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Underwater Speakers Help Revive Dying Coral Reefs, Study Finds




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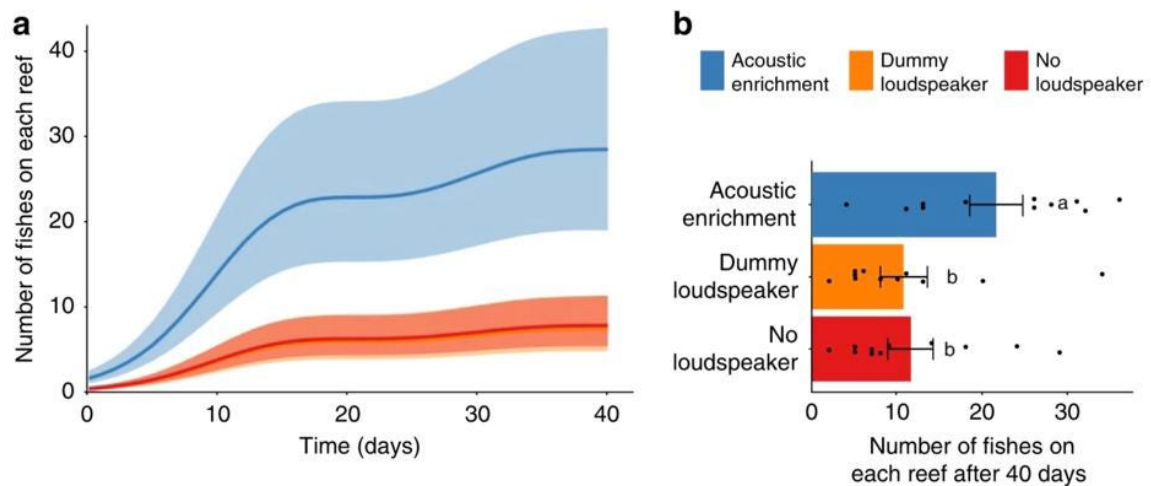
Soft Coral Scolymia GETTY

As coral reefs die they become silent graveyards, however, the introduction of underwater loudspeakers brings new life and helps to rejuvenate the coral reefs.

A recently published paper in *Nature Communications* highlights research focused on the impact of playing sounds around dead or dying corals. The findings were a pleasant surprise in the future conservation and recovery of coral reefs.

The researchers weren't playing Kesha or classical music, but the sounds of healthy vibrant coral reef ecosystems.

The researchers believed they could potentially entice juvenile and adult fish to a dying reef by playing sounds associated with a vibrant living reef. The results proved their hypothesis, broadcasting healthy reef sounds doubled the total number of fish and increased the number of fish species by 50% compared to equivalent unmodified dead coral.



Effect of acoustic enrichment on coral reefs NATURE COMMUNICATIONS

To make sure there was no bias in the acoustically enriched reefs, the research team studied dead coral areas with both dummy speakers and no speakers. After 40 days the acoustically enriched reefs had double the number of fish compared to the dummy speaker and no speaker control groups. The increase in fish was spread across a diverse transect, including herbivores, detritivores, planktivores, and predatory piscivores.

While the reintroduction of fish to a coral reef isn't the entire recipe to regrow healthy coral reef ecosystems, it helps the reef begin to recover. Fish clean reef and create spaces for new corals to grow.

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“If combined with habitat restoration and other conservation measures, rebuilding fish communities in this manner might accelerate ecosystem recovery,” said [Professor Andy Radford](#), a co-author from the University of Bristol, in the press release.

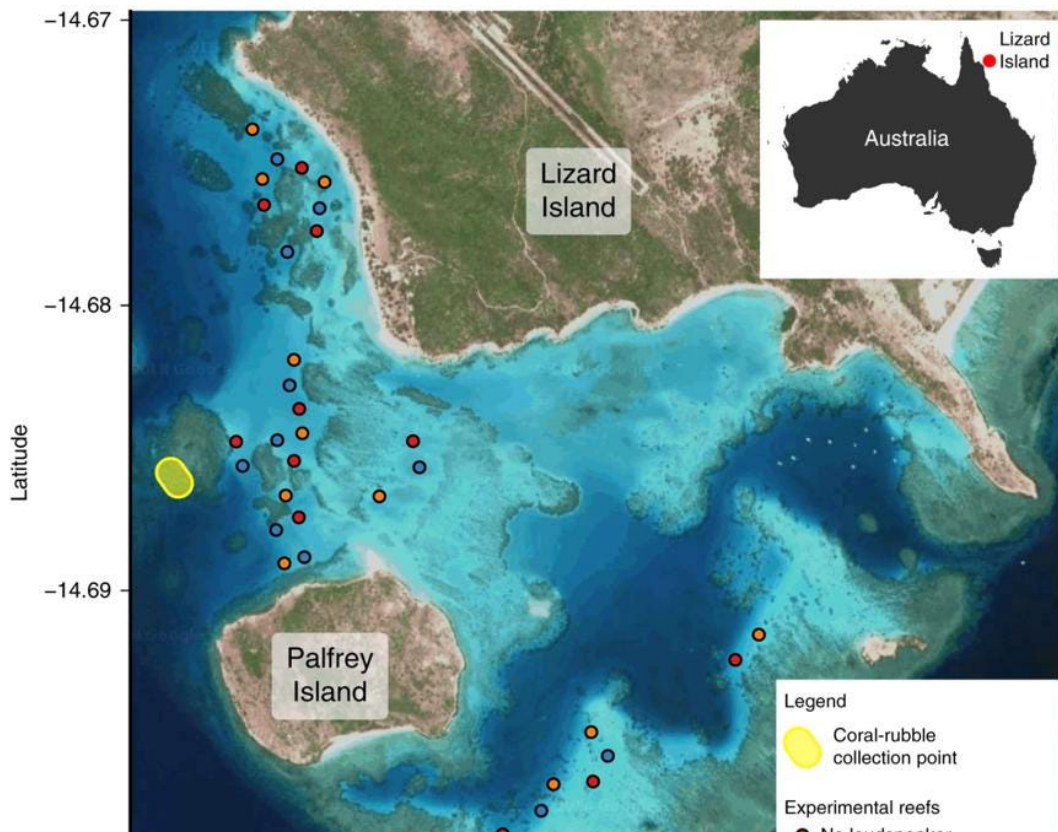
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Map showing study area and locations acoustic enrichment, no loudspeaker, and dummy loudspeaker NATURE COMMUNICATIONS

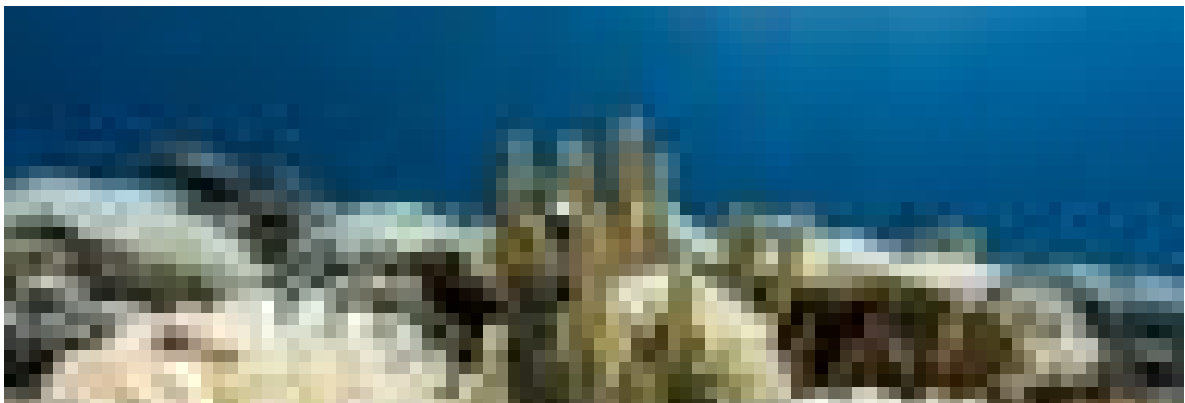


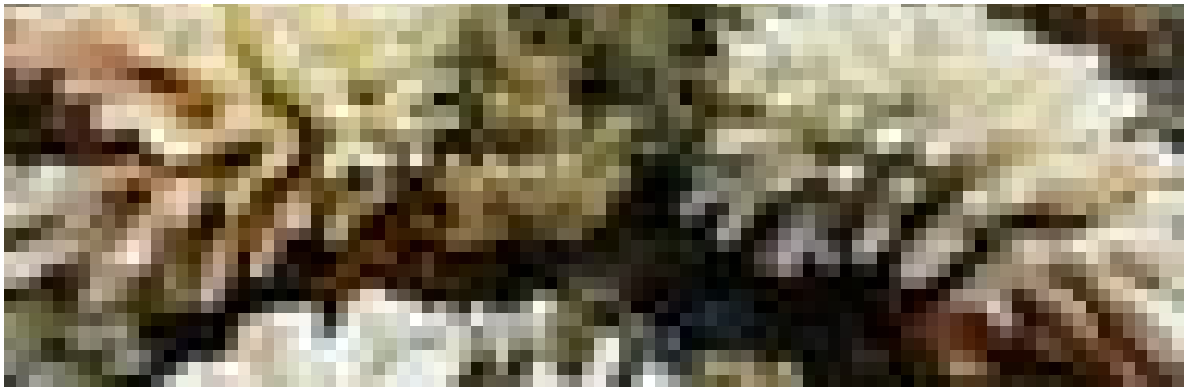
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The introduction of diverse groups of fish, who all provide different functions in a coral reef ecosystem, is an important part of maintaining and recovering reef ecosystems.

Several factors are leading to the increased deaths of coral reefs globally. A [recent study](#) found that the primary factor in the death of corals in the Florida Keys is due to nitrogen enrichment from sewage and fertilizer runoff.





A view of major bleaching on the coral reefs of the Society Islands on May 9, 2019 in Moorea, French ... [+] GETTY IMAGES

Also, coral zooxanthellae require a narrow temperature range to live, increasing the temperature of the surrounding ocean water only a couple of degrees can cause [zooxanthellae to leave corals en masse](#), essentially killing the coral reef. On a positive note, it appears corals are becoming [more resistant to increasing ocean temperatures](#).

The last factor associated with the [decline of corals is through ocean acidification](#), a direct response to more CO₂ in the atmosphere. Ocean acidification can etch away the fragile coral carbonate skeleton and weaken coral reefs.

Fish aren't the only ones who are attracted to the sounds of a natural environment. Researchers recently [figured out](#) why sounds of a rushing stream, crashing waves or rustling leaves help us to relax. It's clear, healthy natural environments are beneficial to all.

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