

Study suggests mysterious bio-duck sounds in southern ocean come from minke whales

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Minke whale in Ross Sea, Antarctica. Credit: Wikipedia

(Phys.org) —A diverse group of researchers from several countries conducting research in the oceans around Antarctica and near Australia, has concluded that the mystery noises heard in the area for decades, are emitted by minke whales. In their paper published in the journal *Biology Letters*, the team describes how they attached sensors to two minke whales last year and how doing so helped to identify the minke whale as the source of what have come to be known as "bio-duck" sounds—because they have a distinctive quack like quality.

Reports of seasonal bio-duck sounds have circulated since the 1960's, when they were first reported by personnel aboard submarines. Since that time, many scientists have heard and captured the noises, though until now, no one really knew from whence they came. In this latest effort, the researchers took a direct approach—they attached [sensors](#) to the backs of two of the whales and captured data for 24 hour periods.

Putting sensors on [minke whales](#) is not easy—they're fast and turn on a dime. Thus it was a bit of a triumph that the team was able to manage to do so. The sensors they used were quite sophisticated, yet small—they capture and record not only sound, but water depth and movements in 360 degrees—plus, they don't cause harm, they're held on by suction cups. A sensor on one of the whales gave away the secret of bio-duck sounds—capturing the distinctive bio-duck noise, repeating several times as the whale was near the surface. The recordings were compared to prior recordings of bio-duck sounds made by researchers aboard submarines and were found to match, solving the mystery of the bio-duck sounds.

The researchers note that solving the mystery is more than fanciful, now that the source is known, researchers can use recording equipment to track their migration, feeding patterns or even the reproduction cycles of the whales, offering the possibility of a whole new research area. Research on the minke whales is particularly important for two reasons.

One is that they are a primary target of Japanese whalers, the other is because of where they live—a part of the ocean undergoing transformation due to global warming.

More information: Mysterious bio-duck sound attributed to the Antarctic minke whale (*Balaenoptera bonaerensis*), *Biology Letters*, Published 23 April 2014 [DOI: 10.1098/rsbl.2014.0175](https://doi.org/10.1098/rsbl.2014.0175)

Abstract

For decades, the bio-duck sound has been recorded in the Southern Ocean, but the animal producing it has remained a mystery. Heard mainly during austral winter in the Southern Ocean, this ubiquitous sound has been recorded in Antarctic waters and contemporaneously off the Australian west coast. Here, we present conclusive evidence that the bio-duck sound is produced by Antarctic minke whales (*Balaenoptera bonaerensis*). We analysed data from multi-sensor acoustic recording tags that included intense bio-duck sounds as well as singular downsweeps that have previously been attributed to this species. This finding allows the interpretation of a wealth of long-term acoustic recordings for this previously acoustically concealed species, which will improve our understanding of the distribution, abundance and behaviour of Antarctic minke whales. This is critical information for a species that inhabits a difficult to access sea-ice environment that is changing rapidly in some regions and has been the subject of contentious lethal sampling efforts and ongoing international legal action.

[Press release](#)

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