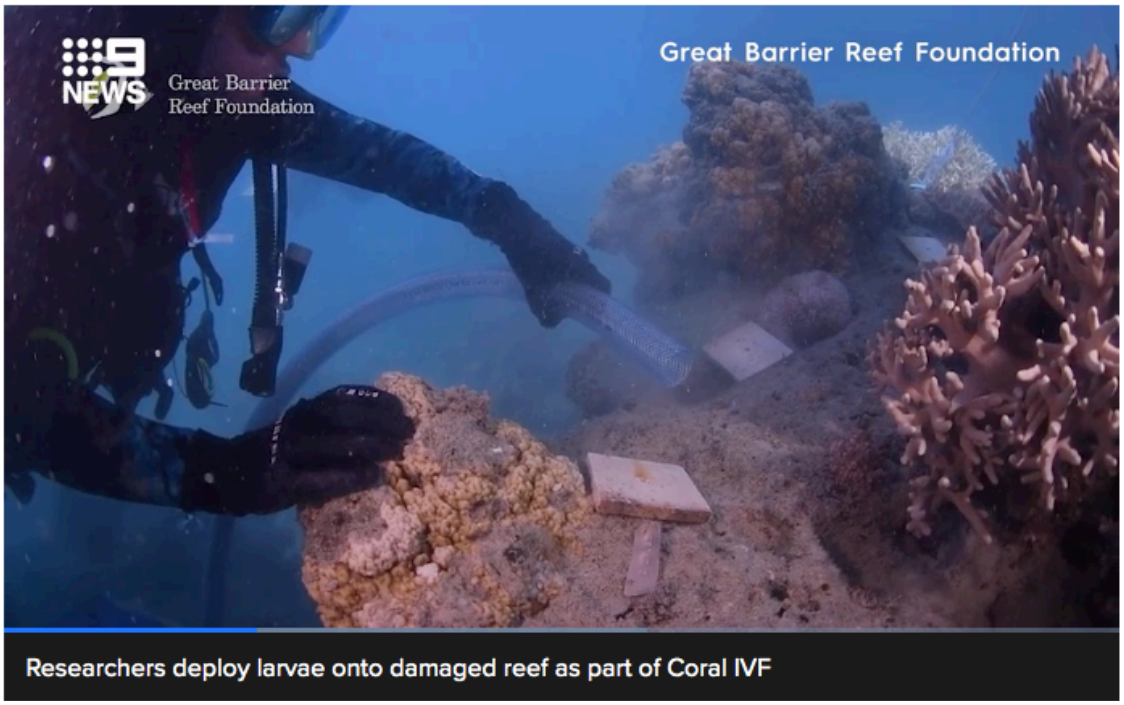
Fresh hope for the Great Barrier Reef after 'game-changing' technique is deployed on damaged coral

By Raffaella Ciccarelli • Producer | 9:25am Nov 20, 2020



Researchers deploy larvae onto damaged reef as part of Coral IVF

An Australian-led research team is breathing new life into the bleached bones of the Great Barrier Reef, using a technique called "Coral IVF".

Two weeks ago, Peter Harrison, Director of the Marine Ecology Research Centre at the Southern Cross University, led a team of Great Barrier Reef Foundation researchers and tourism operators, and fertilised a section of bleached in-shore coral near Hook Island, in the Whitsundays.

The process made use of the coral's annual spawning event, which sees a "kaleidoscope" of fragile coral sperm and eggs float to the surface of the water.

Scientists captured samples of this slick and transported it to floating "larvae nursery pools", anchored on sandy areas of the reef.

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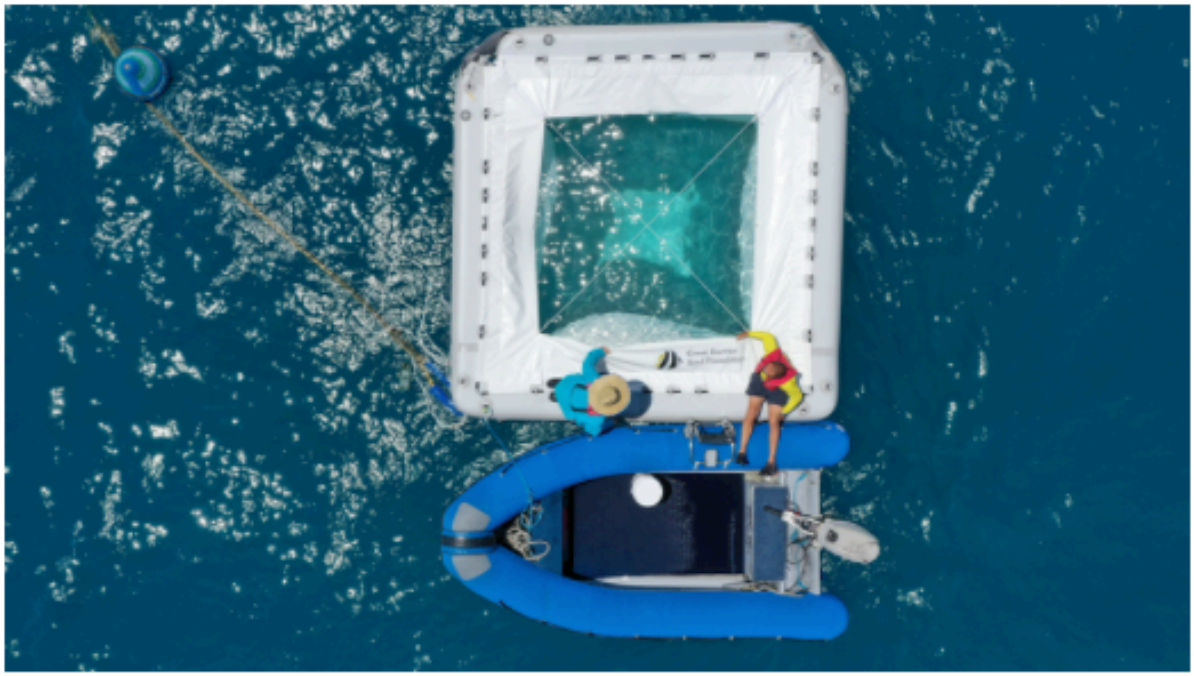


Great Barrier Reef Foundation researchers check on larval pools. (Great Barrier Reef Foundation)

The team then monitored fertilisation rates, and cultured the larvae over five to seven days. This week, once they were fully developed, the scientists released the larvae onto target areas in need of live coral.

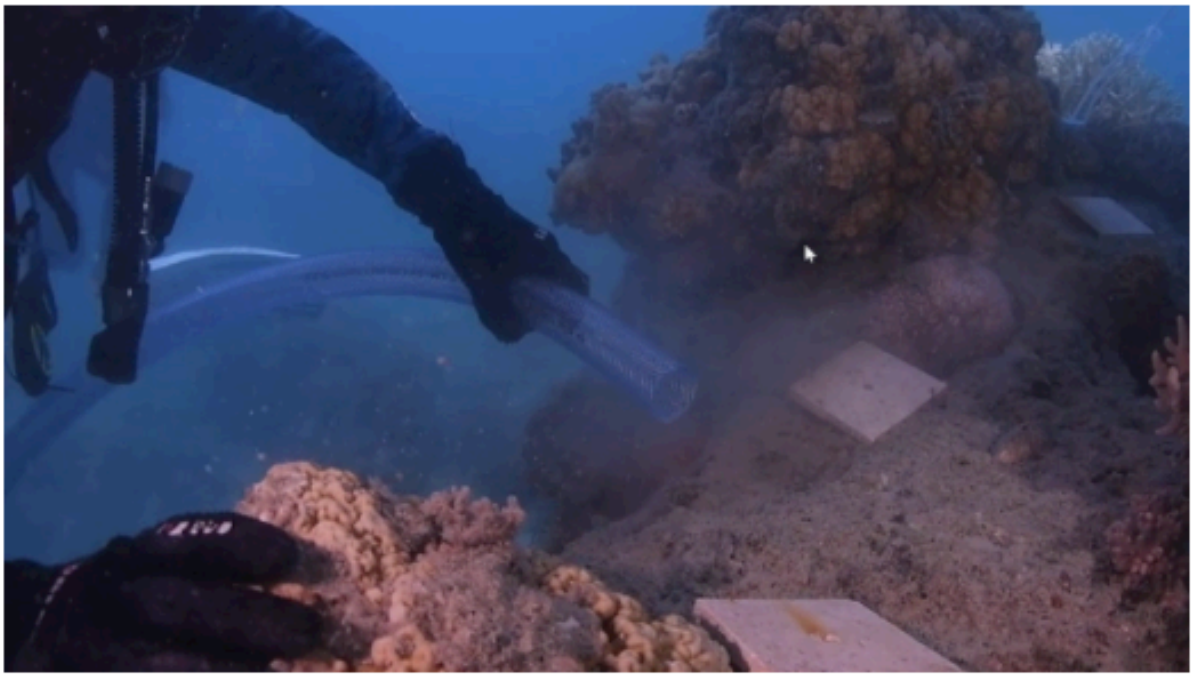
It's the fifth time the technique has been used on a damaged section of Queensland's natural wonder. The process first began in 2016 in Heron Island.

Researchers check corals for signs of spawning. (Great Barrier Reef Foundation)

Professor Harrison told 9news.com.au the latest project made use of three local tourism operators and is already showing signs of success.

"This went really well. We were able to prove citizens and scientists were able to help with the spawn capture, and larval development," he said.

"Just a few days ago we squirted some of the larvae back onto damaged reef areas on Hook Island and we were able to get some of those to settle."



Researchers deplo coral larvae onto a damaged section of the reef at Hook Island in the Whitsundays. (Great Barrier Reef Foundation)

Professor Harrison believes in three to five years time, entire kilometres of damaged reef could be potentially re-seeded.

"Each time we go out to these coral spawning events we are learning more about how to make the process more efficient," he said.

"In the next few years we hope to culture hundreds of millions of larvae.

"Hopefully a few years from now we will have dozens of groups with their own vessels capturing coral spawn, growing larvae, and releasing it back on damaged areas."

'Enhanced coral'

Professor Harrison has spent more than 30 years studying the intricacies of coral reproduction and has been dreaming about Coral IVF "for decades".

One of the most heartening aspects of his research, he said, was the fact the process increases the chance larvae with strong genes will filter through the population creating what he called "enhanced coral".

n this undated file photo, a diver swims on Australia's Great Barrier Reef. (AP)

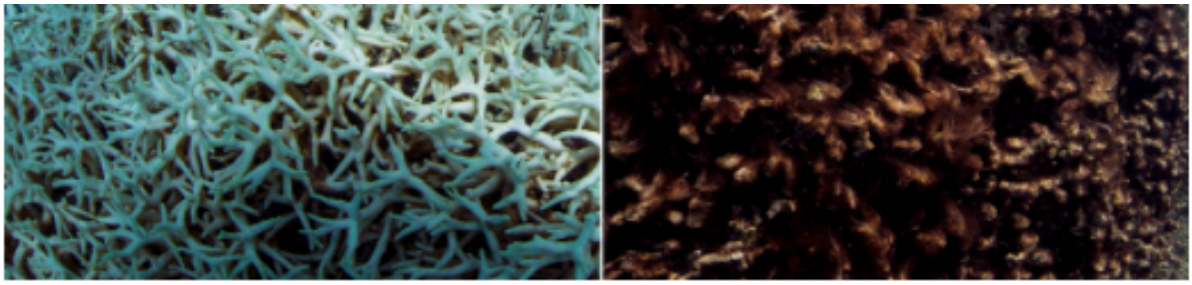
"Even if you get high rates of fertilisation naturally, most larvae produced end up drifting away from the parent reef," he said.

"What we're trying to do now is rescue the surviving coral populations. We know in many areas of the reef more than half the corals have been removed by bleaching events and Crown-of-thorns starfish and cylones and such.

"By taking the spawn from surviving corals - we know the next generation are more likely to survive, because they come from parents that have survived damaging events."

A hot summer ahead

The development couldn't come fast enough, as the Great Barrier Reef suffered it's third mass bleaching event last summer.



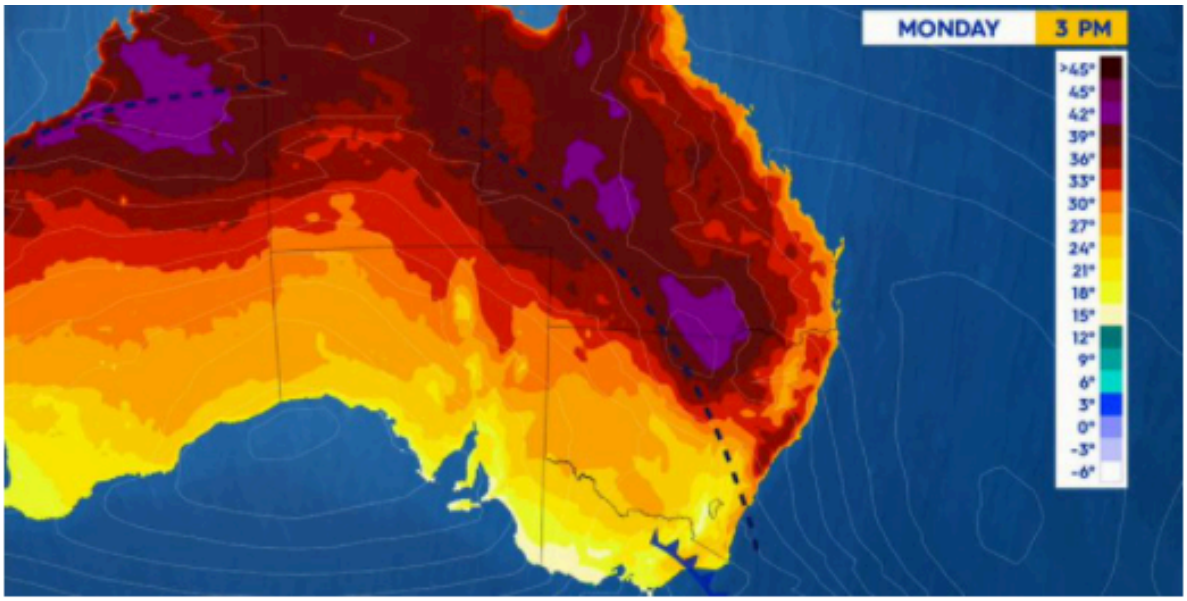
This photo shows before, March 2016, left, and after, May 2016, images of coral bleaching and death at Lizard Island on Australia's Great Barrier Reef. (AP)

While it's too early to tell if this year will see another such event, Great Barrier Reef Foundation managing director Anna Marsden says the signs point towards one.

"Once it hits about February we will start to keep a watchful eye on it," Ms Marsden told 9news.com.au.

"There are expectations and concerns we will have a hot summer, and the conditions that normally mean bleaching, heat, low cloud and low wind, are there. This means the water gets hotter and hotter and the coral cooks."

The Bureau of Meteorology's forecast also indicated a hot summer ahead.



On Monday large parts of Australia saw extreme heat; with more warm weather expected as summer hits. (Nine)

Despite the extreme weather warning, Professor Harrison has "genuine hope" Coral IVF could help safe sick reefs around Queensland and the world.

"Now we've proved this technique on the Great Barrier Reef, we're certain it can be applied to most other reef areas around the world," he said.

"If we get to kilometre-long scales within the next three to five years then we have genuine hope of repairing coral communities fast enough to counter-act the threats of increasing sea temperatures, Crown-of-thorns outbreaks and super-cyclones."

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