

Vanishing Act

Scientists have sounded the alarm that many of the world's coral reefs are dead or dying. While some healthy reefs still exist, the future is ominous.

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Draft Only

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It's news to no one that Earth's coral reefs are in peril. Last year, headlines ricocheted around the world when a scientific report concluded that half of Australia's Great Barrier Reef had died since 2016, following a period of warmer waters that caused the reef to suffer unprecedented, back-to-back bleaching events. And the most recent news only confirms the dire assessments.

The latest study, published in March 2019 by the scientific journal *Nature*, confirms that the consecutive bleaching events led to a massive collapse in the number of new corals. The decline—by 89 percent—puts into question the overall survivability of the coral reef ecosystem. “Dead corals don’t make babies,” says Professor Terry Hughes, lead author for the study and director of coral reef studies at James Cook University in Queensland, Australia. “We saw bleaching due to global heating in two consecutive summers, which killed half the corals.” Corals can recover from a single bleaching event, but repeated periods of warm water amount to a death sentence, says Hughes. “The gap between one event and the next is critical for coral recovery, which takes a decade to occur.”

Individually, corals are tiny polyps that live in colonies and cumulatively build up limestone skeletons. Those structures link with others in the colony to become reefs. A rise in ocean temperatures can trigger the bleaching response, in which heat-stressed corals turn white as they eject the symbiotic algae living inside their tissues that provide their host's energy supply. If conditions aren't reversed, prolonged bleaching results in coral death.

The first global bleaching event was recorded in 1998 during a strong El Niño. A second mass bleaching occurred in 2010 and a third, which lasted from 2014 to 2017, severely damaged about 70 percent of the world's reefs. By virtually all scientific accounts, human activity is the culprit. For the past 250 years, the burning of fossil fuels and deforestation of carbon-absorbing forests have artificially raised the concentration of greenhouse gases in the atmosphere. When Earth's radiated heat is trapped by the greenhouse gas carbon dioxide, land and sea temperatures rise.

A United Nations-backed study published in 2017 predicted that within the century, annual severe bleaching will affect 99 percent of the nearly 1,000 species of hard corals on Earth. The UN Intergovernmental Panel on Climate Change warned last year that tropical reefs could decline by 70 to 90 percent if the oceans experience an average global rise of 1.5 degrees Celsius from preindustrial temperatures (the upper limit of which is the goal of the Paris Climate Accord). At 2 degrees Celsius warming, more than 99 percent of the reefs could be lost.

The impending disaster for corals has become code red, and their loss has far-reaching implications. Corals support an estimated 25 percent of all marine species and are relied upon by more than 1 million species of plants and animals on land and sea. The decision to live in a world with or without coral is upon us, and scientists stress that the time to act is now. From Australia to Florida, New Caledonia to Hawaii, here's the latest on the state of our coral reefs and what can be done to help.

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Great Barrier Reef } Australia

The Great Barrier Reef (GBR) is a UNESCO World Heritage Site renowned as the crown jewel of all coral reefs. It ranks as the world's largest living structure, lacing Australia's eastern coast like a 1,400-mile shimmering necklace. Comprised of nearly 3,000 individual reefs, the system is rich in biodiversity with some 400 species of coral, 3,000 shellfish species, and 1,625 types of fish. Until recently, there was consensus that the size and diversity of the Great Barrier Reef made the sprawling reef bleach-proof.

But as ocean temperatures have spiked, the Great Barrier Reef has now become exhibit A for the global predicaments facing coral reefs. Alarms first went off after a 2014 report by the Government of Australia's Great Barrier Reef Marine Park showed the GBR experienced a 50-percent decline in coral during the prior 27 years. In ensuing years, the situation has worsened.

Hughes took part in a 2016 aerial survey, documenting

over 500 individual reefs in the GBR's northern section. “We used to think the Great Barrier Reef was too big to fail—until now,” he says. “Almost without exception, every reef we flew across showed consistently high levels of bleaching. We flew 4,000 kilometers (about 2,500 crisscrossed miles) in the most pristine parts of the reef and saw only four reefs that had no bleaching.” In the past three years, the full 900 miles of the reef system have experienced severe bleaching. Hughes' latest findings published in *Nature* paint an even bleaker assessment. “The areas of the reef that have lost the most corals had the greatest declines in replenishment,” he says.

Bleached corals can recover, but the study's scientists fear that up to 50 percent of the affected coral has been destroyed and could take decades to recover. Mark Eakin, a coral reef scientist with National Oceanic and Atmospheric

Administration's (NOAA) Coral Reef Watch program, points to climate change as the main culprit and cites a blitz of global bleaching events occurring in 1998, 2010, and a consecutive period from 2014 to 2017. “[There were] huge marine heat waves that hit the Southern Hemisphere. In 2016, the GBR lost about 29 percent of its corals, and in 2017, another 22 percent,” he says, adding that climate change has increased water temperatures around the world. “You add that to climate change events like El Niños and La Niñas, and the high temperatures are causing the corals to bleach and die.”

Australia's government has pledged nearly \$380 million to save the GBR, but scientists remain skeptical. Short of reversing the global greenhouse gases responsible for climate change, the crown jewel of the world's coral reefs will almost certainly be dethroned. ▶

Clockwise from top:
Hardy Reef, part of the Great Barrier Reef in the Whitsunday Islands; photographer Jürgen Freund taking photos of coral bleaching in the northern Great Barrier Reef, Queensland, Australia, March 2017; the Great Barrier Reef off the northeastern coast of Australia, December 2017.





Florida Reef Tract } Florida

When Hurricane Irma buzz-sawed the Florida Keys in 2017, scientists were woeful about the already-perilous condition of its coral reefs. In the aftermath of one of America’s costliest storms (\$50 billion), an assessment team from The Nature Conservancy converged at points along Florida Keys National Marine Sanctuary, a corridor containing the only living barrier reef in the continental United States.

“It was crucial to get a fast yet detailed assessment of reef condition,” explains Jennifer Stein, The Nature Conservancy’s chief scientist on the research team. “Under normal circumstances, coral reefs can recover from hurricanes, but the Florida Tract reef was already stressed from bleaching and disease,” she says. “Irma was a record-setting Category 4 hurricane, packing winds up to 130 mph when its eye crossed the Florida Keys. Given these factors, we had no idea what to expect.”

The damage was severe, especially at the southern end of the Keys where the wind and wave action were strongest. “It looked like a battlefield,” recalls Stein. Fragments of coral littered the seabed. Ten-foot-tall reef spurs were fractured and overturned. Huge areas of the reef had been reduced to rubble “as if there had been an earthquake,” she describes.

The storm’s devastation was but the latest saga for the 360-mile Florida Reef Tract, the world’s third-largest barrier



reef. A decade ago, the state’s Department of Environmental Protection issued a report revealing a 44 percent decline in coral cover from 1996 to 2005, largely due to massive coastal developments, stresses from unsustainable population growth such as wastewater outfalls, marine pollution, and the smothering of reefs by sediments. Just last year, scientists added climate change to the dire equation by reporting that less than 10 percent of the coral were alive. The further decay was traced to back-to-back bleaching events caused by increased ocean temperatures.

Beyond the ecological consequences, the loss of coral reefs poses greater coastal damage from storms that will likely increase in severity and frequency as global temperatures rise. Corals reduce the risk of flooding during storms and contribute to protecting the shoreline, affirms NOAA. Adds Michael Beck, lead marine scientist with The Nature Conservancy, “It’s incredibly important to recognize that these coral reefs are our first line of defense, and when we degrade them, we put ourselves at much greater risk.”



Clockwise from top: Coral reefs and sand flats off the north coast of Jamaica; Boulder Star Coral in Curacao, Netherlands Antilles, at the latter stage of bleaching; the same coral in the normal to beginning stages. *Opposite, counterclockwise from top:* Smooth Brain Coral in the Florida Keys; Brain Coral off Juno Beach, Florida, suffering from White Plague, a disease ravaging the Western Atlantic; a lighthouse in the Keys.

Jamaica

About 50 percent of the Caribbean’s coral has disappeared since the 1960s, and just 16 percent remains healthy, according to the United Nations Environment Programme. The UN agency that assists developing countries in implementing environmental policies and practices predicts that Caribbean coral reefs could face extinction within 20 years if population growth, pollution, invasive species, global warming, and overfishing are not curtailed.

At the center of this coral catastrophe sits Jamaica. The Caribbean’s third-largest island is surrounded by 479 square miles of coral reefs, many of which have been at the tipping point from overfishing, pollution, and natural storm disasters. By 2005, 34 percent of Jamaica’s coral reefs had become bleached from rising sea temperatures and grew precariously fragile. Later that year Hurricane Katrina ravaged the reefs further, affecting more than a third of the island’s corals already stressed and weakened by repeated blows from hurricanes Allen (1980), Gilbert (1988), and Ivan (2004).

Despite the adversities, Jamaica’s reefs have proved somewhat resilient and are showing signs of improvements. While climate change and the resulting ocean acidification caused by increased carbon dioxide continue to pose major, long-term threats, a comprehensive analysis by 90 experts point to tourism, pollution, and, in particular, overfishing as the greatest challenges. In the “Status and Trends of Caribbean Coral Reefs: 1970–2012” study, overfishing of reef “grazers” such as the colorful parrotfish are adding to the collapse of coral reefs. In areas where populations of parrotfish, along with long-spine sea urchins, have declined, coral reefs have suffered considerably.



“Sea urchins and parrotfish are coral guardians,” explains Ken Nedimyer, founder of the Coral Restoration Foundation. “These species are grazers and are fundamental in keeping algae in check. Excessive algae growth occurs without these animals feeding on algae, and corals weaken and die or become susceptible to other influences.” As algae moves in, diseases flourish while corals become smothered and succumb from lack of clear, nutrient- and oxygen-rich waters, Nedimyer says.

To date, Jamaicans’ fondness for parrotfish has brought the species to the brink of extinction. Without meaningful fishing regulations and enforcement, the loss of natural guardians will only exacerbate the demise of Jamaica’s once-unspoiled coral reefs. ▸



HELPING HANDS

A private Florida community partners with an NGO to help restore local reefs.

In the shallow waters off Key Largo, Florida, lies a startling site: a whimsical underwater faux forest resembling Christmas trees decked with dangling ornaments swaying in the Gulf Coast current. The trees, in fact, are made of PVC pipe, the ornaments are fragments of coral, and the forest itself is known as the Carysfort Coral Tree Nursery—a total coral reef restoration initiative, the first of its kind.

The Florida Keys have seen drastic die-offs in coral cover in recent years, experiencing a 90-percent decline since the 1970s. In 2015, the private Key Largo community of **Ocean Reef Club** (oceanreef.com) partnered with the **Coral Restoration Foundation**, or CRF, (coralrestoration.org) to fully restore Carysfort Reef off Key Largo. The nursery's trees currently hold more than 6,000 individual coral colonies, suspending them above the smothering sands and debris that can impede young coral growth. When the corals reach a specific size, the CFR team and volunteers harvest the coral fragments and secure them to designated reef patches with a two-part marine epoxy.

Since 2015, Ocean Reef Club has committed \$1 million to enable 30,000 corals to be propagated and outplanted to Carysfort Reef. The partnership estimates a full-scale restoration of the reef by 2020, with hopes that other similar reef projects will follow.

"North Carysfort Reef is an ideal site for a full restoration based on numerous factors," says Jessica Levy, CRF program manager. "Our goal is to demonstrate a best-in-class example for international reef restoration efforts. Our partnership with Ocean Reef Club is proof that concentrated efforts are making a positive difference for this critical habitat."

Hikkaduwa Marine National Park } Sri Lanka

Hugging the southwest coast of Sri Lanka, Hikkaduwa Marine National Park was established in 1985 as a sanctuary to protect flamboyant reefs that were among the healthiest in the Indian Ocean. The protected designation helped sprout scores of diving shops and instructors offering the opportunity to snorkel or scuba dive Hikkaduwa's thriving reefs, which drew thousands of visitors.

Yet protected National Park status couldn't offset the impacts from climate change. During the region's coral bleaching episode in 1998, Hikkaduwa's reefs began their slow death march. "The coral reefs were bleached in 1998, along with the other impacts in the Indian Ocean, due to El Niño," explains Dr. Arjan Rajasuriya, coordinator for the country's International Union for Conservation of Nature. Local waters rose by as much as 9 degrees Fahrenheit, which in turn reduced the numbers of live coral from 47 percent to 13 percent.

Corals often recover with cooler water temperatures, but 20 years since the devastating mass coral bleaching from El Niño, Rajasuriya says additional pressures are mounting. "There are other negative impacts, particularly the filling of the area with sand," he says. The coral-smothering sand is the unintentional result of the addition of a southern breakwater built to protect a nearby harbor after the 2004 Boxing Day tsunami. The breakwater has shifted inshore currents, causing the 251-acre Hikkaduwa reef area to become inundated with accumulating sand. "As a result, recovery is very slow and only certain species are able to tolerate that kind of sedimentation or sand accumulation," Rajasuriya says.

Coral scientists say that 30 to 40 percent of a reef system needs to be restored to become self-sustaining. In the case of Hikkaduwa, there have been attempts by a team from the University of Colombo to transplant live corals to accelerate the recovery. The reintroduced corals grew successfully at first, but a tube worm colony took hold and destroyed the newly hatched coral polyps. Another invasive species, the black sponge, also killed off the new corals. In the end, the research team was unable to successfully re-grow Hikkaduwa's corals.

Even with mitigation of the breakwater's sand and control of invasive species, Hikkaduwa's once-famous coral gardens face an ominous future. "It will take at least 15 to 20 years for the destroyed corals to come back, but only if bleaching occurrences do not take place repeatedly."



New Caledonia Barrier Reef

Located 1,200 miles east from Australia's Great Barrier Reef, the 930-mile New Caledonian barrier reef is the longest continuous barrier reef in the world. Historically, its centuries-old reefs teemed with upward of 8,500 marine species, placing it among Earth's top biodiversity hot spots. In 2008, the French overseas territory became listed as a UNESCO World Heritage Site largely due to its reef diversity and associated ecosystems.

The South Pacific archipelago was also lauded for its auspicious ability to rebound from what NOAA calls the "worst ever" global coral bleaching events in 2016 related to El Niño weather patterns. During the heat wave, surface sea temperatures throughout the equatorial Pacific rose 3.6 degrees Fahrenheit higher than normal. "All it takes for coral to bleach is the water being 1.8 degrees Fahrenheit above normal," says Fanny Houlbrecque of France's Institution for Development Research. "Most corals do best in water temperatures between 73- and 84-degrees Fahrenheit."

Unlike bleached corals in the Great Barrier Reef, New Caledonia reefs have recovered in the two years afterward. But scientists are becoming increasingly alarmed at additional threats to coral health that include agriculture runoff, destruction of mangrove forests, and, particularly, nickel mining.

New Caledonia has the largest-known nickel deposits in the world, which generate roughly 90 percent of the region's foreign exchange. The impacts of the nickel mining industry have been devastating as open-pit mines have led to deforestation and habitat destruction. Mining effluent has caused the siltation and destruction of streams and offshore coral reef areas. The loss of mangroves (which help retain



From top: Hard coral above and below water in New Caledonia; filming the coral bleaching in New Caledonia. Opposite from top left: The restoration of Carysfort Reef is the first of its kind; a green sea turtle on Hikkaduwa reef; aerial view of the reefs.

sediment from reaching offshore) has resulted in reefs being buried under several feet of silt.

New Caledonia's government increasingly passes new legislation to maintain the balance of environmental conservation measures and the mining industry; a team of mine inspectors was created to ensure pollution abatement measures were upheld. But in the recent James Cook University (Australia) scientific report "Coral Health on Reefs Near Mining Sites in New Caledonia," researchers conclude that mining continues to lead to coral death from sedimentation, disease, and algae overgrowth.

"You can't grow back a 500-year-old coral in 15 years," says NOAA's Eakin. "In many cases, it's like you've killed the giant redwoods." ▸

Hawaii

Until 1983 widespread coral bleaching events were unheard of—and certainly not happening in Hawaii. Pockets of bleached corals had been documented around the globe, but never on a large scale. As initial indications of climate change took hold in the early '80s, scientists began to formulate calculations looking at the cause-and-effect relationship of greenhouse gases resulting from human activity and rising ocean temperatures.

A decade later, Hawaii found itself in the climatic crosshairs. “Here in Hawaii, we only had a bleaching event in 1996, and then the corals recovered,” recalls Ku’ulei Rodgers, a researcher at the Hawaii Institute of Marine Biology, University of Hawaii. “Unlike many places in the world, we were doing very well until 2014.”

Spanning more than 1,200 miles in the Central Pacific, Hawaiian coral reefs account for about 85 percent of all coral reefs in the United States, with 410,000 acres of living reef in the main islands alone. Sometimes referred to as the “Rainforests of the Sea,” the system has more than 7,000 known species of marine plants and animals, and because of marine life that can be found only on Hawaii’s reefs.

But it turns out that Hawaii’s isolation wasn’t enough to forestall the effects of mounting climate change on a global level. In 2014, the coral reefs bleached again, followed by another widespread bleaching episode in 2015—the year NOAA declared the third-ever global bleaching event.



That year the elevated sea temperatures bleached 47 percent of corals at Oahu’s Hanauma Bay, known as a snorkeling paradise the world over. Researchers later concluded that 10 percent of the bay’s coral died after permanently expelling the symbiotic algae. NOAA has since reported that 56 percent of the Big Island’s coral, 44 percent of Maui’s western reefs, and 32 percent of Oahu’s reefs were bleached and stressed between 2014 and 2015.

In a one-two punch for Hawaii’s coral, new findings show that rising sea temperatures may be only part of the problem. Just this year, researchers from the Ocean Tipping Points project published a new study that analyzed 10 years of data examining how sedimentation, development, and fishing affect

Hawaii’s coral reefs. “When we jumped into the water in west Hawaii, over half the coral reef was dead,” says Lisa Wedding, lead author on the Stanford University report.

Understanding that local human activity is playing a role in the demise of Hawaii’s coral is the bad news no one wants to hear, but that knowledge will shape future efforts and policy, says Joey Lecky, co-author of the study and analyst for NOAA Pacific Islands Fisheries Science Center. “These findings will allow us to take a big step forward in understanding how corals are impacted by both human activities and by environmental stressors.”



From top: A reef with stony coral at Baie Ternay Marine National Park, Mahe, Seychelles; divers in the Seychelles. Opposite from top: Bleaching before and after in the Molokini midreef area; Oahu’s Hanauma Bay, a popular marine life conservation area teeming with fish and coral reefs.

Seychelles

The island nation of the Seychelles conjures dreamy images of idyllic tropical splendor. White-sand beaches, distinctive granite shores, perfectly arching palms, and tourmaline waters are ever-present backdrops for the 115-island archipelago off East Africa in the Indian Ocean. However, the picture-perfect paradise is experiencing a relentless environmental battle.

Up to 97 percent of the Seychelles coral reefs died after the catastrophic bleaching event in 1998, causing many reefs around the islands to collapse into rubble fields.

In 2016 another enormous bleaching event hammered the islands and eliminated the recoveries made during the intervening years. While some of the Seychelles’ bleached corals continue to live, they do so precariously and without the symbiotic algae that gives corals their colorful hues and critical food source. It’s anybody’s guess whether these weakened, disease-prone, fragile corals will survive future episodes of ocean temperature spikes.

The Seychelles government has sprung into action as it tries to protect its reefs, which are seen as lucrative enticements for travelers who visit the Seychelles, especially to snorkel and scuba dive. This year the government embarked on an innovative program where it exchanged a portion of its sovereign debt for investment in marine protection areas. In one high-profile case, The Nature Conservancy and environmentalist-actor Leonardo DiCaprio teamed up to purchase \$22 million in debt owed to various countries in exchange for the creation of two reserves around two critical



ecosystems. Meanwhile, conservationists have implemented a number of coral reef restoration projects spread throughout the archipelago.

Nature Seychelles, a local NGO, began the country’s first scientific coral restoration program nine years ago and has since propagated over 45,000 coral fragments for transplanting to damaged reefs. The country’s National Parks Authority, Four Seasons Resort Seychelles, and other entities have become involved with coral nurseries as well, as the collective emergency has become imminent.

In light of global warming and the likelihood of continued bleaching events, Nature Seychelles is attempting to identify and grow “super corals” that demonstrated resistance to the 2016 bleaching event. “Restoration is really only a tool to try and help the reef to recover faster,” says Chloé Pozas, a project leader with Nature Seychelles, “especially because coral bleaching is projected to happen annually to 2050.” ▶

DIVE IN

Pristine coral reefs are increasingly rare. See them now.



RED SEA, EGYPT

Where parched Egyptian sands slide into the Red Sea lies an implausible marine paradise of Technicolor corals and upward of 1,000 fish species. “Many don’t realize how large the Red Sea is and how much marine diversity exists in it,” explains Wayne Brown, CEO of **Aggressor Adventures** of global liveaboard vessels used by divers and snorkelers. Aboard the *Red Sea Aggressor I*, the Brothers/Daedalus/Elphinstone itinerary offers proof that pristine coral reefs with over 150 coral species can exist in unimaginable places. “The big standouts are the Brothers reefs—two small islands sitting in the middle of the Red Sea where pinnacle reefs are smothered with



extravagant coral surrounded by zillions of colorful reef fish,” says Brown. “Guests are astounded at the florid underwater tapestry seemingly at odds with the region’s arid desert. It’s one of the sunniest places on the planet, so the corals and their tiny guests thrive on an abundance of solar energy.”

Details: Multiple dates throughout 2019–2020; 20 guests; departs from Port Ghalib, Egypt. From \$2,400/person; aggressor.com

TUBBATAHA, PHILIPPINES

Isolated in the Sulu Sea, Tubbataha Reef National Park is a UNESCO World Heritage Site visited by divers who want to experience the best coral reefs of the 7,000-island

Philippines archipelago. “Due to the reef’s remote location and limited, three-month window of accessibility, corals there are as undisturbed and as extravagant as you’ll find anywhere,” says Yvette Lee, marketing manager for **Discovery Fleet**, which specializes in organizing regional dive trips on its two liveaboards, *Discovery Palawan* and *Discovery Adventure*. Guarded zealously 24/7 year-round by marine rangers that are the only inhabitants, Tubbataha consists of two massive atolls and a smaller reef totaling 375 square miles, with plunging 300-foot perpendicular walls, extensive lagoons, and two coral islands. Scientists have documented 360 coral species and over



Clockwise from top left: An enormous Napoleon wrasse fish in the Red Sea; a massive reef in the Red Sea; Raja Ampat, Indonesia; healthy coral; cave diving in the Solomon Islands; fluorescent coral at night; swimming with a whale shark at Tubbataha; a dive boat at Tubbataha.



600 fish species. “Every dive you’ll see walls of corals and resident fish that are so colorful it almost doesn’t seem real,” says Lee.

Details: June 12–19/14–21, 2019 (2020 schedule TBD); 26/32 guests; departs from Puerto Princesa (Palawan), Philippines. From \$2,325/person, plus \$275 transit/park fees; discoveryfleet.com

SOLOMON ISLANDS

In the middle of the fabled Coral Triangle, these islands lie in a region of the Western Pacific recognized as the undisputed center of marine biodiversity. That includes enormous coral gardens of every hue, precipitous plunging walls, and seascapes of incredible visibility where sharks, mantas, pilot whales, and tiny pygmy seahorses are as common as they are extraordinary. “The Solomons are still considered remote and don’t see many visitors,” explains Renske Lauterbach, marketing assistant with **Master Liveaboards**, which owns and operates the *Solomons PNG Master*. Says Lauterbach of the Diving Solomon Islands itinerary, “The areas we visit are filled with innumerable unspoiled hard and soft corals. Of course, fish large and small—from whale sharks to tiny ghost pipefish—come with the show.”

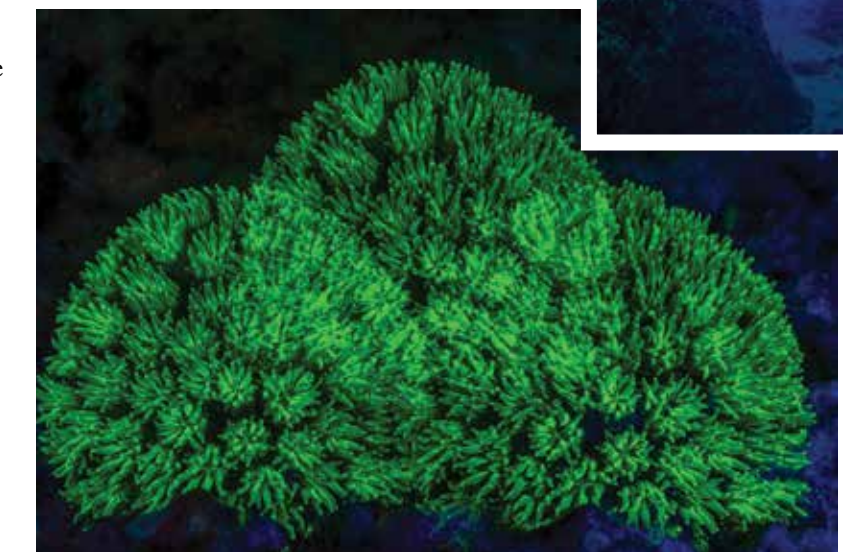
Details: Multiple dates throughout 2019–2020; 20 guests; departs from Honiara (Guadalcanal), Solomon Islands. From \$2,950/person; masterliveaboards.com

RAJA AMPAT, INDONESIA

Off the northwest tip of Indonesia’s West Papua province, the sprawling Raja Ampat archipelago boasts the world’s richest biodiversity. Scattered among 1,500 virtually

untouched islands, cays, and shoals, the waters flaunt at least 1,300 fish species, 13 marine mammals, five species of sea turtles, and a whopping 75 percent of all known coral species. “Most marine biology records are established here—the reefs swarm with so many fish that they block the sunlight,” says Luigi Russo, managing director for the boutique liveaboard *Arenui*. On the Greater Raja Ampat itinerary, passengers of the ship—a luxurious, classic Indonesian wooden sailing vessel—might see up to 465 coral species during 11- and 13-night voyages. “The only problem with Raja Ampat is that guests say they become forever spoiled by near-perfect conditions,” says Russo.

Details: The season begins November 20, 2019 (check for additional dates/availability); 16 guests; departs Sorong (West Papua), Indonesia. From \$6,930/person; thearenui.com ♦



From Top: Damien Maunic (2); KVMacWilliams (2); Opposite, From Top: Alexis Rosenfeld; Scott Johnson; Alex Mustard/NPL; Greg Lecoeur