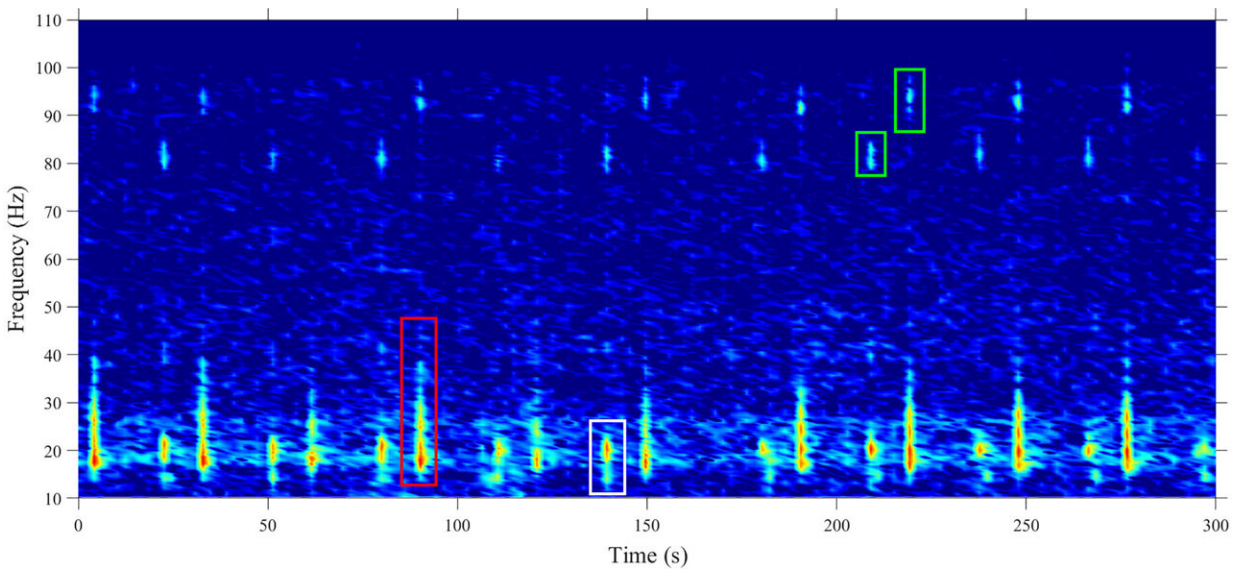


Fin whale songs shed light on migration patterns

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Spectrogram of example vocalizations of the fin whale. The 20 Hz pulse (red box), the back-beat pulse (white box) and the higher-frequency components accompanying both the back-beat and 20 Hz pulses (green boxes). Image was taken from Cape Leeuwin, (06-Aug-2011, 19:00). Spectrograms were calculated in 256-point Hann windows with 0.49 frequency resolution; sampling frequency 250 Hz. Credit: *Frontiers in Marine Science* (2022). DOI: 10.3389/fmars.2022.864153

A Curtin University-led research team has uncovered valuable information on the migration patterns of the fin whale, as well as where they breed and feed, which will help aid in the monitoring and protection

of the species.

Publishing in *Frontiers in Marine Science*, the research team monitored 285,000 hours of underwater [sound recordings](#) from 15 locations off Antarctica and Australia between 2002 and 2019 and identified two migratory pathways used by the species—from the Indian sector of Antarctica to the west coast of Australia and from the Pacific sector of Antarctica to the east coast of Australia.

Lead researcher Ph.D. student Meghan Aulich, from the Center for Marine Science and Technology (CMST) at Curtin University, said the fin whale, known as the "greyhound of the sea," was globally vulnerable due to a history of whaling, and ongoing risks of climate change and habitat disturbance.

"Our study identifies the long-term, seasonal vocal presence of the fin whale in Antarctic waters from late summer to early winter (February to June) and in Australian waters from autumn to mid-spring (May to October)," Ms. Aulich said.

"We were able to determine that the whales spent more time in specific regions due to their ecological needs and not because they were 'residents' of that area. For example, we found that the fin whale had a late seasonal presence in colder, Antarctic waters in the winter and may be breeding at the Pacific Antarctic Ridge during this time.

"Further research is needed to fully understand their behavior and migratory patterns, but by tracking this species and listening to their underwater conversations we were able to learn about where they breed and feed, which will help us monitor and protect this [vulnerable species](#) to ensure it thrives in its natural habitat."

Professor Christine Erbe, also from Curtin's CMST, said using the

passive acoustic monitoring method allowed the research team to follow the [fin whales](#) without being intrusive.

"The Southern Hemisphere fin whale is a vulnerable sub-species and this method of tracking, whereby microphones are deployed in the [deep sea](#), allows us to observe and map their movements with little disruption," Professor Erbe said.

"Acousticians from the Australian Antarctic Division (AAD) were instrumental in helping us conduct this research, recording almost a million calls at frequencies of 20Hz, which is too low for humans to hear.

"This collaboration and expertise allows researchers to listen in to where the whales are going and why, better informing us so we can help protect their populations in the future."

More information: Meghan G. Aulich et al, Seasonal Distribution of the Fin Whale (*Balaenoptera physalus*) in Antarctic and Australian Waters Based on Passive Acoustics, *Frontiers in Marine Science* (2022). [DOI: 10.3389/fmars.2022.864153](https://doi.org/10.3389/fmars.2022.864153)

Provided by Curtin University

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