

AN ECO-FRIENDLY HOLIDAY

We all want to do our part to future-proof the planet but we don't always know where to start. **Jessica Wynne Lockhart** hops on board Coral Expeditions' annual Citizen Science Cruise to do her bit.

As the sun set over Queensland's coastline, I stood on the sun deck of the 72-passenger Coral Discoverer and waved goodbye.

In the distance, the Sunshine Coast's Glass House Mountains drifted past, their silhouettes dark against the orange-pink sky – a perfect colour match for the aperol spritz I sipped.

With the bon voyage cocktail cool in my hand, it was easy to forget that the trip I was embarking on from Brisbane to Cairns wasn't just another pleasure cruise. As a passenger on Coral Expeditions' annual Citizen Science Cruise, I'd be spending the next 10 days learning about coral science, observing reef restoration, and helping to monitor the health of the reef at snorkel and dive sites along the way.

Citizen science – which refers to when members of the general public make observations or help collect data for use by scientists, often submitted through apps – is far from a new concept.

However, it's only been in the past decade that it's been more widely embraced by tour operators, who are increasingly recognising the potential of travellers to help conduct research at scale. This is particularly true for expedition cruise companies like Coral Expeditions, which frequent waters that may be inaccessible to researchers due to funding constraints or resource limitations.

These citizen science programmes also give travellers greater insight and understanding into the natural world around them.

At our first stop outside Bundaberg, for example, we're given an insider tour of Monsoon Aquatics. The aquaculture facility is conducting research to determine how corals spawn – and what species might be the most heat-tolerant as global water temperatures rise.

"We still don't know so much about coral; we don't know how old they have to be before they spawn or even how long certain coral live for," explains our guide, Megan Combe.

She leads us between the rows of water tanks, each containing neon-coloured coral fragments. Their vivid colours are the result of the blue lights above and zooxanthellae algae within their polyps, which help them to photosynthesise.

These are the same algae that coral expel when they're stressed, resulting in bleaching. But bleached coral is not dead coral. As Combe begins to feed



coral from a dropper – their tentacles emerging and their mouths opening – she points out one fragment that's less colourful than the rest.

"It was bleached, but you can see it's already recovering," she says.

At each stop over the next week, we too are drip-fed, our minds opening and hungry for knowledge.

At Lady Elliot Island, we meet a manta ray researcher. At Daydream Island, where we get a chance to hand-feed stingrays and learn from on-staff marine biologists about how they're perfecting their coral planting programme through trial and error – research that has implications for restoration elsewhere on the reef. And at each snorkel site we visit, we're invited to submit our observations to apps, such as the Great Barrier Reef Marine Park Authority's Eye on the Reef.

However, critics are increasingly concerned that the proliferation of these programmes is nothing more than "public relations citizen science", as researchers from York University and the University of Hawaii phrased it in *Social Studies of Science* in 2021.

Part of the problem? Even though assessment tools – like the waterproof rapid monitoring surveys that we're handed on our first day – are designed for laypeople, the average person is prone to biases and deviations from standard procedures. Research shows that citizen scientists are more likely to record significant sightings (like sharks) while ignoring the seemingly mundane (yet another parrotfish). This results in gaps, redundancies, and a vast ocean of data, much of it potentially unusable.

I have my own doubts. But I'm reminded of my purpose when I

speak to one of my fellow passengers, a woman in her late 80s, about climate change.

"We look at our great grandchildren and wonder: What kind of a future is there for them?" she says.

There's no future without more research. Even if the data we're collecting as tourists isn't usable, our presence is helping to make the work of the ship's master reef guides – who are trained to collect data – possible.

The simple fact is that scientists would never be able to complete the amount of surveying necessary to properly assess the 2300km-long reef's health without help, due to its sheer scale. That's where tourism comes in.

In an April 2024 statement, the Great Barrier Reef Marine Park Authority credited tourism operators for doing the "heavy lifting" with monitoring in the latest mass bleaching event. They conducted more than 15,000 reef health surveys, including submitting 65,000 images, which helped create an accurate snapshot of the reef's health.

Citizen science may have its faults, but when we disembark in Cairns, I feel more knowledgeable and empowered. When it comes to the Great Barrier Reef, the only chance for its future is to foster this culture of hope – not one of helplessness.

How to get involved

Coral Expeditions' next 10-day Citizen Science Cruise will be setting sail from Brisbane in March 2025. It's just one of the many expedition cruise lines – including the newly B Corp-certified Aurora Expeditions – to offer a participatory science component, with passengers doing everything from counting penguins to taking water samples. However, you don't

need to be aboard a cruise to get involved in citizen science efforts on the Great Barrier Reef. Here are three ways that any traveller can give back on their next visit to tropical north Queensland:

Report your sightings to Eye on the Reef

Before you head out on your next snorkel sesh, download the Eye on the Reef app. Developed by the Great Barrier Reef Marine Park Authority, the free program allows anyone out on the water to report sightings in real time, including of coral-hungry Crown of Thorns starfish. The data is then used by the authority to inform its management decisions and actions, contributing to the long-term protection of the reef.

Become a marine biologist for a day

Apps like Eye on the Reef and iNaturalist are designed for the average person to use, without any training required. However, if you're looking for further insight into how to interpret what's happening under the water's surface, then sign up for a guided snorkel or dive. Daily tours departing from Cairns and Port Douglas for the reef typically have train trained marine biologists on board, and many tour operators are now offering citizen science excursions. In April, Passions of Paradise launched its Eco Reef Tour, with departures daily starting from A\$410. On the full-day small group tour, you'll assist master reef guides as they survey reef health and monitor the more than 9000 pieces of coral that have been planted by the tour operator at the Hastings Reef.

Learn about a living coral reef biobank

If you're not a confident swimmer or snorkeller, you can witness the majesty and diversity of the Great Barrier Reef at the Cairns Aquarium. However, down a back hallway and behind the tanks is where you'll find something truly extraordinary: the Forever Reef Project. This is where researchers are analysing and housing 179 of 400 species of coral from the Great Barrier Reef – some collected by Coral Expeditions on a previous Citizen Science Cruise – to help ensure coral biodiversity for future generations.

Backstage access is available daily at 11.30am on the 30-minute Coral Conservation Tour. ◀

Details: coralexpeditions.com/au/destinations/great-barrier-reef/citizen-science-on-the-great-barrier-reef-brisbane-to-cairns-10-nights

Tourism plays a crucial role in monitoring the Great Barrier Reef's health.

Coral Expeditions' annual Citizen Science Cruise engages travellers in coral science and reef monitoring.

Photos / Coral Expeditions