



Omura's whale song features, patterns, and geographic variation in northern Australia

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ABSTRACT

The Omura's whale (*Balaenoptera omurai*) is one of the most recently described species of baleen whale. This study describes the acoustic features of Omura's whale vocalisations detected in northern Australia across five geographic regions. The most commonly observed vocalisation was a two-unit 'doublet' between 17–52 Hz with a ~ 25.5 Hz peak frequency and ~15 s duration. The doublet was rhythmically, repeated for extended periods of time, in typical baleen whale song structure, suggesting it is a male breeding display. Presence of song was recorded year-round with seasonal peaks in density from October to May. In well studied baleen species, males generally sing more during twilight or night than during the day. However, there was no distinct diel or lunar patterns in Omura's whale song. A one-unit 'singlet' vocalisation was also observed in the lower-latitude locations off the northwest in the same frequency range with shorter duration. In the Great Barrier Reef, doublet vocalisations similar, but not identical, to the known Omura's whale vocalisations were observed, identifying a possible acoustic population of the species in the Pacific Ocean. Omura's whale song has been observed to vary across geographical regions both within an ocean and across multiple oceans. Given there are still many knowledge gaps on the species, geographic variation of song may be an effective measure to gain a baseline understanding of Omura's whale populations globally and to monitor species movements, as has been utilised in well studied baleen whale species.