PROCEEDINGS OF THE ECS WORKSHOP

BEST PRACTICE IN RESCUE

Held at the
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Editors:
James Barnett, Sarah J. Dolman, Mark P. Simmonds and Andrew J. Wright

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Editors:
James Barnett[1], Sarah J. Dolman[2], Mark Simmonds[3] and Andrew J. Wright[4]

[1] **British Divers Marine Life Rescue, Lime House, Regency Close, Uckfield, East Sussex TN22 1DS, UK**
[2] **Whale and Dolphin Conservation (WDC), Brookfield House, 38 St Paul Street, Chippenham, Wiltshire, SN15 1LJ, UK**
[3] **Humane Society International, c/o 5 Underwood Street, London N1 7LY, UK**
[4] **European Cetacean Society.**

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Sarah J Dolman[1], James Barnett[2] and Mark P. Simmonds[3]

[1] Whale and Dolphin Conservation (WDC), Brookfield House, 38 St Paul Street, Chippenham, Wiltshire, SN15 1LJ, UK. email: Sarah.dolman@whales.org
[2] British Divers Marine Life Rescue, Lime House, Regency Close, Uckfield, East Sussex TN22 1DS, UK
[3] Humane Society International, c/o 5 Underwood Street, London N1 7LY, UK

BACKGROUND AND INTRODUCTION

Marine mammal strandings and entanglements generate a significant welfare issue on the coasts and in the seas of Europe. Such events elicit a strong response from humans aspiring to intervene for the perceived benefit of the individuals concerned. Appropriate action has the potential to return an animal to the wild to become a fully integrated and productive member of the local population and species as a whole. However, inappropriate action, despite the good intentions driving it, can exacerbate the animal welfare problem and potentially have more serious consequences for the welfare and conservation of the species and other species living in the same environment.

The purpose of this workshop was to invite all those directly or indirectly involved with this field, or with opinions on this matter, to participate and to make suitable recommendations for the appropriate management of stranded cetaceans. A resolution was agreed by all participants at the end of the workshop, and subsequently passed by the ECS at its Annual General Meeting, and is provided below.

The workshop began with presentations about historical and ethical considerations. These focused on the welfare and the perceived gains from intervention for individual whales and dolphins, as well as issues surrounding their conservation, relevant scientific knowledge, public education and the role of the media. Then, laws relating to interventions (including strandings, rescues and entanglements) in Portugal and elsewhere in Europe and how these have influenced decision making in recent decades were considered. The ethical aspects of expert decision-making and how to best deal with public understanding about decision-making were issues that arose repeatedly during the day.

Consideration was given to the appropriate triage of affected cetaceans on the beach, considering pre-stranding behaviour, time on the beach, age, condition and other important factors based on more than 20 years of interventions in the UK. Triage and post-beach release monitoring techniques developed in Cape Cod in the USA and the results of analytical studies to inform future release decision-making were also detailed. Interventions and the appropriate triage of pinnipeds in the Netherlands, including strict rehabilitation protocols and resulting successful release rates of seal rehabilitation facilities, were discussed. Unfortunately, it was not possible to provide a presentation on cetacean rehabilitation at the workshop but an abstract from an intended presenter is included in the workshop report for completeness.

The next session introduced criteria and methods for returning animals to the sea, including health status during and after rehabilitation and, particularly for rehabilitated seals (as the presentation on rehabilitation of cetaceans was not possible). Post-release monitoring methods and the welfare and longevity aspects of each (hat-tags, flipper-tags and photo-identification) were introduced. Photo-identification has enabled the monitoring of an individual female seal and the birth of subsequent pups over a 15 year period in Cornwall in the UK. Appropriate post release monitoring of released seals and cetaceans was discussed in some detail.

Next, the population level effects and animal welfare considerations surrounding large whale entanglements and subsequent causes of death and injury and the recent deliberations of the International Whaling Commission on this issue were introduced. Prevention was repeatedly identified as the only suitable long-term solution, but disentanglement triage, and associated guidelines and principles, was the focus of the subsequent presentation.

During the afternoon sessions, the workshop focused on euthaniasia. This discussion included criteria for euthanasia candidates during triage on the beach and the reasoning behind use of different euthanasia methods, (e.g. drugs and ballistics). Topics covered included the practicalities of euthanasing cetaceans; how important it is to record and learn from every animal attended; and, in addition, the issues of human health and safety, carcase disposal, emotional effects on rescuers and explaining the rationale for decision making to the media, public and rescuers. How to determine unconsciousness (and death) was also considered and the particular challenge of large whale euthanasia. A review of the most commonly used euthanasia methods was presented with the aim of determining the most appropriate method when all relevant factors are considered, including welfare aspects such as time to death, visual impact for onlookers, costs and availability.

Finally, the workshop considered appropriate data recording and sample gathering, both clinical and (in the eventuality of death) pathological. Justification of research that does not directly relate to the rescue and (if undertaken) rehabilitation of the animal was introduced, weighing advancement of knowledge of direct and indirect benefit to animal population conservation and welfare against the invasiveness of the research procedure and its effect on the individual's welfare.

This workshop was held as one of a series of 'Best Practice' workshops organised by the European Cetacean Society (ECS) Scientific Advisory Committee. The workshop took place on Sunday 6th April at the Old Library in Setubal before the start of the 27th Annual European Cetacean Society conference. It was attended by more than 75 people (a list of participants is provided at the end of the workshop report).

The workshop organisers and chair are grateful to all the workshop presenters and participants for their role in making the workshop an interesting and successful day. We are very grateful to the ECS Scientific Advisory Committee for covering the costs of the workshop so that there was no attendance fee.

RECOMMENDATIONS

The following recommendations were unanimously accepted by the workshop participants and subsequently were presented to the European Cetacean Society conference:

- 'Prevention is better than cure';
- Safety of personnel is paramount; and
- The guiding principle in rescues should be that everything done is done in the best interests of the welfare of the animal.

Establish a network of EU/European-wide stranding contacts which will regularly share and review information; and through this, and generally in our work, we will strive to:

- maintain a trained and well informed and organised local community network;
- share data (including from outside of the European region) – in order to better inform the rescue and response processes;
- standardise data collection across the region for the whole rescue and response process;
- **set up a working group** to establish standard protocols for data collection, including post release;
- support the development of guidelines and protocols for rescue, post release, euthanasia, necropsy and disentanglement – i.e. IWC disentanglement guidelines;
- objectively assess survival of released animals;
- facilitate/conduct necropsy examinations where rescue fails;
- skill-share in terms of public expectations;
- evaluate and publish rescue information in the scientific literature to inform future decision making; and
- maintain long term datasets where they exist (e.g. the UK Cetacean Stranding Investigation Programme).

2. STRICKEN MARINE MAMMALS – A HUMAN RESPONSIBILITY: AN INTRODUCTION TO THE BEST PRACTISES FOR THE RESCUE OF MARINE MAMMALS WORKSHOP

Mark P. Simmonds[1]

[3] Humane Society International, c/o 5 Underwood Street, London N1 7LY, UK

This short contribution is based on the opening statement made at the workshop by its Chair.

Attitudes towards marine animals are far from static over history (Brakes & Simmonds, 2011). In Europe, the industrial revolution was illuminated and its great machines lubricated by oil obtained by 'mining' whales. The developing middle classes were only able to venture increasingly safely out in the dark evenings (and read the new generation of widely available books into the night) because whale oil was burning in their lamps and lubricating the steam-driven book presses that were mass producing their reading material. Popular natural history books arrived in the Victorian era and many were illustrated with images of hunted animals, including whales. Our modern European culture was, in effect, founded on what we now appreciate to be the cruel deaths of tens of thousands of animals who would have experienced not just their own pain, but also that of their offspring and family. Now, of course, we know better and, with that knowledge, comes responsibility and a new approach to the mammals of the sea.

A live whale found lying on the shore typically provokes strong emotions and people call for swift rescue action. One seen swimming close inshore may also lead to calls for action to drive it back to what is perceived as its deeper and more appropriate habitat, even though he or she may, in fact, be perfectly fine. This provides one illustration of why managing public understanding and expectation has become an important consideration in rescues. In the 21st century, public understanding is primarily mediated via the lens of the media. This is also the age of the short sound-bite (which can make it difficult to adequately explain complex issues like rescue protocols or the rationale for euthanasia). This is further compounded by the fact that high profile rescues can sometimes be relayed live around the world and sometimes even to millions of viewers, as was the case with the rescue attempted of the young northern bottlenose whale found in central London far up the River Thames in 2006.

The media like controversy. Hence, if there is more than one view about how a rescue might progress this may become 'news' and a popular line from some commenting on rescues is that nature should be allowed to 'take its course'. Such comments provide an immediate counter to those involved in a rescue but they should not be ignored. We need to be ready to explain what we are doing, and why we are doing it, if we want public understanding and appreciation. In practice this may well even mean diverting a special member of any rescue team to cover the media interest.

From UK and other strandings data it is clear that many animals coming ashore in this part of the world are nearing the end of their lives or otherwise incapacitated. There is really no dispute that some of the stranding and other events that we respond to are

the result of natural processes, and some are not. Debates about causes can continue for years and in many cases (even high profile ones) may never be fully concluded. However, the key immediate question is really whether a distressed animal – whatever the cause of its plight – should have its suffering alleviated.

I believe that being compassionate is part of what qualifies us as human beings, and that this compassion extends to all living things. What then follows – if you agree with this perspective - is how alleviation of suffering is best achieved, and this is where pooling our knowledge, our data and our expertise becomes so important. This does not mean that intervention is always the best approach and this is another issue we have to work hard to explain

In the UK, for some years (at least since 1989) individuals and organisations concerned with the rescue of marine animals have regularly met, corresponded and debated, and formed working groups, to try to determined the best approaches to rescue. This effort continues under the auspices of what has become known as the UK's Marine Animal Rescue Coalition (MARC); a forum with little public profile and a rudimentary constitution, and which does not complete with those that use it.

The best iteration of the UK's rescue policies can be found in the rescue handbook of the British Divers Marine Life Rescue (BDMLR; Barnett et al., 2013). The latest, seventh, edition includes advice for rescuers and vets including detailed triage, born out of many years of experience. However, we are still learning in the UK and it is not clear that part of this process should include better exchange of information across Europe and beyond. This is clearly in the stricken animals' best interests and this first Europe-wide meeting should be the start of improved communications between us all.

Marine animal rescue is going to continue to challenge us, perplex the public and the media and make news fodder of rescue efforts whether we like it or not; whilst the rescues themselves will continue often be dangerous and always demanding. In conclusion, I only add the entreaty that all our efforts should be guided by the simple principle that whatever we do must always be in the best interests of the animal. Once we have that identified in each case – we are halfway to the best remedy.

Thank you for everything that you do for the marine animals.

REFERENCES

Barnett, J., Knight, A. and Stevens, M. 2013. *British Divers Marine Life Rescue Marine Mammal Medic Handbook*. The Printed Word, Horsham. 7th Ed.

Brakes, P. and Simmonds, M.P. (Eds) 2011. *Whales and Dolphins. Cognition, Culture, Conservation and Human Perceptions.* Earthscan, London & Washington DC.

3. LEGAL AND ETHICAL ASPECTS OF MARINE ANIMAL RESCUE AND REHABILITATION IN PORTUGAL

José Vingada[1,4,5], Marisa Ferreira[1,5], Josep Alonso-Farré[3,4], Manuel Garcia-Hartmann[2] & Catarina Eira[1,4]

[1] The Quiaios Marine Animal Rehabilitation Center (CramQ)/Portuguese Wildlife Society (SPVS), Estação de Campo, Casa da Guarda Florestal Sul, Rua das Matas Nacionais s/n, 3081-101 Figueira da Foz, Portugal
[2] Marineland Antibes, 306 Avenue Mozart 06600 Antibes, France
[3] Coordinadora para o Estudio dos Mamíferos Mariños (CEMMA), P.O. Box 15, 36380 Gondomar, Pontevedra, Spain
[4] Centre for Environmental and Marine Studies (CESAM) & Department of Biology. University of Aveiro, Campus Universitário de Santiago, 3810-193, Aveiro, Portugal
[5] Molecular and Environmental Biology Centre (CBMA) & Department of Biology, Universidade de Minho, Campus de Gualtar, 4710-047 Braga, Portugal

Rescue and rehabilitation of marine animals in Continental Portugal is compulsory (Law 263/1981, on the Protection of Marine Mammals in Inland Waters, Territorial Sea and Exclusive Economic Zone in Continental Portugal). In the 80's, live animals found in the Portuguese coast were transported to the Vasco da Gama Aquarium or to the Lisbon Zoo, which had no infrastructure dedicated to rehabilitation. Many of the stranded animals were frequently re-floated by inexperienced people. The Rede Abrigos – RAMM (Network Marine Mammals Rescuing) was created in 1999, being coordinated by the ICN with the support of the Zoomarine, the Lisbon Zoo, the Parque Biológico de Gaia and the Projecto Delfim. In 2002, the company Mundo Aquático S.A. created the Porto d'Abrigo - Zoomarine, which became the first Portuguese rehab centre dedicated to marine animals (mammals and sea turtles). Since 2003 there was an increment of live strandings detected along the Portuguese Coast and some cases became tremendously popular in the national media. In 2006, the Portuguese Wildlife Society in cooperation with the Universities of Aveiro and Minho, established the Quiaios Marine Animal Rehabilitation Center (CRAMQ), located at the Quiaios Field Station, thus becoming the second Portuguese centre dedicated to the rehabilitation of marine animals in Portugal.

In September 2009, the Legal Ordinance 1112/2009 established the National Network of Fauna Rehabilitation Centres (RNCRF), coordinated by the Institute for Nature Conservation and Biodiversity in conjunction with the Veterinary General Directory. The RNCRF consisted of specific infrastructures for indigenous or naturalized specimens of wild fauna, comprising those listed in the directives and international conventions on nature conservation and biodiversity, their treatment, recovery and subsequent return to the natural environment.

Over the last 5 years, the rehabilitation of marine animals in Portugal was significant improved with more staff dedicated to rescue and rehab and upgraded facilities and logistics. Consequently, there was a significant increase in the number of rescuing events and in the success of rehabilitation, which were accompanied by greater responsibilities, costs and need for more efficient human resources and techniques. The improvements achieved were mainly financed by the organizations that promote rehabilitation and had very little support from the State Agencies, which are responsible for the Laws and Ordinances.

Although the ethical aspects concerning rescuing and rehabilitation of marine mammals were initially discussed within the Framework Rede Abrigos – RAMM, the issue has not been discussed between partners since 2005. Due to the lack of a nationwide strategy, a guide/protocol to the decision making process in rescuing events was established at CRAMQ. This protocol takes into account the species involved, the animal's clinical condition evaluated at the stranding site, the conditions of the stranding site, the availability of infrastructures for rehab and the probability of success after release. In order to achieve the best possible decision, any resolution concerning rescuing, euthanasia, refloating or rehabilitation of an animal is always discussed between rescuers, rehabbers, veterinaries, biologists and external advisors. Decisions in all cases are then discussed with the National Coordination of the Rede Abrigos / ICNF for their approval.

In terms of public opinion, rescuers and rehab centres are strongly recognized and valued by their work. In the last years, this appreciation was extended to the fisheries domain and in several cases, fishermen associations have become partners in projects related with the rescuing and rehabilitation of marine mammals.

4. SOS DOLFIJN, RESCUE AND REHABILITATION CENTRE FOR SMALL CETACEANS IN THE NETHERLANDS

Eligius Everaarts[1]

[1]Stichting SOS Dolfijn, Postbus 293, 3840 AG Harderwijk

The Dutch stranding network for marine mammals consists of various NGO's, research institutes and individuals. SOS Dolfijn represents a rescue organisation and advisory body for small cetaceans stranded alive on the Dutch coast and in surrounding countries. Cetacean mass strandings are extremely rare in the area and live stranding events consist nearly always of individual animals. SOS Dolfijn aims to intervene in best possible ways in order to help animals in distress. Well-being of the animal involved and a reduction of suffering have highest priority. In case of a live stranded cetacean, the organisation chooses from 4 options to help a beached animal: Immediate return to sea (on site or possibly after relocation), euthanization, no action and rehabilitation. The decision between the options depends on several criteria and is based on experience, species involved, size of the animal and (medical and physical) situation of the animal. Harbour porpoises stranded alive are usually taken into rehabilitation. Experience has shown these animals practically always are affected by illness, injury, starvation or effects of the stranding event itself that makes rehabilitation the right help option. Animals that are severely suffering, are not able to survive at sea or show little chances in a long-lasting recovery process will be euthanized.

The rescue team of SOS Dolfijn is fully available 24/7. SOS Dolfijn runs a highly specialised rehabilitation centre. Primary objective of this centre is to offer best possible rehabilitation opportunities. Education and research are important secondary objectives. Over the past years mainly harbour porpoises (*Phocoena phocoena*) have been treated at the centre. Success rates over the past years are above 50%. Over the past decade 35 harbour porpoises have been returned to sea after rehabilitation. No successful recovery of neonates (n=10) has been achieved. Rehabilitation of animals in this age-class will no more be attempted until new insights in nutritional needs have been gained or new neonate feeding strategies have been developed.

Rehabilitated animals are being returned to their natural environment if they have a fair chance of survival and cause no threat to the wild population. Therefore the animals need to meet certain criteria: An animal should be clinically healthy and be independent from medication, it should not show abnormalities in growth and (swimming) behaviour, have no condition that will compromise life in the wild (such as blindness) and it should have 'healthy' acoustic abilities. Young animals especially are tested on catching live fish in order to test their independency of maternal care. During rehabilitation strict rules on hygiene and quarantine (in relation to caretakers and others specimens) are accomplished. At present, animals are not being monitored ones released at sea. The rehabilitation centre however, aspires to execute a post release monitoring project in the near future. Harbour porpoises that do not meet release criteria can be handed over to other care facilities for permanent care.

Protocols and policies at SOS Dolfijn are largely based on rescue of and experience with harbour porpoises. The organisation recognizes that criteria whether or not to start a rehabilitation process and criteria for release of an animal are species-dependent. The organisation therefore approaches live stranding events species-specific and, in order to formalize this, presently starts working on a species-specific stranding and release protocol in which both biological and non-biological aspects will be considered.

Live stranding events of cetaceans, and especially larger species, evoke high levels of engagement and response. A recent event of a live stranded Humpback whale (*Megaptera novaeangliae*) in the Netherlands proved many organisations and individuals got involved, accompanied by extensive media coverage, which resulted in discussions and dissension. SOS Dolfijn pursues a situation in which actions to intervene in the animals situation should always be made in the best interest of the animal. This should be done under supervision of professionals, according to sound protocols and executed with a strong sense of cooperation. By no means, motivations other than helping the animal in need should be involved.

5. TRIAGE OF SEALS FOR REHABILITATION AND DATA RECORDING AND SAMPLE GATHERING FROM THE LIVE ANIMAL

Lenie't Hart[1]

[1] SRRC, Seal Rehabilitation and Research Centre, Pieterburen, The Netherlands

Since 1971, the Seal Rehabilitation and Research Centre (SRRC) has rehabilitated seals in distress following strandings on the Dutch coast. The centre has evolved from a simple orphanage for young seals to a research-based seal hospital. Rehabilitation is first of all a demonstration of the need for help by individual animals in distress, which is a problem for many animals. Most seals are either common seals (*Phoca vitulina*) or grey seals (*Halichoerus grypus*), although occasionally arctic species are also rehabilitated. Rehabilitated seals are mainly orphaned, weaned seals with complications or seals with a parasitic bronchopneumonia. Infectious diseases in the wild and their management during rehabilitation are an important issue that has benefitted from increased awareness since the phocine distemper virus decimated the common seal population of north-western Europe. For the optimal handling of seals and their diseases, centralised operations with quality standards are essential. In 2004, the SRRC was the first animal rehabilitation centre to obtain an ISO 9001-2000 quality certificate. The professional care of seals can reduce mortality during rehabilitation to a minimum, resulting in the successful release of the treated animals. Close monitoring of admitted seals provides valuable information on diseases in the population. Information obtained during rehabilitation can provide strong support for results obtained through different scientific approaches. During both phocine distemper virus epidemics, close co-operation between rehabilitation and field-based teams led to the identification of the virus as the cause of the mass mortalities (Osterhaus and Vedder 1988, Jensen *et al.* 2002). The expertise gained through direct contact with animals in rehabilitation is the basis for extensive scientific research into the health status of seals in the Wadden Sea.

REFERENCES

Osterhaus, A.D. & Vedder, E.J., 1988. Identification of virus causing recent seal deaths, Nature 335(6185):20.

Jensen, T., van de Bildt, M., Dietz, H.H., Andersen, T.H., Hammer, A.S., Kuiken, T. & Osterhaus, A. 2002. Another Phocine Distemper Outbreak in Europe, Science 297(5579):209.

6. TRIAGE CRITERIA FOR CETACEANS WHEN REHABILITATION IS NOT AN OPTION AND IMMEDIATE RETURN TO THE SEA OR EUTHANASIA ARE THE ONLY VIABLE OPTIONS

Dr. Ian Robinson[1]

[1] International Fund for Animal Welfare (IFAW), Yarmouth Port, Massachusetts 02675, USA

Cape Cod has one of the highest annual rates of dolphin strandings in the world. Over the past 10 years, more than 1300 dolphins whales and porpoises stranded on Cape Cod. The most common species of this group to strand was the short-beaked common dolphin, *Delphinus delphis*.

It is believed that strandings in this locale are largely due to the Cape's hook-like shape and its large tidal flux that leaves these dolphins "stuck" as it recedes beneath them.

Over the last 10 years we have increased the number of live stranded animals refloated and released from around 17% to over 70%. We have done this by a number of actions:

- Realizing that animals refloated back into the shallow waters of Cape Cod bay had a very high return rate, we started to translocate as many animals as possible for release from beaches with access to deeper waters close to the coast. This meant improving our facilities from an open flatbed trailer, to the present climate controlled trailer complete with diagnostic equipment that we use today;
- Working with volunteers to improve response time and starting with supportive care very rapidly; and
- Trying to improve our triage techniques and prognostic criteria through monitoring and recording of both physical clinical signs and haematology/clinical chemistry parameters – we have recently included ultrasound examination and are starting to work with AEP.

The main problem with developing prognostic parameters for triage of stranded cetaceans is knowing what happens to them. How many of our increased number of animals refloated actually survive?

Following refloating, the number of animals for which we have a confirmed fate – that either restrand and die or survive for an adequate period of time to claim successful survival – and for which we have reliable data tends to be very small.

Since 2010 we have been trying to improve our post release monitoring through the use of single pin satellite tags (made possible in part through a generous grant from the Pegasus Foundation). In the winter of 2012 we had an exceptionally high number of strandings over a three month period of which over 90 stranded alive, which was a unique opportunity to gather such data quickly.

We have been able to gather together a dataset based on animals which were known to die following attempted release (or died before release could be attempted) - rather than animals which were selected for euthanasia. Also we have a number of animals which were released and deemed 'successful' based on satellite tags transmitting data for a minimum of 21 days – even so the size of our data set is still small (n = 26). The retrospective analysis of these data was performed by Sarah Sharp – an ex-member of IFAW's Marine Mammals Rescue and Research team and presently a second year veterinary student at Tufts University.

Survivors were defined as any animal that was satellite tagged, released, and whose tag transmitted for three weeks or more. This three-week cut off was based on findings from previously published studies.

Failed animals were defined as any animal, satellite tagged or not, that died or re-stranded and was euthanized due to poor health and had blood drawn prior to death (but not those selected for euthanasia following the initial stranding).

Physical parameters evaluated were:

- respiratory and heart rates; and
- length, weight, and axillary girth measurements in the form of length:girth, length:weight ratios and body mass index.

Blood was collected from the dorsal fluke periarterial venous rete of all dolphins, representing a mixed arterial and venous blood sample. In-field analysis was conducted on IFAW's Abaxis HM2 for hematology and handheld i-STAT for clinical chemistry. Additionally, both whole blood and serum were sent to an external laboratory (IDEXX) for further analysis and to act as a quality control.

24 hematology and 32 clinical chemistry parameters were evaluated from the 26 dolphins.

For statistical analysis, a Receiving Operator Characteristic (ROC) Curve Analysis was performed using Medcalc statistical software to evaluate the difference between failures and survivors for each parameter. ROC Curve analysis provided indicators of sensitivity and specificity as well as a suggested clinical cut off value for each parameter. We used sensitivity in this case as the ability to predict that an animal will fail, and specificity to mean the ability of a given parameter to only identify the animals that fail.

Due to the small sample size, nonparametric Mann-Whitney-Wilcoxin tests were also performed on the dataset. The data presented were found to be significant by both tests and p values are from the nonparametric analysis.

Ten dolphins fell into the failed category and sixteen into the survived category. Fortunately, although the groups were relatively small, their demographics were fairly comparable.

For physical parameters, there was a difference between the failed and survived dolphins in their length to girth ratios. Failed dolphin girths were relatively smaller

compared to their length than survivors indicating that they were potentially in poorer body condition.

For hematology, failed dolphins were found to have lower red blood cell counts, hemoglobin, and hematocrit than survivors, indicting a possible anaemia, and higher red cell distribution widths (*polychromasia and anisocytosis*) indicating possible regenerative anemia.

For clinical chemistry results, failed dolphins were found to have higher BUN and Uric Acid concentrations and lower albumin, albumin:globulin ratios, TCO2, and HCO3 than animals that survived. While the BUN test had 100% sensitivity, it was not a very specific test, meaning that many animals that survived also had high BUN values, so it may not be the best parameter for triage purposes.

The high BUN and Uric Acid values may be due to dehydration, which would also correlate with their poorer body condition. Increased BUN could be due to any process that decreases Glomerular Filtration Rate, including heart failure or shock, both of which are known to have stranding-related etiologies.

The hypoalbuminemia and decreased alb:glob ratios may be related to an acute response to trauma or a pre-existing pathology. Decreased albumin could also be due to decreased production in the liver or increased loss in the GI tract.

The decreased HCO3 and TCO2 were likely due to a metabolic acidaemia which could be from either tissue ischemia from lying recumbent or capture myopathy OR increased muscle activity due to thrashing or attempts to swim when grounded.

While not significant, some failed animals presented with exceptionally high values for AST, LDH and CK. These values are known to be elevated in capture myopathy. Capture myopathy can cause a decrease in perfusion of "non-essential" tissues, resulting in ischemia, acidemia and potential necrosis, a state that is consistent with blood values and postmortem results on the failed cases

In summary, failed dolphins were found to be less robust, relatively more anemic, acidemic, and hypoalbuminemic than dolphins that survived. They may have also been more dehydrated as well. Combined with the outlier values for LDH, AST and CK, these results indicate that there may be a variety of factors affecting post-release survival in these dolphins, including both pre-existing conditions and stranding-induced capture myopathy. Importantly, the results also suggest that they may be clinically evident from blood work and physical exam. We believe that in progressing this work the importance of the physical parameters cannot be underestimated. Also that care of blood samples – including careful recording of time between blood draw and analysis, is very important in assessing the validity of results.

While this study was based on a small number of animals, it still represents the largest collection of blood values with known outcomes for stranded common dolphins anywhere in the world, to our knowledge. While an increase in the sample size is certainly needed, this preliminary study directs attention towards certain parameters that may be more useful prognostically and that may ultimately help to improve disposition decision-making in the field regarding stranded common dolphins.

7. TRIAGE OF CETACEANS WHERE REHABILITATION IS NOT AN OPTION – CETACEAN STRANDINGS MANAGEMENT IN THE UK

James Barnett[1]

[1] British Divers Marine Life Rescue, Lime House, Regency Close, Uckfield, East Sussex, TN22 1DS, UK

Live cetacean strandings are a significant welfare problem in the United Kingdom, with 20 or more occurring annually, and in 1993 the Marine Animal Rescue Coalition (MARC) was founded to try and improve their management. Rehabilitation has not proved to be a viable option in the U.K., with no facilities specifically set up for this purpose. A number of rehabilitation attempts were carried out in the early 1990s in sub optimal facilities and success rates were poor, with only 3/17 animals released between 1992 and 1995 (Mayer, 1996). Following Mayer's review of strandings management, the Coalition elected to concentrate on a two-option approach, namely refloatation and euthanasia.

The use of refloatation has been justified partly on evidence from the necropsy of live stranded cetaceans. Of 654 cetaceans examined by the Cetacean Strandings Investigation Programme between 1990 and 2008 that were either known or suspected to have stranded alive, 318 (48%) were determined to have no significant pathology that could explain the stranding, the majority of these being pelagic species (Deaville and others 2010). This data does suggest that a significant proportion of live stranded pelagic species may be suitable for refloatation, with prompt action and careful assessment.

To achieve a prompt response, the primary responder to live cetacean strandings in the UK, British Divers Marine Life Rescue (BDMLR) has trained a national network of volunteers and invested heavily in equipment, including boats, trailers equipped for large scale rescues and many kits of basic rescue equipment positioned around the coast of the UK. The charity also has a number of pontoons designed for refloating smaller whales and dolphins. To facilitate assessment and decision making, a triage has been developed with the assistance of BDMLR and MARC veterinarians. Key components of the assessment include:

- Observed behavior prior to stranding;
- Length of time stranded, particularly in relation to body size;
- Whether the animal is a deep diving species;
- Estimated age, particularly in relation to weaning;
- Nutritional status;
- Extent of any trauma;
- Skin condition and hydration;
- Level of consciousness;
- Presence of deep bleeding from orifices;
- Breathing rate and character and, depending on the animal's size, lung auscultation;

- If possible, core body temperature and blood analyses (haematology, biochemistry); and
- Behavioural response to being returned to the water.

BDMLR attended 129 live stranding events involving 151 animals between 1995 and 2010. Of these events, 16 were mass strandings, including two mother-calf pairs, and 113 were single strandings. Species involved in mass strandings were predominantly pelagic, but a more even mix of pelagic and coastal species were involved in single strandings. 72/151 animals were selected for refloatation and of these 23 are known to have died or were euthanased. The most common necropsy findings in these animals were strandings related lesions, highlighting the difficulty of adequately assessing health status on the beach. The fate of the remaining 49 animals is unknown because at present the charity does not have a suitable post release monitoring programme, an issue it is trying to address.

REFERENCES

Deaville, R., Baker, J., Brownlow, A., Barnett, J., Chimonides, J., Davison, N., Loveridge, J., Patterson, T., Penrose, R., Perkins, M., Reid, R., Ross, H., Simpson, V. & Jepson, P.D. 2010. A review of the live stranded cetaceans in the UK between 1990 and 2008. 24th Annual Conference of the European Cetacean Society. Stralsund, Germany, March 22-24.

Mayer, S.J. 1996. The veterinary care of stranded cetaceans. A Report for the Whale and Dolphin Conservation Society, Bath, UK.

8. THE WORK OF THE INTERNATIONAL WHALING COMMISSION (IWC) ON LARGE WHALE ENTANGLEMENTS

Greg Donovan[1] and David Mattila[1]

[1] Head of Science, International Whaling Commission, Cambridge, UK

This presentation will focus on the entanglement-related outcomes of workshops held by the International Whaling Commission as part of its continuing work on the entanglement issue. Two primary workshops were held in 2009 in Maui (http://iwc.int/index.php?cID=2635&cType=document) and in 2011 in Provincetown (http://iwc.int/index.php?cID=2636&cType=document). The first workshop *inter alia* developed an assessment and decision tree for structuring the response to entangled whales, and also addressed the question of euthanasia should all efforts to free an animal fail. The second workshop *inter alia* established a global network of disentanglement experts and developed principles and guidelines and a training strategy and curriculum for capacity building. The presentation will focus upon these. A number of training workshops have already taken place around the world. While noting that disentanglement, when carried out responsibly, has the potential to be of benefit at both the population level and from an animal welfare perspective, it will be stressed that prevention is the only real solution to this problem from both perspectives.

9. POST RELEASE MONITORING OF GREY SEALS (HALICHOERUS GRYPUS) REHABILITATED AT THE CORNISH SEAL SANCTUARY, CORNWALL, UK

Dan Jarvis[1] and Sue Sayer[2]

[1] Cornish Seal Sanctuary, Gweek, near Helston, Cornwall TR12 6UG, UK.
[2] Cornwall Seal Group, Copperleaf Cottage, Phillack Hill, Hayle, Cornwall, TR27 5AD, UK.

The Cornish Seal Sanctuary has been rescuing, rehabilitating and releasing grey seal pups back to the wild for over 50 years. Every winter season since 1996-97, pups have been tagged with a small plastic roto-tag through the webbing of a rear flipper, which has a seasonal colour code and unique identifying number that should last their lifetime. Two other tag types have also been trialled, paint and hat tags, to increase public reporting. Paint tags were used in 2001-02 and each pup had a different colour and symbol painted on their head. Hat tags (pyramid-shaped plastic tag that was affixed to the fur on the head of each pup) were used in the 2003-05 seasons. Both methods were temporary, lasting a maximum of year until the seal moulted. Paint tags did not significantly increase reporting rates so were not re-used. Hat tags did increase reporting rates, but the tags were decided to be unsuitable due to the method of attachment and their use discontinued. Cornwall Seal Group carries out monitoring and photo-identification of local wild seals by matching pelage patterns to track seals over time and between locations. As this method has been successful, a photo-ID catalogue for each season is now kept so photos can be matched back if the flipper tag is not seen. Of 671 seals released since 1996-97, 167 have been resighted, consisting of 1101 records. These are mainly from Southwest England, but also from the coasts of Wales, Ireland and northern France, with several older animals that are seen regularly beginning to show seasonal patterns of site fidelity, including for pupping.

10. POST RELEASE MONTIORING OF SOCIAL ODONTOCETES

Sharp, W.B.[1*], Harry, C.T.[1], Hoppe, J.M.[1], Landry, S.[2], Moore, M.J.[1,3], Niemeyer, M.E.[1], Robinson, I.[1], Rose, K.S.[1], Sharp S.M. [1], Moore, K.T.[1]

[1] International Fund for Animal Welfare (IFAW), Yarmouth Port, Massachusetts 02675, USA
[2] Provincetown Center for Coastal Studies, Provincetown, Massachusetts 02667, USA
[3] Woods Hole Oceanographic Institution, Woods Hole, Massachusetts 02543, USA

Before considering the release of a live stranded social cetacean that has received a thorough health assessment stranding responders should first determine what means are available for monitoring the success or failure of released animals. Identification methods for cetaceans can range from temporary options through the use of non-toxic paint livestock markers, to longer term options such as plastic livestock tags (Roto-tags) applied to the trailing edge of the dorsal fin. These basic and cost effective options can also be used in conjunction with more advanced methods such as satellite tagging. Within the last five years several wildlife tracking companies have developed reliable single pin satellite tag options which allow stranding responders to quickly attach these tags in the field during a stranding event. The tag is attached with a degradable link that automatically detaches the tag over time since the battery duration of the unit is typically limited to a few months, depending on the transmission cycle chosen. Since 2010 the International Fund for Animal Welfare's Marine Mammal Rescue and Research program has deployed 38 single pin satellite and VHF combination tags for use in tracking released social cetaceans from both single and mass stranded events.

If released animals can be relocated through vessel surveys then detailed observations, along with digital and video documentation, should be collected including; behavioral observations, respiration rate, strength of movement, body condition, and skin condition. If the released animal has assimilated into a group, or is in the proximity of a group of conspecifics, then group related observations should be collected including; group size, behavior of the group, distance of tagged animal to conspecifics, co-surfacing, and coordinated directional changes.

Information collected from all types of identification and post-release monitoring provide vital data that can be utilized in decision making for future stranding responses and determining the best disposition option for those cetaceans assessed as healthy enough for release.

11. METHODS OF MARINE MAMMAL EUTHANASIA

Josep M. Alonso-Farré [1,2,3], Marisa Ferreira [4,5], Catarina Eira [1,4], and José Vingada [1,4,5]

[1] Centre for Environmental and Marine Studies (CESAM) & Department of Biology. University of Aveiro, Campus Universitário de Santiago, 3810-193, Aveiro, Portugal
[2] Coordinadora para o Estudio dos Mamíferos Mariños (CEMMA). P.O. Box 15, 36380 Gondomar, Pontevedra, Spain
[3] Association EDMAKTUB www.edmaktub.com, Barcelona, Spain
[4] Marine Animal Rehabilitation Center of Quiaios - CramQ/Portuguese Wildlife Society (SPVS), Estação de Campo, Casa da Guarda Florestal Sul, Rua das Matas Nacionais s/n, 3081-101 Figueira da Foz, Portugal
[5] Molecular and Environmental Biology Centre (CBMA) & Department of Biology, Universidade de Minho, Campus de Gualtar, 4710-047 Braga, Portugal

Euthanasia could be defined as the intentional causing of a painless and easy death to untreatable sick or injured patients to end their suffering. Stranding network's veterinarians have often to face scenarios in which they need to take this alternative. The complex decision tree that ends with this option is not a trivial issue and it is discussed in other workshop presentations. The present presentation provides a review on methods to carry out this final option, taking into account aspects such as: animal welfare (way and time to achieve unconsciousness and death), health and safety implications for technicians, emotional implications for volunteers or observers, and carcass disposal and tissue residues management. There are three physiological mechanisms for inducing euthanasia in these animals, which take into account the special anatomical and physiological marine mammal features. Although several techniques are considered acceptable for inducing euthanasia, all of them fall into one of the following categories: (1) physical disruption of brain activity caused by direct destruction of brain tissue (e.g. gunshot, explosives), (2) drugs that deeply depress the central nervous system and induce death (e.g. overdose of barbiturates or other anaesthetics) and (3) mechanisms that directly (e.g. decapitation) or indirectly (e.g. muscle paralyzing drugs) induce hypoxia. Ideally, an achievement of unconsciousness without distress or suffering is required prior to ending vital life functions. Once the euthanasia decision is taken, the technical staff in charge of the stranding event should make the best choice, considering the particular conditions of every single case.

12. METHODS OF EUTHANASIA, CONSIDERING WELFARE, HEALTH AND SAFETY AND DISPOSAL IMPLICATIONS: FOCUS ON SPERM WHALES

Dr. Sandro Mazzariol[1]

[1] Coordinator of Cetaceans strandings Emergency Response Team (CERT), Italy

In December 2009, a rare and dramatic stranding event occurred along the Southern coast of Italy: seven sperm whales (*Physeter macrocephalus*) were found spread on a 4 km long sandy beach. Three animals were still alive and died within 48 hours after stranding. During this period, many concerns on their welfare were raised by veterinary services and public opinion, since refloating operation were not possible due to bathimetric and marine condition, but euthanasia was not an option, both considering chemical and physical methods.

Drugs generally used in large cetaceans contain ethorphine, a semi-synthetic opioid possessing an analgesic potency approximately 1,000-3,000 times that of morphine. The potency of ethorphine poses risk to personnel handling the drug, especially in the large doses needed for euthanasia: it can be incidentally absorbed through broken skin and mucous membranes, in particular in fields condition and a second person trained in handling opioid accidents with a first-aid kit should be present. A proper disposal method should be considered to avoid any accident. Also ballistic was considered but the only efficient firearm tested on sperm whales is a special anti-aircraft gun developed in New Zealand and called Sperm Whale Euthanasia Device (SWED). Both these unsafe methods for personnel were not present in Italy, which was not ready to face similar events. Furthermore, these protocols impair any postmortem analyses and samples collection.

After this mass stranding event, a working group composed by veterinarians, biologists and bioethical experts was charged to review national legislation and protocols on cetaceans stranded alive and, in particular, to propose best methods to ensure a human death to these animals, considering also other priorities as personnel safety and health, postmortem studies. The experts established that, in cases similar to the mass stranding herein reported, the best way is the natural death ensuring a quiet situation and a deep sedation, speeding up the process and giving to the stranded whales a painless and easy death.

13. DATA RECORDING AND SAMPLE GATHERING FROM A LIVE ANIMAL

Marisa Ferreira[1,5], Manuel Garcia-Hartmann[2], Josep Alonso-Farré[3,4], Catarina Eira[1,4] & José Vingada[1,4,5]

[1] The Quiaios Marine Animal Rehabilitation Center (CramQ)/Portuguese Wildlife Society (SPVS), Estação de Campo, Casa da Guarda Florestal Sul, Rua das Matas Nacionais s/n, 3081-101 Figueira da Foz, Portugal
[2] Marineland Antibes, 306 Avenue Mozart 06600 Antibes, France
[3] Coordinadora para o Estudio dos Mamíferos Mariños (CEMMA). P.O. Box 15, 36380 Gondomar, Pontevedra, Spain
[4] Centre for Environmental and Marine Studies (CESAM) & Department of Biology. University of Aveiro, Campus Universitário de Santiago, 3810-193, Aveiro, Portugal
[5] Molecular and Environmental Biology Centre (CBMA) & Department of Biology, Universidade de Minho, Campus de Gualtar, 4710-047 Braga, Portugal

Monitoring sentinel species such as cetaceans presents a relevant approach for both population and environmental surveillance. During rehabilitation, stranded cetaceans can provide a wealth of information on the health status of a population and contribute to the development of novel techniques for the medical care of marine mammals.

Data recording and sample collection are extremely important in all phases of the stranding event. In a first approach, it helps to assess the probable cause of stranding and helps in the decision-making process regarding the fate of the animal. Secondly, if the animal is taken to rehabilitation facilities, systematized data recording and sample collection are crucial tools for condition monitoring and correction/update of medical treatment.

Immediate assistance to a live stranded animal is very important to the outcome of any stranding event. While at the beach if possible, data to be recorded should include species identification, morphometric data, respiratory rate, behaviour (response to stimulus, swimming ability). In terms of sampling it is important to take blood samples for condition assessment (hematology and chemistry).

If the animal is taken to rehabilitation, behaviour should be constantly monitored. Data recording should include animal activity, faeces frequency (including colour and texture), urine, respiration, appetite and abnormal behaviour. Additionally, all nutrition and medication protocols should be recorded.

Regular sampling of body fluids (blood, faeces, urine, gastric juice, blowhole), in the course of rehabilitation, are useful for assessing abnormalities and to establish normative values. These samples must be properly preserved to be used for hematology, serum chemistry, cytology, virology, bacteriology and parasitology. Additionally, with current techniques, it is also possible to evaluate the burden of anthropogenic toxins (heavy metals, OCs) and see its evolution over time in a live animal.

The standardisation of data registering and sample collection are crucial to get baseline information of the animal and rehabilitation evolution. Finally, the

compilation of as much information as possible is a valuable tool to assessing the health status of wild populations and to understand the threats upon them.

14. DATA RECORDING AND SAMPLE GATHERING FROM THE DEAD ANIMAL

Rob Deaville[1]

[1] Project Manager, UK Cetacean Strandings Investigation Programme (www.ukstrandings.org).
email: rob.deaville@ioz.ac.uk

Strandings present researchers with a unique opportunity to learn more about the causes of mortality in cetaceans. Because of the nature of the work that is conducted during such investigations, they also allow detailed study of a wide range of biological and pathological parameters through collection of both samples and data. In the UK, the Cetacean Strandings Investigation Programme has collected data on over 11000 stranded cetaceans since 1990 and conducted over 3200 systematic necropsies during this time. The necropsy process in the UK will be discussed in this presentation, along with an overview of some of the measurements and samples that can be collected, along with the analyses and investigations that such material and data can inform.

15. LIST OF PARTICIPANTS

Name	Organisation	Email address
Yaron Haitovich	IMMRAC	yarunh@yarzum.com
Aviad Scheinin	IMMRAC	shani.aviad@gmail.com
Julienne Schaet	Student	julienne-noreen@gmx.net
SC Niemeijer	Student	niemeijersc@live.nl
Jennifer Libutte	Student	jenatou06@hotmail.com
Tim van der Stap	Student	timvanderstap8g@gmail.com
Emma Beatson	AUT University NZ	emma.beatson@aut.ac.nz
Janne Sundermeyer	Seal Centre Friedchskoog Germany	j.sundermeyer@seehundstation-friedrickskoog.d
Tanja Rosenburger	Seal Centre Friedchskoog Germany	t.rosenburger@seehundstation-friedrickskoog.de
Stefanie Mahal	Seal Centre Friedchskoog Germany	s.mahal@seehundstation-friedrickskoog.de
Michelle Pouvinelli	University of Padua	michelle.pouvinelli@hotmail.it
Cinzia Centelleghe	University of Padua	cinzia.centellephe@gmail.com
Carolina Fdez-Maldonado	CEGMA	carogue38@hotmail.com
Sarca Pedro	Instituto de Pesquisas Cananeia	sarcalmondega@gmail.com
Ines Ferreira Guedes	Instituto de Pesquisas Cananeia	Inesferreiraguedes@gmail.com
Greg Donovan	IWC	greg.donovan@iwc.int
Mariel ten Doeschate	Student/SO Dolphin foundation	marieldoeschate@gmail.com
Fiona Read	WDC	fiona.read@whales.org
Edita Mapileviciute	FFI	edita.mapileviciute@fauna-flora.ag
Janie Steele	UK	jsteele@rvc.ac.uk
Wojiech Gsusk	Hel Marine Station	oceago@ug.edv.pl
Gemma James	BDMLR	gemzjames@aol.com
Jenny Allen	Stellwagen Bank Sanctuary	j.allen@umiami.edu
Patricia Sieva	Municipality Almada	pasilva@cma.m-almada.pt
Mario Estevens	Municipality Almada	mestevens@cma.m-almada.pt
Marine Sequiara	Institute for Nature Conservation and Forestry	marinesequeira@icnf.pt
Ines Encalves	Escala de Mar/APCM	inestg88@gmail.com
Anja Braudecker	CMRC University College, Cork Ireland	anja.braudecker@gmx.de
Catia Nicolau	Madeira Whale Museum	catianicolau@museudgbaleia.org
Zofia Halicka	Student University of Gdansk	zochnah@gmail.com
Richard Mardens		richard.mardens@gmail.com
Chiara Bertuilli	University of Iceland-PHD student	ciarabertuilli@yahoo.it
Jose Juan Pablo Colin		yo.tursiops@hotmail.com
Gavin Bruce	BDMLR	gavin@internationalanimalrescue.org
Alan Knight	BDMLR	alan@internationalanimalrescue.org
A L Hart	SRRC	
Stephen Marsh	BDMLR/ORCA	stephen@bdmlr.org.uk
Ana Hace	Morigenos	pt@morigenos.org
Tina Centrih	Morigenos Slovenis	pt@morigenos.org
Katarina Mladenovic		katerina@mladenovic84@gmail.com
Louise Rawdle	Deutsches Meeresmuseum	louise.rawdle@uni-oldeub.org.de
Anne Herrmann	Deutsches Meeresmuseum	Anne.herrmann@meeresmuseum.de

Marisa Ferreira	Soc.Port.Vias.Selvagen	mctferreira@socpvs.org
Tania Marques		taniarsmarques@gmail.com
Jessica Frois	Student	jessicaa.frois@gmail.com
Sara Galego	Student	saragalego@hotmail.com
Barbara Camaroo	Student	bccamaroo92@gmail.com
Nakita Camara	Student	kita_camara@hotmail.com
Amir Sayad Shirazi	vet	amir@zeehondencreche.nl
Dan Jarvis	Cornish Seal Sanctuary	dan@cornwallsealgroup.co.uk
Rod Penrose	CSIP	rodpenrose@strandings.demon.co.uk
Matt Perkins	CSIP	matthew.perkins@ioz.ac.uk
Rob Deaville	CSIP	Rob.Deaville@ioz.ac.uk
Paul Jepson	CSIP	paul.jepson@ioz.ac.uk
Arda Tonay	IU/TUDAU	atonay@instanbul.edu.tr
Nicola Hodgins	WDC	nicola.hodgins@whales.org
Mario Acpharone	Univ of Tromso	mario.acquarone@uit.no
Sophie Brasseur	Imares	sophiebrasseur@wur.NL
Eileen Hesse	Imares	eileen.hee@wur.nl
Lara Mielke	Imares	lara.mielke@wur.nl
Ian Robinson	IFAW	irobinson@ifaw.org
Brian Sharp	IFAW	bsharp@ifaw.org
Hans Verdaat	Imares	hans.verdaat@wur.nl
Elisa Bravo Rebolledo	Imares	elisa.bravorebolledo@wur.nl
Sofia Romoo		A_Pekensa_sofia@hotmail.com
Thierry Jauniaux	Ulg	t.jaunieux@ulg.ac.be
Ana Sofia Borges		sofia.cassiopeia@gmail.com
Nadia Sofia Morado		nadsky.9@gmail.com
Janine Bahr	Robbenzentrum Fohr (Seal Centre Fohr)	janine_insee@hotmail.com
Eduard Degollada	Edmaktubas	edmaktub@edmaktub.com
Josep M Alonso Fune	University of Aveino	jmalonso@iim.cdic.es
Jose Miguel Santos		joaobvsantos@hotmail.com
Mafaldo Ferro		malfaldo_ferro@hotmail.com
Jose Penalver Garcia	Murcia University	josepenalver@um.es

16. AGENDA

8.45-9.25am REGISTRATION

9.30am **INTRODUCTION TO MEETING**

9.30 – 9.35 CHAIR Mark Simmonds

9.35am **SESSION 1. Criteria for different levels of human intervention**

1.1) Consideration of legal and ethical aspects of intervention

9.35 - 9.50 Mark Simmonds

9.50 - 10.05 Marisa Ferreira

1.2) Triage of animals where rehabilitation is an option

10.05 – 10.20 Cetaceans - Eligius Everaarts [unable to make the meeting]

10.20 – 10.35 Seals – Lenie 't Hart

10.35 - 11am **DISCUSSION**

11 - 11.30am TEA & COFFEE BREAK

11.30am **SESSION 1 (continued). Criteria for different levels of human intervention**

1.3) Triage of cetaceans where rehabilitation is not an option (including release criteria)

11.30 – 11.45 Ian Robinson

11.45 – 12.00 James Barnett

1. 4) intervention with animals at sea, e.g. entanglement, entrapment

12.00 - 12.15 Large cetacean entanglements – Greg Donovan

12.15 - 1pm **DISCUSSION**

1 – 2pm LUNCH

2pm **SESSION 2 - Criteria & Methods for returning animals to the sea**

2.1) Release criteria and post release monitoring - seals

2.00 - 2.15 Dan Jarvis

2*.2) Post release monitoring – cetaceans*

2.15 - 2.30 Brian Sharpe

2.30 - 2.45 Rehabilitated cetaceans - Eligius Everaarts [unable to make the meeting]

2.45 – 3pm **DISCUSSION**

3pm **SESSION 3 - Criteria & Methods recommended for euthanasia**

3*.1) Methods of euthanasia, considering welfare, health and safety and disposal implications*

3pm – 3.15 Josep Alonso Farré

3.15 – 3.30 Sandro Mazzariol (plus pathology) – focus on sperm whales

3.30 – 4pm **DISCUSSION**

4pm TEA & COFFEE BREAK

4.30pm **SESSION 4 - Recording data and gathering samples for research**

4.1) Data recording and sample gathering from the live animal

4.30 – 4.45 Jose Vingada

4.45 – 5pm Lenie ‘t Hart – seals

4.2) data recording and sample gathering from the dead animal

5pm – 5.15 Rob Deaville

5.15 – 6pm **DISCUSSION**

6pm - Close of workshop

17. SELECTED BIBLIOGRAPHY

ACCOBAMS. 2004. Guidelines for the Development of National Networks of Cetacean Strandings Monitoring, available here: http://www.rspca.org/sites/default/files/doc_cetacean/stranding.pdf

Barnett, J., Knight, A. and Stevens, M. 2013. *British Divers Marine Life Rescue Marine Mammal Medic Handbook*. The Printed Word, Horsham. 7th Ed

BDMLR. 2006. Marine Mammal Medic Handbook. www.bdmlr.org.uk

Brakes, P. and Simmonds, M.P. (Eds) 2011. *Whales and Dolphins. Cognition, Culture, Conservation and Human Perceptions.* Earthscan, London & Washington DC.

Department of Primary Industry, Water and Environment. 2002. ACTION PLAN FOR WHALE RESCUES: TASMANIA.

Deaville, R., Baker, J., Brownlow, A., Barnett, J., Chimonides, J., Davison, N., Loveridge, J., Patterson, T., Penrose, R., Perkins, M., Reid, R., Ross, H., Simpson, V. & Jepson, P.D. 2010. A review of the live stranded cetaceans in the UK between 1990 and 2008. 24th Annual Conference of the European Cetacean Society. Stralsund, Germany, March 22-24.

IWDG. 2000. Face to face with a beached whale. Guidelines for the welfare of live stranded animals. 17 pages.

Mayer, S.J. 1996. The veterinary care of stranded cetaceans. A Report for the Whale and Dolphin Conservation Society, Bath, UK.

Moore, M., Early, G., Touhey, K., Barco, S., Gulland, F. and Wells, R. 2007. Rehabilitation and Release of Marine Mammals in the United States: risks and benefits. *Marine Mammal Science*, 23, 731-750.

National Direction of Aquatic Resources. CONTINGENCY PLAN FOR CETACEAN STRANDINGS ALONG THE URUGUAYAN COAST.
NZ DOC. 2004. Marine Mammal Stranding Contingency Plans.

ORCCAMM. STRANDING NETWORK – PERU. Standard Operations Procedures.

RSPCA. 1998. Stranded Whales and Dolphins A First-aid field guide, available here: http://wildpro.twycrosszoo.org/S/00Ref/miscellaneouscontents/rspca-strandedwhales/TitlePage.htm

Trouwborst, A., Caddell, R. and Couzens, E. 2012. To Free or Not to Free? State Obligations and the Rescue and Release of Marine Mammals: A Case Study of 'Morgan the Orca'. *Transnational Environmental Law*, 1-28.

Wells, R.S., Fauquier, D.A., Gulland, F.M.D. and DiGiovanni, R.A. 2012. Evaluating postintervention survival of free-ranging odontocete cetaceans. *Marine Mammal Science.*

Whaley and Borkowski. 2009. Marine mammal stranding response, rehabilitation and release. Available online at: http://www.nmfs.noaa.gov/pr/pdfs/health/release_criteria.pdf

Zagzebski, K.A., Gulland, F.M.D., Haulena, M., Lander, M.E., Greig, D.J., Gage, L.J., Hanson, M.B., Yochem, P.K. and Stewart, B.S. 2006. Twenty-Five Years of Rehabilitation of Odontocetes Stranded in Central and Northern California, 1977 to 2002. *Aquatic Mammals*, 32, 334-345.

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