Progress Report for the Cetacean Emerging and Resurging Disease (CERD) Working Group

The Cetacean Emerging and Resurging Disease (CERD) Working Group was formed at the 59th International Whaling Commission Scientific Meeting as a result of the workshop on Emerging Diseases in Cetaceans which was held in 2007. Since that time the Working Group has completed a second workshop on Skin Diseases of Cetaceans in Santiago, Chile in 2008. Annually the Scientific Committee develops workplans for the Working Group to do for the next intersessional year. The increasing issues with pollution, Harmful Algal Blooms and infectious diseases as complicated or impacted by climate variability and climate change, highlights the importance of stranding networks and the CERD working group for enhanced collaboration and communications to address these chronic and emerging issues for cetaceans globally.

The Cetacean Emerging and Resurging Disease (CERD) Working Group (WG) was given several tasks to be performed for IWC62 through intersessional email participation. Below is a list of accomplishments and plans for each of those items.

Skin Disease

Rosa (Chair), Brownell, Carlson, Galletti, Marcondes, Mattila, Robbins, Rosa, Rowles, and Weller

The Skin Disease Subgroup made some progress on the development of a website for skin lesions in cetaceans and on the standardization of skin lesion/disease descriptions.

Diagnostic Laboratories and Veterinary Experts

Utilizing the fields developed for diagnostic laboratories, the WG has identified regional experts who would be willing to provide the information and complete the first round of diagnostic laboratories by region, ocean basin or country.

Europe: United Kingdom - Paul Jepson and Ailsa Hall; The Netherlands - Thijs Kuiken; Belgium - Thierry Janiaux; Germany - Ursula Siebert; Spain/Canary Islands-Antonio Fernandez;

North America: United States- Frances Gulland, Dave Rotstein, Stephanie Venn Watson, Dee McAloose; Canada- Stephen Raverty

India: Sridhar Ramaswamy

South America: Brazil-Milton Marcondes; Argentina-Marcela Uhart

Prioritization of Pathogens in Cetaceans

Based on recommendations for prioritization of pathogens for the CERD and needs identified by the Working Group on Marine Mammal Unusual Mortality Events in the US, a pathogen assessment and prioritization scheme was developed and implemented in 2010 as a pilot assessment with a small number

of Subject Matter Experts (SMEs) identified by the Working Group on Marine Mammal Unusual Mortality Events. A report of this pilot study is (either Appendix I or separate Doc). The following is a summary of the actions noted in that pilot study.

Numerous microbes have been isolated from and reported in cetaceans. These reports have varied from the isolation of a bacterial species once in one animal to the association of a virus to numerous mass mortality events. During 2009-2010, the task of prioritizing cetacean pathogens was undertaken on behalf of the Working Group on Marine Mammal Unusual Mortality Events, US as survey using a small number of SMEs. The results of this survey may serve as a pilot study for the CERD task on a broader scale. The survey evaluated pathogens utilizing the following factors:

- Likelihood of marine mammal exposure to the pathogen;
- If exposed, likelihood of marine mammal illness;
- If exposed, likelihood of marine mammal death;
- If exposed, likelihood of marine mammal epizootic (often implying high probability of animal to animal transmission); and
- Public health implications: zoonotic, reportable in the U.S or emerging/reemerging diseases among humans

The study used a total of 76 pathogens for which there were peer-reviewed publications of those pathogens in marine mammals. Although there are numerous additional pathogens observed in marine mammals, this study focused on those identified in peer reviewed published reports. Raw risk scores and weighted risk scores (incorporating survey participants' confidence in their risk ratings), were used to prioritize pathogens for large cetaceans and small cetaceans. Adequate published data were only available to prioritize pathogens for small cetaceans, therefore the results are reported only on small cetaceans. The ten highest priority pathogens (have the highest total scores) among small cetaceans were morbillivirus, parapoxvirus, *Brucella* spp. anisakis, calicivirus, herpesvirus, nasitrema, *Clostridium* spp., and toxigenic *Escherichia coli.*

Of the 76 pathogens included in the survey, 27 (35.5%) were potentially zoonotic, and 12 (15.8%) and 20 (26.3%) were associated with reportable and emerging/reemerging human diseases in the United States, respectively. The next steps for prioritization would be to broaden the SMEs participating in the study to include more experts from other countries. In addition a process for evaluation of emerging pathogens and those without peer reviewed publications should be developed that may address the significant lag time in getting information peer-reviewed and published in a timely manner.

Emergency Response

Fernandez-Chair, Brownell, Jepson, Marcondes, Rosa, Rowles, Uhart, and Urban

Southern Hemisphere Baleen Whale mortalities.

Besides the Southern Right whale mortality in Peninsula Valdez – Argentina (see SC/62/Rep1), Brazil had an increase in stranding and mortality of humpback whale in the last four years comparing with the previous four years period: 2002-2005 average 22, min.20 max 23 ; 2006-2009 average 36,25, min 30, max 41 (Marcondes, unpubl.data). In Australia's western coast an unexpected die-off of more than 45 humpback whales occurred in 2009 (Coughran, pers.com). These facts highlight the needs of enhancing communication between the different networks and discussion of these mortalities in a larger perspective.

Enhance capacities and communications between stranding networks

Over the past year there were several efforts by different individuals or organizations to enhance the capacities of existing stranding programs, build or initiate stranding programs in areas that had no program, or better coordinate regional networks. As a part of this effort stranding training and capacity building workshops were held in four regions: West Africa, Caribbean, Brazil and India.

Caribbean: As an outgrowth of the 2003 White Water to Blue Water Initiative to foster partnerships to promote marine conservation in the Wider Caribbean, NOAA made a commitment to provide marine mammal stranding response training to all countries of the Cartagena Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region in the Treaty's three working languages. To that end, three workshops were held this year: Panama, Curacao and Guadeloupe. These workshops were a priority action identified by the UNEP's Specially Protected Areas and Wildlife (SPAW) Programme's Marine Mammal Action Plan (MMAP) for the Wider Caribbean Region (WCR), modeled after the first Eastern Caribbean stranding response workshop held in Trinidad & Tobago in 2005

Panama: NOAA in collaboration with and the support of National Environmental Authority of the government of Panama, the Regional Activities Center for the Protocol for Specially Protected Areas and Wildlife of the Cartagena Convention, the Commonwealth of Puerto Rico Marine Mammal Rescue Program, and the University of Las Palmas, Canary Islands convened a Regional Marine Mammal Stranding Response Training Workshop for Spanish-speaking nations of the Wider Caribbean Region on April 22 and 23, 2010 in Panama City, Panama. Over 100 participants attended the workshop. The workshop was held at the Smithsonian Tropical Research Institute and the Veterinary School of the University of Panama. It hosted invited government and non-governmental representatives from 12 countries, including Venezuela, Colombia, Panama, Dominican Republic, Belize, Costa Rica, Guatemala, and Nicaragua, to provide marine mammal stranding response training and discuss capacity building for stranding response in the Wider Caribbean.

French Caribbean Territories Regional Workshop

The Regional Workshop for the French-speaking Caribbean Territories in response to Marine Mammal Strandings from 8-10 January 2010 was held in Bouillante, Basse Terre in Guadeloupe. Thirty participants, representing Protected Area management organizations, government departments, and non-governmental organizations from five French-speaking islands and territories of Guadeloupe, Haiti, French Guyana, Martinique and St. Martin. The participants of the workshop are expected to promote the above goals on their island after returning from the workshop. The workshop was organized by ECCN in collaboration with Evasion Tropical.

Curacao Workshop

The Dutch Caribbean Regional Workshop for Effective Implementation for Marine Mammal Stranding Response (DCSW) was hosted by at the Curacao Sea Aquarium from 5 to 7 November 2009 in the Netherland Antilles. The Southern Caribbean Cetacean Network (SCCN), recently established on Curaçao, organized this stranding workshop in cooperation with the Dutch Caribbean Nature Alliance (DCNA), and the Eastern Caribbean Cetacean Network (ECCN), which organized the first stranding workshop in Trinidad & Tobago (2005). The goal of the

Workshop was to build capacity to review the techniques and protocols for responding to stranding incidents for marine mammals and to facilitate possibilities for collaboration in the Dutch Caribbean islands. Twenty-one participants representing Protected Area management organizations, government departments, and non-governmental organizations from six Dutch Caribbean islands attended—Aruba, Bonaire, Curacao, St. Eustatius, St. Maarten, and Saba. The US Marine Mammal Commission, DCNA, the Netherlands Antilles' government, and the Curaçao Sea Aquarium/Dolphin Academy provided funding for the workshop.

Brazil

In Centro Mamíferos Aquáticos (Aquatic Mammals Center the Brazilian Government organized the first Seminar for Training Veterinarians in Aquatic Mammals Necropsies. This event occurred in Itamaraca Island, from 12 to16 April 2010 and had the participation of nearly 30 professionals from all regions of Brazil. Dr Antonio Fernadez (ULPGC) and Dr Mike Walsh (University of Florida, USA) providednecropsy, pathology and clinical training.

India

A first of its kind ***Marine Mammal Stranding Workshop*** was held at the Central Marine Fisheries Research Institute (CMFRI), Kochi, India Jan 21-23, 2010. This event was organized by NOAA and CMFRI with funds provided by the Indo-US Science and Technology Forum (IUSSTF), India and NOAA. The workshop was aimed at increasing awareness and interest in marine mammals among the scientific community and the local public, and to provide the necessary impetus and training to collect relevant stranding data and create regional stranding networks in different parts of coastal India. A more specific goal was to communicate the inherent scientific value of data collection from stranded animals, maintaining a stranding database, and engaging in environmental stewardship to conserve and protect marine habitats and their inhabitants. Training was provided to the participants by staff from the NOAA Fisheries, Smithsonian Institution, and International Fund for Animal Welfare (IFAW) with extensive international experience in conducting such events. Forty-two participants from 23 organizations attended the workshop. The participants were scientists, researchers, veterinary surgeons, government and non-government officials. Some of the recommendations of the workshop are as follows: (i) Ministry of Environment and Forests, Government of India will serve as the lead agency in establishing and supporting a National Marine Mammal Stranding Network in India by allocating and distributing funds. Central Marine Fisheries Research Institute (CMFRI), Kochi HQ will serve as the nodal agency for executing and managing the Network. (ii) Existing MoU between National Oceanic and Atmospheric Administration (NOAA) MoU and Ministry of Earth Sciences (MoES) can be leveraged to set up bilateral research projects and capacity building/training in three areas: fisheries management, impact of climate change on living marine resources, and marine mammal conservation including stranding response. (iii) Annual workshops within each regional ecological zone (NW, SW, SE, NE, Andaman and Lakshadweep Islands) and at national ministerial level needs to be organized subsequent to the approval of guidelines submitted to the forest department. A follow up regional Marine Animal Necropsy Training and Stranding Workshop is proposed for Jan-Feb 2011 at the Madras Veterinary College Chennai, India.

West Africa

As part of the effort to address the Illegal, Unreported, Unregulated fishery by-catch of non-target species including cetaceans, NOAA has been working with various partners to enhance the capacity of countries to adequately detect by-catch. For West Africa this effort has been focused on observer and stranding capacity building for marine mammals and sea turtles.

National Stranding Meeting-US

NOAA held the second National Marine Mammal and Sea Turtle Health and Stranding Conference at the National Conservation Training Center in West Virginia from April 6-9 2010. The conference had more than 260 participants from the US, Canada, South Africa, West Africa, India, Caribbean, United Kingdom, the Netherlands, Brazil, and Argentina. It included didactic teaching, laboratories, stranding scene investigations, necropsies, panels and workshops on topics such as forensic science, euthanasia, mass stranding response, epidemiology, emerging diseases, sound in the ocean, oil spill response, and marine mammal and sea turtle medicine. The conference was a fantastic way for building collaboration and communication within US networks and between US networks and those in other countries.

Inventory of Stranding Networks

Utilizing information from the ICES working group (2009) and the IWC Ship Strike Working Group (2009), a broad inventory of stranding networks globally has been developed. The inventory contains the contact information for stranding networks in alphabetical order by country. The fields to be included in this spreadsheet: contact information, locations, species, type of work, and whether data is kept in a database. The spreadsheet needs to be evaluated by regional or national teams. The CERD working group needs to determine recommendations for accessing the information and for maintaining it.

Information on which facilities or organizations would be willing to provide on-site training or interns for both husbandry staff as well as veterinary staff, which facilities or organizations would be willing to assist with responses in other countries or regions, and which facilities or organizations are interested in participating in capacity building training opportunities might be applicable in additional tables. Two organizations have indicated a willingness to host interns or persons for additional experience in stranding response and necropsies. These are the University of Las Palmas, Canary Islands and the Marine Mammal Center, Sausalito California.

Other mechanisms for capacity building, training, and outreach have been discussed and electronic mechanisms for enhancing communication are being explored.