

New research sheds light on the unique 'call' of Ross Sea killer whales

February 26 2020, by Lauren Sydoruk

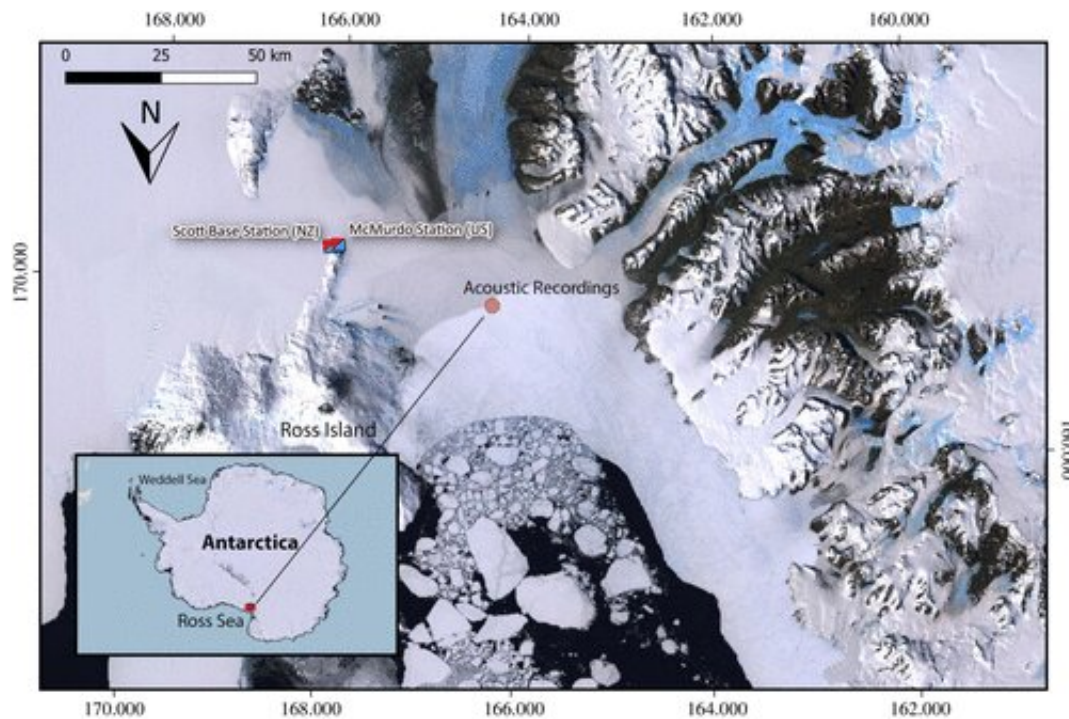


Figure 1. Map of Antarctica showing the location of the study area and marked point where acoustic recordings were taken in McMurdo Sound between December 2012 and January 2013. Map produced using QGIS mapping software [64] with Quantarctica package [65]. Satellite imagery provided by Norwegian Polar Institute based on Landsat satellite images from previous years does not reflect sea ice coverage during the 2012–2013 season.

New Curtin University-led research has found that the smallest type of killer whale has 28 different complex calls, comprising a combination of

burst-pulse sounds and whistles, which they use to communicate with family members about the changing landscape and habitat.

The research, published in *Royal Society Open Science*, analyzed data collected in 2012 and 2013 to better understand the call repertoire of Ross Sea killer whales, also known as Type C, which are found in the McMurdo Sound in Antarctica.

Lead author Ph.D. candidate Rebecca Wellard, from Curtin's Centre for Marine Science and Technology (CMST), said the remoteness of the Ross Sea can make it difficult to monitor and record the movements of killer whales, but it is essential to better understand their behavior and acoustic repertoire.

"In Antarctic waters, there are five different types of killer whales, with Type C being the smallest, growing up to 6.1 meters in comparison to Type A males who can grow up to almost 10 meters long," Ms Wellard said.

"By using passive acoustic monitoring, our team was able to analyze recordings from nine separate encounters with approximately 392 Type C killer [whales](#), including adults, sub adults and calves.

"We were able to identify that the calls of the Type C killer whale are multi-component, meaning that many calls transition from burst-pulse sounds to whistles. We also found that 39 percent of the call types started with a series of 'broadband pulses.'"

Ms Wellard explained that the most common killer whale behaviors observed in the study were traveling and foraging under the ice and socialising at the surface, which could explain the increase in call rate.

"During the calls, often two of the sounds occurred at the same time,

also known as biphonation. These types of calls could be used to locate where other members of the pod may be. Due to the shifting and changing habitat in McMurdo Sound, calves could also be using biophonic calls to communicate with [family members](#) about available breathing holes," Ms Wellard said.

"Our findings provide an initial step towards comparing and distinguishing Type C killer whale acoustics with those of other killer whale populations in the Southern Hemisphere."

More information: Rebecca Wellard et al. Cold call: the acoustic repertoire of Ross Sea killer whales (*Orcinus orca*, Type C) in McMurdo Sound, Antarctica, *Royal Society Open Science* (2020). [DOI: 10.1098/rsos.191228](#)

Provided by Curtin University

Citation: New research sheds light on the unique 'call' of Ross Sea killer whales (2020, February 26) retrieved 23 April 2024 from <https://phys.org/news/2020-02-unique-ross-sea-killer-whales.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.