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How to Save the Great Barrier Reef

By Bill McKibben, The New Yorker, 31 May 18

From Port Douglas, in Queensland, Australia, it's about two hours by motorboat to the outer edge of the Great Barrier Reef. On a trip last month, the sea was choppy and no one talked much, just dozed in the early morning sun. We were headed to the Opal Reef, where, three years earlier, a crew had filmed some of the remarkable scenes of coral spawning for the BBC Series "[Blue Planet II](#)." Guided by the phases of the moon, and with David Attenborough providing discreet and tasteful narration, the garden of corals simultaneously released clouds of eggs and sperm, in the world's most profligate display of fecundity.

We moored, tugged on snorkels and masks, and stepped off the stern, clad in full-body "stinger suits" to protect against the jellyfish. I swam the fifty yards to the reef with James Kerry, a reef researcher at Queensland's James Cook University, and, when we got to the edge, peered down. It was like snorkeling over a parking garage. The *forms* of coral remained—there were exuberant fans and antlers and trays—but instead of vivid neon colors there were just shades of murk. The living coral were so few in number that Kerry could tell me about them individually as we treaded water at the surface. "That blue one is *Pocillopora damicornis*. It's pretty hardy," he said. "And did you see that one thing down on the bottom

that looked like a pillow? That's a large single-polyp coral, a fungid." Some fish wandered through—mostly parrotfish, which feed off the algae that covers the dead coral.

The Great Barrier Reef is the largest living structure on Earth, but it is roughly half as living as it was three years ago. Massive bleaching events in 2016 and 2017—caused by the incursions of hot water that are becoming far more common on our rapidly warming planet—devastated the northern and central sections. It's hard to explain how grim it looked beneath the surface, in the same way that it's hard to explain precisely how you know instinctively that a dead body is dead. But everyone on board was trying, working out a kind of grief.

Dean Miller, a reef scientist who is the director of media and science for the Great Barrier Reef Legacy, an organization that works to get more scientists out on the water, has filmed transects across this section of the reef over the years, mapping the same route across the coral. "This place—it looked like someone had created the reef, had planted all their favorite corals in perfect shapes and sizes. It was a bustling city, like in 'Finding Nemo.' But now it just seems quiet, like the lights have been turned off." The shapes of the dead coral will persist until the first big

storm crumbles them, but no one has seen any spawning in the area in the past two years.

Paul O'Dowd was the mate on the boat. He's not a scientist, but he has been bringing visitors to the reef since December, 1990. He told me, "There are individual coral colonies I'd had contact with for years, and then in a matter of days they fluoresce and bleach. There are very few of the old familiars left." Each day during the siege of hot water was a little worse, he said. "We kept hoping the wind would come up and blow it away, but it didn't. You'd dive and it was like visiting a friend in the hospital, knowing he was terminal. It's like touring a hospice ward."

While we were diving, about fifty miles away, in the reef city of Cairns, several Australian cabinet members were announcing a "reef-rescue plan." It did not address climate change at all—instead, in what was widely perceived as an election-year gesture, it provided hundreds of millions of dollars mostly to combat the crown-of-thorns starfish, which eat coral polyps, and agricultural runoff from the shore. Those are real problems for the reef, but no scientist thinks that they're the reason for its dramatic demise; it was akin to interrupting a mugging to give the victim a quick cholesterol check. In fact, it was worse than that, since Prime Minister Malcolm Turnbull's government was also trying to open what would be Australia's largest coal mine. The charity that the government put in charge of reef rescue was reportedly run by a former Esso Australia [executive](#), and his "chairman's panel" includes representatives from [mining giants](#) like Rio Tinto and Peabody Energy.

On the way home, I stopped in Vancouver, Canada, to help activists fighting a giant new pipeline from the Alberta tar sands. Although Prime Minister Justin Trudeau spoke eloquently at the 2015 Paris climate conference about the need to limit the planet's temperature increase to 1.5 degrees Celsius, he has pushed for more infrastructure to expand output from Alberta's oil region. Last year, he told an energy-industry audience in Texas that Canada would develop the hundred and seventy-three billion barrels of oil in the Alberta tar sands, adding, "Our job is to insure that this is done responsibly, safely, and sustainably." But burn oil and you produce carbon dioxide. That's chemistry. And if you burn a hundred and seventy-three billion barrels, the CO₂ you

produce will use up between a quarter and a third of the carbon budget between us and [that 1.5-degree rise](#). That seemed more likely than ever on Tuesday morning, when Trudeau announced that the Canadian government would buy the contested pipeline outright, so that it could finish its construction, over the objections of environmentalists and indigenous people.

The day after I left Vancouver, I was down the coast in Oakland, California, where people were preparing to protest Governor Jerry Brown's planned September climate summit. Few world leaders have done as much as Brown has to push down demand for fossil fuel; his most recent announcement was that every new house built in California will soon need to be come with solar panels. But while Brown, Turnbull, and Trudeau are all willing to talk about reducing emissions by cutting demand for energy, none of them are reducing the *supply* of fossil fuel. According to a coalition of environmental groups that includes 350.org, of which I am a co-founder, Brown's Administration has issued [twenty thousand drilling permits](#) to oil companies, just as Canada has kept pushing to expand development in the tar sands, and Australia to open the vast, untapped coal reserves of the Galilee Basin. If you want to address climate change in whatever time remains to do so, you need—as [one study](#) put it recently—to "cut with both arms of the scissors."

You'd think that urgency would be the order of the day. In the past few years, Australia has had heat waves so dramatic that government meteorologists had to add new shades of red to the official weather map. Canada has watched nearly half the sea ice in the Arctic melt, and California has suffered catastrophic out-of-season wildfires and mudslides. But, in truth, virtually no world leader has moved aggressively to cut supply. (One exception: Prime Minister Jacinda Ardern, of New Zealand, announced recently that her government will stop issuing new permits for offshore oil and gas exploration as part of its efforts to combat climate change.)

If you possibly can, you should see the Great Barrier Reef. It's glorious, the most psychedelic corner of God's brain. It's not by any means all dead. In fact, after our dive on the desolate section I've described, we motored a few minutes to another section of the Opal Reef, this one by a channel of water that apparently had flowed fast enough to cool the corals

somewhat during the worst of the bleaching. When we dived, there was beauty all around us. Chevron butterflyfish. Orange-tailed damselfish. Plate corals in three-color morphs. A giant clam with neon filaments in its mouth, which closed comically when Kerry gave it a tug. You're looking in on another world, so alien that its inhabitants barely recognize you as an intruder—schools of fish dart just a few inches to avoid you, and then carry on. But, even as you marvel, it's hard to ignore the truth that this is a lovely realm we're about to blow up—by 2050, on current trends, coral-reef researchers believe this ecosystem will be gone, not just in Australia but around the world.

“Even that section we just were on, it's not a healthy reef,” Kerry said quietly as we headed back to shore across the chop. “If you did a transect, even that section was fifty per cent dead. You want to say it's the hope for the reef going forward, but if we keep getting these bleaching events it doesn't really matter, because they'll all be killed.”