A Plausible Physical Cause for Live Cetacean Mass Strandings

R James, S Woodings and S Chambers

Physics Department, The University of Western Australia, NEDLANDS, WA 6907, AUSTRALIA
Telephone: (08) 9380 3478 Fax: (08) 9380 1014 email: Ralph@physics.uwa.edu.au

ABSTRACT

One of the common causes presented in explanation of cetacean (whale and dolphin) mass strandings is that of reduced effectiveness of sonar as a navigational tool. Attenuation of sound and ultrasound by an ocean surface layer of resonant bubbles over a gently sloping beach is proposed as a significant mechanism for disrupting echolocation. An analysis of reflections and sound attenuation was undertaken along with preliminary laboratory tests providing basic qualitative support. Prevailing weather, coastal topography and cetacean sonar data, pertaining to recent Western Australian and Tasmanian strandings, have been combined to evaluate the theory's plausibility as a physical cause of cetacean mass strandings.