

INVESTIGATING SEASONAL PRESENCE OF HUMPBACK WHALES (*MEGAPTERA NOVAEANGLIAE*) IN EAST ANTARCTICA USING PASSIVE ACOUSTICS

S McKay, D Thiele

Deakin University, Warrnambool, Victoria, Australia

Low frequency passive acoustic data were analysed to investigate the seasonal presence of humpback whales, *Megaptera novaeangliae*, in East Antarctica. It has long been accepted that humpback and other baleen whales migrate to lower latitudes from their Antarctic feeding grounds at the end of the austral summer. Visual surveys have detected large numbers of humpback whales remaining at these high latitudes well into autumn. This raises the question of whether this species may remain during winter also. Automatic and manual call detection methods were applied to data recorded on a single autonomous Acoustic Recording Package (ARP) deployed near Mawson Station. Sea ice and oceanographic data were integrated with call data to investigate relationships between observed seasonality in the physical environment and the distribution of whales. ASPeCt data, along with satellite images of sea ice extent, were analysed to investigate the influence of ice coverage around the ARP site, while the measurement of distance to the ice edge provided a context for distribution. Results show strong seasonal differences in humpback whale presence with a peak occurring during autumn. It appears that individual humpback whales use the ice edge and outer ice margins as additional feeding habitat during autumn and possibly migrate in late autumn or early winter. Interpretation of these results are based on the social and seasonally modulated behaviour apparent in this species and are important to investigate further in the context of improving the potential use of passive acoustic monitoring of cetaceans. Increased survey effort combining both acoustic and visual data is necessary to develop a system of broad categories of association that relate call types to behaviour. Once established these categories can be applied in other regions of Antarctica and elsewhere. The deployment of the Mawson ARP has provided the first long term recording of underwater acoustic signals in East Antarctica allowing access to year round continuous data for analysis of linkages between whale distribution and ecosystem processes.