



Acoustic presence and call variations of Antarctic minke whales in East Antarctica and Western Australia

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ABSTRACT

Antarctic minke whales are amongst the most abundant baleen whale species found in higher latitude waters of Antarctica. Despite their abundance, little is currently known on their acoustic behaviour within these waters and site usage outside of Antarctica. As such, the conservation and management of these species continue to be an ongoing challenge. Our research focuses on geographic differences in Antarctic minke whale bio-duck vocalisations in the east Indian and Southern Ocean. Utilising passive acoustic monitoring data collected across over two decades in Western Australia and east Antarctica, the spatiotemporal patterns and acoustic diversity of these vocalisations are described and compared. In Western Australia, bio-duck presence peaked in the Perth Canyon during July and August, with peak bio-duck presence also reported in the Pilbara region during October. In general, for the east Antarctic datasets, bio-duck presence peaked from June to October across all years. Additionally, unique, site-specific bio-ducks are reported, alongside instances of "call switching". This research represents the first efforts to compare the seasonal distributions and vocal diversity of these regions. Understanding the acoustic behaviour of this species will assist in improving future acoustic monitoring efforts and ultimately contribute to a more robust assessment of this species in rapidly changing environments such as the Antarctic.