zanardelli
[IV] South China to Java and Gulfs (SCJG)	Michael Tetley
[V] Philippines and North Borneo (PHNB)	Simone Panigada
[VI] Sulawesi to Banda Sea (SUBS)	Giuseppe Notarbartolo di Sciara
[VII] South Java and Lesser Sunda (SJLS)	Caterina Lanfredi

Annex V – List of approved IMMAs and cIMMAs

Some 44 candidate Important Marine Mammal Areas (cIMMAs) were identified by the experts attending the IMMA Regional Workshop for the North East Indian Ocean and South East Asian Sea. These were used to compile standard submissions for IMMA status for inspection by the independent review panel. Following review and subsequent revisions in some cases, 30 areas were accepted as IMMAs, two cIMMA were merged into one cIMMA (Mayo and Pujada Bays cIMMA) resulting in seven cIMMAs, subject to additional data or clarifications needed to pass review in future. The other six cIMMAs were given AoI status with the recognition that these areas will be monitored and that additional research could contribute to them becoming a cIMMA at a future IMMA expert workshop. These six AoI joined the list of other AoI resulting in a total of 32 AoI.

Below are the IMMAs and cIMMAs, and the AoI are listed in Annex VI. A summary of the supporting rationale will be made available via the Task Force website (marinemammalhabitat.org).

The titles of the IMMAs and cIMMAs are listed below under the Workshop sub regions.

Subregions:

[I] North and West Bay of Bengal (NWBB)
[II] Bay of Bengal and Indian Ocean (BBIO)
[III] Coral Coast to West Sumatra (CCWS)
[IV] South China to Java and Gulfs (SCJG)
[V] Philippines and North Borneo (PHNB)
[VI] Sulawesi to Banda Sea (SUBS)
[VII] South Java and Lesser Sunda (SJLS)

30 IMMAs:

[I] North and West Bay of Bengal (NWBB)
- Chilika Lagoon IMMA
- Coastal Northern Bay of Bengal IMMA
- Sundarbans IMMA
- Swatch-of-No-Ground IMMA
- Gulf of Mannar and Palk Bay IMMA
- South West to Eastern Sri Lanka IMMA

[II] Bay of Bengal and Indian Ocean (BBIO)
Excluded from assessment.

[III] Coral Coast to West Sumatra (CCWS)
• Satun-Langkawi Archipelago IMMA
• Matang Mangroves and Coastal Waters IMMA
• Southern Andaman Islands IMMA

[IV] South China to Java and Gulfs (SCJG)
• Con Dao IMMA
• Kien Giang and Kep Archipelago IMMA
• Mersing Archipelago IMMA
• Kuching Bay IMMA
• Similajau-Kuala Nyalau Coastline IMMA

[V] Philippines and North Borneo (PHNB)
• Bohol Sea IMMA
• Babuyan Marine Corridor IMMA
• Iloilo and Guimaras Straits IMMA
• Malampaya Sound IMMA
• Tañon Strait IMMA

[VI] Sulawesi to Banda Sea (SUBS)
• Berau and East Kutai District, Kalimantan IMMA
• Wakatobi and Adjacent Waters IMMA
• Balikpapan, Adang, Apar Bays IMMA
• Tolitoli IMMA

[VII] South Java and Lesser Sunda (SJLS)
• Buleleng IMMA
• Kaimana, West Papua IMMA
• Savu Sea and Surrounding Areas IMMA
• Eastern Lesser Sunda Islands and Timor Coastal Area IMMA
• Western Lesser Sunda Islands and Sumba Coastal Area IMMA
• Southern Bali Peninsula and Slope IMMA
• Bintuni Bay, West Papua IMMA

7 cIMMAs:

[III] Coral Coast to West Sumatra (CCWS)
• Trang cIMMA

[IV] South China to Java and Gulfs (SCJG)
• Trat Koh Kong cIMMA
• Upper Gulf of Thailand cIMMA

[V] Philippines and North Borneo (PHNB)
• Bay of Brunei cIMMA

• Lower Kinabatangan Estuarine and Coastal Area cIMMA
• Mayo Bay to Pujada Bay cIMMA

[VI] Sulawesi to Banda Sea (SUBS)
• Raja Ampat and Dampier Strait cIMMA

Annex VI – List of AoI for future consideration

After consideration of more than 100 Areas of Interest (AoI) summarized in the AoI report, with some further areas added during the workshop, submission forms were then prepared for 44 candidate IMMAs (cIMMAs). Some AoI were dismissed as overlapping, duplicative or irrelevant. It was considered that 32 AoI sites would stay as AoI due to the present lack of evidence suitable for identification as cIMMAs at the time of the workshop, or as a course of further consideration following the independent review process. These sites consisted of (1) AoI originally submitted to the Task Force prior to the workshop, (2) those AoI additionally identified by experts over the course of the workshop in light of new information and knowledge presented, and (3) cIMMAs that failed to become IMMAs or to be kept as cIMMAs. The AoI status is valuable in terms of facilitating and focusing future monitoring and research activities on marine mammals in the region. This enhanced activity could provide additional evidence for such AoI to be reconsidered as IMMA candidates during future iterations of the IMMA identification process and Regional Expert Workshops. The AoI, listed below, and any supporting rationale, will be highlighted in the future on the Task Force website (marinemammalhabitat.org) and in other Task Force publications:

- Alor AoI
- Balut and Sarangani Island AoI
- Banda and Ceram Seas AoI
- Bandon Khanom AoI
- Batanes Islands AoI
- Brooke's Point AoI
- Bunaken to Sangihe-Talaud AoI
- Busuanga, Calamianes, and Palawan AoI
- Cendrawasih Bay AoI
- Central Tamil Nadu, Puducherry AoI
- Coastal Areas and Estuaries of Sesayap to Cowie Bay AoI
- Davao Gulf AoI
- Dumaran Araceli AoI
- Gahirmatha and Central Odisha AoI
- Halong Bay AoI
- Hinatuan Bay AoI
- Honda Bay AoI
- Koh Rong AoI
- Malita AoI
- Myeik-Similan AoI
- Nha Trang Bay and Adjacent Area AoI
- Nicobar Islands AoI
- Nino Konis Santana AoI
- North Andaman Island AoI
- Off coast of Andhra Pradesh AoI

- Payar Island and Surrounding Waters AoI
- Penang Island and Butterworth Coast AoI
- Polillo Island AoI
- Savu-Timor Sea AoI
- Wadge Bank to Bar Reef AoI
- Western Celebes Sea and Drop-off AoI
- West Seram AoI

AoI reserved for future IMMA Workshops and Regional Task Force consideration

North Papua to Papua New Guinea AoI is part of Pacific Islands IMMA Region

Annex VII – Template for Area of Interest (AoI) submission form

Preparatory to the Borneo workshop, the expert participants, members of the public, and the marine mammal and ocean ecosystem communities were asked to fill out an AoI submission form for any areas that they would potentially like to nominate for consideration as candidate IMMAs. This form is then used at the workshop to draft the cIMMA submissions (see Annex VII).

THE AREA OF INTEREST (AoI) SUBMISSION FORM

AoI Title:
[Brief name that describes the area within the AoI]

Point(s) of Contacts
[Name, Affiliation/Organization, Contact Email]
[Name, Affiliation/Organization, Contact Email]
[Name, Affiliation/Organization, Contact Email]

Abstract
[Brief summary of the AoI description and qualifying selection criteria 250 words maximum]

Summary Table of AoI species

ID	Scientific Name	Common Name	Population/Sub-population Name	IUCN Status	IMMA Selection Criteria Met (x)							
					A	Bi	Bii	Ci	Cii	Ciii	Di	Dii

AoI Map
[simple boundary map of the AoI location]

Description of AoI
[Description and references to supporting information about the AoI location, i.e. country, geographic locality]

[Description and references to supporting information about the marine mammal species occurring within the AoI]

[Description and references to supporting information about why the area meets the IMMA selection criteria and should be considered as a AoI]

References and other supporting information

[Use this space to add any references used in the submission including those citations, books, reports, or links to websites or databases used to support to submission]

Annex VIII – Template for cIMMA submission form

At the Borneo workshop, a simplified cIMMA submission form was used for the first time (see immediately below). Following this form is a more detailed list of points that has been used to assist participants of regional workshops to draft their cIMMA submissions.

THE cIMMA SUBMISSION FORM

cIMMA Title:
[Brief name that describes the area within the cIMMA]

Point(s) of Contacts
[Name, Affiliation/Organization, Contact Email]
[Name, Affiliation/Organization, Contact Email]
[Name, Affiliation/Organization, Contact Email]

Abstract
[Brief summary of the cIMMA description and qualifying selection criteria 250 words maximum]

Summary Table of cIMMA species

ID	Scientific Name	Common Name	Population/Sub-population Name	IUCN Status	IMMA Selection Criteria Met (x)							
					A	Bi	Bii	Ci	Cii	Ciii	Di	Dii

cIMMA Map
[simple boundary map of the cIMMA location]

Description of cIMMA
[Description and references to supporting information about the cIMMA location, i.e. country, geographic locality]

[Description and references to supporting information about the marine mammal species occurring within the cIMMA]

[Description and references to supporting information about why the area meets the IMMA selection criteria and should be considered as a cIMMA]

Criterion A – Species or Population Vulnerability
[Detailed description for meeting the above criterion – only required if the area meets the above criterion]

Criterion Bi - Small and Resident Populations
[Detailed description for meeting the above criterion – only required if the area meets the above criterion]

Criterion Bii – Aggregations
[Detailed description for meeting the above criterion – only required if the area meets the above criterion]

Criterion Ci – Reproductive Areas
[Detailed description for meeting the above criterion – only required if the area meets the above criterion]

Criterion Cii – Feeding Areas
[Detailed description for meeting the above criterion – only required if the area meets the above criterion]

Criterion Ciii – Migration Routes
[Detailed description for meeting the above criterion – only required if the area meets the above criterion]

Criterion Dii – Distinctiveness
[Detailed description for meeting the above criterion – only required if the area meets the above criterion]

Criterion Dii – Diversity
[Detailed description for meeting the above criterion – only required if the area meets the above criterion]

References and other supporting literature
[Use this space to add any references used in the submission including those citations, books, reports, or links to websites or databases used to support to submission]

Annex A. Supporting Figures or Maps
[Use this space to add any figures including those maps, sightings, charts, data tables, or images which support the submission of the cIMMA – please ensure each figure is accompanied by a figure legend / appropriate description of the figure]

Annex B. List of Primary and Secondary Species
Primary Species – rationale for cIMMA proposal

Scientific Name	Common Name of Species	Population / Subpopulation Name	IUCN / other status assessment

Secondary Species – present in areas but not used in the rationale for cIMMA proposal

Scientific Name	Common Name of Species	Population / Subpopulation Name	IUCN / other status assessment

LIST OF POINTS USEFUL FOR THE PREPARATION OF cIMMA SUBMISSIONS

Part 1: cIMMA Description

- Title/Name of the area
- Points of contact for submission (names, affiliations, title, contact details)
- Abstract (100-word summary of the submission)
- Introduction (feature type(s) present, geographic description, depth range, oceanography, general information data reported, availability of models)
- Location (Indicate the geographic location of the area/feature and the underlying rationale for boundary selection. This should include reference to a location map shown on page 11 of this form in the space provided, and the total size of the area in km2. It should state if the area is within or outside national jurisdiction or straddling both.)
- Description of the species and features which qualify as IMMA (information about the characteristics of the feature to be proposed, e.g. in terms of species, population and underlying physical description (water column feature, benthic feature, or both) and then refer to the data/information that is available to support the proposal and whether models are available in the absence of data. This needs to be supported where possible with maps, models, reference to analysis, or the level of research in the area)

Part 2: Criterion A – Species or Population Vulnerability

- Explanation for cIMMA assessment (including rationale for feature selection and description of feature and condition)
- Declaration of confidence in evidence available (including information on data gathered, gaps in knowledge, reliability, age of information and any known biases)
- Additional notes on the cIMMA submission on Criterion A

Part 3: Criterion B - Sub-criterion Bi – Small and Resident Populations

- Explanation for cIMMA assessment (including rationale for feature selection and description of feature and condition)
- Declaration of confidence in evidence available (including information on data gathered, gaps in knowledge, reliability, age of information and any known biases)
- Additional notes on the cIMMA submission on Sub-criterion Bii

Part 4: Criterion B - Sub-criterion Bii – Aggregations

- Explanation for cIMMA assessment (including rationale for feature selection and description of feature and condition)
- Declaration of confidence in evidence available (including information on data gathered, gaps in knowledge, reliability, age of information and any known biases)
- Additional notes on the cIMMA submission on Sub-criterion Bii

Part 5: Criterion C - Sub-criterion Ci – Reproductive Areas

- Explanation for cIMMA assessment (including rationale for feature selection and description of feature and condition)
- Declaration of confidence in evidence available (including information on data gathered, gaps in knowledge, reliability, age of information and any known biases)
- Additional notes on the cIMMA submission on Sub-criterion Ci

Part 6: Criterion C - Sub-criterion Cii – Feeding Areas

- Explanation for cIMMA assessment (including rationale for feature selection and description of feature and condition)
- Declaration of confidence in evidence available (including information on data gathered, gaps in knowledge, reliability, age of information and any known biases)
- Additional notes on the cIMMA submission on Sub-criterion Cii

Part 7: Criterion C - Sub-criterion Ciii – Migration Routes

- Explanation for cIMMA assessment (including rationale for feature selection and description of feature and condition)
- Declaration of confidence in evidence available (including information on data gathered, gaps in knowledge, reliability, age of information and any known biases)
- Additional notes on the cIMMA submission on Sub-criterion Ciii

Part 8: Criterion D - Sub-criterion Di – Distinctiveness

- Explanation for cIMMA assessment (including rationale for feature selection and description of feature and condition)

- Declaration of confidence in evidence available (including information on data gathered, gaps in knowledge, reliability, age of information and any known biases)
- Additional notes on the cIMMA submission on Sub-criterion Di

Part 9: Criterion D - Sub-criterion Di – Diversity

- Explanation for cIMMA assessment (including rationale for feature selection and description of feature and condition)
- Declaration of confidence in evidence available (including information on data gathered, gaps in knowledge, reliability, age of information and any known biases)
- Additional notes on the cIMMA submission on Sub-criterion Dii

Part 10: Numerical Threshold Benchmarks

- Complete threshold benchmarks table where appropriate (including estimates of population abundance or percentage of population size)

Part 11: Species Description

- Complete the species list table where appropriate (including IUCN or other source for threatened or declining status information)

- Species condition and future outlook of the proposed area (description of the current condition of the area and species present– are they static, declining, improving, what are the particular vulnerabilities? Any planned research/programmes/investigations?)

Part 12: Maps and Figures

- Maps and supporting figures (showing the boundary or area of the candidate IMMA and any relevant supplementary contextual information supporting IMMA classification)

Part 13: References

- References (relevant documents and publications, including URL where available; relevant data sets, including where these are located; information pertaining to relevant audio/visual material, video, models, etc.)

Annex IX – Historical data, traditional knowledge and IMMAs

Historical whaling data can be useful for establishing AoI as well as contributing to cIMMA proposals. In the Pacific Islands region, whaling data provided input for the EBSA determinations, and therefore also had a role in identifying AoI which helped lead to the cIMMAs in that region.

In recent years, the Scientific Committee of the International Whaling Commission (IWC) and associated researchers have helped to organize whaling data and make it accessible in scientific papers and on the IWC database. The two main data sources are a massive compilation of 19th Century whaling records which plots sightings, and catches, as well as the more formal record keeping from the 20th Century whaling industry. In future, it could be useful to explore the value of historical data to IMMAs.

At the Kota Kinabalu workshop, whaling data provided input to the EBSA determinations in the region, and therefore played a role in identifying current potential Areas of Interest. Whaling, or other historical data may have more value in confirming the long-term viability of an area where marine mammals continue to be found, rather than as guidance for identifying present-day areas.

Traditional knowledge can also be used to assist in the identification of IMMAs, both in terms of informing the selection process and validating other data. In areas where marine mammals have been traditionally hunted, it may be possible to compute abundance and population trends. IMMAs are independent of political and socioeconomic factors during the identification stage.

Annex X – Freshwater IMMAs

The *Workshop for the Identification of Important Marine Mammal Areas (IMMAs) in the North East Indian Ocean and South East Asian Seas region* considered coastal and pelagic marine waters, including mangroves and estuaries, that are particularly important for cetaceans and dugongs but did not consider resident "marine mammal" populations in freshwater systems that adjoin marine environments of the North East Indian Ocean and South East Asian Seas Region. These species include one "true" freshwater dolphin (*Platanista gangetica*) and one "facultative" freshwater dolphin (*Orcaella brevirostris*) that is both resident to freshwater systems as well as in nearshore coastal waters. These species and the main freshwater systems are shown in Table 1 below. It was decided that freshwater systems will be considered during a later IMMA workshop specifically focused on freshwater marine mammals.

Table 1. List of freshwater systems supporting freshwater dolphins that adjoin the marine waters of North East Indian Ocean and South East Asian Seas

Freshwater System	Species		IUCN Red List	
	Scientific Name	Common Name	Species	Subpopulation
Ganges-Brahmaputra-Meghna River System	*Platanista gangetica*	Ganges River dolphin	EN	Not Listed
Karnaphuli-Sangu River System	*Platanista gangetica*	Ganges River dolphin	EN	Not Listed
Mekong River	*Orcaella brevirostris*	Irrawaddy dolphin	EN	CR
Ayeyarwady River	*Orcaella brevirostris*	Irrawaddy dolphin	EN	CR
Mahakam River	*Orcaella brevirostris*	Irrawaddy dolphin	EN	CR
Songkhla Lake	*Orcaella brevirostris*	Irrawaddy dolphin	EN	CR

Acronyms

AoI	Area(s) of Interest
BIA	biologically important area (US and Australia)
CBD	Convention on Biological Diversity
cIMMA	Candidate Important Marine Mammal Area
CMS	Convention on Migratory Species
CR	Critically Endangered (IUCN RedList)
DAF	Data appraisal form (for the IMMA process)
DD	Data Deficient (IUCN RedList)
EBSA	Ecologically or Biologically Significant Area
EN	Endangered (IUCN RedList)
GOBI-IKI	Global Ocean Biodiversity Initiative's project supported by the International Climate Initiative
IBA	important bird and biodiversity area
IBAT	International Biodiversity Assessment Tool
ICMMPA	International Conference on Marine Mammal Protected Areas
ICoMMPA	International Committee on Marine Mammal Protected Areas
IMMA	Important Marine Mammal Area
IoK	Inventory of knowledge (for the IMMA process)
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Area
LC	Least Concern (IUCN RedList)
MiCO	Migratory Connectivity in the Ocean
MM	marine mammal
MMPA	marine mammal protected area
MMPATF	Marine Mammal Protected Area Task Force
MPA	marine protected area
MSP	marine spatial planning
NT	Near Threatened (IUCN RedList)
SAC	Special Area of Conservation (EU Habitats & Species Directive)
SSC	Species Survival Commission (of the IUCN)
VU	Vulnerable (IUCN RedList)
WCMC	World Conservation Monitoring Centre (within UNEP)
WCPA	World Commission for Protected Areas (of the IUCN)
WDC	Whale and Dolphin Conservation