

Critters on ocean floor communicating in synchronized rumbles

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This watercolor by scientist Erica Staaterman shows a California mantis shrimp "rumbling" or making noise. A study featured in *Aquatic Biology* uncovered the fact each individual shrimp seems to have its own "voice." The males make rhythmic "rumbles" in groups of three that may help to attract females to their burrows or defend their territories against neighboring males. Credit: Erica Staaterman

September- Understanding animal communication has long been a fascinating and vast area of research for those who dare to welcome the challenge. Some species use body language to express their message while others use calls and loud noises. In fact, some animals communicate in frequencies that are inaudible to humans, either above or below our hearing range.

But how do critters on the ocean floor use communication to fend off

[predators](#), attract mates and protect their homes? This was the question six scientists, including two students from the University of Miami Rosenstiel School of Marine & Atmospheric Science, Erica Staaterman and Austin Gallagher set out to answer. Their destination was the muddy water off the coast of Catalina Island, California. Their subject was the California mantis shrimp (*Hemisquilla californiensis*), a benthic crustacean that measures 8 - 10 inches.

"Rarely are there studies of benthic acoustics (sounds from the oceans floor)," said Staaterman. "There has always been suspicion that burrow-dwelling creatures like the mantis shrimp make some sort of noise, and our research is going to help us better understand life and communication on the ocean floor."

After collecting data using various instruments that included a coupled audio–video system, a hydrophone array and an autonomous recording unit, the team was able to develop theories about communication on the [ocean floor](#).

The study uncovered the fact that [mantis shrimp](#) made noise, each individual seeming to have its own 'voice.' The males made rhythmic 'rumbles' in groups of three that may help to attract females to their burrows or defend their territories against neighboring males.

"These sounds recorded in the field were different than what we recorded in tanks, so to hear these creatures communicating in the wild was very special. Our research team noted the 'rumbles' were so synchronized that it sounded like a chorus, similar to that of groups of birds or frogs," she added.

Aquatic Biology journal made the study their August cover story. At the time of the research, Staaterman was a staff member at the University of Massachusetts working under the supervision of Dr. Sheila Patek and

Gallagher was an assistant on the research team before both relocated to the University of Miami's Rosenstiel School.

Provided by University of Miami

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