

Title

Stingrays: no longer the silent residents of the sea

Summary

Stingrays are making sounds beneath the waves. Elasmobranchs — sharks, rays, and skates — are generally thought to be unable to intentionally make sounds, however, new research suggests that they can actually be quite vocal when they want to be. Researchers from Sweden, Spain and Australia have shown that at least two species of stingray produce sounds voluntarily, likely as a defence or warning response. These findings were just published in the [Journal Ecology](#)

Text

"We know that over 990 species of bony fish make sounds," said lead author Dr Lachlan Fetterplace, a researcher at the Swedish University of Agricultural Sciences Department of Aquatic Resources. "But Elasmobranchs, the animal group that includes sharks, rays, and skates, have generally been thought of as silent and until now there hasn't been any evidence of them making sounds intentionally". "We now have multiple recordings and observations of two species of stingrays making sounds in the wild."

The authors present and analyse multiple records from Australia and Indonesia of voluntary sound production by two species of stingray (mangrove whipray *Urogymnus granulatus* and the cowtail stingray *Pastinachus ater*). Sounds recorded from both species are described as a series of very short and loud clicks and are thought to be used to warn off predators. In all recorded observations, the ray started making the click sounds in response to the observer approaching closely, and then stopped when the observer or ray had moved away.

The mechanism behind the sounds remains unclear, however - "We can't be certain of how the rays are producing the sounds" said co-author Joni Pini-Fitzsimmons, postdoctoral research fellow at Macquarie University, "but it appears to involve rapid movement of the head or jaw and spiracles, an opening behind the eyes used for respiration."

There are over 1200 species of elasmobranchs and it is possible that some of these may make sounds as well. The published observations were captured opportunistically by three separate people, so it is likely that there are other recordings like these out there that haven't yet come to light. "Now that active sound production in rays has been identified in two species of rays, we are hoping that people will share recordings of other species" said Dr Barbara Wueringer, Principal Scientist and Director at Sharks And Rays Australia. "Sound production may be more common in stingrays than we think." The authors encourage citizen scientists and other researchers with further examples to make contact.

"That we only just realised that these commonly encountered stingrays are making sounds demonstrates, once again, how little we know about the oceans " said Fetterplace.

Multimedia



Image 1: Mangrove whipray *Urogymnus granulatus* at Magnetic Island, Australia. Image by J. Javier Delgado Esteban.



Image 2: Cowtail stingray *Pastinachus ater* at Heron Island, Australia. Image by Johnny Gaskell. Image usage restrictions - Only for use in articles about this research.

Video: High Definition video of rays making sound are available at
https://figshare.com/articles/dataset/Sound_in_rays_-_video_files/16929838

Reference

Fetterplace, L. C., Delgado Esteban, J. J., Pini-Fitzsimmons, J., Gaskell, J. and Wueringer, B. E. (2022). "[Evidence of sound production in wild stingrays](#)." Ecology. DOI: [10.1002/ecy.3812](#)

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