P5.08 Movement patterns and habitat preferences of two albatross species at a shared wintering site.

Deppe L[1]* and Scofield P[2].

[1]School of Biological Science, University of Canterbury, Christchurch, New Zealand.
[2]Museum of Canterbury, Christchurch, New Zealand.

*lorna.deppe@pg.canterbury.ac.nz

Albatross species are considered globally at risk and facing numerous threats in both their marine and terrestrial environment. To implement effective conservation measures, we need to understand species specific spatio-temporal dynamics, based on which marine important areas can be identified and classified. We studied two albatross species that breed in close proximity on two islands belonging to the Chatham Island Group: the Chatham albatross, *Thalassarche eremita* and the Northern Buller's albatross, *T. bulleri platei*. Using Global Location Sensing (GLS) loggers, including salt water immersion sensors, we recorded the birds distribution during the non-breeding season. Both species showed a strong spatial overlap and similar movement patterns inside their South American wintering areas but did segregate on a temporal scale. Combining information on wintering movements with actual temperature recordings by the GLS loggers and remotely sensed sea surface temperature (SST), we were able to identify temperature as a determining factor for habitat selection.

O4.07 Effects of simulated military sonar on sound production by blue whales, sperm whales, Risso's dolphin, and Cuvier's beaked whale

DeRuiter SL*[1], Calambokidis J[2], Douglas AB[2], Falcone E[2], Friedlaender AS[1,3], Goldbogen J[2,4], Hildebrand JA[4], Moretti D[5], Pusser T[1], Schorr G[2], Southall BL[6] and Tyack PL[1].

[1]Biology Department, Woods Hole Oceanographic Institution, Woods Hole, Massachusetts, 02543, USA.
[2]Cascadia Research Collective, Olympia, Washington, 98501, USA.
[3]Nicholas School of the Environment, Duke University Marine Laboratory, Beaufort, North Carolina, 28516, USA
[4]Scripps Institution of Oceanography, University of California San Diego, La Jolla, California, 92093, USA.
[5]NAVSEA, Newport Undersea Warfare Center, Newport, Rhode Island, 02841, USA
[6]Southall Environmental Associates, Santa Cruz, California, 95060, USA

*stacy_deruiter@yahoo.com

Whales and dolphins use sound for different functions including echolocation and social communication, and thus changes in sound production patterns are a likely component of any behavioral response to anthropogenic sounds such as military mid-frequency sonar (MFA). To simultaneously log whale and dolphin movements, sound production and reception, and anthropogenic sound exposure levels, we used Dtags (Woods Hole Oceanographic Institution) and bioacoustic probes (Greeneridge Sciences). Tags were deployed on wild, free-ranging cetaceans in Southern California waters. Tagged animals were then exposed to simulated MFA or, as a control, pseudo-random noise (PRN). In total, the August-September 2010 SoCal10 behavioral response study included 28 playbacks: 19 to blue whales (11 MFA, 8 PRN), 5 to fin whales (3 MFA, 2 PRN), 2 to a single sperm whale (1 MFA, 1 PRN), 1 to a Risso's dolphin (MFA), and 1 to a Cuvier's beaked whale (MFA). For this analysis we focus first on baleen whale call production and reception rates (particularly blue whale D calls and variable calls) in relation to sound exposure level, dive behavior, and lunge feeding rates. We then examine echolocation-based foraging behavior and social call production by the toothed whales as a function of sound exposure level. This rich dataset, including multiple cetacean species of conservation concern, provides insight into the wide potential range of responses to sound, and the dependence of those responses on ecological, social and behavioral context. Investigations like SoCal10 can help guide inferences for related topics, such as assessment of population effects of anthropogenic noise.