Coastal dolphins quieter than thought

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Dolphins are thought to be able to communicate with each other over vast expanses of ocean, between distances as far as 15 miles apart. Studies of dolphin whistles have suggested that they should carry that far in water, which transmits sound much better than air does.

To put this idea to the test, Frants Jensen of Aarhus University in Denmark dropped underwater microphones (hydrophones) into coastal waters near Bunbury, Australia and recorded the loudness of bottlenose dolphins. By combining this data with measurements of the background noise and how sound travels through water, he estimated that these dolphins would only be able to hear each other from a few hundreds of meters apart.

"It's the first time we've measured the source levels -- the loudness of the whistles -- in these tropical areas," says Jensen.

Compared to the open ocean, the coastal waters of Australia are fairly loud, with snapping shrimp and vessel noise crowded into the same frequencies that the dolphins use to communicate.

The range at which an animal can communicate is likely to have an effect on its social structure, says Jensen. Baleen whales and elephants, for instance, can talk to each other over vast distances, which is thought to allow them to stay in constant contact and easily find each other.

These dolphins' limited range of communication may be one reason they live fairly solitary lives in more fluid societies.

"Dolphins move a lot around in this area but don't associate closely with many other individuals," says Jensen. "Some males have alliances and swim together consistently for their lifetime, while females are a lot more individual and associate mostly with their own calves over time."

Frants Jensen will present the findings at the 2nd Pan-American/Iberian Meeting on Acoustics on Friday, November 19.

More information: "Bottlenose dolphin shortrange communication in a shallow, noisy environment (5aAB7)". Abstract: asa.aip.org/web2/asa/abstracts … ch.nov10/asa803.html

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