

(12%), and multiple white spots (9.5%). Pale patches were also observed in association to superficial linear marks attributed to intraspecific interaction (12%). The results indicate a significant incidence of vesicles in the studied population, which may be a cause of concern. The origin of vesicles and their significance for the health of humpback whales are unknown; however the prevalence found in this study was higher than those reported in other whale populations. Retrospective analysis of photographs and skin biopsies are being conducted to elucidate epidemiological aspects and potential causes of skin lesions in humpback whales. Acknowledgements: field assistants and crew; FAPESP #2010/51801-5 and #2010/50094-3; PARNAM Abrolhos; Petrobras; Veracel Celulose S/A.

The Seven days stranding of a live adult Right Whale in Southern Brazil: which are the challenges in such an event?

Groch, Karina Rejane¹; Groch, Kátia Regina^{2,1}; Moreira, Luciana Magnabosco de Paula³; Kolesnikovas, Cristiane Kiyomi Miyaji⁴; Da Silva, Rodrigo De Rose¹; Pretto, Dan Jacobs⁵; Flores, Paulo André de Carvalho⁵; De Freitas, Rodrigo Ribeiro⁶; Gaidzinski, Morgana Cirimbelli⁶; Da Rocha, Maria Elizabeth Carvalho³

- (1) Projeto Baleia Franca/Brasil, Caixa Postal 201, Imbituba, 88780-000, Brazil
 (2) Departamento de Patologia Experimental e Comparada, Faculdade de Medicina Veterinária e Zootecnia, Universidade de São Paul, Av. Orlando Marques Paiva, 87, São Paulo, SP, 05508-270, Brazil
 (3) Área de Proteção Ambiental da Baleia Franca/ ICMBio, Av. Santa Catarina, 1465, Bairro Paes Leme, Imbituba, SC, 88.780-000, Brazil
 (4) Associação R3 Animal, Rua dos Coroas, 469, Florianópolis, SC, 88061-600, Brazil
 (5) Centro Nacional de Pesquisa & Conservação de Mamíferos Aquáticos, ICMBio, MMA, CMA-SC, Rod. Maurício Sirotsky Sobrinho, s/n, km02, Jurerê, Florianópolis, SC, 88053-700, Brazil
 (6) Unidade de Zoologia Prof^o "Morgana Cirimbelli Gaidzinski", MUESC, UNESC, Av. Universitária, 1105 - Bairro Universitário, CP 3167, Criciúma, SC, 88806-000, Brazil

Corresponding author: krgroch@terra.com.br

On September 7th 2010, a 14m long southern right whale (*Eubalaena australis*) stranded alive at Itapirubá Sul Beach (UTM 0722644, 6860085), Southern Brazil. Strandings of live whales are challenging events, especially those with adult animals. This work report the attending of this stranding as well as the difficulties and evolution of health conditions presented by the right whale during the seven days it remained stranded. Initially, the animal was in good body condition, reacting to approach of people and eventually moving its body. Immediate rescue was considered, however, the lack of adequate equipment due to whale size prevented attempts. In the second day hoses were passed around the animal's body while an appropriate boat for rescue was being provided. At the same time, due to the large extension of breaking waves (~300m of surfing zone), wave height (2-2.5m), tide flow and animal's size, there was a major concern that rescue would put whale, people and boat safety at risk. In the subsequent days, the whale presented ocular nystagmus, skin sloughing, lower respiratory rates and stopped reacting to human approach. Superficial lesions leading to bleeding caused by *Ligia sp* bites were observed in tongue and ventral surfaces of the body. Despite irresponsiveness and deteriorating general condition, the whale remained alive. Around 30% of whale's body was buried in the sand. A decision was made to euthanize the animal. The first try (4th day) was unsuccessful. Another euthanasia procedure successfully stopped animal' suffering on 7th day. During carcass recovery, extensive ulcerated necrotizing skin lesions were observed under mandibles and left eye. At necropsy, there were no evidences of the cause of stranding. The whale was a lactating female. Survival of large whales stranded during several days is rare. Information gathered on this unusual stranding may contribute to actions taken in future events.

Seasonal home range of sperm whale *Physeter macrocephalus* in the Azores Archipelago: implications for long term spatially restricted photo-ID studies.

Guilpin, Marie¹; Gordon, Jonathan²; Matthiopoulos, Jason²; Steiner, Lisa³

- (1) University of St Andrews, East Sands, St Andrews, Fife, KY16 8LB, UK
 (2) Sea Mammal Research Unit, university of St Andrews, East Sands, St Andrews, Fife, KY16 8LB, UK
 (3) Whale Watch Azores, 1B, Museum Square, Keswick, Cumbria, CA12 5DZ, UK
 Corresponding author: marieguilpin@gmail.com

Conservation of sperm whale populations relies on the effective monitoring of populations. Mark-recapture (MR) using photo-identification has proven to be an effective method for providing these data. Sperm whales are a long-lived and slow reproducing species, long-term data collection is therefore required but funding this can be prohibitive. Whale watching has become a thriving activity in the Azores, which is both a feeding, and breeding ground for sperm whales. Photo-ID data collected from whale watching boats by skippers and biologists/guides could provide inexpensive alternatives to dedicated surveys and provide long-term datasets. Sperm whales range widely and, individuals are thought to visit the Azores seasonally. Using a 20-year photo-ID dataset, this study investigated seasonal "home ranges" of sperm whales within the Azores, and implications for biases in photo-ID data collected by spatially restricted whale watching operations. Data from twenty whales identified over > 4 years was used. The distribution of presences and associated absences was modelled with a GAM, which included a spatial covariate (non-linear lat/long interaction) and a temporal covariate (year). The deviance explained and the output of a confusion matrix confirmed the good predicted power of the model. Roughly half of the whales showed a preference for specific areas within their seasonal home range, which appeared stable in time. Sperm whale site fidelity can affect capture probability and compromise photo-ID MR studies. These findings could be used to explore biases in population estimates and how to minimise them. Notwithstanding the need for additional work, it is already clear that data collected opportunistically by a commercial whale watching operation is providing useful data for research and management over extended periods of time. If continued, initiatives such represent a practical method for obtaining the long-term data sets required.

Acoustic detection of Atlantic bottlenose dolphin (*Tursiops truncatus*) vocalizations using SSQ53F sonobuoys modified for autonomous data collection

Hager, Carl Allen¹; Sturzbecher, Jenny¹; Kumar, Anurag²

- (1) Oceanography Department, United States Naval Academy, Chauvenet Hall, 572C Holloway Road, Annapolis, Maryland, 21402, USA
 (2) Environmental Conservation - Marine Resources, Naval Facilities Engineering Command (NAVFAC) Atlantic, 6506 Hampton Blvd, Norfolk, VA, 23508, USA
 Corresponding author: hager@usna.edu

SSQ53F sonobuoys provide an expendable acoustic monitoring capability for Navy aircraft and surface vessels. Data is transmitted from the buoy to a receiver system on either platform via selectable VHF frequencies. While this sensor has proven valuable in non-military marine mammal detection and localization scenarios, VHF interference encountered during near shore monitoring often precludes continuous coverage. The use of autonomous recording packages, constructed from expended SSQ-53F hardware and hydrophones would provide a cost effective solution to this challenge. In August of 2010, five recording packages were deployed during a three day visual and acoustic survey onboard the U.S. Naval Academy's 109' research vessel. The survey was conducted in support of the monitoring plan for the Virginia Capes (VACAPES) Letter of Authorization under the MMPA. When deployed, the

constant shallow omni-directional (CSO) hydrophone output voltage was recorded directly from the sonobuoy's Electronic Function System (EFS) circuit board at a 96 kHz sampling rate using a MicroTrack II digital recorder. The packages proved successful as numerous *Tursiops truncatus* vocalizations were detected. Sonobuoy deconstruct, feasibility test methodology, and lessons learned will be presented.

The importance of depth-use pattern in relation to environmental factors for improving availability bias

Hagihara, Rie¹; Jones, Rhondda²; Marsh, Helene³

(1) James Cook University, School of Earth and Environmental Sciences/ Marine and Tropical Biology, Townsville, QLD, 4811, Australia

(2) James Cook University, School of Marine and Tropical Biology, Townsville, QLD, 4811, Australia

(3) James Cook University, School of Earth and Environmental Sciences, Townsville, QLD, 4811, Australia

Corresponding author: rie.hagihara@my.jcu.edu.au

Environmental factors and animal behaviour make some diving animals to be undetected by survey observers. Accounting for these variables can improve population estimates. Since the 1980s, the dugong abundance has been estimated by using aerial surveys. Current methodology incorporates surfacing rates of the animals under various combinations of water turbidity and sea state. However, the effects of water depth, time of day and tidal pattern on their diving patterns have not been quantified. We combined data from time-depth recorders (TDRs) and GPS satellite tracking devices to investigate the depth-use of 6 dugongs (*Dugong dugon*) tracked in Hervey Bay, eastern Australia in 2004. The effects of water depth, time, light and tidal direction were examined using ANOVA. On average, the dugongs spent about 65 % of their time near the surface, 29 % near the bottom and 6 % in mid-water. The relationship between water depth and depth-use was U-shaped, with the lowest proportion of time near the surface at depths of 6-9 m regardless of other variables. The result indicates that survey observers are less likely to detect dugongs occurring in this depth zone than the ones at other water depths. The apparent interaction between water depth, time of day and light irradiance was observed at water depths of 9-12 m. In this water range, dugongs spent only 29 % of their time near the surface in the morning in contrast to 93 % in the afternoon. Aerial surveys are conducted between 8 am and 3 pm. Our results suggest the use of different detection probabilities over water depths and the survey period. The tidal effect was insignificant. The findings should be tested in a larger sample size and with animals from different areas. We recommend these factors to be investigated in other diving animals.

The widespread exposure of Scottish harbour seals (*Phoca vitulina*) to biotoxins from harmful algae.

Hall, Ailsa Jane¹; Morris, Steven²; Lacaze, Jean-Pierre³

(1) Sea Mammal Research Unit, Scottish Oceans, Institute, University of St Andrews, St Andrews, KY16 8LB, UK

(2) Centre for Environment, Fisheries and Aquaculture Science, Barrack Road, Weymouth, DT4 8UB, UK

(3) Marine Scotland Science, Marine Laboratory, Victoria Road, Aberdeen, AB11 9DB, UK

Corresponding author: ajh7@st-andrews.ac.uk

The abundance of harbour seals in many regions around Scotland continues to decline yet the causes for this remain unknown. Several harmful algal (HAB) species of phytoplankton are now found regularly in Scottish waters, often producing large and prolonged blooms during spring and summer. Therefore in 2010 we investigated the extent of exposure to biotoxins from HABs among harbour seals at various sites around Scotland. Diatoms of the genus *Pseudo-nitzschia* are repeatedly reported, including species that

produce domoic acid (DA), a potent neurotoxin. Although it has a short half-life in body fluids it persists for several days in faecal material, making this a useful matrix for exposure estimation. Faecal samples from haulout sites (n=262) collected during spring/summer were analysed for the presence of DA using the ELISA method, confirmed by LC-MS/MS. There was also a significant correlation between positive results using these two methods ($R^2 = 0.918$, n=6). Along the east coast, including Shetland and Orkney, the proportion of positive samples (>2ng/g) was 48% (n=190) and in the Outer Hebrides it was 43% (n=23) whereas along the north and the west coasts it was only 12% (n=49). DA is most likely to have been ingested by seals which prey on demersal benthivores such as flatfish and squid, in which the highest levels of DA were found (up to 1.3ug/g). Of added concern is the presence of saxitoxin-producing dinoflagellates in Scottish waters. ELISA results suggest that the harbour seals are also ingesting saxitoxin and its derivatives (33% positive, >40ng/g, n=18), biotoxins produced *Alexandrium* spp. Whilst toxin uptake is likely to be through chronic rather than acute exposure this may still have population level consequences. Increasing evidence suggests such low level sub-convulsant exposure affects immunity and in neonates causes domoate-induced neurological changes which result in increased seizure susceptibility in adulthood.

The Nantucket Gray Seal: A case of reverse harassment

Hall, Lanni¹; Rosner, Allison¹; Garron, Mendy¹; Nickerson, Todd²

(1) NOAA NMFS Northeast Region Protected Resources Division, 55 Great Republic Drive, Gloucester, Massachusetts, 01930, USA

(2) NOAA NMFS Northeast Region Office of Law Enforcement, 53 N 6th Street, New Bedford, MA, 02740, USA

Corresponding author: lanni.hall@noaa.gov

During the summer of 2010 the NOAA NMFS Northeast Region Marine Mammal Stranding Program was alerted to a situation by the non-profit organization, Trustees of Reservations, involving gray seals on Nantucket Island off Massachusetts. A video posted by the public on YouTube showed a large, male, adult gray seal coming onto the beach with unusually bold behavior to chase down fish being reeled in by surfcasters at a popular fishing location. A site visit by NOAA NMFS and subsequent observations concluded that one animal in particular was "harassing" fishermen and the general public. To address public safety concerns with the animal, estimated to be between 400-500 pounds, an outreach plan was developed with the Trustees of Reservations until seasonal tourism and fishing ended, traditionally after the Labor Day weekend. On October 1, 2010, an animal was reported on a beach on Cape Cod to local stranding network responders as being lethargic and with a severe injury to an eye. The animal was collected and after assessment, euthanized. Photo ID from a unique scar on the animal confirmed it was the same animal as on Nantucket. Necropsy revealed the animal had been shot in the head at close range. The NOAA NMFS OLE investigation is ongoing. This poster will discuss the actions taken by NOAA NMFS NERO that led to an outreach and monitoring plan for this particular animal and continuing efforts on Nantucket to address gray seals and humans interacting in close proximity.

Time series of growth recorded in the teeth of sperm whales

Hamilton, Vicki¹; Evans, Karen^{2,1}; Raymond, Ben³; Hindell, Mark¹

(1) University of Tasmania, Institute for Marine and Antarctic Studies, Private bag 129, Hobart, Tasmania, 7001, Australia

(2) CSIRO Marine and Atmospheric Research, GPO Box 1538, Hobart, Tasmania, 7001, Australia

(3) Australian Antarctic Division, Channel Highway, Kingston, Tasmania, 7050, Australia

Corresponding author: vic.hamilton@bigpond.com