



PROCEEDINGS OF THE  
FOURTH INTERNATIONAL CONFERENCE  
ON MARINE MAMMALS  
PROTECTED AREAS

ICMMPA 4: *Forging Partnerships and Planning For Protection*  
November 13 – 17, 2016 | Jalisco, México |

Editors: Alexandra Spring, Naomi McIntosh, and Tundi Agardy



# ICMMPA 4 Conference Proceedings

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Comisión Nacional de Áreas Naturales Protegidas (CONANP)

Ecología y Conservación de Ballenas, AC (Ecobac)

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## ICMMPA 4 Conference Proceedings



Photo credit: Joan Gonzalvo, Tethys Research Institute

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# ICMMPA 4 Conference Proceedings

## Foreword



-- **Erich Hoyt**, Bridport Dorset UK  
Research Fellow, Whale and Dolphin Conservation  
Steering Committee Member, ICoMMPA  
Co-chair, IUCN MPA Task Force

In November 2006, Brad Barr and I stood on the rocks looking out to the open sea from a small town in northern Chile. We were presenting at a seminar on MPAs organized by the Chilean Global Environment Facility's Marine Program. Besides one other presentation from Chile, ours was the only one that touched on marine mammals. At the time Brad was the manager of the Stellwagen Bank National Marine Sanctuary, and he had been talking to David Mattila and Naomi McIntosh from the Hawaiian Islands Humpback Whale National Marine Sanctuary about the need for a unique forum for marine mammal researchers, MPA managers and related stakeholders. He was—let's say—excited.

It didn't take more than a few minutes of listening for me to say "great idea—count me in!" At the time, I had just published the first edition of *Marine Protected Areas for Whales, Dolphins and Porpoises* and I was keenly aware that while a few things were starting to happen for marine mammal habitat conservation in various parts of the world, no one seemed to be talking to each other and there were only a few true marine mammal protected areas (MMPAs) occupying only a small part of the world ocean.

In early July 2007, David, Naomi and others at NOAA graciously hosted about a dozen potential steering committee members from around the world to discuss the idea of holding an international conference on MMPAs. The International Committee on Marine Mammal Protected Areas (ICoMMPA) was founded. It took time to raise the conference funds and to design the program but with some relief, and significant sponsorship by NOAA and the Australian government, we opened our stalls on Maui in March 2009, hosting more than 200 people from 40 countries for five days of plenary talks, workshops, training sessions, and outings with the theme of "Networks: Making connections."

Deemed a success, the first conference seemed a good tool for getting people together to talk MMPAs and the idea of doing it again gained currency in other corners of the world. We added members to the steering committee, most notably from the newly formed French MPA Agency who were commissioning large area surveys of marine mammals and conferring protection to large areas

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throughout French waters. They sponsored the second conference in Martinique in November 2011 with the theme of “Endangered Spaces, Endangered Species”.

The Martinique ICMMPA2 was followed by ICMMPA3 in Adelaide, Australia in November 2014, hosted and co-sponsored by Whale and Dolphin Conservation (WDC-Australasia) and the Australian government with the theme of “Important Marine Mammal Areas—A Sense of Place, a Question of Size”. ICMMPA3 progressed discussions about the elements of MMPAs that confer success – size, networking, and management measures included.

And in November 2016, the Mexican National Commission of Natural Protected Areas (CONANP) hosted ICMMPA4 in Puerto Vallarta, Mexico, with the theme “Forging Partnerships and Planning Strategies for Protection”. The subject of how to begin and nurture partnerships repeated throughout the proceedings that follow.

So, what have we accomplished in some 10 years of trying to make connections with people and to gain traction for the creation, design and management of MMPAs? And where will we go from here?

There have been a number of exciting announcements at our conferences: International Sister Sanctuary Agreements were reached in the Pacific and, later on, in the Atlantic between MMPAs located on humpback whale feeding and breeding grounds. And Bangladesh stole the show twice with announcements of new marine mammal protected areas for various dolphins living in the Sundarbans (Bay of Bengal), as well as offshore dolphins and the Bryde’s whale found in an area called Swatch of No Ground.

Besides the fanfare, we came to a number of realizations. The first was that we could get people together to talk, especially researchers and marine conservationists, but we were still having trouble getting enough managers in the room, and particularly managers of MMPAs outside of the developed countries. This continues to be a challenge that we are determined to address.

The second is that we realized that part of the reason there was a small and unrepresentative number of marine mammal species with protected habitat was because of huge data gaps. This applied to most pelagic and high seas waters—most of the ocean. We were going to need to get countries and big organizations involved in large-scale survey work to gather the data, and at the same time we needed data specialists, modelers and mappers to extrapolate and extend that data to cover more of the ocean. Just as worrisome was the fact that the Convention on Biological Diversity (CBD) was holding workshops across the world ocean to identify ecologically or biologically significant areas (EBSAs) and only a few well-scattered areas, mostly well-known near shore humpback breeding grounds, were being considered for marine mammals. We had to start sending marine mammal habitat experts to the EBSA workshops.

The third challenge was realizing how fast things were moving in terms of marine spatial planning in the exclusive economic zones (EEZs) of countries. Industry, engaging with governments, wanted to make plans to use the seas and seabed, reaching ever farther from shore. The data for marine mammals barely gave the kind of information needed to argue for keeping special zones for habitat protection, even though 25% of the marine mammals remain in IUCN threatened categories, and at least 50% are officially data deficient. From this third challenge emerged an MSP working group, shepherded by Tundi Agardy, which has been a strong thread at every conference to frame the issues and advance the work of embedding MMPAs in broader spatial management frameworks.

Meanwhile, the ICoMMPA steering group was realizing that it needed more influence in the conservation world. Somewhere between the ICMMPA2 and ICMMPA3 conferences, in 2013, the idea was born to create an IUCN Task Force on Marine Mammal Protected Areas to push ahead some of the above recognized issues in the forums of the CBD, IUCN, CMS and national governments. The steering group sought advice from IUCN Marine vice-chair of the World Commission on Protected Areas (WCPA), Prof. Dan Laffoley, and step-by-step, the MMPA Task Force (TF) became a reality,



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lodged jointly in the WCPA and the Species Survival Commission (SSC). The entire steering committee became the core TF and others have been added since. The goal of the TF is to facilitate mechanisms to encourage collaboration, sharing of information and experiences to access and disseminate knowledge and the tools for establishing and managing MMPAs. The Task Force's mission focuses on promoting effective spatial solutions and best practices for marine mammal conservation.

Soon after the Task Force was formed, Giuseppe Notarbartolo di Sciara and I, as Task Force co-chairs, began focusing on the development of a new conservation tool inspired partly by the Important Bird Areas (IBA) concept of BirdLife International. IBAs had gained substantial traction in conservation circles. Thus, Important Marine Mammal Areas—IMMAs—were born, defined as “discrete portions of habitat, important to marine mammal species, that have the potential to be delineated and managed for conservation.”

After several workshops co-organized with Giuseppe and Mike Tetley, IMMA criteria emerged, modeled closely on IBA, EBSA and key biodiversity area (KBA) criteria, but closest to EBSA criteria in that thresholds defining specific numbers as percentages of world populations and other metrics were not made mandatory - due to data gaps for these typically wide-ranging oceanic species. The result is a workable set of criteria that can be applied even in data-deficient areas, paving the way for identifying areas important for marine mammals everywhere in the world.

The MMPA TF travelled far and wide, taking the IMMA idea around for the better part of two years. In October 2016 the first IMMA workshop, generously funded by the MAVA foundation, was convened to cover Mediterranean waters. Some 41 candidate IMMAs (cIMMAs) are now being considered by an independent panel. In March 2017, the IMMA workshops moved to the South Pacific, with even more generous funding from the German government's climate initiative IKI, as part of the GOBI program. The GOBI-IKI funded work of the Task Force will now occupy the next five years until 2021, as the workshops move region by region around the southern hemisphere to identify IMMAs and start to pursue further conservation and monitoring, partly through the appointment of regional committees of the Task Force.

What do we hope IMMAs will ultimately achieve?

The identification of IMMAs across the ocean will help determine whether existing MMPAs are in the right places or need to be expanded or zoned. It will also suggest new areas that need MMPA protection and it will reveal much about the kind of habitat and whether it needs a high level of protection (highly protected, no take areas, or special zones). In addition, it will enable countries to know the location of marine mammal areas as part of marine spatial planning processes. IMMAs will also allow better monitoring to answer many questions, including: Is climate change affecting the migrations and preferred habitat areas of cetaceans? Marine mammals are the best monitors we have of ocean diversity and overall health as they are the main species that come to the surface for air and are visible. If cetacean populations are healthy, we can usually say that the ecosystem is healthy.

As of mid-2017, ICMMPA5 is now being planned for 2019 in Greece, to be sponsored by WWF Greece. Greece has several dolphin species in its seas, along with resident sperm whales in the Hellenic Trench and Mediterranean monk seals along its coasts, all of which are in need of formal habitat protection. This first ICMMPA conference in the old world will bring new managers and researchers to the table, and the dedicated group that has been attending various other conferences will no doubt come to Greece and bring their ideas. On the one hand, marine mammal species are more threatened in the waters of the Mediterranean and Black seas. Even the short-beaked common dolphin in the Mediterranean is not so common and now considered endangered. But the Mediterranean has had focused attention for several decades on its marine mammal populations through EU agencies, CMS, the CBD EBSA process and most recently by the first IMMA workshop in October 2016. There are opportunities to make some headway with marine conservation in the Mediterranean, and ICMMPA 5 should help push things ahead.

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In September 2017, the ICoMMPA journey will return to northern Chile, this time La Serena, for wide ranging discussions at the International Marine Protected Area Congress (IMPAC 4). ICoMMPA and Task Force discussions will lay some early groundwork for our 2020 IMMA workshop being planned to cover the southeast Pacific including the waters of the long Chilean coast. La Serena will be a good opportunity to celebrate our first 10 years, and to plan the next 10.

From the beginning, we wanted to create a “community of practice” for MPA practitioners, researchers and stakeholders around the world working with or concerned about marine mammals or MMPAs. We have achieved our initial goals, though the road to truly effective use of MPAs for marine mammal conservation is long, and challenges remain. Now more than ever, the ICoMMPA community is ready to meet those challenges.



Photo credit: Keith Ramos

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### List of Abbreviations

ABNJ	Areas Beyond National Jurisdiction
ACCOBAMS	Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean, and Contiguous Atlantic Area
AoI	Areas of Interest (for IMMAs)
CBD	Convention on Biological Diversity
CCH	Cetacean Critical Habitat
cIMMA	Candidate Important Marine Mammal Area
CMS	Convention on Migratory Species
CONANP	Comisión Nacional de Áreas Naturales Protegidas (Mexico)
EBM	Ecosystem-Based Management
EBSA	Ecologically or Biologically Significant Area
ECOBAC	Ecología y Conservación de Ballenas, AC
GBR	Great Barrier Reef
GOBI	Global Ocean Biodiversity Initiative
HSPMA	High Seas Marine Protected Area
IBA	Important Bird Area
ICoMMPA	International Committee on Marine Mammal Protected Areas
ICMMPA	International Conference on Marine Mammal Protected Areas
IMMA	Important Marine Mammal Areas
IMO	International Maritime Organization
INECC	National Ecology Institute (Mexico)
IUCN	International Union for the Conservation of Nature
IWC	International Whaling Commission
KBA	Key Biodiversity Area
MMA	Marine Managed Area
MMPA	Marine Mammal Protected Area
MMPATF	Marine Mammal Protected Area Task Force
MPA	Marine Protected Area
MSP	Marine Spatial Planning
NOAA	National Oceanic and Atmospheric Administration
NOS	National Ocean Service
PSSA	Particularly Sensitive Sea Area
QGIS	Geographic Information System
SDG	Sustainable Development Goal
SPREP	South Pacific Regional Environment Program
SSC	Species Survival Commission
UNGA	United Nations General Assembly
UNEP	United Nations Environment Programme
WDC	Whale and Dolphin Conservation
WWF	World Wildlife Fund / Worldwide Fund for Nature

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### Executive Summary

Over 90 marine mammal protected area (MMPA) researchers and managers as well as government and conservation group representatives from 19 countries convened in Puerto Vallarta, México, from 13-17 November 2016 for the Fourth International Conference on Marine Mammal Protected Areas (ICMMPA4). A primary focus of the conference was to explore the role of effective partnerships and planning strategies for managing and monitoring protected areas with marine mammals.

The conference theme “Forging Partnerships and Planning for Protection” provided an opportunity for the exchange of ideas and practices among participants from different disciplines to enrich the knowledge and devise better tools for implementing cutting edge strategies and planning schemes aimed at increasing the effectiveness of marine mammal conservation. The exchange of ideas and experiences revealed both what we can do to create new MMPAs and improve on existing ones. It made us aware of the many success stories already taking place, showcasing what México is already doing to promote connectivity for the conservation and protection of species in both terrestrial and marine ecosystems. ICMMPA4 also provided incentives and new tools to help move forward discussions for the creation of ocean corridors for marine mammals such as the humpback whale Mexico, Costa Rica and Panama safe corridor, an initiative we can say started at ICMMPA4 in Puerto Vallarta.

During the conference, Mark Spalding on behalf of the Ocean Foundation, the International Fund for Animal Welfare and other partners presented a formal proposal for the creation of continental scale networks of marine mammal protected areas for the protection and conservation of marine mammals, as well as the description and potential designation of corridors for marine mammal “safe passage”.



Photo credit: F. McCann ECOBAC

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The proposal from the Northern to Southern Atlantic Oceans, from Nova Scotia down the east coast of the United States through the Caribbean, and down to the very tip of South America was both supported and expanded by the ICMMPA4 participants to a “pair of corridors” - a parallel and simultaneous replication of the Atlantic corridor, along the Pacific Coast of the entire Western Hemisphere to connect the North and South Basins of the Pacific.

The conference was organized by the International Committee on Marine Mammal Protected Areas (ICoMMPA) in collaboration with the Mexican Government Comisión Nacional de Áreas Naturales Protegidas (CONANP) and Ecología y Conservación de Ballenas, AC (Ecobac). Other organizations helping to sponsor the conference included the French Agence des aires marines protégées, the IUCN Marine Mammal Protected Areas Task Force, the U.S. Marine Mammal Commission, Whale and Dolphin Conservation, NOAA’s Office of National Marine Sanctuaries, the World Animal Protection and Eulabor Institute.

**Key Ideas, Opportunities and Recommendations** that emerged from the panel and workshop discussions at ICMMPA4 included:

- Important Marine Mammal Areas (IMMAs) and their role on the high seas was a featured topic at ICMMPA4. Giuseppe Notarbartolo di Sciara, Mike Tetley and Simone Panigada, fresh from Chania, Greece, provided updates from the first IMMA workshop which selected 41 candidate IMMAs covering the habitats of Mediterranean marine mammal species. Additionally, new mapping tools for determining IMMA Areas of Interest (AOI) and for collating information on marine mammal distribution, densities and habitat were introduced in a “hands on workshop session”. The session served as a testing ground for the Task Force to further refine the use of the tools such as QGIS, Google Earth and the on-line IMMA SeaSketch facility. Planning efforts are currently underway for a second IMMA Workshop, addressing marine mammal habitats in the Pacific Islands Region, to be held in Apia, Samoa, 27 to 31 March 2017.

- We have continued discussions begun at ICMMPA’s inaugural meeting on how Marine Spatial Planning (MSP) can lead to the establishment of MMPAs, and how marine mammal science can inform management both inside and outside those protected areas. At ICMMPA4, we focused the discussion on a specific sector that is driving much MSP around the world: renewable energy. Our panelists discussed the incorporation of marine mammal science in siting decisions for wind, wave, and other offshore renewable energy installations, as well as giving specifics on how data on marine mammals has resulted in the creation of areas off limits to energy development and/or has resulted in amending the energy development plans. As a group, we discussed the considerations that planners need to keep in mind when making decisions about allocating space to maritime uses like energy development, and we also highlighted mechanisms for marine mammal conservationists to become engaged with planners so that marine mammal conservation concerns are addressed. We intend to create guidelines to promote the uptake of marine mammal information in marine spatial planning, covering four kinds of situations that exist worldwide: 1) areas with strong regulatory frameworks and planning capacity, where marine mammal information is readily available; 2) areas with strong regulatory frameworks and planning capacity that are marine mammal data poor; 3) areas still developing regulatory frameworks or with limited capacity but where marine mammal information is available; and finally 4) areas where regulatory frameworks and planning are limited and where marine mammal data are lacking.

- Securing and identifying sustainable sources of financing to support critical management and research needs for marine mammal protected areas was a featured topic at ICMMPA4. The topic was discussed in a panel and workshop. These sessions highlighted the challenges MMPAs face and what managers confront on a daily basis to effectively address their sites management goals. There was a sense and considerable interest from the participants at the conference in finding ways to make MMPAs more sustainably funded, and to increase capacity at the sites and within the MMPA community of practice to achieve this goal.



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- The need for collaboration and international networking for entanglement response in North America was reinforced when a real entanglement (Puerto Vallarta's first for the season) was reported, interrupting a technical session during the last day of the workshop. The trilateral workshop convened by the IWC Entanglement Response Network and hosted by Comisión Nacional de Áreas Naturales Protegidas (CONANP) began during ICMMPA4 and continued for a few days after the conference concluded. The aim of the meeting was to develop working agreements to aid cooperation when dealing with entangled whales across national boundaries. Response leaders from Canada, the USA and México participated. Entanglement of whales in fishing gear and marine debris is a growing and global issue. The size and power of whales means these entanglements can be carried thousand of kilometres and across national boundaries. This size and power also means that entanglement response is dangerous. Safe, professional and coordinated entanglement response is needed for both whale and human safety. The workshop considered these issues and also the importance of information sharing between countries, in order to understand and prevent entanglements from occurring in the first place.
- The role of protected areas for river dolphin conservation in South America was discussed in plenary the following recommendations were made: (1) Incorporate IMMAs criteria in freshwater ecosystems; (2) Assess connectivity status in the Amazon and Orinoco basins with special attention to river dolphins; (3) Foster mercury pollution assessments in aquatic ecosystems in the Amazon and Orinoco basins; and (4) Request home range countries to nominate South America's river dolphins for International Whaling Commission Conservation Management Plan and other international fora tools (i.e. CMS, CBD).

These ICMMPA conferences will continue to foster collaboration and partnerships well into the future, beginning with ICMMPA5 (to be held in Greece in April 2019).

### Background on ICoMMPA



In 2006, the International Committee on Marine Mammal Protected Areas (ICoMMPA) (pronounced eye-COM-pa) was established as an informal group of international experts dedicated to the conservation of marine mammals and their habitats. Members of ICoMMPA represent various geographic regions, as well as a wide range of expertise within the fields of marine mammal biology, ecology and the design and management of marine protected areas and other marine planning initiatives. Members include scientists, representatives of governmental agencies and NGOs.

Since its founding in 2006, ICoMMPA has worked to promote marine mammal conservation through marine protected areas and other area-based management measures, informed by the best available science and to provide a mechanism by which the “community of practice” — comprised of managers, natural and social scientists, decision makers, and other stakeholders — could collaborate, share information and experiences, and disseminate knowledge and tools for establishing, monitoring, and managing marine protected areas (MPAs). The primary activity of the Committee has been organizing periodic MMPA conferences. The four conferences that have been held to date include Maui, Hawaii (2009); Fort de France, Martinique (2011); Adelaide, Australia (2014); and the latest in Puerto Vallarta, México taking place in November (2016).

Critical habitats for marine mammals range from the tropics to the poles, extending from shallow estuarine areas to the high seas. Despite this wide range of habitats, the threats to the vital activities of marine mammals are often remarkably similar, including commercial fishing, resource extraction activities such as oil and gas, commercial shipping, and water and noise pollution. The application of marine protected areas (MPAs) as an effective conservation tool for marine mammals has been demonstrated in a number of areas. Worldwide, at least 700 marine and land-based protected areas have been specifically designated for, or contain populations of, marine mammals. Yet MMPAs often fall short of their mandate and considering the breadth of the ocean, they are poorly represented in the waters of most countries and on the high seas. ICoMMPA’s mission is to ensure that MMPAs are used effectively to conserve marine mammals, and to help grow a worldwide community of practice comprised of researchers, planners, managers, coastal residents, and businesses all aligned to protect marine mammals and their ocean habitats.

### Keynote 1:

## A Proposal for a North America - South America - Caribbean Marine Mammal Corridor in the Atlantic

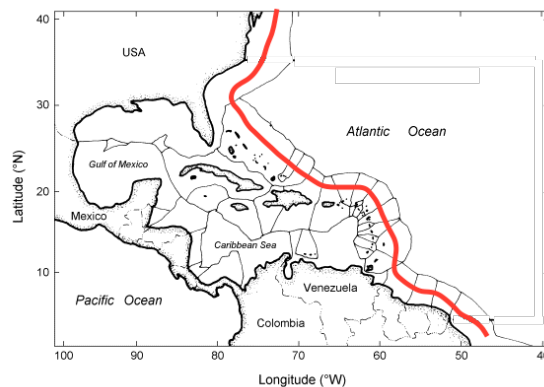
**Mark Spalding**

President, The Ocean Foundation

We all recognize that oceans are critically important for mankind, providing us with benefits in the form of ecosystem services and making the planet inhabitable for life itself. Seventy percent of the planet's surface is covered by ocean, more than half the world's population lives on or near the coast, and one out of every seven people rely on the marine fisheries for their main source of protein. Unfortunately, we are stressing our seas with overfishing, pollution, unregulated coastal development, noise and thermal stress, and climate change effects. The Ocean Foundation (TOF) has supported important work in addressing these threats, including efforts targeting marine mammal conservation.

The Ocean Foundation works to connect donors with those in the front lines of conservation. TOF serves ocean donors by delivering grant making services, providing grant advice, coordinating pooled funds, acting as an international donor facilitator, and managing government funds. It fosters marine solutions by generating innovative ideas for marine projects, and it supports ocean implementers. TOF's goals are to: 1) Build a strong, vibrant and well-connected community of donors, grantees and projects that effectively responds to urgent issues and seizes on key opportunities for global marine conservation; 2) Find, evaluate, and support the most effective marine conservation projects and organizations; 3) Actively address problems facing our ocean; 4) Increase knowledge of, support of, and participation in marine conservation; and 5) Expose new leaders and ideas and build skills. TOF focuses on solutions, and the following is an example.

Together with International Fund for Animal Welfare (IFAW), we are proposing a marine mammal migratory corridor from the Northern to Southern Atlantic Ocean basins, from the Gulf of Saint Lawrence to Stellwagen Bank, through the Florida Current and the waters of the West Indies and Antilles, to the east coast of South America. The goal is to connect the protections of the Marine Mammal Protection Act in the USA (including the US Virgin Islands) to the Agoa Sanctuary and to fill in protective gaps to create a marine mammal migratory "safe passage" corridor (marine protected area) for 21 species, including humpback whales, sperm whales, spotted dolphins, Fraser's dolphins, and pilot whales. This will integrate and expand on the "Martinique Declaration" (from ICMMPA2); as well as the concept of the North Atlantic Humpback Whale-Sister Sanctuary Program (NAHW-SSP). In addition, it can support UNEP's Specially Protected Areas and Wildlife's Marine Mammal Action Plan for the Wider Caribbean Region (UNEP/SPAW-MMAP).



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***Giant's Journey*** – A photographic exhibit displayed at South end of Malecon Boardwalk, Puerto Vallarta

Photo credit: Ecobac – F. Mc Cann



### Panel 1: Building Innovative Partnerships for Marine Mammal Protection

#### Coordinator:

**Brad Barr** (U.S. National Oceanic and Atmospheric Administration, Office of National Marine Sanctuaries, *United States of America*)

#### Speakers:

**Rocio Rivera Campos** - Mexican Fund for the Conservation of Nature, *New Alliances for Wildlife Conservation, Mexico*

**Theresa Fyffe** - Great Barrier Reef Foundation, Director Projects and Partnerships, *Out of the Blue: Creating a Powerful Network to Protect a Global Icon, Australia*

**Mark Spalding** - The Ocean Foundation, *Building Financing Partnerships for Marine Mammal Protection Areas, United States of America*

**Naomi Mcintosh** - U.S. National Oceanic and Atmospheric Administration, Office of National Marine Sanctuaries, Pacific Islands Region, *Ideas for Supporting Sustainable Funding of MMPAs, United States of America*

#### Introduction and Overview

Recognizing that one of the particularly significant challenges MMPA scientists and managers must confront is finding sufficient funding to support management and research activities needed to effectively achieve management goals, this panel focused on innovative partnerships to help attain this goal. Programs like the Great Barrier Reef (GBR) Foundation (<http://www.barrierreef.org>) have been established, at least in part consistent with Article 17 of the World Heritage Convention, to support research on GBR natural and cultural resources. This might represent a potential model for establishing an institution to support research and management in marine mammal protected areas (MMPAs) around the world. The GBRF possesses a structure and process for identifying a research strategy, developing a catalogue of peer-reviewed proposed projects consistent with that strategy, and a prioritization process that guides the allocation of available funds. This is not particularly groundbreaking, but our understanding is that this Foundation has been quite successful in finding funding and supporting needed research. Something similar might perhaps be a resource for MMPA managers and scientists.

Since the inception of the International Committee on Marine Mammal Protected Areas (ICoMMPA), we have been searching for ways to offer the opportunity to our community of practice to help them address critical research and management issues, many of which are shared challenges at most MMPAs around the world. The GBR Foundation model might be one way to provide this opportunity, and the International Committee on MMPA could be the institution, with a foundation partner, that

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does the work needed to implement this model for the MMPA community. To make this happen, we already have:

- 1) A compelling issue (marine mammals and the protected areas established to conserve and protect key places critical to their survival),
- 2) An MMPA community that is confronting considerable challenges from human activities that represent threats to the long-term health and welfare of these charismatic species, and developing relationships with these places that desperately need the support,
- 3) A committed group of widely recognized experts in the MMPA community who could convene and conduct workshops that would help develop, in consultation with our community of practice and foundation partner, the strategies, processes, and criteria needed to effectively implement the initiative. They could also provide the necessary peer review of proposals to ensure that only the most scientifically robust proposals are put forward for funding,
- 4) Close institutional and partnership connections with the agencies that manage these places, international marine conservation organizations working on these issues and challenges (such as the IUCN MMPA Task Force, for example, currently engaged in implementing the "Important Marine Mammal Area" initiative), and the research community that supports the work of MMPAs around the world.

What we currently lack, however, is a suitable foundation partner, but we have begun some initial efforts to identify potential foundation collaborators. We particularly require a foundation partner that possesses the knowledge and insight to advise us on what projects and proposals would have traction in the funding community, as not all projects will necessarily be of interest to potential funders. This foundation would also need established relationships with the philanthropic organizations that may be relevant to our mission.

However, before we move forward with any one potential approach, we should see how others have successfully addressed this challenge. This panel assembled representatives from similar foundations to present their models, and to elicit their expertise in helping to find a path forward in support of effective MMPA research and management.

### Session objectives

- 1) Present the idea of an MMPA Foundation and how it might be developed and successfully implemented;
- 2) Hear other approaches for achieving sustainable funding for place-based conservation initiatives;
- 3) Seek comments and advice from experts actively implementing similar initiatives on the idea of an "MMPA Foundation"; and
- 4) Seek input and perspectives from the Conference participants on how to most effectively move forward with offering opportunities for funding innovative and essential research and management strategies for MMPAs.



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### Discussion Summary

Each speaker offered their insight into the challenges and opportunities of seeking and securing sustainable funding for MPAs, using examples from their respective organizations. Generally, the key message common to all presentations was that securing sustainable funding for MPAs was possible with great effort facilitated by a strategic approach to a diverse portfolio of potential sources, it should be expected to take a considerable amount of time – potentially many years, the coordination will require financial support, advice and expertise of those who have relevant successful fundraising organizations, and potentially a number of dedicated staff and organizational infrastructure to implement the coordination effectively. There was a sense from the interaction with the participants at the conclusion of the panel that there was considerable interest in finding ways to make MPAs more sustainably funded, and to increase capacity at the sites and within the MPA community of practice to achieve this goal. Discussion of this topic was continued in Workshop 9.

### Presenter Summaries

#### *New Alliances for Wildlife Conservation*

**Rocío Urapiti Rivera Campos**, Marine and Coastal Conservation Coordinator, Fondo Mexicano para la Conservación de la Naturaleza (FMCN)

As a philanthropic institution dedicated to conservation finance, FMCN seeks to develop innovative mechanisms to bring technical and financial resources to bear on conservation initiatives in Mexico. Five mechanisms currently stand out in this endeavor. Combined, they have the potential to increase resources for conservation projects in the field by 50%. The first is the design and implementation of a national compensation fund in collaboration with environmental authorities. The fund would manage resources provided by the private sector as a means of mitigating and compensating for their inevitable, environmental impacts. The second is a new mechanism to manage the financial resources of third party projects on an ad hoc basis, provided they are aligned with FMCN's conservation priorities. They would be in charge of execution and technical supervision while FMCN would ensure the transparent and effective management and disbursement of the funds. The third, similar to the second, is the financial assets management of third party endowments, leveraging FMCN's 20 years of experience. This provides the opportunity to comply with environmental, social, and governance responsibility standards within a fast-track learning process. The fourth mechanism is a Latin-American version of the Dutch Postcode Lottery applied in Mexico in partnership with CONANP. The lottery would mobilize resources for protected areas and endangered species in the country. Finally, the fifth proposal is the creation of partnerships with high profile, national and foreign consumer brands to leverage their marketing presence and wide audiences in favor of conservation. Partnerships are already underway with Breitling, and both Jaeger-Le-Coultré and Cartier together to help conserve the golden eagle, the bull shark and the jaguar, respectively. These initiatives are setting a new bar for collaboration between the corporate and philanthropic sectors in Mexico.

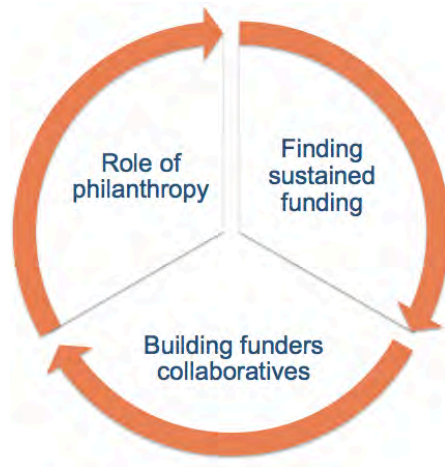
#### *Building Financing Partnerships for Marine Mammal Protection Areas*

**Mark J. Spalding**, President, The Ocean Foundation

MPAs in general are critical to coastal and ocean conservation. They help heal harm from human impact, protect food resources and support food security, serve as a proactive and viable solution to the climate change challenge, and provide habitat and safe haven for marine mammals (as well as other ocean plants and animals). They are special places for governments to recognize and protect

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from the many and cumulating human activities that are overburdening the ocean. Finding sustainable funding for marine mammal protected areas is a challenge that requires diverse strategies to address. From seed money for development to regular visitor fees, there are many possible revenue streams. A diversified portfolio approach is needed to avoid too narrow a reliance on single revenue sources. Case studies on funds for MPAs provide examples of different strategies that could be applied for marine mammal protected areas.



**Difficulties Funding Marine Mammal Work:  
Mark Spalding**

### ***Creating a powerful network to protect a global icon – The Story of the Great Barrier Reef Foundation***

**Theresa Fyffe**, Director of Projects & Partnerships, Great Barrier Reef Foundation

The Great Barrier Reef Foundation (GBRF) was established in 2000 in response to a need for more funding for Great Barrier Reef (GBR)-based research that addresses the priority needs of Reef managers. Over the last 15 years we have raised more than \$50M to support solution-based research projects for the GBR with annual current revenue of \$8M AUD and a team of 11.

The decision to establish a Foundation is not one that should be made lightly and all other options such as partnering with existing Foundations should be carefully considered. Our journey has taken us through three distinct phases of growth and development and these are summarized below:

- Phase 1: Establishment of robust governance arrangements including a business-based Board, a Science Advisory Committee and strong pro-bono partnerships to provide administrative support for legal, financial and audit functions.
- Phase 2: Build strong processes, policies and strategies around the research we support including the development of a research vision, a research framework and a research portfolio to guide our investments. Develop a fundraising strategy that for GBRF resulted in the establishment of our Chairman's Panel made up of CEO's and Chair's from Australia's largest companies (to fund our operating costs) and a donor fund to support research projects.
- Phase 3: Diversification of funding (beyond our strong corporate donor base) to include retail giving, crowd-funding and individual donors. Consolidation of research projects with a focus on fewer, large, high impact projects, rather than many small projects.

We have had many ups and downs over the last 15 years as is likely the case with many in the not-for-profit space. Unfortunately, there is no one size fits all model or a silver bullet for a successful

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not-for-profit, however we consider the key elements of our success to have been developing and maintaining a strong and committed network, having a clearly defined niche that addresses a critical gap and being sufficiently nimble to capitalize on emerging opportunities, whilst staying focused on our mission.

### ***Ideas for Supporting Sustainable Funding for Marine Mammal Protected Areas (MMPAs)***

**Naomi McIntosh**, U.S. NOAA Office of National Marine Sanctuaries Pacific Islands Region

A significant challenge that persists for MMPA managers and practitioners is having sufficient sources of funding to sustain the conservation and management efforts for their protected areas. Most MPAs around the world rely on government support for part or all of their funding needs. Government sourced funds are often limited, susceptible to political shifts, and in most cases, simply not enough to meet the complex management needs of their sites. Undoubtedly, maybe now more than ever, new funding strategies are needed to meet the current and future financing needs for MPAs. In this Panel, we wanted to explore the practicality of an organization like the International Committee on Marine Mammal Protected Areas (ICoMMPA) in attracting new funding opportunities to support collaborative conservation and management initiatives for MMPAs. The questions we would like to address are: Should ICoMMPA explore funding opportunities working with a partner foundation? What are the funding mechanisms that should be investigated and possibly utilized? Could ICoMMPA act as a convener/facilitator for a certain project or initiative? What types of projects/initiatives might funders be attracted to? Our hope for convening this panel was to gain more insight for a possible framework to allow ICoMMPA to expand its efforts to support initiatives that address critical research and management needs for MMPAs.

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Photo credit: Jorge Morales



## Keynote 2: Incorporating Local Marine Mammal Knowledge into Marine Planning Processes: Can We Do It?

Anne Nelson

NOAA MPA Center International MPA  
Capacity Building Team

Thanks and a special shout out to the amazing ICoMMPA steering committee, local planning committee and logistics team for their great work and bringing us all here. Also, a special shout out to Erich Hoyt who could not be here with us today but is certainly here in spirit!

It's good to be here with you all this week. I attended ICMMPA2 five years ago looking for answers related to incorporating marine mammal data into marine renewable energy siting processes. While I didn't find the specific answers I was seeking, I did find this amazing community. We began a conversation at that meeting that has endured and advances later today at the Marine Spatial Planning workshop. You all are cordially invited to attend - please join us later!

This session is about local data. Can we use it? YES! But it's not easy and often doesn't happen. At the time of the ICMMPA2 meeting in Martinique, Oregon State was embarking on amending state land use law to provide for marine renewable energy and designate suitable areas for development of wave energy. Having collected data there as part of Cascadia Research's long-term study of the Pacific Coast Feeding Group of gray whales, I was curious to see how that research was integrated into the process. That inquiry began a journey to understand how marine mammal data is integrated into decision-making processes and what best practices can be applied in data deficient areas. Those early meetings also began a process of connecting planners to scientists so that the data could help strengthen the decision-making process in regards to marine mammals. And that's what brought me to ICMMPA five years ago.

I came to ICMMPA to find guidance from other regions. In addition to those conversations and many others subsequently, researching the literature, one thing was clear: there is global consistency in the need to fill crucial data gaps. Data deficiency is everywhere in the marine mammal realm. Looking at IUCN Red List tells a compelling story – killer whales, beaked whales, arctic minke whales, pygmy blue whale all listed as deficient. Data deficiency doesn't often necessitate action to fill the gaps. This is not news to any of us in this room, but a sobering reminder of how much work there is to left to do to understand marine mammal important habitats, movements in, around and between those areas and behaviors when there. In my quest to find guidance, talking with many people and searching through project processes, I was surprised to see how many processes do proceed in absence of those data. Most processes use what data exists. And often they are not there.

In areas with and without marine mammal data, decisions are being made daily about tourism, coastal development, extractive activities, shipping, dumping, port infrastructure, energy, military exercises, seismic exploration, underwater cables, and more. In some areas data gaps are filled as part of regulatory processes to approve projects. But in some cases, it is too late in the process to provide a timely and robust set of data layers to use in decision making. Many areas do not have those regulatory drivers to get even minimal baseline abundance and distribution data. In many areas, local knowledge is all there is.

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Local knowledge can be an important placeholder to set research agenda and fill critical gaps to be groundtruthed. There are great examples from previous ICMMPAs and MMPA work by Erich Hoyt and others. Can we use it? Yes, of course, but it takes work, time, funding and partnerships and an understanding of and plan to navigate the misalignment of timescales: the timing of development and planning processes do not always align with research and funding timelines and decisions continue to be made in the absence of data in many cases.

The time to do this is now, **before** projects and processes are in the scoping phase. When looking at large infrastructure projects, once something is even at the pre-design phase, its very expensive and challenging to make major changes. How can local data supplement those existing data, lack thereof and in-process research? There are examples from scientists in the room here on applying local knowledge:

- David Wiley, ONMS shared on Whale Alert
- Mike Tetley, IMMA coordinator, shared an example from work in the Arctic

Also want to offer two additional examples:

- Mary Cody, BOEM, provided examples of incorporating indigenous knowledge into projects in Alaska
- A colleague in Peru, not with us today, noted learning about a retired scientist who daily collected data in his local area. He did it just because that's what scientists do. He observed and he meticulously recorded. But the data was never published and remained in his logs in his home. Our colleague learned of this man, and through reaching out to him, was able to painstakingly transfer the data into a format usable by and that is now part of the agency data repository. How many more valuable collections of data are out there?
- There are multiple examples in marine spatial planning to incorporate local knowledge to map fishing grounds and non-consumptive recreational uses that can serve as models to collect and map marine mammal data.

When we talk about local knowledge it can be:

Unpublished data  
Habitat modeling  
Local resident knowledge  
Indigenous knowledge  
Student research  
Bycatch records  
Cultural landscape  
Fisheries observers  
User knowledge  
Fisher's logbooks  
Lighthouse keeper logs  
Data collected on bird surveys  
Stranding data  
Historical data

There are many reasons why there's often a reluctance to use or even consider using local knowledge:

- Legal dimensions to be considered – can data be considered legally?
- Reluctance – individual workload, capacity, will of the agency
- Data platform – decision to use data available for entire assessment area or only national data for example



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This ICoMMPA community, having the unique advantage of focusing on connecting marine mammal science to decision-making processes has a wealth of knowledge to share. This and the extended marine mammal community' networks can beneficially support what needs to be done: we need to connect the data to the planners and support informed marine planning processes. The importance of identifying IMMAs and designating marine mammal protected areas cannot be overstated in this context.

I am honored to be here to work with you all to continue this conversation focused on marine renewable energy and proactive integration of marine mammal data. The process and outcomes from this initiative can also apply to other marine uses and in CMSP processes overall. Local data can provide an important tool to informing these processes and working collaboratively we can find ways to do so that meet multiple goals and build a community of practice to support ongoing planning processes.

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Photo credit: Jorge Morales



## Panel 2: Using IMMAs: How Can the Tool of Important Marine Mammal Areas Contribute to Biodiversity as well as Marine Mammal Conservation on the High Seas?

### Coordinator:

**Giuseppe Notarbartolo di Sciara** - MMPA TF Co-Chair and Tethys Research Institute

### Speakers:

**Giuseppe Notarbartolo di Sciara** - MMPA TF Co-Chair and Tethys Research Institute

**Simone Panigada** - MMPA TF and Tethys Research Institute

**Michael J. Tetley** - MMPA TF, IMMA Coordinator

**Rob Williams** - MMPA TF and Oceans Initiative

**Tundi Agardy** - MMPA TF and Sound Seas

### Introduction and Overview

More than half of the Earth's surface, comprising the pelagic ocean and deep seas, lies in areas beyond national jurisdiction (ABNJ) where marine mammal species spend considerable parts of their year migrating and sometimes feeding and breeding. Yet this region of the ocean presents a huge challenge to biodiversity conservation in terms of data gaps about marine mammal distribution, knowledge of the impact from human activities, difficulties in mitigating threats, and the challenges of management so far from land. On the one hand, the legal situation in the ABNJ awaits full clarification over the next few years. But even with a legal regime for protecting biodiversity, stakeholders will need to come together to devise clever strategies for protecting biodiversity on the high seas. The IMMA is our marine mammal tool, but it is just one tool we can use to achieve goals of conservation. Other tools include the Convention on Biological Diversity's ecologically or biologically significant areas (EBSAs), UNESCO's World Heritage Sites (WHs), BirdLife's important marine bird areas (IBAs), International Maritime Organization's particularly sensitive sea areas (PSSAs) and other directives for shipping, IUCN key biodiversity areas (KBAs), as well as MPAs and MMPAs with various goals and levels of protection. IMMAs themselves are not MPAs, but as scientific tools they will be able to provide input to all of these directives.

The IUCN Joint SSC/WCPA Marine Mammal Protected Areas Task Force (MMPA Task Force) has recently hosted and will report on valuable discussions on the use of IMMAs at the IUCN World Conservation Congress (Sept. 2016, Hawaii), Pew meetings (Oct. 2016, Netherlands) and at the first IMMA Workshop in the Mediterranean (Oct. 2016, Crete). The Task Force, working with the International Committee on Marine Mammal Protected Areas (ICoMMPA) and benefitting from ideas from the wider community of practice, looks forward to rolling out regional technical workshops over the next five years across most of the southern hemisphere to identify IMMAs and implement biodiversity conservation initiatives in those regions.

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### Session objectives:

- 1) Present a primer on the value and use of IMMAs
- 2) Update ICMMPA participants on the status of discussions regarding the identification of IMMAs for marine mammals and biodiversity
- 3) Engage managers and other stakeholders in the challenges of managing and protecting biodiversity on the high seas

The IMMA is our marine mammal tool, but it is part of a suite of high seas tools (EBSAs, KBAs, WHSs, HSMPAs) that we can use to achieve goals of conservation. These tools can be even more valuable when used together.



### Presentation Summaries

#### ***The “IMMA Adventure”: Update On Progress and Where We Want To Go***

**Giuseppe Notarbartolo di Sciara**, MMPA TF Co-Chair and Tethys Research Institute

During the past few years, and in particular since IMMAs were discussed at ICMMPA3 in Adelaide (November 2014), a lot of progress was made. First, all the preparatory work (including: a) the drafting of the criteria in their final format; b) the development of the IMMA tool kit; c) a capillary work on awareness of the IMMA within the international institutional and scientific conservation communities; and d) the construction of the Task Force’s own website which serves to a large extent as an IMMA communication platform) was completed with support from the Eulabor Institute; second, the first IMMA Workshop was organized in the Mediterranean region (see next presentation by Simone Panigada), with financial support from the MAVA Foundation; and third, a series of five regional workshops in the Southern Hemisphere (South Pacific, the Eastern and Western Indian Ocean, the southeast Pacific and the seas around Australia, New Zealand and adjacent Oceania ) are being planned in the next 5 years, with support from the IKI Office of the German Government through the Global Ocean Biodiversity Initiative (GOBI). For each IUCN Marine Region, there will also be work to bring an IMMA to fruition as a conservation initiative (e.g., MPA, PSSA or other IMO directive, etc.). We envisage that each regional workshop, in addition to identifying candidate IMMAs to be subject to peer review, will catalyze the building of a permanent regional working group of marine mammal place-based conservation experts that will facilitate the use of IMMAs as marine conservation tools in each region.

#### ***Lessons Learned from the First Regional IMMA Workshop in the Mediterranean***

**Simone Panigada**, MMPA TF and Tethys Research Institute

The 5-day workshop (24-28 October 2016) was organized by the IUCN Marine Mammal Protected Areas Task Force and sponsored by the MAVA Foundation. There were 34 expert participants from 18 countries including Albania, Croatia, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Morocco, Slovenia, Spain, Syria, Tunisia, Turkey and the United Kingdom. Malta, Duke University and UNEP’s World Conservation Monitoring Centre attended as observers. ACCOBAMS—the Agreement

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on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area—joined the Task Force as a Partner, also helping with the organization along with the Tethys Research Institute. The workshop considered many areas of interest (AoIs), which were submitted to the workshop by participants, as well as by the wider marine mammal research and conservation community. The experts agreed on proposing 41 cIMMAs based on the best evidence available. They range in size from 50 km<sup>2</sup> for species such as the Mediterranean monk seal, to over 134,000 km<sup>2</sup> across the Ligurian Sea and Northwest Mediterranean for fin and sperm whales. Nine marine mammal species were proposed for cIMMAs from a total of 11 being evaluated by the participating experts. Some cIMMAs feature multiple species of marine mammals. The cIMMAs will next go to an independent review panel that will assess whether the criteria were applied correctly and verify that the available supporting evidence was sufficient to support each of them. If approved, the boundaries and supporting evidence will be made available on the [Task Force website](#). The other AoIs identified by experts will be used to assist with highlighting reference areas for further marine mammal research, which will help build an evidence base on which future cIMMAs may be proposed.

### ***IMMAs and Overlapping Classifications: An Appraisal of Supportive Information and Potential Tools for Informing IMMA Identification***

**Michael J. Tetley**, MMPA TF, IMMA Coordinator

How can we better integrate evidence on marine mammals into the process for identifying IMMAs? Marine mammal data, although disparate and difficult to collect, is often a necessary component for informing decision making associated with their protection via marine management and spatial planning. This is especially true for the further protection of biodiversity beyond national jurisdiction. It is essential that available data and varying scientific approaches are considered in a systematic way during the application of criteria to identify IMMAs, which can enhance future marine planning and conservation measures for these species by complementing the repository of CBD EBSAs, the IUCN standard for the Identification of KBAs, and IMO PSSAs. Moreover, evidence related to expert knowledge must be considered in a manner that complements and enhances existing approaches based on estimating abundance and distribution, ecological and behavioral studies, satellite telemetry, genetic analyses, and expert opinion. To this end, the IUCN Joint SSC/WCPA Marine Mammal Protected Areas Task Force (IUCN-MMPATF) is supporting the development of a technical toolkit to accompany the existing guidance on the IMMA selection criteria as well as providing new online engagement and mapping tools for the IMMA community, such as the free web-based IMMA SeaSketch facility.

### ***IMMAs and the Management of Marine Mammal Threats***

**Rob Williams**, MMPA TF and Oceans Initiative

At their core, IMMAs represent valuable habitat that may one day be managed for conservation. Although IMMAs may start out as knowledge products, their potential for use in area-based conservation and management is implicit from their very definition. Not all IMMAs may become marine mammal protected areas (MMPAs), but the fact that MMPA designation is one potential outcome of identifying IMMAs means that the success of the IMMA process will benefit from hard-won lessons learned from the history of systematic conservation planning and marine protected areas planning as a whole. In many ways, the process of nominating and adopting IMMAs can be thought of as the first step in a systematic conservation planning process – namely, to “compile data on the biodiversity of the planning region”. Knowing the abundance and distribution of marine mammals is key to identifying areas that are important if there is any intent to prioritize some areas over others for monitoring or protection. Without having some information – even if it is based on expert opinion – on the relative importance of various habitats within a marine mammal’s range, there is a risk of misdirecting conservation efforts. Unfortunately, it is difficult to identify important areas with incomplete information, and identifying global marine mammal biodiversity hotspots is

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difficult when there are more gaps than data. Some species or regions (e.g., areas beyond national jurisdiction), may always suffer from lack of local knowledge. Incorporating knowledge of threats into the IMMA process offers two key advantages. In the short term, it may facilitate the IMMA process, because global-scale, spatially unbiased data on anthropogenic threats can be easier to obtain than data on marine mammals. As Automatic identification systems (AIS) produce global maps of shipping traffic, it can become possible to identify places where marine mammals may be at elevated risk of ship strikes, oil spills or exposure to chronic anthropogenic noise. In the longer term, compiling information on distribution and trends in threats to marine mammals will set IMMAs up to become proactive tools in the conservation planning and management arena that can help separate important marine mammal habitats from threatening anthropogenic processes. All other things being equal, mapping areas where threats are concentrated or are expected to increase will help focus limited conservation resources on areas and species most at risk. At a minimum, spatial analyses that integrate best available knowledge of marine mammals and the threats they face can identify areas in need of more research and monitoring. Because IMMAs have the potential to be used by agencies or stakeholders for consideration for conservation measures, integrating knowledge of threats into the IMMA process can give end-users a tangible choice to make about regionally relevant uses of IMMAs. In the case of ocean noise, stakeholders can debate the extent to which IMMAs can be used to promote quiet(er) marine mammal protected areas, by managing human activities to keep quiet areas quiet, make noisy areas quieter, or both.

### ***Envisioning a Role for IMMAs as a Tool for Marine Spatial Planning on the High Seas***

**Tundi Agardy**, MPPA TF and Sound Seas

One needs only to look at the case of Important Bird Areas (IBAs) to realize that IMMAs have the potential to advance marine mammal conservation. But challenges do remain, including achieving some consensus on how to incorporate threats into IMMA identification – or possibly the next steps after IMMA identification. Certainly IMMAs need identification, based on robust and defensible criteria. But IMMAs also need to maintain the unique identity, distinguished from other similar geographic designations such as ACCOBAMS' cetacean critical habitat (CCH), Marine Mammal Protected Areas (MMPAs), Ecologically and Biologically Significant Areas (EBSAs), Key Biodiversity Areas (KBAs), Specially Protected Areas under the UNEP Regional Seas Conventions (SPAs), and the like. But perhaps most importantly, IMMAs will need to be used! While the process of selecting areas to be highlighted as IMMAs needs to be kept free of political contamination, we conservationists need to promote the uptake of this knowledge tool. Specifically, we will need to find ways for easy translation of IMMAs into:

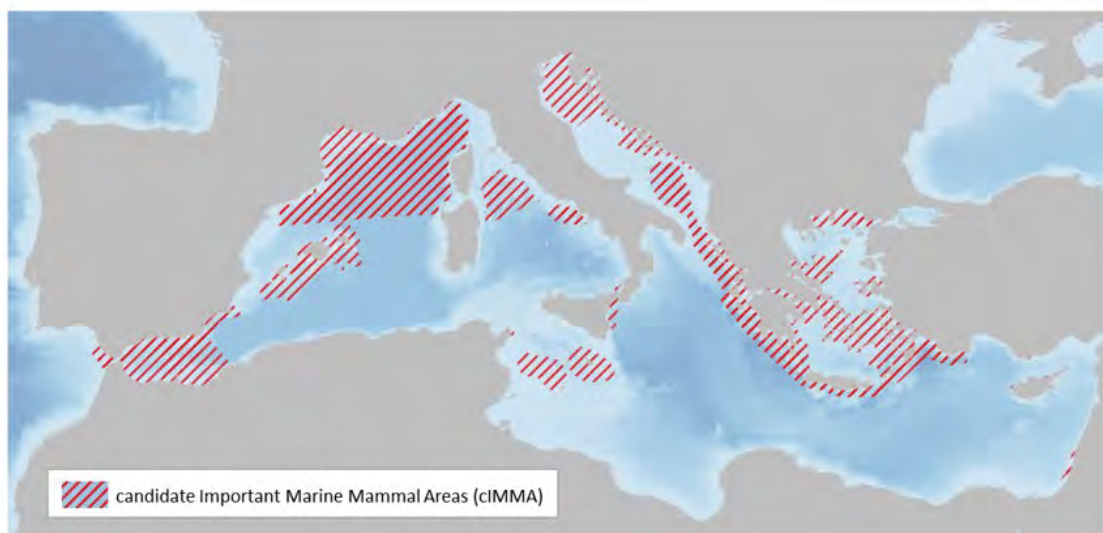
- 1) MPA planning processes
- 2) Transboundary bilateral agreements (or multilateral agreements such as the humpback corridor initiative presented by Mark Spalding in his plenary speech)
- 3) National Marine Spatial Planning processes
- 4) Regional Seas Planning, such as occurs under the Barcelona or Cartagena Conventions
- 5) High Seas/ABNJ discussions

Given that existing databases on marine mammals and other megavertebrates are skewed in that they focus on visible species in areas easy to study, the identification of IMMAs will catalyse much more effective marine conservation. However, the real interest will be in the fine scale – what will actually take place within IMMAs. The marine mammal conservation community has the chance to influence management in these areas, especially those IMMAs that are in understudied or data-deficient areas. Considering the bigger picture, we will need to consider how IMMAs fit in five particular developments of recent years. These include, 1) the huge push for ocean development in the name of the Blue Economy; 2) the corresponding marine spatial planning (MSP); 3) the move to push territorial extensions even further offshore, as with the continental slope designations beyond



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200 nautical mile EEZs; 4) the apparent decline in transboundary cooperation; and 5) the unclear future for High Seas protections, particularly in light of the U.S. election and the potential weakening of United Nations initiatives. All these features add up to a sense of urgency to get the information we have on the map, and use it to its full potential to promote effective marine mammal conservation.



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## Keynote 3: Conserving Orcas- Challenges of Identifying and Protecting Critical Habitats for Killer Whales in Canada

**John Ford**

Marine Mammal Research, Pacific Biological Station,  
Fisheries and Oceans, Canada  
Nanaimo, BC V9T 6N7

Identifying important habitats of highly mobile apex predators and determining what habitat features to protect can be challenging for both conservation biologists and resource managers. Killer whales, or orcas, in coastal waters of western Canada provide good examples of such challenges. Three genetically and socially discrete ecotypes of killer whales share these waters and are listed under Canada's Species at Risk Act (SARA) as either Endangered or Threatened. Implemented in 2003, SARA requires that critical habitats (CH) of listed species be identified and legally protected, and makes it unlawful to "destroy" designated CH.

Over the past decade, our research group has worked to identify CH for the three killer whale ecotypes, each of which specializes on different prey types which in turn leads to divergent habitat use patterns and behaviors. Drawing from 40+ years of photo-identification field studies and, more recently, passive acoustic monitoring through a network of underwater recorders, we have been able to identify CH for salmon-specialist Resident killer whales and mammal-specialist Transient (or Bigg's) killer whales. Determining the features of killer whale CH that warrant protection proved difficult for government bureaucrats but, after five years of deliberation and legal challenges by environmental NGOs, both the geophysical and biological features of Resident killer whale CH finally received protection under SARA. However, CH for Bigg's killer whales was identified in 2013 but has yet to be legally protected. The next challenge in CH protection will be determining what constitutes "destruction" under SARA especially where habitat degradation is occurring incrementally.

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### **Pod of Orcas**

Taken From John Ford's PPT presentation



## Keynote 4: Totoaba Black Market: the Unavoidable Decline of Vaquita

**Lorenzo Rojas-Bracho**

Head of Marine Mammal Conservation & Research,  
INECC/CONANP

The most pressing problem in vaquita conservation today is the totoaba illegal fishery and black markets in mainland China and Hong Kong. What do we know of the totoaba's swim bladder demand in China's and Hong Kong's black-market? We know that it is probably often used to treat many different illness and that the main markets are in Southern and Eastern Provinces of China: Guangdong, Fujian, Zhejiang and Hong Kong. We also know that fishermen can be paid from \$500 to over \$8000 USD/kg of swim bladder, and that this can reach up to \$100,000 USD in the Chinese black-market.

How does this totoaba illegal fishing impact the vaquita population? Vaquita are easily entangled in totoaba gillnets. At least 128 vaquitas were killed in fishing gear between 1985 and early 1992, 65% were in the totoaba fishery. The recent increase in illegal fishing with gill nets for totoaba has worsened in recent years, as has the rate of decline of the population of vaquita. Our most recent results of our acoustic monitoring program show that vaquita's population has been declining from 2011-2015; 80% in these five years. This result is in complete agreement with those of our 64 days vaquita survey from September to December 2015. In this study we combined visual line transect and passive acoustic data in a robust spatial analysis to estimate that only about 60 vaquitas remain at the start of this two years gillnet ban in May 2015.



**Vaquita**

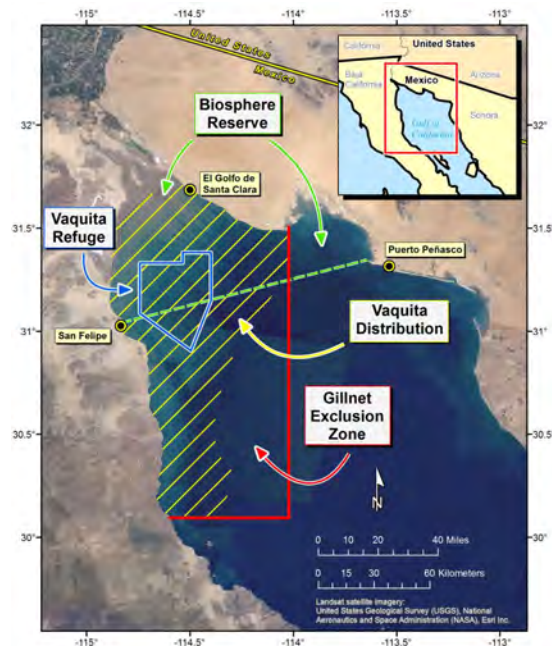
Photo credit: Thomas A. Jefferson



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In May 2016, during the 7<sup>th</sup> meeting of vaquita international recovery team (CIRVA) we reviewed these results and concluded that at this juncture, the choice is simple and stark: either gillnetting in the Upper Gulf ends or the vaquita becomes extinct within a very short time. CIRVA's 7<sup>th</sup> meeting concluded that: in 2015 vaquita population size was about 60 animals, species is now on brink of extinction (smallest population in the world), 92% decline from 1997 to 2015 (visual and acoustic), despite increased enforcement efforts, illegal totoaba fishing continues, and nets remain on the bottom. Three vaquitas were known to have been killed in gillnets in March 2016 and the corvina fishery is being used as a cover for illegal gillnet fishing for both totoaba and corvina. CIRVA recognized the unprecedented efforts by Mexico, but recommended the following key action items:

- Making gillnet ban permanent, including corvina
- Removing totoaba gillnets from the bottom (derelict fishing gear)
- Continuing acoustic monitoring program
- Developing new enforcement tools, including legal framework for penalties
- Issuing permits for existing alternative fishing gear and continue alternative gear development
- Starting to explore *ex-situ* conservation options
- Marketing efforts to support alternative fisheries or livelihoods



### Exclusion Zone Map

Taken From Lorenzo Rojas-Bracho's  
PPT presentation

## Panel 3: Regional: Mexico (Pacific side) through Panama including Costa Rica

### Coordinator:

**Jorge Urban**, Autonomous University of Baja California Sur, La Paz, Mexico

### Speakers:

**Jorge Urban**, Autonomous University of Baja California Sur, La Paz, Mexico

**Jose Julio Casas M.**, Universidad Maritima Internacional de Panama

**Kristin Rasmussen**, Panacetacea

**Lisette Trejos-Lasso**, Departamento de Conservacion de Costas y Mares

**Lenin Orviedo**, Centro de Investigacion de Cetaceos Costa Rica

**Jose Bernal Stoopen**, Director of Priority Species CONANP

### Session Overview:

This panel was dedicated to discussions of the humpback whale as a liaison species to forge partnerships in the countries of the central eastern Pacific region to work collaboratively on marine protected areas and marine mammals.

### Session objectives:

Mexico, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama share besides the humpback other large whales like blue and sperm as well as several other small cetacean species. This Panel set as its goals to:

1. Present a review of the information on the science and management of this species in this region.
2. Explore the possibility of establishing a network of researchers and MPA managers to collaborate and exchange information on the marine mammal protected areas in the region.

### Presentation Summaries:

#### ***Regional MPAs: Mexico to Panama***

**Jorge Urban**

In order to understand marine mammal conservation needs within a region or sub-region, international cooperation and exchange of information is needed. The humpback whale may be used as a liaison species to forge partnerships between the countries of a region. This Panel presented a



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review of the information of the science and management of the humpback whale species in the region, and explored the possibility of establishing a network of researchers and MPA managers to collaborate and exchange information on the marine mammal protected areas in the region. The SPLASH project is a flagship: looking at the Structure of Populations, Levels of Abundance, and Status of Humpbacks. It involves a coordinated research effort to study humpback whales in the entire North Pacific, involving scientists along the US West Coast, Hawaii, Alaska, Japan, Russia, Philippines, Mexico, and Canada. Field work was performed from 2004 to 2006, with funding from governments of the U.S. (NMFS, National Marine Sanctuaries), Canada, and Mexico and private foundations including National Fish & Wildlife Foundation, Pacific Life Foundation, and Marisla Foundation.

Tag recapture and other studies suggest greater understanding of migration movements, and has led to the proposal of a humpback whale corridor of the endangered “distinct population segment” of Central América-México.

### ***The humpback whale (*Megaptera novaeangliae*) conservation action plan*** **José Bernal Stoopen**

The Convention on Biological Diversity (CBD) defines biodiversity in a variety of ways, and it is clear that biodiversity at all levels is under threat from anthropogenic impacts. Such pressures include habitat destruction and fragmentation, chemical and physical pollution, unsustainable harvesting, wildlife illegal trade, climate change, exotic invasive species, and emerging wildlife diseases. CONANP's mission is to protect Mexico's natural capital and avoid loss of biodiversity. At present, there are 177 federally protected areas in Mexico, covering 6 million hectares and nearly 13% of the Mexican Territory. PROCER, targeting species at risk, works with local communities to reduce pressures, currently funding eleven projects on marine mammal conservation.

In one example, CONANP aims to recover the populations of the humpback whale through the management and conservation of the species and its habitat. Its specific objectives are:

- To generate information on the biology and ecology of the species to develop effective measures for the protection, monitoring, recovery and conservation of the humpback whale.
- To promote the participation of different sectors of the Mexican society in the management, protection, recovery and conservation of the species.
- To promote the accomplishment of the educational and outreach goals through whale sightseeing and the development of other touristic activities.

### ***Important Reproductive Areas for *Megaptera novaeangliae* in Pacific of Panama***

**José Julio Casas M.**, Universidad Marítima Internacional de Panamá and  
**Kristin Rasmussen**, Panacetacea

Two distinct populations of humpback whales are present in Panama: *M. n. kuzira* (December to April) and *M.n. australis* (June to December). There is spatial overlap between these species, and temporal overlap is suspected. Central America is the only breeding area where this has been established. Three key areas are identified as reproductive grounds: Chiriqui Gulf, Las Perlas Archipelago, Isla Iguana (Azuer Peninsula). In Chiriqui, there have been more than 19,000 km surveyed and 1,078 sightings of 2,295 humpback whales. The shallow waters of the Las Perlas archipelago provide an important breeding-calving ground for Southeastern Pacific humpback whale, with an estimated population of 1000 animals. Due to the proximity of the Panama Canal ship traffic, these important areas may be threatened, and fishing also poses a risk. The following steps are thus recommended:

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- Restricted shipping lane scheme to lower collision risk
- Responsible sighting being promoted by several NGOs.
- Coastal Communities empowerment and training along the areas for whale watching.
- Marine Spatial Planning and Management – Conservation is promoted and supported at government level.

### ***Humpback whale conservation in the Pacific of Panama: Institucional effort***

#### **Lisette Trejos-Lasso**

In Panama, everything related to the conservation and management of marine mammals was transferred from ARAP to the Ministry of Environment in 2015. Act 13 of May 2005, established a Marine Corridor of Panama for all waters under Panamanian jurisdiction to protect and conserve the marine mammals. Research teams, government, and whale watchers are working together to establish whale watching guidelines and enforce them, especially in calving grounds. A related effort focuses on reducing marine debris. A traffic separation scheme is also being evaluated.

In order to foster cooperation, RIEMMCCA was established to promote communication and collaboration among aquatic mammal researchers and students in Central America and the Caribbean. This program provides information about members per country, organizations, projects and opportunities in the region.

### ***Review on the Wintering Critical Habitats of Megaptera novaeangliae of the Southern Pacific of Costa Rica***

#### **Lenin Orviedo**

Critical habitat for humpback whales is found in depths less than 60 meters, and in close proximity to the coast near the Osa Peninsula and Golfo Dulce. Unfortunately, these are the habitats that are prime real estate for coastal development. After presentation of paper SC/66a/E9 (Herra-Miranda, D., Oviedo, L., Pacheco-Polanco, J.D. and M. Iñiguez. 2015. *Spatial analysis of coastal cetaceans' critical habitats in Golfo Dulce, Costa Rica: considerations for a marina construction project*) to the IWC Scientific Committee, the recommendations were presented to the Costa Rican government. However, the fate of the marina project remains unclear. The SC expressed concern over proposed coastal development in Golfo Dulce "in light of the presence of critical habitat for humpback whales and bottlenose dolphins, and urged the government of Costa Rica, paying due regard to the precautionary principle, to ensure rigorous impact assessments are undertaken, that potential negative impacts are fully mitigated, and that appropriate pre- and post-development monitoring is carried out. Further, the Scientific Working Group recommended that the Secretariat write to the Ministry of the Environment and the Inter-institutional Commission of Marinas (Ministry of Tourism) of the Government of Costa Rica, to raise these concerns". Added to these issues of pressures of coastal development is the impact that climate change appears to be having on marine mammals in the region.

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Photo credit: Jorge Morales



## Panel 4: Pinniped Conservation: Linking Coastal Protections on Land to MPAs

### Coordinator:

**Tundi Agardy**, Sound Seas

### Speakers:

**Mary Cody**, U.S. Bureau of Ocean Energy Management

**Charles Littnan**, NOAA, Hawaiian Monk Seal Research Program

**Ellen Hines**, Wildlife Conservation Society

**Spyros Kotomatas**, WWF Greece

**Carlos Godinez**, Mexico's Parque Nacional Cabo Pulmo, CONANP

### Overview

The goal of Panel 4 was to establish the need for considering coastal/ terrestrial protections alongside MPAs for effective management of pinnipeds and sirenians. These two taxa have been generally underrepresented in discussions taking place in previous ICMMPAs, yet the conservation of these marine mammals remains a major challenge for marine management agencies. Establishing effective protected areas at sea, in the absence of protections for critical coastal feeding habitats, haul-out areas, pupping grounds, and other vital links in the chain of habitats these species need to survive, is unlikely to result in desired conservation outcomes. Thus the panel sought to present success stories describing ways in which terrestrial or near shore protections complement offshore MPAs to conserve these marine mammal species.

Five speakers contributed to this panel, including Mary Cody of the U.S. Bureau of Ocean Energy Management, Charles Littnan of NOAA, Ellen Hines of the Wildlife Conservation Society, Spyros Kotomatas of WWF Greece, and Carlos Godinez of Mexico's Parque Nacional Cabo Pulmo, CONANP.

Mary Cody's presentation focused on the challenges of conserving walrus populations in Alaska, as mandated under the US Marine Mammal Protection Act. Due to shrinking habitat availability resulting from retreat of polar ice, walrus are becoming more and more concentrated in the few remaining coastal haul-out areas. The problems that this crowding present, along with the general decline in walrus numbers, has made walrus a candidate species for Endangered Species Act listing in 2017. In addition to surveying the populations, BOEM (Bureau of Ocean Energy Management) has been involved in establishing flight corridors/ restrictions to minimize disturbance to these vulnerable populations in haul-out areas.

Charles Littnan discussed the conservation of the Hawaiian monk seal, which comprises both MPA protections as exist in the Northwest Hawaiian Islands / Papahānaumokuākea Marine National Monument alongside protections for these pinnipeds where they occur outside MPAs. Littnan stressed the benefits of co-management, and suggested that marine mammal managers should dedicate time to identifying shared mandates, such as exist in Hawaii between NOAA, state management agencies, and the military. As Hawaiian monk seals increasingly venture into highly populated coastal areas such as Waikiki Beach in Honolulu, marine managers need to form

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partnerships with a wide variety of institutions in order to practice unconventional management of these endangered marine mammal species.

Ellen Hines then presented on the challenges of conserving marine mammals that exhibit a high degree of dynamics in their choice of haul out areas, or whose distribution and ecology is not well known. She first presented work on the elephant seal populations of northern California – a species that is changing its distribution due to sea level rise as well as human-induced changes to the shoreline due to coastal development. Modeling factors such as slope of beach, geomorphology of shorelines, and distance of potential haul out areas from public access points allows managers to be proactive with elephant seal management. Similarly, modeling risk to dugong populations in SE Asia allows management agencies to anticipate conflicts between humans and these sirenians, and helps establish conservation priorities at the regional level.

The discussion then returned to monk seals, with Spyros Kotomatas presenting the special conservation challenges inherent in protecting the Mediterranean monk seal. Unlike the case in Hawaii presented by Charles Littnan, this monk seal's population continues to be subjected to great pressures by humans, and the geopolitical context for marine management complicates any effort to conserve the species. Kotomatas did state that the Mediterranean monk seal population is in fact increasing slowly, but suggested that the reasons for these increases are not known, and the upward population trend may only be temporary. Nonetheless, deliberate kills are down, likely due to public awareness. MPAs remain the main tool for conservation of the species, but Kotomatas stressed that in addition to identifying places that needed protection (such as monk seal caves, beaches, and feeding grounds), managers needed to give consideration to long-term management, both inside and outside protected areas. Most importantly, the conservation of this species requires a coordinated international effort, with protected area planning and management following a regional conservation strategy.

Finally, a suite of marine mammal species requiring coastal habitat exist in the Gulf of California, and were the subject of Carlos Godinez's final presentation of the Panel. Most of these marine mammals, with the exception of the highly endangered Guadeloupe fur seal, including the California sea lion, elephant seal, and harbor seal come into close proximity to humans and face a variety of threats. In contrast to many of the other marine mammal case studies described by other presenters on the Panel, Godinez makes the argument that near shore or island habitats for these species are adequately protected but offshore areas are not – since population declines are largely attributed to fisheries interactions. Godinez thus argues that for these marine mammals, the most effective way to conserve these species will be not to establish more protected areas, but to implement effective protections that address the real and present dangers to these iconic umbrella species.



**Walrus**

Photo credit: Capt. Budd Christman, NOAA Corps



**Australian Sea Lions, South Australia**

Photo credit: Tundi Agardy

## Panel 5: Stakeholder Engagement- Science and Conservation

### **Coordinator:**

**Angelica Narvaez, CONANP**

### **Speakers:**

**Diane Gendron** and **Geraldine Busquets Vass**, Instituto Politécnico Nacional, Centro Interdisciplinario de Ciencias Marinas

**Jose de Jesus Varela Galvan**, President El Vizcaino Biosphere Reserve

**Lenin Orviedo**, Earthwatch

**Spyros Kotomatas**, WWF Greece

**Miguel A. Iniguez Bessega**, Fundación Cethus, Argentina and WDC LA

### **Introduction and Overview**

Science has provided over the years relevant data and strategies that have been used to manage and implement conservation programs for marine mammal protected areas.

However, in most if not all cases, the social awareness and participation of the local communities is key to the success or failure of such programs. This happens because despite having all the scientific elements and relevant public policies required to design a management program, the engagement of stakeholders and the participation of local communities are relevant for its successful implementation.

This panel provides the foundation for Workshop 4, where discussions on stakeholder engagement continued in small group format. The Panel and Workshop aimed to identify social, political and scientific tools that can be used to strengthen national and international joint programs, for protecting marine mammals and maintaining effective MMPAs, while ensuring the participation of all parties involved.

### **Session objective:**

To identify and learn from worldwide successful experiences on how science can foster the effective participation of stakeholders in practices and decisions beneficial to marine mammal protection and social communities.

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### Presenter Summaries:

#### ***A New and Effective Passive Observation Method for Sustainable Blue Whale Watching Activities in the Bahia de Loreto National Park***

**Diane Gendron and Geraldine Busquets Vass**, Instituto Politécnico Nacional, Centro Interdisciplinario de Ciencias Marinas

Blue whales were monitored in the waters around Baja California, with observers noting whether whales were with calves or without. Photo identification revealed some 700 individuals, 339 of which were sexed, and 160 of which had ages determined. What is apparent from longitudinal research is that blue whale habitat has changed along with significant changes to coastal habitat, including the development of large scale resorts and increased boat traffic. Whale watching has also had some effect on blue whale distribution. Fecal pellet examination revealed even more about the condition of blue whales, and the ways that human activity can impact these species. Observation shows that blue whales are social animals, with much interaction between males, and a refined social structure in evidence between females. Information about the social behavior of whales has led to a reform in the behavior of whale watching boats, in order to minimize stress and maximize observation time.

#### ***Ecosystems of Laguna San Ignacio (Baja California Sur, Mexico): Relationship Between Local Communities and Marine Mammals***

**Jose de Jesus Varela Galvan**, Director de Kuyima y Presidente del Consejo Asesor de la Reserve de la Biosfera El Vizcaino

In 1989-1990 formal whale-watching activities centered on gray whales in San Ignacio Lagoon, Baja California Sur, Mexico began, setting the stage for ways to manage the many scientific studies of the marine mammals in their natural habitat. These studies actually began earlier, primarily when the area was officially zoned as a refuge site for endangered whales and a site for tourist attractions in 1979, all the way to 1988 when the wider region was incorporated into the Biosphere Reserve for El Vizcaino (REBIVI) as a natural protected area (ANP). It was also during this period from 1979-1988 that based on scientific evidence, numerous laws and instruments to protect marine mammals were implemented, including NOM-ECOL-059-94, the Fisheries Law, the LGPEEPA, revisions to the federal penal code, as well as Mexico's ratification of CITES in 1984 and its declaration of San Ignacio has a World Heritage area of UNESCO in 1993.

During the latter part of this period, the local inhabitants of the lagoon area dedicated themselves to offering services for observing the gray whales, and established strong relations with the scientists studying the animals. These scientists came from domestic and international institutions, including Mexican government agencies (INAPESCA, SEMARNAT, REBIVI); academia (UABCS, CIBNOR, Scripps Institution of Oceanography, University of California, Oregon State University) and civil society (PROANTURA, Wild Coast, ESSA).

In particular, Kuyima formed strong partnerships during this period, by establishing the San Ignacio Lagoon Ecosystem Program led by Dr. Jorge Urban of UABCS, Dr. Steven Swartz, and Dr. Alejandro Gomez Gallardo, also from UABCS. The partnerships between scientists and the local communities have continued well, demonstrating how imperative it is to involve local communities.



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A synthesis of the objectives of this collaborative program is available at [www.sanignaciograywhales.org](http://www.sanignaciograywhales.org), which provides information and points to the technical and scientific support available to conserve the ecosystem, evaluate biological components and provide a solid baseline for management authorities. All this information is then used to support decision-making related to development and ecotourism, fishing and aquaculture, training of volunteers, and implementation of activities and actions to educate about the balance between development and conservation.

Many masters and doctoral students completed their research in the lagoon area and were supported by local communities. Inhabitants participated in marine mammal censuses, photo-identification, assisting sick or injured animals, performing autopsies, and recording data, working not only with migrating gray whales but also resident sea lions and dolphins.

On the part of the local communities, there is active participation in all these processes, including providing resources, monitoring whale-watching activities, maintaining the laboratory, helping create management plans that include not only regulations but also a code of ethics for whale-watching, and constitute an important workforce for REBIVI, SEMARNAT & PROFEPA, and many non-government organizations like PRONATURA, Wild Coast, and COBI (Comandado y Biodiversidad).

At the same time, these institutions and people collaborated to coordinate activities under the management plan “Programa de Manejo de la REBIVI, y la Nom-131-SEMARNAT-2010”. They were able to obtain distinguished certifications, in particular Green Globe 21, NMX-AA-133-SCFI-2006, Distintivo S de Sector & Rainforest Alliance, which allows them to protect natural and cultural resources, targeting not only the gray whale but also the needs of local communities.

In conclusion, the inhabitants of the local communities around San Ignacio Lagoon provide invaluable services to scientists and managers, and perform important tasks needed for sustainable development of the area, which meets conservation demands while also addressing community needs. This engagement means that good decision-making can happen now and into the future, with science in the service of all.

### ***Cetacean conservation in a tropical fjord: a decade of citizen-science based research in Golfo Dulce, Costa Rica***

**Lenin Oviedo**, CEIC: Centro de Investigación de Cetáceos Costa Rica

In many parts of the planet, cetaceans are exposed to pervasive habitat changes, but in the Golfo de Dulce (Costa Rica), habitats are still relatively intact. Fifteen years of transects have been done around the Golfo de Dulce, with participation and support of the Vida Mar Foundation and CEIC. Long term monitoring is essential for understanding the habitat requirements and shifts in cetacean species, but a steady flow of resources are needed. In the absence of strong institutional support, citizen-science is needed. CEIC has found a way to effectively engage the public in monitoring marine mammals in this part of Costa Rica.

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### ***Timeo Danaos et dona ferentes... (fear the Greeks bearing gifts...): Solving the vicious cycle of distrust in Greek MPAs***

**Spyros Kotomatas**, Marine Associate/CYCLADES Life Project Coordinator, WWF Greece

**Contributors:** Alberini, A.<sup>1\*</sup>, Christopoulou, I.<sup>1</sup>, Liarikos C.<sup>1</sup>, Livanou, M.<sup>1</sup>, Papadas, C.<sup>1</sup>, Paximadis, G.<sup>1</sup>, Samara, E.<sup>1</sup>, Theochari, M.<sup>2</sup>, Voltis, K.<sup>3</sup>, Kotomatas, S.<sup>1</sup>

<sup>1</sup> WWF Greece

<sup>2</sup> Doxa Patri 4, Athens, Greece

<sup>3</sup> Development Corporation of Cyclades Local Authorities of Cyclades S.A. Greece

\* Current Address: Duke University, Nicholas School of the Environment, Durham, NC, USA

We present a brief overview of the status of Greek MPAs in relation to the conservation of the marine environment with particular focus on marine mammals. We focus on the process of involving stakeholders in the design and management of MPAs and how lessons learned (achievements and pitfalls) can be used in the future design of MPAs, using the recent example of Gyaros MPA. The Gyaros MPA aims primarily to conserve the largest Mediterranean monk seal, *Monachus monachus*, population in the Mediterranean. We present the key tools utilized in the design of the new Gyaros MPA, including scientific research, EBM and MSP approaches, consultation (or participatory) processes, as well as various engagement and awareness activities, which set the basis for the establishment of the first co-management governance scheme in the country. Based on this case study we discussed how new conservation tools and approaches can be used to further enhance MPA effectiveness in the Mediterranean.



**Gyaros, Greece – An important Mediterranean monk seal habitat** (taken From Spyros Kotomatas' PPT presentation)

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### ***How can responsible whale watching contribute to protection of cetaceans and the marine environment?***

**Miguel A. Iñíguez Bessega**, Whale and Dolphin Conservation

Whale watching is defined as the observation of any of the 86 cetacean species in their natural habitat, including through commercial companies, using a variety of platforms range from coastal observation to the use of small boats, sail boats, cruisers, inflatables, kayaks, helicopters, airplanes and even observations by swimmers. Responsible whale watching has education, research, socio-economic, and conservation components. There are approximately 113 million whale watchers in the world across 119 countries, generating over \$2.1 billion in revenues.

Case studies of responsible whale watching include Miramar, Province of Buenos Aires, Argentina; Rio Negro Estuary, Northern Patagonia; with stranding networks, research and education all involving community members.

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**Puerto Vallarta Boardwalk**

Photo credit: F. McCann, ECOBAC





## Keynote 5: Enhancing the Design and Implementation of Your IMMPA: Why You Need an Economist

**Rebecca Lent**

Executive Director of the  
Marine Mammal Commission

While not inherently obvious, an economist can bring a critically important angle to the design of, support for, and implementation of your marine mammal protected area (MMPA). Consider how economists adhere to the concept of fully accounting for all costs and all benefits of a regulatory option. For example, estimates of non-market or non-consumptive use values for marine mammals, such as the value of whale watching and the existence value of charismatic marine mammals, are part of a complete cost/benefit analysis. These can be compared with the costs (e.g., reduction in net fisheries revenue) imposed by conservation measures such as an MMPA, which should enhance support for an MMPA. Furthermore, an economist will ensure that the “costs” are appropriately estimated, to ensure a true and accurate analysis. Economists also contribute to regulatory analysis by considering incentivizing approaches versus top-down command-and-control measures. The role of economics in evaluating MMPAs is considered in turn for each of three major challenges facing marine mammals - fishery bycatch, climate change, and ocean noise. Clearly there are advantages to an interdisciplinary approach to management of marine mammals with MMPAs.



Photo credit: Jorge Morales

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Photo credit: F. McCann, ECOBAC



## Panel 6: Evolving Perceptions and Stewardships Within Human Communities

### Coordinator:

**David Mattila**, International Whaling Commission

### Speakers:

**Spyros Kotomatas**, WWF Greece

**Christina Castro Ayala**, Director of Research, Pacific Whale Foundation, Ecuador

**Naomi McIntosh**, NOAA Office of National Marine Sanctuaries, Pacific Islands Region

**Everardo Mariano Melendez**, Director El Vizcaino Biosphere Reserve, Mexico

**Israel Popoca**, Assistant Manager of Bahia de Loreto National Park

### Introduction and Overview

Marine mammals are often touted as a “flag ship” species whose charisma can be helpful in developing and nurturing a broader understanding of and conservation ethic for the marine environment in general. This panel examined whether marine mammals and marine mammal protected areas can foster a broader environmental stewardship ethic in a variety of communities. Panelists presented case studies to show case how marine mammals and MMPAs have (or have not) effectively been used to foster a greater environmental stewardship and opportunities for partnerships for protection. The goal of Panel 6 was to provide guidance for MMPA managers to increase the efficiency of their use of marine mammals as a flagship species by identifying those variables and attributes which seem to work, the challenges that must be overcome and even those cases which were not successful to document why.

### Presentation Summaries:

#### ***Conserving *Monachus monachus* in the Aegean: engaging local communities in MMPA stewardship***

**Spyros Kotomatas**, Marine Associate/CYCLADES Life Project Coordinator, WWF Greece

**Contributors:** Alberini, A.<sup>1\*</sup>, Christopoulou, I.<sup>1</sup>, Liarikos C.<sup>1</sup>, Livanou, M.<sup>1</sup>, Papadas, C.<sup>1</sup>, Paximadis, G.<sup>1</sup>, Samara, E.<sup>1</sup>, Theochari, M.<sup>2</sup>, Voltis, K.<sup>3</sup>, Kotomatas, S.<sup>1</sup>

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Despite the high levels of marine biodiversity found in Greek waters, a very small number of marine protected areas (MPAs) have been established in the last 25 years. Moreover, in spite of the fact that about half of the world population of the Mediterranean monk seal, *Monachus monachus*, one of the most emblematic species in the Mediterranean, is found in the Greek archipelago, Greek society has still not embraced marine conservation nor widely accepts the creation of MPAs as a tool for protecting and managing its marine resources. We present a recent case study of the Gyaros MPA that aims to conserve one of the largest monk seal populations in the Mediterranean. We will focus on the process of engaging local stakeholders in the design and management of MPAs and at the same time how the use of EBM and MSP approaches add to our effort in addressing marine conservation issues for the wider region. Based on this case study we will present the key tools utilized to establish the first co-management governance scheme in the country and to develop the necessary partnerships for the establishment and operation of a novel guarding system to further enhance MPA effectiveness in the Mediterranean. Lastly, we will consider how such approaches can be used towards developing a broader understanding of marine conservation needs and fostering a greater environmental stewardship.

### ***Changes in Perspectives on Marine Stewardship and the Community in Puerto López and Machalilla National Park, Ecuador***

**Christina Castro Ayala**

I have worked as a researcher with humpback whales for 19 years. My work is supported by the Pacific Whale Foundation and focuses on research, training and conservations programs.

Ecuador is a small country, situated in the southeast Pacific in South America. It is one of the most bio-diverse countries in the world, and has a population of 16 million people occupying 24 different provinces, 6 of which are located on the coastal line of the country and are the home of almost half of the nation's population. Its coastline also extends over 640km, with different types of ecosystems, including mangroves, beaches and rocky cliffs.

Machalilla National Park (MNP) was created in 1979 covering 55 thousand hectares, out of which twenty thousand are made up of water and small islands. Puerto Lopez, Machalilla, Salango, Ayampe and Puerto Cayo are communities that existed before being part of the protected area.

Puerto Lopez is a typical fishing village. Historically, it has been the coastal population of Ecuador with one of the highest poverty rates in the nation. In coastal regions land and water distribution are inequitable, thousands of families lack access to drinking water, paved roads, sewage systems and electricity, and children often work in the fields instead of attending school. This, most likely, is due to the fact that investment priorities of the government have been focused on the other regions of Ecuador. In this region, we find humpback whales has sparked whale watching tourism, giving the coastal communities new opportunities for social and economic development.

Ecuador is a breeding area for humpback whales. They migrate from the Antarctic traveling more than 7,000 kilometres. Ecuador is among the top five countries involved in whale watching in Latin America, with MNP supporting a growing whale watching industry that focuses on the Southern Hemisphere humpback whale population and that has brought immense changes in development and opportunities for many coastal communities.

The whale watching industry has without a doubt triggered development and offered new opportunities for the community of Puerto López. Puerto López did not have basic services in the past; now, to support tourism, new restaurants and hotels have been established. The government recognizes the importance of humpback whales as a tourist attraction. However, we are still looking forward to experiencing stronger laws and policies to help in the protection of the marine life and

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other ecosystems of Ecuador. Besides this, we need to remember that education needs to become a priority in these communities: it is not enough to better our income. Without education, we will not be able to teach the next generations to effectively protect our resources and contribute to the development of our country.

### **Lessons learned from the Hawaiian Islands Humpback Whale National Marine Sanctuary experience**

#### **Naomi McIntosh**

The story I want to share with you is about the people who worked for the Sanctuary and the inspiration they created in their communities.

The Hawaiian Islands Humpback Whale National Marine Sanctuary was established by the US Congress in 1992 to protect humpback whales and their habitat in Hawaii. The sanctuary covers approximately 1218 square nautical miles of federal and state waters and its boundaries encompass waters off the coasts of the islands of Maui, Molokai, Lanai, Oahu, Hawaii Island and Kauai. These warm waters are an important winter breeding, calving and nursing habitat for the North Pacific humpback whale population. With offices and staff located on 4 separate islands (Maui, Kauai, Oahu and Hawaii Island) the sanctuary created opportunities to engage local communities to work on collaborative initiatives to support humpback whale conservation. These initiatives inspired a diverse community of ocean stewards to work together to support education, research and resource protection for humpback whales in Hawaii. Established in 2002, the Hawaiian Islands Entanglement Response Network was one of those important initiatives. Created to aid in the entanglement response of humpback whales, the program is a community based network coordinated by the sanctuary and dependent upon the commitment of many state and federal agencies (Hawaii's Department of Land and Natural Resources, NOAA Fisheries Pacific Islands Regional Office, the U.S. Coast Guard), private non-governmental organization, fishermen, researchers and other individuals working together. The success of program increased the sanctuary's creditability in the community and showcased the expertise, dedication and passion of the people who work to address these important and difficult conservation challenges have as individuals. More importantly it highlighted the importance of setting high quality standards to work with integrity, to develop trust and form meaningful long-term partnerships and relationships within communities. The people who helped shape the sanctuary in those early years applied these core values to their work and inspired their communities to be better ocean stewards.

### ***Collaboration Agreement for the Management of Whale Watching in the Lagoons of El Vizcaino Biosphere Reserve, Mexico***

#### **Everardo Mariano Melendez**

The annual monitoring system and whale watching regulations within the Ojo de Liebre, Guerrero Negro and San Ignacio coastal lagoons, started long before the declaration of the biosphere reserve. It was then when service providers realized which were the best whale watching sites for tourists, number of boats per visit, and established the code of conduct aimed to not disturbing the organisms within the area, and to provide a better service to visitors. They were the ones to first start watching the whales' behavior, habits, and preferred sites for safeguarding their calves, born within those lagoons.

With over 25 years of monitoring whales, the Biosphere Reserve has records of the number of whales entering the lagoons, and counts for calves, females, and adults in the area.

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### ***Building Partnerships with the Community to Achieve a Passive Watching Blue Whales in the Loreto Bay National Park***

#### **Israel Popoca**

The Bahia de Loreto National Park is unique worldwide. It is there where people can see the largest animal in the world... the blue whale. During the last three years, the authorities of the National Park have worked intensely with the different sectors of society and government building partnerships to protect this whale and its habitat. The strategies that have been designed for this purpose are: identity, surveillance, capacity building, communication, evaluation of environmental services and research. Thanks to those partnerships and the interest of stakeholders involved, the blue whales have not changed its behavior when boats are around. In addition, the community has actually changed, assuming full ownership for the blue whale, which represents a flag species to protect other marine mammals and its habitat. The passive observation of blue whales has increased so much that it has become an alternative activity to commercial and sport fishing. The challenge is to promote these actions in an effort to keep up the economic, social, institutional and environmental development.

## Panel 7: River Dolphins

### Conveners:

**Fernando Trujillo** (Fundación Omacha, Colombia) and **Miguel Iñíguez** (Fundación Cethus, Argentina and WDC LA)

### Chair:

**Fernando Trujillo**

### Speakers:

**F. Trujillo** - Fundacion Omacha, Colombia

**Diego Amorocho** - WWF, Colombia

**Ingrid Furlan Öberg** - IBAMA Brazil

**Enzo Aliaga** - Instituto de Ecología, Universidad Mayor de San Andrés, Bolivia

**Saulo Usma** - WWF/Maryland University

### Introduction and Overview

River dolphins face dramatic transformation of their habitats in the Amazon and Orinoco basins in South America. The main threats for these species are deforestation, water connectivity loss, overfishing, direct catches, pollution and climate change.

Just regarding deforestation, the annual rate remains between 5 to 6% every year since 2011, but the accumulate loss is over 700.000 km<sup>2</sup> from 1970. The most dramatic transformation has been in the south of the river Amazon in Brazil and also in the Andean region. The water connectivity in the Amazon is under high threat due the large number of dams (155 operatives and 270 planned), which isolate dolphin populations and stop fish migration. Probably the most dramatic example of this is for the recent described river dolphin species in the river Tocantins (*Inia araguianensis*) where the number of dolphins is relatively low. Overfishing is also affecting river dolphins, food security for local people and economic activities in the Amazon. The volumes of catches of catfish has decreased and new species are being traded including the scavenger piracatinga or mota fish (*Calophysus macropterus*). This situation triggers one the most important threat for river dolphins that were illegally hunted during the last decade mainly in Brazil and Peru. Governments are reacting to this, promoting a commercial ban for this fish species particularly in Brazil, but the threat still remains in other countries.

Pollution is also one of the big issues in the Amazon basin mainly for illegal gold mining and the use of thousands of tonnes of mercury that according with national reports are polluting rivers, fish and humans. Finally, the climate change is an important factor affecting aquatic ecosystems in the Amazon and Orinoco basins.

The effects of El Niño and La Niña phenomenon is disrupting the hydrological patterns in the forest making flooded and dry seasons shorter or longer. The result of this is reduction of suitable habitat availability and also changes in reproduction and lateral migration of fishes.

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The main question regarding all these threats is how protected areas may help to reduce or mitigate the effects on river dolphins. In most cases protected areas do not include managing plans for aquatic ecosystems and their species, so is a great challenge to address efforts to redefine the role of some of these areas and propose the monitoring of key aquatic species such as river dolphins.

During the 2nd ICMMPA meeting in Martinique, the scientific community recognized that river dolphins need special habitat protection and identified as a positive step the implementation of an Action Plan and also a network initiative (SARDPAN) to connect river dolphins and protected areas.



### **River Dolphins**

(taken from Ingrid Maria Furlan Öberg's PPT presentation)

### **Session Objectives**

- 1) Evaluate the main threats for river dolphins in South America
- 2) Establish the role of protected areas for river dolphins in South America
- 3) Present advances in aquatic conservation initiatives that may include river dolphins
- 4) Make recommendations to include river dolphins in managing plans for protected areas

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### Presenter Summaries

#### ***River Dolphins in Brazil: Threats and the Role of Protected Areas for Their Conservation***

**Fábia de Oliveira Luna & Ingrid Furlan**, Brazilian National Aquatic Mammal Center  
Coordinator – CMA/ICMBio/MMA  
IBAMA/MMA

The hydrography of Brazil is very wide and presents a series of diversified hydrographic basins. Among them, the Amazon Basin, which has the highest water volume in the world. Its territory reaches nine nations. This region comprises the largest and most biodiverse tract of tropical rainforest in the world. However, it presents many threats, which cause extensive environmental damage and biodiversity extinction such as: the construction of dams that completely modify the river regime; oil and gas exploitation; illegal wood commerce; deforestation for the construction of highways and for farms. These impacts threaten the biome as a whole, but dolphins have other threats such as uncontrolled tourism and intentional capture for use as bait for piracatinga. Another Brazilian basin where the presence of dolphins is in danger is the Tocantins-Araguaia. In this region *Inia geoffrensis* is threatened by isolation for several years and possibly specialized in a new endemic and even more threatened group (*Inia araguianaensis*). This basin also undergoes anthropogenic pressure, which causes reduction of dolphins' habitat. The government's environmental agencies seeks to preserve these habitats by creating protected areas (in the Amazon region there are more than 100) and other regulations such as the *moratorium* which prohibits for five years the fishing and commercialization of piracatinga in the country. It also seeks to regulate activities such as dolphin observation tourism, which are already protected by law. However, it is necessary that the protected areas are fully implemented, fulfilling their role and ensuring the protection of the species.

#### ***Conservation Status of River Dolphins (*Inia geoffrensis*, *Inia boliviensis*, *Inia araguianaensis* and *Sotalia fluviatilis*) in the Amazon and Orinoco basins***

**Fernando Trujillo**, Foundation Omacha

River dolphins are among the most endangered cetaceans in the world, both for direct threats and for habitat loss and transformation. New taxonomic and molecular evidence suggest the presence of at least four species of river dolphins in the Amazon and Orinoco basins with different levels of threat. In general, direct killing of river dolphins in Brazil and Peru, for the mota/piracatinga fishery, is the main concern for *Inia geoffrensis*. In second level of magnitude is the loss of connectivity due to the dams in many of the tributaries of the River Amazon. Just in Brazil there are at least 154 dams, and the most critical situation occurs in the River Tocantins where *Inia araguianaensis* is isolated in several stretches of the river and with a relatively low population numbers. Negative fishery interactions, habitat loss, pollution by mercury, climate change and bad tourism practices are also factors of concern. However, the implementation of the South American river dolphin action plan and the increase of scientific research in the area are generating positive incomes for the conservation of these species. Abundance estimations are now available for several rivers in six countries, political and management decisions have been made to reduce killing of dolphins, river dolphins are being included in environment assessment for new dams projects and maps of mercury risk are being develop in order to take better conservation actions.

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### ***Loss of Connectivity in the Amazon Basin: Effects on River Dolphins***

**Diego Amoroch, Fernando Trujillo & Saulo Usma**

Species Program Coordinator, WWF Latin American and the Caribbean, Foundation Omacha

The Amazon basin faces unprecedented development pressures such as dam construction, mining, oil and gas exploitation, land cover changes, over fishing and disruption of timing of hydrological flows. The connectivity of one of the largest river basins is compromised and in danger. About 154 hydroelectric dams are operating at present, 21 are under construction and about 277 new ones are being planned to achieve the goal of 95.000MW. The southern part of the Amazon River is most affected because the damming and their operation trigger associated impacts such as deforestation, human migration and greenhouse gas emissions. Large dams are not the only ones producing impacts on aquatic ecosystems; the small ones also create an accumulative effect with negative consequences. Damming is generating disruption of physical processes changing limnological characteristics of the water bodies, also affecting biological processes affecting lateral and longitudinal migration of fish and promoting deforestation along the flood plains. One of the most affected species are river dolphins that are isolated above and below in different stretches of rivers that have been dammed, as in the case of the rivers Tocantins and Tapajos in Brazil, creating subpopulations and reducing their distribution habitat. Their movements are also disrupted along the rivers. At present there are different initiatives to assess the reduction of habitat for river dolphins due to the fragmentation of aquatic ecosystems and locate the main problems for the conservation of these species. What would be the future of the subpopulations already trapped in river stretches where the quality of the habitats is deteriorating very fast? This and other questions should arise in order to create a plan for the future.

### ***River Dolphins in Protected Areas in Bolivia***

**Enzo Aliaga**

Rossel, Instituto de Ecología- Universidad Mayor de San Andrés La Paz- Bolivia

Bolivia is among the most biodiverse countries in the world, despite being a landlocked country. The high biodiversity is the product of being in the center of South America; with an altitudinal gradient from about 250 to more than 6000 meters above sea level; its many ecoregions and ecosystems from Amazon rainforest valleys to the glaciers of high mountains. With all the natural areas, Bolivia has 22 national parks with approximately a total of 182,716.99 square kilometers; plus 60 regional and local protected areas. On the other hand, Bolivia has many Ramsar wetlands, which protect a biodiversity of fauna associated with very high water bodies. Among these species, the river dolphin or Bolivian bufeo (*Inia boliviensis*) is the only cetacean in the country and one of the most charismatic species. This species is located in only four National Protected Areas: Noel Kempff in Santa Cruz, the Beni Biosphere Reserve, Isiboro Sécure National Park and Indigenous Territory, and regional and local protected areas (Department Park and natural area of integrated management Iténez, Municipal protected area -Pampas del Yacuma and Municipal protected area -Ibare- Mamore). Even though all these mentioned areas are important sites for conservation, they were not created or planned for the conservation of river dolphins, or have direct actions for the conservation. However, two of these local Areas, Pampas del Yacuma and Ibare-Mamore, are interested in tourism activities in the areas. Our program is promoting good practices in the river dolphin observation; this project is capacitating field local guides, motor drivers, tour operators, and other people related to this activity. We hope in the future these activities and monitoring can be replicated in different areas, and become an effective tool of conservation.



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### ***Orinoco River Basin Report Card: Evaluating the Health of the Rivers Through the Dolphins***

**Saulo Usma Oviedo**, WWF Colombia

WWF, the University of Maryland, Omacha Foundation and its partners determined the ecological integrity of the Orinoco River Basin in Colombia using multiple indicators including historical records of the river dolphin populations in its major rivers. Stakeholders throughout the Colombian portion of the Orinoco Basin (149 representatives from 71 organizations) determined an overall score for this region as good (B-, 63%). The values of health for each river basin were: excellent for the Mataven (A+), and Tomo (A-); good for Tuparro, Bitá, Atabapo, and Inírida (B); moderate for Guaviare (C+), Vichada, Arauca, and Meta (C). This assessment highlights three major findings: 1) Land use change, loss of natural cover and ecosystem transformation are the major threats to the basin, due mainly to agro-industry, hydrocarbon and livestock expansion and poorly planned infrastructure development. 2) Updated and accurate information and comprehensive monitoring are needed to publicize and manage current and future impacts of resource use in the basin. 3) The Orinoco River Basin Report Card has many synergies with global initiatives, such as the Sustainable Development Goals (SDGs). Despite several biological indicators were considered, only river dolphins had robust information to be used. Additionally, these species move long distances both longitudinal and latitudinal along the rivers, being very useful to understand the integrity of a basin. A communication strategy was also developed, targeting decision makers and general public. A major achievement of this process is the articulation with the formulation of the strategic plans for the Orinoco and Amazon as basins currently led by Governmental organizations. Our main challenge now is to articulate the Report Card results to the formulation of the strategic plan of the Orinoco Macrocuenca.

### **Main Recommendations**

- **Incorporate IMMAs criteria in freshwater ecosystems**

Based on the presentations made about the application of IMMAs as a suitable tool for the identification of important areas of conservation for marine mammals, the panel of experts on river dolphins recognized that similar criteria might be used in freshwater ecosystems. Calving, feeding and breeding areas can be some of the key areas to protect in the Amazon and Orinoco basins in South America.

- **Assess connectivity status in the Amazon and Orinoco basins with special attention to river dolphins**

One of the main concerns for the conservation of dolphins is the loss of connectivity in the Amazon. The construction of dams is isolating dolphin populations and affecting fish migration in a large scale. There is a need to discuss what would be the future of those dolphin populations that are already confined between dam barrages in low quality ecosystems. Also it is critical to assess the reduction of habitat for river dolphins due the fragmentation of the watersheds. This evaluation might be providing robust information for the dolphins IUCN assessment.

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- **Foster mercury pollution assessments in aquatic ecosystems in the Amazon and Orinoco basins**

Mercury pollution is severely affecting aquatic ecosystems in the Amazon and Orinoco, not only affecting river dolphins but also human health. The origin of the mercury corresponds to different sources: legal and illegal gold mining, natural mercury on the rivers and forest burning among others. The situation is very complex and will require the commitment of Governments and international agreements. The panel recommended consolidating all the available information and producing a map of mercury risk for the Amazon and Orinoco basins.

- **Request home range countries to nominate South America's river dolphins for International Whaling Commission Conservation Management Plan and other international fora tools (i.e. CMS, CBD)**

South American river dolphins face several threats along their distribution and in order to mitigate these threats cooperative actions among home range countries need to be adopted. In this regard, it is proposed to develop an overarching regional policy framework for ecosystem conservation and watershed management. These initiatives could be done under international fora such as IWC, CMS, and CBD, among others.

## Keynote 6: Why Twinnings and How to Manage Them

Christophe Lefebvre and Sabine Garnier

French MPA Agency, La Rochelle, France and Guadaloupe

[Christophe Lefebvre began this keynote by describing how the French MPA Agency is promoting sister sanctuaries programs, along with NOAA, in the Caribbean and how to design and manage twinings.]

I was looking forward to coming to the tropics to get warm(!), though after two days in the air conditioning, it hasn't happened. However, it warms me to be able to speak to you, the wonderful ICMMPA community...

So, why a twinning? What objectives are served by sister sanctuaries or other twinned MPAs? Which MPA serves as a base for a twinning? And who will twin with them? And once partnerships and collaborations are established, how will they be managed?

These questions need to be answered, and expectations need to be managed, before one embarks on a twinning project.

What is the purpose of twinings? One aim is to extend the geographic scale of conservation, in order to fulfill (or create) a conservation strategy. Another goal, depending on how the partnership is structured, is to recognize common scientific interests and develop common methodologies or research protocols. For example, twinned MPAs or sanctuaries can collect information on marine mammal movements and migrations in comparable types of data. These goals are more easily achieved if there is a political and institutional commitment, local or national, at as many levels as possible. But of course this requires resources: time, funding, personnel - for traveling, trainings, and communication.

The goals can thus be miscellaneous. All twinings focus on exchange of data and practical experiences. Site visits are part of the twinning program, but programs can go further, developing joint methodologies for environmental and cultural protection, and shared enforcement regimes. Additional goals include development of standardized research and monitoring programs, with common evaluation methods that can allow cross-comparison, outreach and communications, and community involvement.

Many of these twinning goals are detailed in the agreement between NOAA and French MPA Agency for the Agoa Marine Mammal Sanctuary in the French Antilles and Stellwagen Bank National Marine Sanctuary in Massachusetts. Information about the agreement, goals, and objectives are available at <http://www.aires-marines.fr/>; [http://stellwagen.noaa.gov/sister/pdfs/french\\_press.pdf](http://stellwagen.noaa.gov/sister/pdfs/french_press.pdf); and [http://stellwagen.noaa.gov/sister/pdfs/french\\_mou.pdf](http://stellwagen.noaa.gov/sister/pdfs/french_mou.pdf).

Tools for twinning arrangements include: agreements, MOUs, site visits, training and cooperation sessions, special international events, and special workshops and side events at meetings such as ICMMPA, IMPAC 4, etc. Press releases, media participation, and website outreach are also important to promote the goals of these sanctuary and MPA projects and programs. In this regard, sponsorship is very important. For example, the NOAA Marine Sanctuaries Foundation has assisted the Agoa / Stellwagen Sister Sanctuary Project for collaborative activities and outreach. These communications can safeguard migration routes, promote cultural solidarity, and emphasize our collective belonging to a common ocean community ("oceankind").

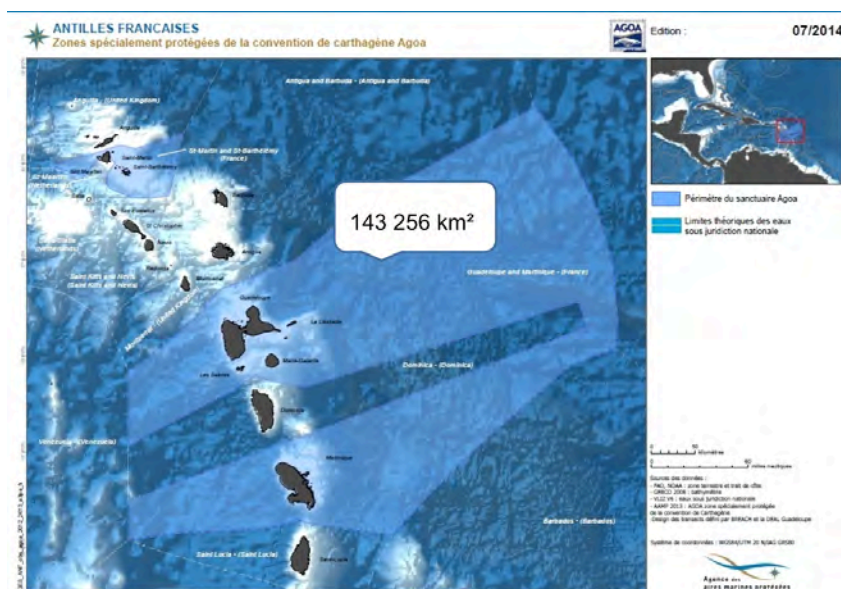
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Beyond marine mammal conservation and outreach, there are opportunities for the twinning program to participate in regional MPA networks, as well as global alliances for conservation. Sister sanctuaries and other twinning programs offer professional recognition for researchers, as well as special status for the site.

Regarding how to define a twinning agreement, partners need to engage the appropriate agencies, and collect background on each site. Objectives and goals of individual MPAs must be clear to both partners, before a program of cooperation can be developed. Partners will need to decide who will be in charge of implementing the program, at the technical level. Focal points need to be established, between two, three, four – or as many sites as are involved in sister sanctuary arrangements. The next step is to agree to a financial agreement – very important to secure the effectiveness of the relationship as well as the in-situ management. Arrangements tend to be three-year agreements described in a detailed plan of cooperation, with indicators related to specific objectives, and then periodic evaluations to ensure goals are being met.

The preparation of the twinning agreement can thus be achieved quickly – as long as clear objectives and a budget to attain the objectives have been defined. ICMMPA could promote more effective marine mammal conservation by providing important guidance for twinning programs and projects. Twinning could be undertaken at the regional scale first, but it is possible to imagine twinning at larger scales. Sister sanctuaries and twinning programs are strategically important for MPA networks everywhere.

[Sabine Garnier of the French MPA Agency – in charge of special programs for twinning, and overseeing Agoa - then spoke about the specific goals and objectives of the Agoa Sanctuary and the twinning project between Agoa and Stellwagen Bank, among other partnerships.]



### Area of Agoa's Action

(taken from Christopher Lefebvre's PPT presentation )

Agoa Sanctuary is a work in progress. It is a sanctuary established to ensure good marine mammal conservation, protecting habitats against destructive human activities. The success of the Agoa Marine Mammal Sanctuary is dependent on a collaborative approach among neighbors. Cooperation is thus the basis for the elaboration of Agoa Sanctuary.

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Agoa is the name of a water spirit West Indian native mythology, signifying mother of the waters. It is a sanctuary designated under the SPA Protocol of the Caribbean Regional Seas Convention (Cartagena Convention). SPA RAC (the Regional Activity Center of the Convention, based in Kingston Jamaica) is Agoa's main partner. The Convention committed to Agoa in 2010, and the Sanctuary was established in 2011. The management board of Agoa Sanctuary is composed of local stakeholders, including fishermen. The French MPA Agency has been involved since 2013. Agoa comprises a huge perimeter of action, between Guadeloupe, Martinique, the French portion of St. Martin, and St. Barth's. It is the second largest French MPA, after New Caledonia.

Cooperation already exists within Agoa, but the new twinning allows cooperation with other nations, particularly with NOAA (USA) and especially Stellwagen Bank, and with Canada. Next steps will be to sign on additional partners, such as Dutch St. Martin and Eustacia, and Samana Bay in Dominican Republic. We've got a perspective of cooperation; workshops will help us enhance preservation of marine mammals. Sustainable whale watching is one activity that can promote marine mammal conservation, and best practices can be encouraged through twinning workshops.

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Photo credit: F. McCann, ECOBAC



## Workshop 1: Coastal and Marine Spatial Planning: Marine Renewable Energy and Marine Mammals

### Co-conveners and co-chairs:

**Tundi Agardy**, Sound Seas

**Anne Nelson**, NOAA MPA Center International  
Capacity Building Team

### Introduction and Overview

Workshop participants continued a discussion begun at ICMMPA's inaugural meeting on how Marine Spatial Planning (MSP) can lead to the establishment of Marine Mammal Protected Areas, and how marine mammal science can inform management both inside and outside those protected areas. At ICMMPA4, we focused the discussion on a specific sector, which is driving much MSP around the world: marine renewable energy.

Managers charged with developing coastal and marine spatial plans face complex scenarios of balancing conservation of important habitats and processes with a multitude of human uses. Increasingly, spatial planners are tasked with factoring the siting of installations or determining suitable areas for development of marine renewable energy. These planners often must weigh placement of these technologies in areas where understanding of marine mammal abundance, distribution, habitat use and behavior is insufficient or unknown, thus rendering avoidance of risk a formidable challenge. However the decisions do get made in the absence of marine mammal data in many cases. A need exists to better support decision-making in these scenarios.

Offshore wind in the EU is the most advanced with projects in operation and monitoring in place to aid in adaptive decision-making. Other technologies, such as wave, tidal, current, offshore solar and ocean thermal conversion are in varying stages of development and pilot projects take many forms, thus increasing uncertainty when aiming to avoid or minimize risk. Areas with pilot projects or areas considered for development include Latin and South America, Southern, Southeast and Western Asia, the UK, North America, New Zealand and Australia. There is potential and significant interest for development in most coastlines off most continents.

This two-part workshop provided an opportunity for ICMMPA colleagues to review existing guidance for planners to incorporate marine mammal science into siting and planning for marine renewable energy development. In part one, we provided a brief overview of the various types of technologies for deriving ocean energy: wave, offshore wind, tidal, current. We reviewed selected syntheses of potential impacts of marine renewable energy and existing guidance for the planning and siting of marine energy projects in regards to marine mammals. We explored investigation protocols for gathering baseline data and approaches to planning in data deficient areas.

Our panelists discussed identification of Biologically Important Areas, incorporation of marine mammal science in siting decisions for wind, wave, tidal and other offshore energy installations, as well as provided specifics on how data on marine mammals has resulted in the creation of areas off limits to energy development and/or has resulted in amending the energy development plans. As a group we discussed the considerations that planners need to keep in mind when making decisions



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about allocating space to maritime uses like energy development, and we also highlighted mechanisms for marine mammal scientists and conservationists to become engaged with planners and decision makers so that marine mammal conservation concerns are addressed.

In part two we applied information from part one to a real-time discussion on a proposed wave energy project just off of Puerto Vallarta, site of the ICMMPA4 meeting. Multiple local scientists brought their knowledge of local species to the workshop discussion. Together with other international scientific and policy experts, workshop attendees reviewed the wave energy project information on depth, distance from shore and project footprint to identify species in the area. We began generating a list of questions and considerations to assess potential siting of the energy project.

In the final segment, we discussed next steps to develop a process to refine decision making guidance and added several participants to the project team. We particularly aim to contribute to precautionary guidance for management professionals in data deficient areas for marine mammal areas under consideration for marine renewable energy.

The project will align with IMMA identification process and build upon and support other projects discussed at this and previous ICMMPA meetings in order to progress the collective

We intend to create guidelines to promote the uptake of marine mammal information in marine spatial planning, covering four kinds of situations that exist worldwide:

- 1) Areas with strong regulatory frameworks and planning capacity, where marine mammal information is readily available;
- 2) Areas with strong regulatory frameworks and planning capacity that are marine mammal data poor;
- 3) Areas still developing regulatory frameworks or with limited capacity but where marine mammal information is available; and finally
- 4) Areas where regulatory frameworks and planning are limited and where marine mammal data are lacking.

The workshop concentrated on guidance for scenario #4, which accounts for much of the world, by drawing on experiences from cases in scenarios 1 & 2.

### Session Objectives

- Discuss intersection of marine mammal conservation and marine renewable energy development and deployment
- Review potential impacts syntheses and guidance for siting and monitoring marine renewable energy
- Contribute guidance to planners in marine mammal data deficient areas for marine renewable energy siting
- Identify means to proactively increase understanding of marine mammal distribution, abundance and behavior in areas of consideration for marine renewable energy development
- Identify emerging issues and considerations and determine next steps for MMPA and CMSP

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### Presentation Summaries

#### ***Good Practice Guidance for the Oil & Gas Sector***

**Pippa Howard**, Flora and Fauna International

The good practice guidance for the oil & gas sector for managing marine biodiversity and ecosystem services is premised on an ecosystem-based approach. When managing and mitigating impacts to the environment, it is important to take an ecosystem approach which requires sound ecological information taking into account the patterns and processes of the ecosystem. Patterns represent the composition and spatial attributes of biodiversity, such as species abundance and richness, habitat heterogeneity and dispersal. Patterns are often underpinned by processes, or ecosystem function, and include processes of genetic flow, biomass production, carbon sequestration and nutrient cycles. Both patterns and processes are dynamic in their variability and responses to change, often driven by human-induced activities or abiotic and climatic changes. This information has dynamic and spatial components – particularly in the marine environment - and needs to be understood to better manage the relationships between and within biodiversity and the environment and present options for mitigation measures where impacted.

Socio-ecological, life histories and behavioral patterns of species also need to be considered to ensure temporal and spatial considerations of ecosystem components are adequately addressed. Studies have shown that a decline in biodiversity results in a decline in ecological function and impact on resultant ecosystem service benefits. In the Great Barrier Reef, this is evident in the empirical link between species loss and significant reduction in regeneration of fisheries, and thus in the capacity of the reef to support diversity and composition of species. The maintenance of ecological functions in an ecosystem promotes the persistence of biodiversity and resilience to climate change and environmental perturbations.

#### ***Experiences with Identifying Biologically Important Areas for Whales Off California***

**John Calambokidis**, Cascadia Research (remote presentation)

This session shared Cascadia's work to identify Biologically Important Areas off California, different data collection methodologies and considerations for research specific to marine renewable energy. The presenter shared the following insights learned in setting Biologically Important Areas (BIAs)

- Wide variety of approaches possible based on what is available, feasible and cost effective
- Different approaches have different strengths and weaknesses
- Importance of trying to integrate datasets or at least interpretation where possible and not having competing determinations
- Collaboration crucial both for accessing data, conducting studies and building support for final determination
- Other biological factors besides just density important
  - Status of population (subpopulations, endangered or limited range)
  - Behavior and use of area (migratory corridor, breeding or feeding)
  - Seasonality and duration/tenure important for considering chronic impacts

#### ***Incorporating Science and Traditional Ecological Knowledge in Decision Making***

**Mary Cody**, Bureau of Ocean Energy Management

The National Environmental Policy Act (NEPA) requires that federal agencies assess the potential for impacts to the human environment for any major federal action. This includes renewable energy projects in offshore areas. NEPA not only requires the use of the best available information in decision making, but also requires that agencies actively acquire new scientific and technical information when it is technologically feasible to do so and not prohibitively expensive. BOEM has an active studies program that funds and supports scientific and traditional ecological knowledge

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studies designed to fill data gaps that have been identified during the NEPA process or through stakeholder engagement.

BOEM makes strong efforts to include both systematic research science and traditional local knowledge, and to integrate the information gained from each. Traditional ecological knowledge can provide an extremely long time series of information that is site specific and based on annual rather than seasonal observations. BOEM recognizes that local and traditional ecological knowledge play a key role in determining the potential for impacts from actions in offshore areas, and also in determining new and appropriate avenues for further research. Stakeholder groups, such as Inupiat marine mammal hunters in the Arctic or commercial fishers in the Atlantic, can provide essential information that leads to better decision-making in the placement of offshore energy facilities. This information and early stakeholder engagement aids in de-conflicting space use for multiple use areas, and can decrease impacts to sensitive or commercially important species.

### Summary of discussions

Following the panel presentations, part two of the workshop offered an opportunity to review existing guidance for baseline data collection, monitoring and siting considerations for marine mammals. We discussed applying this to other areas. While the guidance from the UK provides a strong foundation, the marine mammals in focus are pinnipeds and harbor porpoise. How do planning areas with large baleen whales and odontocetes such as killer whales apply existing guidance but make it specific for their species and geographies? Each species has unique considerations as does each type of technology and each geographic location of the proposed development.

We then did a rapid application of this information to local example of a wave energy proposal in the waters off Puerto Vallarta. We shared what was known about the project location – distance from shore, depth and scale of the project. The local and international marine mammal experts in the workshop, compiled information on known species habitat usage in the area, temporal and behavioral considerations, and a list of questions and considerations as example of information a planner would need to consider among many in the complex siting process.

Key discussion points:

- Planners may not have access to marine mammal science when decisions about resource and space allocation are being made and therefore also may not know questions to ask and considerations for siting.
- As some marine renewable energy technologies are rather new and installations generally pilot or small scale in nature, cumulative impacts on marine species are unknown, and, along with climate change, are rarely considered.
- Investigations and considerations for siting of energy development must be species specific and impact specific, yet must be considered within an ecosystem based management framework.
- A common theme among panelists and group discussions is the need to understand habitat usage, behavior, temporal considerations, sub-populations and very localized species in addition to broad abundance and distribution. This often times is only known through local knowledge. Incorporating local knowledge with other data sets needs to be agreed upon early in the process in order that decision making tools and processes can integrate and use the information.
- Because the implications of marine renewable energy development for marine mammals may be great, need to overcome the challenge that biodiversity and species assessments are seldom implemented early enough in the project development cycle to lead to good conservation outcomes for marine mammals.

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- Most decision making processes tap research already done, though may not necessarily be the purpose for which it was initially collected. Where it can be applied it can also be used to evaluate data gaps and additional work that needs to be done.
- We can draw on lessons learned in other sectors on how to consider marine biodiversity concerns in non-renewable energy development. Similarly, we can apply traditional knowledge into assessment information on marine mammals in its siting and permitting from other types of projects.
- Participants shared experiences from various assessment methodologies from the US and Canadian West Coasts – stressing the importance of the right approaches depending on the species and project. Examples include acoustic surveys for some species may not prove as effective for others.
- Time and concerted effort are needed now to proactively assess where interest in development is focused and applying marine mammal science early into the planning process. There is a spectrum of the development process and engagement at the earliest points is most effective. One area of promise is to engage with engineers of renewable energy technologies early, so as to influence not only where these technologies are deployed, but also their design.
- Collaboration will be vital in the future – can look to past examples and assess benefits (e.g. SPLASH).
- One of the biggest problems: discordant timelines. That is, the timeline for industry rarely matches the timeline for management, and almost never for science.
- How can project specific planning be best aligned with large marine ecosystem and migration corridor projects?
- Look to the best EIA's and share among planners as examples.

The session concluded with an overview of next steps to develop guidance for planners over the coming year. Several participants will join the process to be work shopped tentatively in late 2017.

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(taken from Israel Popoca's PPT presentation)



### Workshop 2: Important Marine Mammal Areas (IMMAs )

#### Conveners:

**Michael J. Tetley**, IUCN MMPA Task Force

**Giuseppe Notarbartolo di Sciara**, IUCN MMPA Task Force and Tethys Research Institute

**Erich Hoyt**, IUCN MMPA Task Force and Whale and Dolphin Conservation

#### Chair:

**Michael J. Tetley**, IUCN MMPA Task Force

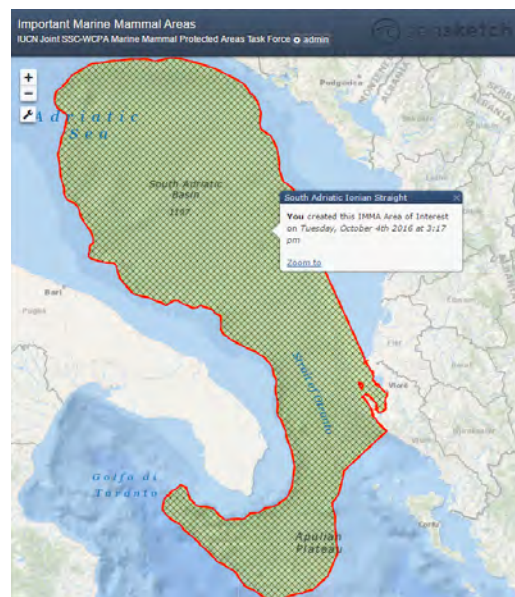
#### Introduction and Overview

Efforts to enhance the collation of information and data used to inform environmental protection and spatial planning initiatives have led to the development of many new technologies in mapping data. The IUCN Joint SSC/WCPA Marine Mammal Protected Areas Task Force (IUCN-MMPATF) is in the process of assessing the efficacy of such tools for collating information on marine mammal distribution, densities and habitat. These approaches will become a key part of the process for the identification of IMMAs and the IUCN-MMPATF has been developing a series of tools to help streamline the process for collating expert information for determining areas of interest (AoI) for assessment against the IMMA selection criteria.

The IMMA criteria have been developed in part over a number of past ICMMPA meetings. In particular, this included workshops and panel session at the 3<sup>rd</sup> ICMMPA meeting in Adelaide in 2017 on the testing of initial criteria and development of an informed IMMA work plan. At ICMMPA4 the 'hands on' session provided an excellent opportunity for the Task Force to further test and refine the use of mapping tools such as QGIS, Google Earth and the on-line IMMA SeaSketch facility. The session also provided the opportunity to collate information from participating experts that could inform the future regional IMMA activities of the Task Force.

#### Session Objectives:

1. Introduce participants to a range of tools and datasets being prepared by the IUCN-MMPATF to support the identification of IMMAs.
2. Provide demonstration and initial training in the use of the programs such as QGIS, Google Earth and SeaSketch to ICMMPA participants.



**IMMA: SeaSketch Example**  
(taken From Mike Tetley's PPT presentation)



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3. Collect potential AoI proposals from participants in planned IMMA workshop regions and gather feedback on the availability of data in these areas.
4. Discuss recommendations on how best the Task Force should approach the issues of data gaps in relation to the IMMA identification process.

### Presentation Summary:

#### ***Mapping areas of interest for Important Marine Mammal Areas (IMMAs): a summary of tools being developed by the IUCN Marine Mammal Protected Task Force***

**Michael J. Tetley**

IMMA Coordinator - IUCN MMPA Task Force

Marine mammals and their habitats are increasingly under pressure from a variety of threats, such as habitat degradation, ship strikes, and noise, which require strategic conservation management and mitigation against. Promotion of enhanced conservation can be achieved through Important Marine Mammal Areas (IMMAs), discrete portions of habitat, important to one or more marine mammal species, which have the potential to be delineated and managed for conservation. The global IMMA network of the world's aquatic mammals, and supporting marine biodiversity, will be identified through an internationally agreed criteria standard. This repository of sites important for the maintenance of marine biodiversity will provide a basis for future monitoring of these highly visible and wide-ranging species. As such the program of regional expert workshops to identify IMMAs across 2016-2020 will assist in maintaining the marine mammal element in the increasing global trend of implementing Marine Spatial Planning, and in the enhancement of Marine Mammal Protected Area networks. A key component of this collaborative process is the use of accessible mapping tools for collating information on marine mammal distribution, densities and habitat. The IUCN-MMPATF has been developing a series of tools, such as instructional examples for using freely available QGIS and Google Earth, and the use of an on-line IMMA SeaSketch facility to help streamline the process for collating expert information for determining areas of interest (AoI) for assessment against the IMMA selection criteria.

### Main Recommendations

- **Diversify the methods for collating Area of Interest (AoI) proposals via online methods**

At the time of the workshop the IMMA SeaSketch facility acts as the primary portal for experts to submit Areas of Interest (AoI). It is recommended from workshop participants that other 'less technical' portals could be developed which may not require the type of stable internet connection that SeaSketch currently requires. This would be very important for assisting those experts in developing regions to also fully engage with the IMMA process.

- **Develop new tutorials for the IMMA SeaSketch Facility**

SeaSketch was considered to be a very powerful and accessible means of collating expert information to inform IMMA investigation. However, at the time of the workshop, only basic instructions were available on how to use the portal via the 'Forums'. It was suggested that a standalone document on the use of SeaSketch could be developed which could be hosted for download on the Task Force website.

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- **Incorporate into IMMA Guidance instructional examples of how QGIS or Google Earth can be used to prepare IMMA proposals**

Freely available mapping software, such as QGIS or Google Earth, were considered to be very useful for empowering experts to collate and input information into the process to identify IMMAs. However, without examples or training, few experts may be interested to make full use of software available. Participants recommended that examples or basic instructions could be incorporated into future versions of the IMMA Guidance document or in a standalone IMMA Technical Toolkit.

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Photo credit: Ecobac – F. Mc Cann



## Workshop 3: Managing Encounters with Marine Mammals: Impacts, Mitigation, and Experimentation

### Conveners:

Lorenzo Rojas-Bracho, INECC/CONANP

Erin Ashe, Oceans Initiative

### Speakers and Topics

**Erin Ashe**, Oceans Initiative  
Moderator

**Greg Kaufman**, Pacific Whale Foundation

Species concerns and conservation efforts internationally to mitigate impacts of whale watching and value/role MMPA can provide in support of that, and the IWC's proposed Modeling and Assessment of Whale-watching Impacts (MAWI) initiative. Emergence, growth and management of whale watching in Indian Ocean Region Area. How MMPA's could address emerging issues in whale watching regions.

**Melissa Landry**, Resource Management- Species at Risk, Fisheries and Oceans, Canada  
How protected areas are used for whale conservation in Canada, including offshore areas. MPA and Marine Park regulations with respect to the management of encounters with whales, and a recent example of updated regulations.

**Everardo Mariano Melendez**, CONANP, Director Loreto Marine Park  
A discussion of stewardship and public engagement in a marine park.

**Rob Williams**, Pew Fellow in Marine Conservation, Oceans Initiative  
Lessons learned from the first community-led protected area for killer whales. Role of protected areas in facilitating research to understand ecology and vessel impacts, and to inform adaptive management of whale watching.

**Lars Bejder**, Murdoch University  
Whether there are places where whale and dolphin watching should not occur, based on the last two decades of research.

### Introduction and Overview

Whale watching has been promoted for decades as a non-consumptive use of marine mammals. Emerging science is showing that for some cetacean populations, whale watching can have significant impacts on behavior, health, and population viability, which is a concern for endangered populations. Marine Protected Areas offer a promising tool for: providing much-needed experimental controls sites to improve studies to estimate consequences of disturbance; offering a refuge to mitigate potential impacts of whale-watching and other human activities; and facilitating studies to monitor the efficacy of mitigation measures. MMPAs could also serve as a focal point for sustainable development of whale-watching activities. This workshop brought together scientists and managers

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to review and discuss emerging issues, identify how MMPAs can be used effectively to achieve protection, discuss whether there are regions where whale and dolphin watching should not occur, and identify places and opportunities where MMPAs can provide experimental data to help inform management decisions.

The focus of our workshop was managing encounters with marine mammals. This workshop considered several case studies illustrating the value of MMPAs. Based on the science presented, workshop participants wanted to know whether there are some areas where whale watching is not appropriate.

Invited speakers represented a diversity of geographic and thematic backgrounds, with expertise drawn from science, management and industry. Speakers included Greg Kaufman, Melissa Landry, Everardo Melendrez, Rob Williams, and Lars Bejder. The follow-up panel stimulated lively discussions, and led to the following conclusions:

### Conclusions

1. There seems to be some debate about whether we need good, evidence-based whale watching guidelines or regulations, or MMPAs. Our workshop concluded that we need both tools in our toolkit. In that light, workshop participants considered MMPAs as providing a safety net in case whale watching guidelines or regulations outside the MMPA are insufficiently precautionary to prevent impacts on cetacean populations.
2. For some populations and areas, whale watching may be more effectively managed by protected areas and no-go zones than guidelines centered around approach distances etc. Examples included Canada's Robson Bight (Michael Bigg) Ecological Reserve, which protects important killer whale habitats, and Mexico's protected breeding lagoons for grey whales. Given the difficulty in estimating distances at sea, participants felt that it would be inappropriate to rely solely on approach distance-based guidelines for spinner dolphins in Hawaii. Participants favored setting aside a few resting bays as no-go zones as a pragmatic alternative to trying to enforce distance-based guidelines.
3. Workshop participants reiterated Ben Wilson's recommendation that managers need to consider the temporal when protecting the spatial. Something like a gravel rubbing beach used by killer whales may lend itself to a static MPA. For cetaceans feeding on ephemeral plankton blooms or at a moving ice edge, a dynamic MPA may be needed.
4. Participants concluded that the management of whale watching could benefit from lessons learned in managing fisheries over the last several decades. In fisheries, marine protected areas can serve as a sort of backup plan in case we get the stock assessment or fisheries management wrong outside the MPA. With whale watching, we see similar value in having good guidelines everywhere, but also core, no-go zones. These MPAs can serve as a refuge, and an experimental control site to continually test and refine and adapt regulations.
5. For places where whale watching does not yet exist, but is poised to take off, we encouraged participants to look at the International Whaling Commission's research plan for a large-scale whale watching experiment (Modeling and Assessment of Whale watching Impacts, MAWI).
6. Finally, participants concluded that conservation scientists should not become complacent with impacts of disturbance on otherwise large and growing cetacean populations. Even healthy populations may need MMPAs, especially if a population relies on discrete sites that support essential life functions.

## Workshop 4: Stakeholder Engagement- Science and Conservation

### Conveners:

**Angelica Narvaez**, Coordinator of Priority Species, CONANP, Mexico

### Speakers:

**Diane Gendron and Geraldine Busquets Vass**

Instituto Politécnico Nacional, Centro Interdisciplinario de Ciencias Marinas

**Jose de Jesus Varela Galvan**, Director de Kuyima y Presidente del Consejo Asesor de la Reserve de la Biosfera El Vizcaino

**Lenin E. Oviedo Correa**

Research Associate CEIC – Earthwatch Scientist

**Miguel A. Iñíguez Bessega**

Fundación Cethus and Whale and Dolphin Conservation NA

### Presenter summaries:

#### ***A New and Effective Passive Observation Method for Sustainable Blue Whale Watching Activities in the Bahia de Loreto National Park***

**Diane Gendron and Geraldine Busquets Vass**

Instituto Politécnico Nacional, Centro Interdisciplinario de Ciencias Marinas

The Gulf of California is a wintering ground for the northeastern Pacific blue whale population and represents an important calving and nursing area. Our 25-year sighting history database of 700 blue whales is linked to individual's information on their sex and age class. The high fidelity of several known individuals to Loreto Bay National Park (2,065 km<sup>2</sup>) has enabled us to conduct successful individual focal follows, to record their natural diving behavior and evaluate the effect on their behavior of an increasing whale watching (WW) fleet of about 56 small boats. From February to April of 2009 to 2016, 161 individuals (63 females, 20 females with calves, 36 males and 42 individuals of unknown sex) were followed at a distance >100m on board a 7m skiff with outboard motor, setting off when behavior permitted. Track, surface and diving behavior were recorded continuously during a total of 646h (mean per day 5h; range 1h - 8h). Results of natural diving behavior against diving behavior in interaction with WW boats showed a significant decrease on dive and surface durations ( $p=0.001$ ); the result was shared with the WW captains. In 2014, among several of them, the use of this passive method approach to WW was promoted. The results were conclusive; dive and surface time was not modified by the presence of WW boats. These preliminary results were again shared with the WW fleet and, consequently, this passive method became a consensus decision and is now widely used by the captains. This research demonstrates how this new approach is less invasive and encourages its long-term application, which is relevant for the management of this species in this area. This is especially so when considering the proposed coastal development, which is already



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reflected in an increase in maritime traffic and WW activities. These positive results were achieved due to the alliance between researchers, local authorities, the WW fleet and tourists.

### ***Ecosystems of Laguna San Ignacio (Baja California Sur, Mexico): Relationship Between Local Communities and Marine Mammals***

**Jose de Jesus Varela Galvan**, Director de Kuyima y Presidente del Consejo Asesor de la Reserve de la Biosfera El Vizcaino

In 1989-1990 formal whale-watching activities centered on gray whales in San Ignacio Lagoon, Baja California Sur, Mexico began, setting the stage for ways to manage the many scientific studies of the marine mammals in their natural habitat. These studies actually began earlier, primarily when the area was officially zoned as a refuge site for endangered whales and a site for tourist attractions in 1979, all the way to 1988 when the wider region was incorporated into the Biosphere Reserve for El Vizcaino (REBIVI) as a natural protected area (ANP). It was also during this period from 1979-1988 that based on scientific evidence, numerous laws and instruments to protect marine mammals were implemented, including NOM-ECOL-059-94, the Fisheries Law, the LGPEEPA, revisions to the federal penal code, as well as Mexico's ratification of CITES in 1984 and its declaration of San Ignacio has a World Heritage area of UNESCO in 1993.

During the latter part of this period, the local inhabitants of the lagoon area dedicated themselves to offering services for observing the gray whales, and established strong relations with the scientists studying the animals. These scientists came from domestic and international institutions, including Mexican government agencies (INAPESCA, SEMARNAT, REBIVI); academia (UABCS, CIBNOR, Scripps Institution of Oceanography, University of California, Oregon State University) and civil society (PROANTURA, Wild Coast, ESSA).

In particular, Kuyima formed strong partnerships during this period, by establishing the San Ignacio Lagoon Ecosystem Program led by Dr. Jorge Urban of UABCS, Dr. Steven Swartz, and Dr. Alejandro Gomez Gallardo, also from UABCS. The partnerships between scientists and the local communities have continued well, demonstrating how imperative it is to involve local communities.

A synthesis of the objectives of this collaborative program is available at [www.sanignaciograywhales.org](http://www.sanignaciograywhales.org), which provides information and points to the technical and scientific support available to conserve the ecosystem, evaluate biological components and provide a solid baseline for management authorities. All this information is then used to support decision-making related to development and ecotourism, fishing and aquaculture, training of volunteers, and implementation of activities and actions to educate about the balance between development and conservation.

Many masters and doctoral students completed their research in the lagoon area and were supported by local communities. Inhabitants participated in marine mammal censuses, photo-identification, assisting sick or injured animals, performing autopsies, and recording data, working not only with migrating gray whales but also resident sea lions and dolphins.

On the part of the local communities, there is active participation in all these processes, including providing resources, monitoring whale-watching activities, maintaining the laboratory, helping create management plans that include not only regulations but also a code of ethics for whale-watching, and constitute an important workforce for REBIVI, SEMARNAT & PROFEPA, and many non-government organizations like PRONATURA, Wild Coast, and COBI (Comandado y Biodiversidad).

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At the same time, these institutions and people collaborated to coordinate activities under the management plan “Programa de Manejo de la REBIVI, y la Nom-131-SEMARNAT-2010”. They were able to obtain distinguished certifications, in particular Green Globe 21, NMX-AA-133-SCFI-2006, Distintivo S de Sectur & Rainforest Alliance, which allows them to protect natural and cultural resources, targeting not only the gray whale but also the needs of local communities.

In conclusion, the inhabitants of the local communities around San Ignacio Lagoon provide invaluable services to scientists and managers, and perform important tasks needed for sustainable development of the area, which meets conservation demands while also addressing community needs. This engagement means that good decision-making can happen now and into the future, with science in the service of all.

### ***Cetacean Conservation in a Tropical Fjord: A Decade of Citizen Science Based Research in Golfo Dulce Costa Rica***

**Lenin E. Oviedo Correa**

Research Associate CEIC – Earthwatch Scientist

The long term research and monitoring on cetacean’s wild population is key to the understanding of the dynamic functioning of discrete ecological communities. However, long term field data collection can be financially cumbersome, which would hamper the scientific potential to produce knowledge to inform management and conservation. The Citizen Science model have become an alternative where a network of volunteers assist in professional research, using methodologies applied by professional researchers to balance the imposed time and resource consuming challenges of the required presence in the field. The Golfo Dulce Cetacean Project, based in the coastal community of Rincon de Osa (Puntarenas Province, Costa Rica) has particularly engaged non-scientist volunteers to the work reality of the neotropic. The most important contribution of this project, beside the decade old database on bottlenose, pantropical spotted dolphins and wintering humpback whales, which has clearly identified the relevance of coastal areas as critical habitats (candidates to allocate protection in the form of MPAs), is the creation of benefits in the form of income-flow to the community. Such income is closely associated with the fact that humans are neighboring cetaceans’ critical habitat. Coexistence of local communities and cetaceans has generated a transition within the community from indirect receptor of benefits to active entrepreneurs in the town of Rincon. Locals has seized the opportunity to establish real sustainable businesses centered on the possibilities of research and monitoring of whales and dolphins in the scenic seascape of Golfo Dulce. The well being of cetacean populations is linked to the economic stability of human coastal community, in this particular case, the appreciation for the local biodiversity is not funded by foreign investors who would naturally take profits out to the origin of the investment. Empowered locals produce financial benefits within their hometown and profits permeate the community, while supporting the needed platform for scientific data collection

### ***How responsible whale watching could contribute to protect cetaceans and the marine environment***

**Miguel A. Iñíguez Bessega**, Fundación Cethus, Monteverde 3695, B1636AEM, Olivos, Prov. Buenos Aires, Argentina and Whale and Dolphin Conservation NA

Whale watching is the observation of any of the 86 cetacean species in their natural habitat, including a commercial component, using a variety of platforms range from coastal observation to the use of small boats, sail boats, cruisers, inflatables, kayaks, helicopters, airplanes and even observations by swimmers. The last review of the activity was done in 2008 and shows more than 13 million people took whale watching tours last year in 119 countries worldwide, generating a whopping \$2.1 billion in total expenditures during 2008. Whale watching managed in a responsible way and considering

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four components as essential pillars such as education, conservation, research and socio economic could contribute positively to the conservation of the cetacean populations, the marine habitat as well as to the developing of coastal communities. The objective of this presentation is to show few examples in Latin America on how combining research, education, conservation and working with authorities, responsible whale watching contribute to protect cetaceans and the marine environment.



Photo credit: RABEN

### Workshop 5: Tools for Managers

#### Coordinator:

**David Wiley**, U.S. National Oceanic and Atmospheric Administration, Stellwagen Bank National Marine Sanctuary

#### Speakers:

**Dr. David Wiley**, U.S. National Oceanic and Atmospheric Administration, Stellwagen Bank National Marine Sanctuary

**Dr. Garance Weller**, Space Oceanography Division, CLS

**Dr. Susan Gallon**, French Agency for Marine Protected Areas

#### Introduction and Overview

Decision-making in today's contentious world requires high quality data and tools that are trusted by a wide range of stakeholders. New and evolving technologies provide managers with the potential to bring such data and decision tools into marine protected area discussions, hopefully reducing the cycle of disagreement, entrenchment and stalemate that characterize many forums. Examples were provided of a number of technologies: advances in Argos satellite tracking of animals and human activity, mobile software applications for MPAs (e.g., *Whale Alert* iApp), Automatic Identification Systems (AIS) for compliance monitoring (US and New Zealand), and decision support tools, (i.e., *E04wildlife* project) that can be used by managers. A case study of New Zealand MPA decision-making was also used to demonstrate the need for scientists using such tools to maximize their social power by directly incorporating stakeholders into the research design. The focus was on how these tools can help managers engage with stakeholders rather than dictate results to them. Following these presentations, participants shared experiences concerning the pros and cons of technological tools and brainstormed new technologies that might assist managers in the future.

#### Session Objectives

1. Provide examples of new technologies for data collection and decision-making
2. Demonstrate the need for these tools to be combined with stakeholder involvement
3. Provide examples of how the tools discussed can aid managers in connecting with stakeholders
4. Share participant experiences relative to the pros and cons of data collection and decision-making technologies
5. Envision new technologies that could aid managers in the future

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### Presentations

#### ***Social Complexity and Scientific Uncertainty and Technological Tools to Aid Management and Stakeholder Involvement in the Stellwagen Bank National Marine Sanctuary***

**Dr. David Wiley**, U.S. National Oceanic and Atmospheric Administration, Stellwagen Bank National Marine Sanctuary

#### ***Argos Data Collection***

**Dr. Garance Weller**, Space Oceanography Division, CLS

Dr. Weller is in charge of scientific studies for national and European institutions. Her talk highlighted new ARGOS related data collection devices, with a focus on sensors that allow human activity to be tracked, such as the location of fishing boats and their fine-scaled behavior (e.g., number of revolutions of the net-reel) that can aid managers in understanding activities within their MPA.

#### ***The EO4wildlife Project***

**Dr. Susan Gallon**, French Agency for Marine Protected Areas

Dr. Gallon presented on the *EO4wildlife* project which aims to design and develop an operational and easy-to-use platform to query, search, mine and extract information from different databanks (i.e., owner database, archive database and online database). The role of the French Agency for Marine Protected Areas within the project is to identify tools to be developed for Marine Protected Areas' managers, for example, tools to obtain and visualize the predicted distribution of protected species such as marine mammals and therefore anticipate and/or act on potential identified threats (ship corridors, offshore platforms, bycatch, pollutants, etc.). Top marine predators tracking data and oceanographic variables will be combined to develop predictive habitat utilization and species distribution models. Authorities can then use these as dynamic management tools (e.g. fisheries, shipping, Marine Protected Areas) to help them make real-time decisions to protect these species.

### Workshop 6: New Challenges for Species Conservation and Management for Rebounding Populations

#### Coordinator:

**Brad Barr** (U.S. National Oceanic and Atmospheric Administration, Office of National Marine Sanctuaries, *United States of America*)

#### Speakers:

**Naomi McIntosh**, U.S. National Oceanic and Atmospheric Administration, Office of National Marine Sanctuaries, Pacific Islands Region, *United States of America*

**Brad Barr**, U.S. National Oceanic and Atmospheric Administration, Office of National Marine Sanctuaries, *United States of America*

**Charles Littnan**, U.S. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Pacific Islands Fisheries Science Center, *United States of America*

**Lars Bejder**, Murdoch University, *Australia*

**Jorge Urbán Ramirez**, Universidad Autónoma de Baja California Sur, *México*

#### Introduction and Overview

The good news is that we are being successful in recovering some marine mammal populations from their previously precarious status of “endangered”, “threatened” or otherwise requiring some enhanced level of protection. The bad news is that a considerable number of marine mammal protected areas (MMPAs) have been established without fully considering the role of the MMPA will be if conservation efforts are successful. This raises some fundamental questions. How should these MMPAs evolve and persist when the flagship species they were protecting are not as threatened as they once were and the conservation priorities need to be re-evaluated? One recent example of this emerging challenge is the Hawaiian Islands Humpback Whale National Marine Sanctuary (HIHWNMS) in the U.S., where de-listing or downgrading the endangered status of Humpback whale populations has recently occurred. The HIHWNMS attempted to evolve its mission by re-focusing the management goals and strategies towards other protected marine mammals and non-marine mammal resources at that site. It was an effort that has, to this point, been challenging, but may provide critical insight into how current MMPAs navigate this type of challenge or how future MMPAs may be designed with “conservation success” more explicitly in mind from their conception. The workshop engaged conference participants in the more encompassing issue of challenges to effectively address rebounding “flagship” and other important marine mammal populations in MMPAs. Potential response to this situation involves identifying creative solutions and strategies in light of the lessons learned in Hawai’i, and drawing from other MMPA’s experiences elsewhere in confronting what would otherwise be a cause for celebration that the primary conservation mission has been fully successfully achieved. Perhaps it is a bit of an overstatement to suggest, “be careful



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what you wish for, because you might just get it”, but success undoubtedly can be a “two-edged sword.” This is an emerging challenge for MMPA managers when despite all the obstacles and limited available resources, they achieve their management goals. Applying the considerable expertise and experience of the MMPA community is essential to finding “creative and effective responses to success” without risking the diminishment or loss of the public support and enthusiasm for MMPA conservation and management at that site which has been cultivated and fostered over many years.

### Session objectives:

- 1) To present the emerging challenge of “rebounding populations” of marine mammals, particularly when these are MMPA “flagship species”, and the implications of this conservation success on the future stewardship of that MMPA.
- 2) To present and discuss a case study, from the US Hawaiian Islands Humpback Whale National Marine Sanctuary, which is actively confronting such a challenge.
- 3) To engage the workshop participants in discussion of both the case study and the larger question of “what to do next” when key populations of marine mammals at that site recover and are no longer considered “threatened.”
- 4) To identify and capture the creative ideas and solutions arrived at by the workshop participants to help inform and guide others in the MMPA community who may be confronted with this challenge in the future.

### Discussion Summary:

After some brief introductory remarks, the panel and participants engaged in a wide-ranging and often lively discussion focused on the workshop topic. Some key points of the discussion included:

- Need to think outside the box. Historically, the thought process appears to be that of “why should we bother when species is recovered.” That needs to change and we need to bother.
- Need to embrace and celebrate conservation success and give ourselves credit for doing something right.
- Mexico’s experience with grey whales is a possible example. Mexico became the first country to protect whale habitat with the designation of Laguna Ojo de Liebre for gray whales. The lagoons are now part of El Vizcaino Biosphere Reserve, Mexico’s largest protected area. The focus in Mexico expanded and important whale areas in the Gulf of Mexico and in all Mexican waters are protected waters for whales. There is still interest for grey whales, the resource is still valued and there is a dedicated office and staff to support conservation
- Look at the values of the rebounding populations...economic and ecological opportunities.
- Management focus at the site may no longer be simply biological – may mean fewer regulations, more focus on monitoring to insure recovery of population continues. May also lead to greater management attention to other species of concern at the site. Recovery could result in changes to conservation measures previously not supported e.g. in Western Australia it is legal to swim with humpback whales. Currently the government allows for 14 permits.

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- Need to anticipate what the impacts of recovery could mean to the suite of marine mammal populations present, as well as the social and economic well being of local communities. Need for adaptive management of the site will continue. Resurgence of populations often brings new challenges. An example was offered of the situation with the recovery of Grey Seal populations on Cape Cod in the US. Generally, MMPAs manage ecosystems, not just populations.
- Need to understand how to conserve resources by learning how to live with them.
- May need to begin looking at issues at the site in a different way – public safety likely becomes more of a focus of management.
- Need to revise education messages. Discussion of whales could focus on whales as sentinel species, and management successes that led to recovery.
- U.S. has a somewhat unique management relationship with marine mammals. There are marine mammal species that are protected but not endangered. U.S. Marine Mammal Protection Act offers specific guidance regarding species protection when that species has recovered.
- Need to identify and cultivate new stakeholder involvement. The public remains interested in marine mammals after they have recovered, and more robust populations offer opportunities for expanded wildlife watching and tourism.

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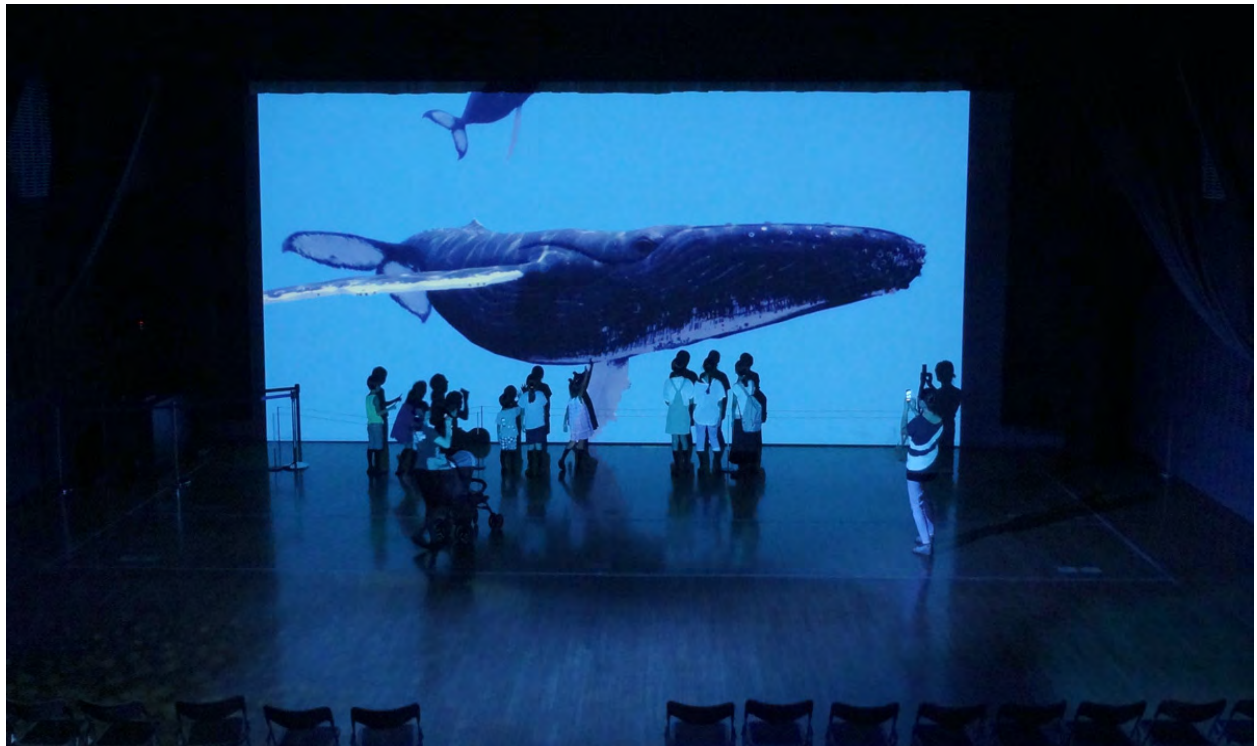


Photo credit: Haruyoshi Kawai, LightAnimal



## Workshop 7: Visualizing Marine Mammal Conservation

### Coordinators:

**Andy Collins**, U.S. National Oceanic and Atmospheric Administration, Papahānaumokuākea Marine National Monument

**Naomi McIntosh**, U.S. National Oceanic and Atmospheric Administration, Office of National Marine Sanctuaries, Pacific Islands Region

### Co-organizers:

- IUCN WCPA Marine Mammal Protected Areas Task Force
- NOAA's Office of National Marine Sanctuaries

### Speakers:

**Daniel Ho** - Songwriter, composer, producer - Humpback whale video with musical artist Daniel Ho. Presented by Naomi McIntosh.

**Erich Hoyt** - Senior Research Fellow, Whale and Dolphin Conservation, Co-Chair, IUCN Joint Marine Mammal Protected Areas Task Force - Light Animals — Interactive life size whales from Yokohama to Honolulu. Presented by Naomi McIntosh.

**Andy Collins** - Education and Technology Coordinator, NOAA Papahānaumokuākea Marine National Monument and UNESCO World Heritage Site - bringing a very remote MPA to the people rather than the people to the place, and building constituencies that may never personally experience a place.

**Huld Haflíðadóttir** - Project Manager, University of Iceland's Research Center - Husavik Whale Museum, Connecting with the community as a northern Iceland fishing town transforms into the whale watching capital of northern Europe.

**Paloma Ladrón de Guevara** - Marine Mammals and Environmental Education Consultant - Community involvement in the conservation of the manatee: the design of outreach materials.

### Session Overview:

Visual and other media play an important role in engaging broad and diverse constituencies in marine mammal conservation and help to create the emotional landscape that facilitates a personal connection with wildlife. Music, posters, info graphics, exhibits, paintings, films, videos, interactive animations, and murals can be presented within a museum or marine mammal/MPA visitor center context, or in various media displayed in public places. The workshop engaged a variety of people and cultures to present examples of effective communication tools to meet conservation goals by increasing awareness and educating the public.

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### **Session objectives:**

1. Show a wide variety of visual media related to creating identity, enhancing education, and forging partnerships within the MMPA community.
2. Discuss what works and what doesn't and how it helps to get the MMPA community including the public involved.
3. Provide practical tools for working with artists so that goals are achieved and impact is maximized, including discussions of copyright issues.

### **Discussion Summary**

#### **Music and Interactive Animation**

Music and interactive animation are providing new approaches to connect people with conservation and nature. In a unique collaboration, inspired by never before seen video footage from NOAA's Hawaiian Islands Humpback Whale National Marine Sanctuary, Grammy award winner and composer Daniel Ho wrote an original slack key composition entitled Kai Palaoa. This original composition accompanied by the video footage was featured on a special musical compilation CD. The CD also featured the music of some of Hawai'i's finest musicians who each donated their work to focus on raising awareness of the importance of Hawai'i's ocean resources. A portion of the proceeds from the sale of the CD was donated to support education programs of Kokua Hawai'i Foundation and the Hawaiian Islands Humpback Whale National Marine Sanctuary. For a preview of Daniel Ho's Kai Palaoa visit: <http://www.danielho.com/aukahi/>

Singing Hawaiian humpback whales, spinner dolphins and orcas was also inspiration to Japanese cetacean illustrator-animator Haruyoshi Kawai and computer graphic designer Keisuke Saikai who devised "Light Animal". Light Animal was created to offer a non-intrusive way to learn about marine life and to support animal conservation and education. The creators imagined there would be greater respect and affection for whales and dolphins and their ocean home if more people were to have experiences where they could watch whales and dolphins up close. The animators worked for many years to develop a truly educational exhibition experience using computer graphics with the capability to display life-size animation of animals. This unique computer animation technology also has the ability to perceive and react to the movement of people standing nearby. The technology was recently showcased in Honolulu at the International Union for Conservation of Nature's World Conservation Congress in September 2016. For more information about Light Animal visit: <http://www.lightanimal.net/>.

#### **Connecting the Public to Conservation Using Engaging Visuals & Technology**

The use of engaging visuals and the application of technology has significantly transformed the way conservation affects the public. An iconic image of a monk seal entangled in marine debris taken in the Northwestern Hawaiian Islands helped galvanize support to create the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve, and subsequently the Papahānaumokuākea Marine National Monument (now one of the largest MPA's on Earth). The use of Google Earth and Google Streetview to provide virtual access to remote protected areas allows armchair explorers and students to develop personal connections to places they may never visit. The commissioning of fine art by the indigenous communities connected to MPAs and MMPAs helps to continue genealogical connections to place, and build upon oral histories. There are vast opportunities to both engage new kinds of partnerships, as well as showcase new imagery and technology to increase conservation for marine mammals and their habitats.

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### Cross Sector Partnerships with Museums

At the Husavik Whale Museum in Iceland, educational initiatives that connect conservation, art, history, politics and community are a key program focus. Last year, the museum was funded by the U.S. government, through the American Alliance of Museums to launch the Connecting Coastal Communities project in collaboration with New Bedford Whaling Museum. The program has made a great impact towards informing the community about the connections Husavik has with whales. The Whale Museum began as a trial with only a small exhibition on whales. Soon after its establishment, the museum was relocated to a larger building because of its popularity in the community. The current location, formally an abandoned slaughterhouse in town is now one of the most visited places in the north of Iceland. The Husavik Whale Museum is a non-profit organization, founded in 1997. Its primary focus is to provide detailed and interesting information about whales and their habitat. The Whale Museum, along with the University of Iceland's Research Center forms educational component to the whale watching trips, enjoyed in Husavik during the summer months. For more information about the museum visit: <http://www.whalemuseum.is/>

### Community Involvement in the Conservation of the Manatee: the Design of Outreach Materials

The Antillean manatee, *Trichechus manatus manatus*, is a priority species of the Gulf of Mexico and the Caribbean that is endangered. An important population of this species inhabits the Natural Protected Area (NPA) Laguna de Terminos, Campeche, Mexico, where human activity negatively affects them. Therefore, to succeed in manatee conservation it is essential to have the involvement of local people. This has been achieved through the participatory planning process, organizing environmental education and social participation workshops. One of the main activities is a drawing contest about the manatee. The drawings have been used to make outreach material (calendars, flyers, signage's, good practice manuals, books, etc.). The opinions and suggestions of the communities have always been taken into account for the design of the outreach materials. Children's drawings, the use of simple language, and the collaboration among community, scientists, and NPA managers, have contributed to the acceptance and success of the outreach and education material. Kids have been a catalyst to promote and raise awareness of the ecological, social, cultural and economic value of the manatee. It has been possible using these strategies to establish a culture of manatee conservation that previously did not exist in this region.

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Photo credit: Jorge Morales





## Workshop 8: MMPA Management and International Agreements: Building Bridges for Cooperation

### Coordinator:

**Jose Truda Palazzo**, Institutional Development Officer, Instituto Baleia Jubarte, Canoas

### Speakers:

**José Truda Palazzo, Jr.**, Instituto Baleia Jubarte, Brazil - An Overview of Some International Treaties with a Bearing on MPAs

**Giuseppe Notarbartolo di Sciara**, Co-Chair, IUCN MMPA Task Force and Tethys Research Institute, Italy - CMS Agreements, CBD EBSAs and the Mediterranean Experience

**Lorenzo Rojas-Bracho**, CONANP, Mexico - The International Whaling Commission and its Conservation Committee

**Mike Donoghue**, SPREP, Samoa - The South Pacific Environment Programme and the Year of the Whale. Presented by José Truda Palazzo, Jr.

**Sabine Garnier** and **Christophe Lefebvre**– The AGOA Marine Mammal Sanctuary and its Cooperation/Sistership Agreements

### Introduction and Overview

Marine Protected Area Managers are usually overwhelmed with their own local issues, and rarely if ever have the opportunity to think of their work in the global context, much less in the universe of international treaties. Nevertheless, decisions taken (or not taken!) at international policymaking fora can have a direct impact on MPAs. Also, some international agreements might provide platforms for cooperation, information exchange and even funding of initiatives with a potential to improve on-site management of both marine mammals and MPAs. This session intends to briefly present some of these treaties/platforms and discuss ways in which MMPA managers could get more involved, make their voices heard and reap benefits from interacting with it.

### Session Objective:

Our main objective was to find ways of empowering MMPA Managers with the information to seek their direct participation in formulating national policies for relevant international treaties taking their needs and views into account, enhancing the opportunities for international exchange and partnerships through these fora.

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### Discussion Summary:

**José Palazzo** introduced the workshop theme with a brief summary of potential interfaces between MMPAs and several international agreements, including the International Whaling Commission (IWC), Convention on Migratory Species, Convention on Biological Diversity and regional agreements and programs, highlighting the need to make information flow better between MMPA managers and these international fora. **Giuseppe Notarbartolo di Sciara** presented a Mediterranean perspective on how Multilateral Environmental Agreements (MEAs) affect MMPA management, drawing attention to the additional layer of information and management that could be brought by the ongoing definition of Important Marine Mammal Areas (IMMAs). **Lorenzo Rojas-Bracho** focused on the progress made by the Conservation Committee of the IWC and several area-based initiatives at the Commission, which could have a bearing on MMPA management e.g. the establishment of Sanctuaries over wide areas. On behalf of **Michael Donoghue**, José Palazzo presented the work of the South Pacific Environment Program, its Year of the Whale initiative and many actions and technical products developed for – and with – local communities and MPA managers. **Sabine Garnier** and Christophe Lefebvre presented the AGOA Marine Mammal Sanctuary in the Caribbean and the efforts by the French Marine Protected Areas Agency to develop cooperation and sistership agreements for the Sanctuary.

In the ensuing debate, participants in the Workshop focused on two main questions: how do we ensure that the expertise and input from MMPA managers and people on the ground inform decisions and actions by these international bodies, and how best to capture and use the decisions and products coming from the international framework. There was general agreement on the need for better two-way communication between MMPA managers and the international agreements community, and it was recommended that national governments should find ways to connect the treaty delegations with the Environment & Protected Areas agencies so that information can flow regularly from the field to the global arenas and vice-versa. It was suggested that MMPA managers should seek a role in high-profile international issues such as climate change, noting that in many countries the ocean components of this issue have not been properly considered in the formulation of national policies or international positions. It was also suggested that ICMMPA5 might convene a similar Workshop inviting government diplomats involved in these issues and more MMPA managers to identify specific opportunities for international cooperation.

### Workshop 9: Strategies to Support Sustainable Financing for MPAs

#### Coordinator:

**Brad Barr**, U.S. National Oceanic and Atmospheric Administration, Office of National Marine Sanctuaries, *United States of America*

#### Speakers:

**Albert James DeGarmo**, NOAA/ONMS/Pacific Islands Regions, *Ideas for Supporting Sustainable Funding of MMPAs, United States of America*

**Brandon Deroche**, Propeller, *Supporting Sustainable Financing through Crowd funding, United States of America*

#### Introduction and Overview

This workshop will carry forward from the presentations and preliminary discussions from Panel 1, “Building Innovative Partnerships for Marine Mammal Protection.” One of the greatest challenges facing MMPA managers is securing sufficient financial resources to fully address management strategies adopted for their site. While most MMPAs are allocated budgets from the government programs with which they are affiliated, these funds are almost universally inadequate to address the full spectrum of needs. These include the research, monitoring, management, and enforcement services required to appropriately and comprehensively provide effective stewardship for the marine mammals that visit and inhabit their sites. Further support is needed to sustain the quality of the ecosystem of that site which is critical to sustaining those populations. Partnerships can help to fill this funding gap. However, given the time and effort required to identify, build and successfully accomplish these collaborative initiatives, some “best practices” – lessons learned from other sites who have been successful (or not so successful) in establishing such partnerships – would be very valuable to develop and share broadly within the MMPA community of practice.

This workshop intends to bring together MMPA managers and others that support this to share experiences with seeking sustainable financing for MPAs. The goal of which is to identify “best practices” that will help to guide and inform others as they embark on creative collaborations.

#### Session Objective

The objective of this session is to provide an opportunity, in small topical breakout groups, for participants to come together to share their successes (and not so successful attempts) in identifying,

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establishing and implementing creative partnerships. The focus of these discussions will be to identify possible “best practices” to share more broadly within the MMPA community. Additionally, the session will also begin to identify types of MMPA management needs that may become part of a portfolio of ideas, projects and initiatives that could be funded with the envisioned “MMPA Foundation.” Questions that may be addressed in the breakout discussions include:

- 1) From your experience, what has worked well in securing continued funding for MMPA?
- 2) Does your organization see any emerging trends that could be adopted to increase the community's success?
- 3) What are you currently lacking to effectively manage your portfolios?
- 4) What are the project characteristics of successful proposals you see foundations/organizations prioritize?
- 5) What are some current frustrations in securing continued funding?
- 6) Looking back at your work at this point, are there any “lessons learned” that might be beneficial for other members in the community?
- 7) Besides the model discussed during this panel, are there other existing/emerging models that you are aware of?
- 8) Have you attempted to seek funding through “crowd-sourcing” and what was your experience? What sort of project best lends itself to this approach? What can be learned from attempts to use crowd sourcing for similar projects that can help to elucidate “best practices?”

### Discussion Summary

The workshop began by reviewing the historical context for securing funding for the various marine areas. Industry expert, Mark Spalding was asked to discuss the role of foundations. This focused on traditional means for securing funding, and the frustrations that often follow. Participants were then introduced to a variety of new trends that have begun to emerge as an alternative for sustainable funding. Brandon Deroche and Theresa Fyffe were able to add their experienced voices to the discussion as they reviewed crowd funding and public private partnerships. They were able to discuss how these new and innovative strategies could be implemented at various MMPAs. Concluding the presentation was a review and lessons learned from the first panel. Generally, the key message throughout the workshop was that in order to maintain any level of sustainable financing for your respective MMPA, it is crucial to diversify your portfolio. Additionally, throughout the discussion it became apparent that these different managers and scientists have developed solutions that work for their specific sites, and could be likewise adapted and potentially implemented at similar sites around the world. There was a sense from the interaction with the participants at the conclusion of the workshop that there was considerable interest in finding ways to make MMPAs more sustainably funded, and to increase the collaboration between these managers in the future.

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### Presenter Summaries

#### ***Ideas for Supporting Sustainable Funding for Marine Mammal Protected Areas***

**Albert DeGarmo**, U.S. NOAA Office of National Marine Sanctuaries Pacific Islands Region

Securing sustainable funding for conservation management is one of the most difficult challenges facing most marine mammal protected areas (MMPAs) around the world today. Managing an MMPA is an expensive affair; the costs of both waterborne patrol systems and simple transport within MMPAs is generally significantly higher than in terrestrial protected areas where costs for outreach, neighboring community development projects, and other conservation activities only add to the burden. Many MMPAs enjoy a significant initial injection of funding from either government agencies, international conservation NGO's, or development projects involved in the establishment of the MMPA, but this funding often decreases dramatically or disappears altogether within a 3-5 year period after establishment.

The simple truth remains that these MMPA do not have proper financial support needed to address all their management needs. Government sources still account for 80% of biodiversity financing worldwide and this funding can fluctuate with changes in government and policy. This problem is only compounded by the fact that many MPA managers have no background in business or financing, making it hard to develop robust new revenue streams.

Thus, there is an international need for an organization or some collaborative mechanism to help support MMPAs in securing a sustainable source of financing. In summation, there were three takeaways from the first panel. First, these sites must craft powerful narratives in order to garner participation. Without a compelling narrative, there is no initial attraction for investment. Secondly, the sites financial portfolio should be diverse in their funding sources in order to alleviate themselves from systemic shock in any field. Lastly, all managers should be responsive to changes in the economic field. If the financial landscape is changing, it is important to remain flexible and change with it.

#### ***Supporting Sustainable Financing through Crowd Funding***

**Brandon Deroche**, Propeller

Crowd funding is a way to raise money, awareness and support for a project, from a portion of the general population that has identified with your initiative. This emerging source of funding allows individuals to have direct support of their ideals and values through the power of the crowd. By distributing the cost for support, a portion of the general population is able to support large-scale projects at relatively little cost to them.

This approach works on various different levels. First, it validates the public's support in your project through direct financial contributions. This not only gives the project confidence, but it proves that the people like your idea and will pay to make it happen. Additionally, it serves as a great tool to scale your own existing network. When you launch a crowd funding supported project, invested parties naturally disseminates information regarding your plan. They become advocates in their own communities and tend to draw in other participants. By influencing their network, they are able to garner much more attention than a single marketing campaign.

As other sources of financial support for these MMPAs is quickly dwindling, the international community needs to identify other viable sources of steady income. While this might not be the main component for a sites operation, it can become a valuable component to any of their financial portfolios.

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(taken from David Wiley's PPT presentation )



## Workshop 10: Noises Issues- Strategies for Quieter MMPAs (Canada to Costa Rica)

### Coordinator:

**Rob Williams**, Ocean Initiatives

### Speakers:

**David Wiley**, Research Coordinator, NOAA/NOS/ ONMS (USA)

**Mary Cody**, Bureau of Ocean Energy Management (USA)

**Rob Williams**, Marine Scientist, Oceans Initiative (USA)

**Lorenzo Rojas**, CONANP and Instituto Nacional de Ecología (Mexico)

### Introduction and Overview

Noise is one of the major stressors for marine mammals. While traditional marine protected areas reduce fishing and other pressures, noise is rarely addressed. We can use the new interest in IMMAs to determine areas important for whales *vis a vis* the noise level. While on one hand we are insisting that IMMAs are purely scientific (knowledge) products, they must eventually be used for management or they will have been for nothing. This panel focused on what we know about noise and marine mammals, and practical aspects of incorporating noise reductions into MMPAs.

### Presenter Summaries

***NOAA Ocean Noise Strategy Roadmap and experience in Stellwagen Bank National Marine Sanctuary to understand effects of ship noise on baleen whales and their habitat***  
**Dave Wiley**, Research Coordinator, NOAA/NOS/ ONMS (USA)

David Wiley's presentation focused on noise research done in Stellwagen Bank (USA), with Leila Hatch and Michael Thompson. This work has been feeding into the Ocean Noise Roadmap. Stellwagen is abundant in marine mammals, but also supports lots of shipping (3500 transits/year). NOAA Sanctuary Acoustics: passive acoustics (Leila, Chris & Sofie) and Dtags (this can give area/habitat-based ambient noise budgets, and whale-centered ambient noise budget) were used to characterize the Sanctuary's acoustic environment. We are fortunate in that NOAA has long-term noise monitoring at reference stations. TrackPlot shows movements of whales through the Sanctuary.

Humpbacks make feeding calls when they're in deep water, or at night (no visibility), but don't make feeding calls during day in shallow water (good visibility). We don't fully understand whale communications, but we have observed that ship noise disrupts that feeding behavior.

NOAA Ocean Noise Strategy (CetMap / CetSound) has an Ocean Strategy Roadmap outlining its 10-year plan to get a common cross-agency vision for how to treat noise in ocean management.



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### ***Characterizing and managing ocean noise in important marine mammal habitats in a rapidly changing Arctic***

**Mary Cody** – Bureau of Ocean Energy Management (USA)

Recently, we have witnessed an increased open water season in the Arctic, with increased ship access. There are many new entry points, but they all exit through the Bering Strait. With shipping expanding in the NW passage, a bottleneck has developed through Unimak Pass, and a lesser chokepoint at Bering Strait. The paths of Shell's seismic surveys off Hanna Shoal and other activities in Bering Sea are visible (castle turret design) from satellite AIS.

At present, a tradeoff exists between safety speed (slow, around ice) and maneuverability (more maneuverable at higher speeds) of ships. Noise isn't included in most considerations, because safety trumps noise.

There are some proposals for oil and gas exploration and / or recovery in the Chukchi and Beaufort Seas. Some areas were withdrawn under President Obama, but it is unclear whether this will last.

Several species naive to noise (bowhead, beluga, bearded and ringed seals, walrus and polar bear from the Chukchi Sea) may be especially vulnerable to oil and gas activity's noise. However, mitigation measures exist: including amendment to shipping having to do with seasonality, and routing.

Unfortunately, reliance on passive acoustic monitoring limits understanding, as it only captures vocalizing animals.

### ***Toward Quiet(er) MMPAs in Canada's Pacific Region***

**Rob Williams**, Ocean Initiative (USA)

Much of our work in marine mammal conservation involves identifying the animals' habitat needs, and finding creative ways to protect species that need our help. Defining and protecting whale habitat requires more than drawing boxes on maps. Sound is arguably the most important sense that marine mammals use to obtain information about their environment. Anthropogenic noise degrades marine mammal habitat, and mitigating ocean noise is essential for protecting important marine mammal habitats. There is a perception that noise is impossible to manage through MMPAs, because MMPA boundaries offer no barrier to sound propagation (Hatch and Fristrup 2009). Notwithstanding the difficulty of managing ocean noise using area-based management tools, it is the case that many human activities (e.g., whale watching core areas, shipping lanes) are fairly predictable in time and space. Human activities are carving persistent acoustic features in the ocean, which lends ocean noise amenable to marine spatial planning (Erbe et al. 2014). Noise levels are sufficiently high in some areas to compromise the quality of acoustic habitat for some endangered populations. The critically endangered southern resident killer whale population may be losing 62 or 97% of their communication opportunities on typical or busy days, respectively (Williams et al. 2014). By integrating data on long-term average distribution of marine mammals and spatial variability in anthropogenic noise levels, it may be possible to manage human activities to keep quiet habitats quiet, and make noisy areas quieter (Williams et al. 2015).

Hatch, L.T. and Fristrup, K.M., 2009. No barrier at the boundaries: implementing regional frameworks for noise management in protected natural areas. *Marine Ecology Progress Series*, 395, pp.223-244.

Williams, R., Clark, C.W., Ponirakis, D. and Ashe, E., 2014. Acoustic quality of critical habitats for three threatened whale populations. *Animal Conservation*, 17(2), pp.174-185.

Erbe, C., Williams, R., Sandilands, D. and Ashe, E., 2014. Identifying modeled ship noise hotspots for marine mammals of Canada's Pacific region. *PloS one*, 9(3), p.e89820.

Williams, R., Erbe, C., Ashe, E. and Clark, C.W., 2015. Quiet(er) marine protected areas. *Marine Pollution Bulletin*, 100(1), pp.154-161.

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### ***Using Passive acoustic monitoring to estimate Vaquita abundance and define the spatial extent of an MMPA***

Lorenzo Rojas, CONANP and Instituto Nacional de Ecología (México)

Acoustic methods are used to assess impacts of human activities on marine mammal habitats. But passive acoustic monitoring (PAM) is also a powerful way to understand distribution, abundance, and habitat use of the marine mammals using MMPAs. Drawing from long-term studies of the vaquita, this presentation showed how the accuracy and precision of vaquita abundance estimates were improved by switching from line transect surveys to PAM-based point transect surveys to estimate abundance. The PAM data were also used to define the boundary of a gillnet closure area, which is in effect an MMPA.

### **Discussion Summary:**

The group agreed that we need to keep quiet areas quiet, and at the same time make noisy areas quieter. For reducing seismic noise, it will be imperative to export solutions internally. The group discussed the idea of "acoustic prospecting", and the fact that such assessment could be concentrated in the Global South, where the last quiet oceans may be found. But capacity for doing acoustic prospecting must be built.

The group resolved to build an open-access Acoustic Prospecting Toolkit to share, and to increase participation from the Global South at ICMMPA5.



(taken from Rob Williams' PPT presentation)

## Workshop 11: Entanglement Response International Networking in North America

### Coordinator:

**David Mattila**, International Whaling Commission

### Speakers:

#### *Network for the Assistance of Entangled Great Whales*

**Dulce Maria Avila Martinez** (México), Comisión Nacional de Áreas Naturales Protegidas (CONANP)

#### *IWC Global Whale Entanglement Response Network: Facilitating capacity building and cooperation*

**David Mattila**, Technical adviser, Human Impact Reduction Secretariat, International Whaling Commission & Center for Coastal Studies

#### *Large Whale Entanglement: Trans-boundary Cases*

**Jamison Smith**, National Entanglement Response Program Coordinator, NOAA

#### *Large Whale Rescues & Successes of the Pacific Northwest Marine Mammal Response Program Canada & United States Cooperation*

**Paul Cottrell**, Marine Mammal Coordinator Fisheries and Oceans Canada

#### *Transboundary Examples - Alaska Region*

**Ed Lyman**, NOAA/ Hawaiian Islands Humpback Whale National Marine Sanctuary

#### *Cooperation Between East Coast Canada and US*

**Scott Landry**, Center for Coastal Studies

### Introduction and Overview:

#### Day One: Setting the Scene

Workshop 11 was the first part of a three day workshop convened by the International Whaling Commission with sponsorship by World Animal Protection, and in partnership with the Department of Fisheries and Oceans (Canada), the National Oceanic and Administrative Association (NOAA) and the National Parks of Mexico (CONANP). The primary goals of the workshop were to learn, through brief overviews, about each of the three countries networks, and to set the foundation for discussions about how countries can assist each other through cooperation surrounding “transboundary” entangled whales (e.g. free-swimming whales that move between countries).

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### Overview of Mexico's Network (RABEN)

Mattila welcomed the participants and introduced Avila Martinez, who presented an overview of the formation and current status of Mexico's large whale entanglement response network (RABEN: Red Nacional de Atencion a Ballenas Enmalladas).

Mexico's Action Plans for the Conservation of Humpback and Blue whales identify entanglements as a major risk for the species. To address this issue, in 2012 CONANP call for the formal integration of a national entanglement response network and in close collaboration with ECOBAC and the support and participation of the Global Whale Entanglement Response Network (GWERN) they held the first training courses which resulted in the constitution of 12 regional groups. As of 2015, the RABEN has grown to 15 groups in all the Mexican Pacific and the Gulf of California, with about 180 well trained and equipped members from diverse sectors, including: fishermen, whale-watching tour operators, non-governmental organizations as well as other federal and state agencies. In order to standardize procedures and operations and based on the IWC guidelines, the National Coordinator formulated and publish the Protocol to Assist Entangled Great Whales, which can be found in both the CONANP and RABEN web sites. The Mexican government, through CONANP each year provides funds to the RABEN for training, proper tools and personal safety equipment as well as uniforms. The challenge for the future is to improve network operation and strengthen regional groups.

The presentation was followed by a brief video describing the history, growth and current operations of RABEN.

### Discussion:

The group **commended** Mexico for the remarkable job they have done in rapidly developing a cohesive, trained network of multiple stakeholders, and **agreed** that their efforts were a great example for other countries. Avila Martinez stressed that communication (e.g. RABEN web site and post-season meetings) has played an extremely important role in Mexico's successful building and unifying of their network, and that this communication is now helping them to get out proper messaging (i.e. only trained individuals should intervene). In addition, it has helped them work together with fishermen on ideas for prevention. She further noted that the cooperation of the Navy varied from port to port, depending on the relationship between the commanding officer and the local RABEN coordinator. In response to a question about how the Network certifies its members, it was explained that all trained RABEN members are certified on one of three levels, as:

- 1) Communications
- 2) Support
- 3) Action

These are defined in detail in their protocol document.

### Overview of IWC GWERN and some potential agreements

Mattila provided an overview of the International Whaling Commission's (IWC) initiative to build capacity and facilitate cooperation between countries in response to large whale entanglements. The IWC has been concerned about the bycatch (entanglement) of large whales for several decades, and has been endeavouring to understand the scope and impact of this human impact through its Scientific Committee and its working group on human induced mortalities. More recently, concerns about both the welfare and conservation (for some populations) implications have brought the topic to the attention of the Commission, through their conservation committee and working group on whale killing methods and welfare issues. In 2012 the Commission endorsed an expert advisory panel, and a capacity building strategy. This initiative has resulted in the development of a Global "network" of affiliated National entanglement response networks (described in more detail on the second day of the workshop).

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Beyond facilitating cooperation through the Global Network, the IWC has also assisted with specific entanglement events by helping to arrange for trained individuals from one country to assist with an entanglement in a country that lacks that capability. Finally, Mattila mentioned some existing agreements that might either serve as an umbrella for Mexico, Canada and the USA to work together, or as an example for new cooperative agreements, whether formal or informal. Examples included the recent Memorandum of Cooperation for Western Grey Whales, facilitated by the IWC and IUCN, and signed by Mexico, USA, Russia, Japan and Korea, and the North American Agreement on Environmental Cooperation (under NAFTA). Both of these include language that encourages international cooperation between range states that share common species (e.g. migratory whales) and environmental issues.

### Examples of cross boundary cases and events

#### *USA (S. California) and Mexico example cases*

Smith briefly presented some transboundary cases between California and Mexico. They are included in Viezbike's summary from the second day of the workshop (see, "California and West Coast Network")

#### **Discussion:**

The presentation stimulated a discussion about liability if something goes wrong.

- In the USA all responders operate under an Endangered Species Act (ESA) permit. The Act protects most large whale species, and the authorization (through a permit) protects the actions of the rescuer from prosecution.
- Currently, in the USA each permitted individual and/or NGO insures itself.
- However, NOAA-NMFS cannot require insurance as a condition of the permit, but can if responders are contracted (as a part of their contract)
- It might be possible for responders from other countries, assisting in the USA, to attain USA volunteer status, and therefore be insured that way
- Another hurdle for cooperation during events is that it is very difficult to get non-government staff on a government boat
- This is also an issue for non-nationals in USA

It was noted that insurance is currently required in Canadian contracts.

One suggestion for requiring insurance in the US was that all American responders could be contracted for \$1 so that insurance could be required in that \$1 contract. The Center for Coastal Studies, which pioneered large whale entanglement response in the USA, noted that their insurance for these activities is "attached" to their vessels, not to an individual.

### British Columbia and USA cases

Cottrell presented slides and videos of several recent events from British Columbia. He noted that, with regard to cooperation with the USA, that was primarily comprised (so far) of attaching satellite telemetry buoys to whales that subsequently entered USA waters.

#### **Discussion:**

In response to the issue of transboundary entangled Southern resident killer whales, it was noted that these were one of NOAA Fisheries' "Species in the Spotlight" and that NMFS had highlighted these for special concern, and that this may therefore provide extra motivation for cooperation and support for rapid, effective response.

With regard to unusual gear on a gray whale, it was noted that the recent MoC on WGW might help to facilitate tracking down the origin.

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### **Alaska**

Lyman presented an overview of the response network in Alaska, but noted that (so far), there were very few documented transboundary entanglements between Southeast Alaska and Northern British Columbia, however there was a case of an entangled whale that moved between British Columbia and Hawai'i. He also gave examples of entangled whales that moved extensively within Southeast Alaska, and who could easily have crossed the border into northern British Columbia.

### **Discussion:**

During discussion of a whale that was entangled in BC and released off Hawai'i, it was noted that some pot buoys in BC have "PIT" tags, and this stimulated a discussion about the utility of cooperation between the three countries in order to determine the origin of gear removed from whales. The presentation also stimulated conversation about how to best communicate about entangled animals that move between teams, and countries.

The above information and discussion during Workshop 11 provided the foundation for the next two days of discussions about how the three countries can cooperate for safe and successful outcomes.

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### Conference Schedule

SUNDAY 13 NOVEMBER 2016	
TIME	SESSION
5:00 – 7:00 PM	Conference Registration
4:00 – 6:00 PM	Public Event: “Giants Journey” Photographic Exhibition and Marine Mammals Conservation <i>South end of the Malecon / Boardwalk and City Hall Palace corridor</i>
7:00 – 8:00 PM	Special Hotel Event: Icebreaker at Conference Venue (Hotel Guests Only) <i>Location: Carreta Garden</i>
MONDAY 14 NOVEMBER 2016c	
TIME	SESSION
8:30 AM	Conference Registration
9:30 AM	Conference Opening and Welcome <i>Amapola &amp; Orquidea Rooms</i>
10:15 AM	Plenary Talk: Mark Spalding – “A Proposal for a North America – South America – Caribbean (NaSaCar) Marine Mammal Corridor in the Atlantic”
10:45 AM	Break
11:15 AM	Panel 1: Building Innovative Partnerships for Marine Mammal Protection (POC: Brad Barr)
1:00 PM	Lunch
2:00 PM	Plenary Talk: Anne Nelson – “Incorporating Local Marine Mammal Knowledge into Marine Planning Processes – Can We Do It?”
2:30 PM	Panel 2: Using IMMAs: How Can the Tool of IMMAs (Important Marine Mammal Areas) Contribute to Biodiversity as well as Marine Mammal Conservation on the High Seas? (POC’s: Giuseppe Notarbartolo di Sciara and Erich Hoyt)
4:00 PM	Break



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4:15 PM	Workshop 1: Marine Spatial Planning <i>Amapola Room</i>	Workshop 2: IMMAs <i>Orquidea Room</i>	Workshop 3: Managing Encounters with Marine Mammals <i>Girasol Room</i>
7:00 – 9:00 PM	Welcome Reception at “La bodeguita del medio”		
TUESDAY 15 NOVEMBER 2016			
TIME	SESSION		
9:00 AM	Plenary Talk: John Ford – “Conserving Orcas – Challenges of Identifying and Protecting Critical Habitats for Killer Whales in Canada” <i>Amapola &amp; Orquidea Room</i>		
9:30 AM	Plenary Talk: Lorenzo Rojas-Bracho – “Totoaba Black Market: the Unavoidable Decline of Vaquita”		
10:00 AM	Panel 3: REGIONAL: Mexico (Pacific side) through Panama including Costa Rica (POC: Jorge Urban)		
11:30 AM	Break		
11:45 AM	Panel 4: Pinniped Conservation: Linking Coastal Protections on Land to MPAs (POC: Tundi Agardy)		
1:15 PM	Lunch		
2:30 PM	Panel 5: Stakeholder Engagement – Science and Conservation (POC: Angelica Lydia Narvaez Casillas)		
4:00 PM	Break		
4:15 PM	Workshop 4: Stakeholder Engagement – Science and Conservation <i>Amapola Room</i>	Workshop 5: Tools for Managers <i>Orquidea Room</i>	Workshop 6: New Challenges for Species Conservation and Management for Rebounding Populations <i>Girasol Room</i>

## ICMMPA 4 Conference Proceedings

7:00 PM	“A Night with Giants”, Video-show hosted by CONANP <i>Amapola &amp; Orquidea Room</i>		
WEDNESDAY 16 NOVEMBER 2016			
TIME	SESSION		
9:00 AM	Plenary Talk: Rebecca Lent – “Enhancing the Design and Implementation of Your IMMPA: Why You Need an Economist” <i>Amapola &amp; Orquidea Room</i>		
9:30 AM	Panel 6: Evolving Perceptions and Stewardships within human communities (POC: David Mattila)		
11:00 AM	Break		
11:15 AM	Panel 7: River Dolphins (POC(s): Fernando Trujillo and Miguel Iñiguez)		
1:00 PM	Lunch		
2:00 PM	Workshop 7: Visualizing MMPA Conservation <i>Amapola Room</i>	Workshop 8: MMPA Management and International Agreements: Building Bridges for Cooperation <i>Girasol Room</i>	
4:00 PM	Break		
4:30 PM	Workshop 1: (continued) Marine Spatial Planning (follow-up discussion from MSP Workshop) <i>Amapola Room</i>	Informal Session: Ask Managers “What Can ICMMPA Do for You” <i>Girasol Room</i>	
7:00 PM	Evening Event: Ocean Noise in MMPAs (Panel and Screening of “Sonic Sea”) <i>Amapola &amp; Orquidea Room</i>		
THURSDAY 17 NOVEMBER 2016			
TIME	SESSION		
9:00 AM	Workshop 9: Strategies to Support	Workshop 10: Noise Issues –	Workshop 11: Entanglement

## ICMMPA 4 Conference Proceedings

	Sustainable Financing for MPAs <i>Amapola Room</i>	Strategies for Quieter MMPAs (Canada to Costa Rica) <i>Orquidea Room</i>	Response International Networking in North America <i>Girasol Room</i>
11:00 AM	Break		
11:30 AM	Plenary Talk: Christophe Lefebvre – “Why Twinnings and How to Manage Them” <i>Amapola &amp; Orquidea Rooms</i>		
12:00 PM	Plenary (Closing) Talk		
1:00 PM	Lunch		
2:00–4:00 PM	IUCN WCPA/SCC Joint Marine Mammal Protected Areas Task Force Meeting	Workshop 12 (continued): Entanglement Response International Networking in North America	
5:00 PM	Closing Event – Sunset Boat Ride Hotel Lobby Pickup		

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## ICMMPA 4 Conference Proceedings

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## Statement of the ICMMPA Steering Committee

### ***Statement in Support of the Establishment of Continental Scale Networks of Marine Mammal Protected Areas Linked by “Safe Passage” Corridors***

*The International Conference on Marine Mammal Protected Areas Steering Committee,*

**NOTING:**

*The Convention on International Trade in Endangered Species of Wild Fauna and Flora, signed in Washington on March 3, 1973;*

*The Convention on the Conservation of Migratory Species of Wild Animals signed in Bonn on June 23, 1979;*

*The Convention on the Conservation of European Wildlife and Natural Habitats of Europe, signed in Bern on September 19, 1979;*

*The International Convention for the Regulation of Whaling, signed in Washington on December 2, 1946;*

*The Convention for the Protection and Development of the Marine Environment of the Wider Caribbean, signed in Cartagena March 24, 1983, and its Protocol on Specially Protected Areas for Wildlife (SPAW), signed in Kingston, on January 18, 1990;*

*The Convention on Biological Diversity (CBD) signed at the Earth Summit in Rio de Janeiro in 1992; and*

*The UN Convention on the Law of the Sea signed at Montego Bay on December 10, 1982.*

*And, **CONSISTENT** with:*

*The Aichi Biodiversity Target 11 to expand protected areas;*

*Efforts already undertaken by the UNEP CEP (CBD) LifeWeb Initiative for Broad-scale Spatial Planning for Management of Marine Mammal Corridors and Critical Habitats in Wider Caribbean Regional Sea;*

*UN Sustainable Development Goals 14.2 and 14.5 to protect marine ecosystems and expand protected areas; and*

*Negotiations of a new marine biodiversity treaty for the high seas and ocean areas beyond national borders (UNGA 69/292).*

**CONSIDERING:**

*The Opening Plenary, formal proposal presented by The Ocean Foundation and the International Fund for Animal Welfare for a “NaSaCar” Atlantic Ocean Marine Mammal Corridor;*

*The vast diversity of marine mammal species present in Western Hemisphere in general;*

*The recognized and potential threats facing marine mammals and their habitats in the Western Hemisphere;*

## ICMMPA 4 Conference Proceedings

*That the Western Hemisphere contains areas of particular importance for the conservation of marine mammals and especially for breeding, birthing, feeding, resting, and migration behaviors, these areas are currently defined as critical habitats for marine mammals; and*

*That the preservation of marine ecosystems in good ecological condition is essential to maintain or improve the capacity of these critical habitats.*

### **ANXIOUS:**

*To work for the conservation of marine mammals in the Western Hemisphere;*

*To ensure a harmonious coexistence of marine mammals and humans, as part of sustainable development; and*

*To assert their position in favor of marine mammal protection at the international level.*

### **STATE:**

1. *We are supportive of the creation of continental scale **networks** of marine mammal protected areas for the protection and conservation of marine mammals; as well as the description and potential designation of **corridors** for marine mammal “safe passage” that can link such networks in the waters under the sovereignty and jurisdiction of Nation States; and in Areas Beyond National Jurisdiction.*
2. *We see the description and potential designation of such networks and corridors as appropriate measures for the conservation of marine mammals, including:*
  - *Raising public awareness;*
  - *Protecting Biological and habitat integrity;*
  - *Restoring species and ecosystem health and safety; and*
  - *Encouraging governments to adopt best practices in ocean governance, law and policy (the management of human activities) related to marine mammals to provide consistency for various actors and interests within national waters and the Areas Beyond National Jurisdiction.*
3. *We are specifically supportive of the **NaSaCar Atlantic Ocean Marine Mammal Corridor**.*
4. *We recommend and encourage The Ocean Foundation, the International Fund for Animal Welfare, and their partners to:*
  - *Extend the NaSaCar concept to include all of South America;*
  - *Pursue the parallel and simultaneous replication of their corridor concept along the Pacific Coast of the entire Western Hemisphere to connect the North and South Basins of the Pacific; and*
  - *Consider the future application of this concept in other areas of our one global ocean.*
5. *This Statement is communicated to all international organizations with international or regional competence.*

Signed this 18th November 2016 at Puerto Vallarta, Jalisco, México

By the Chair & Corresponding Officer of the International Conference on Marine Mammal Protected Areas Steering Committee,

*Naomi McIntosh*

