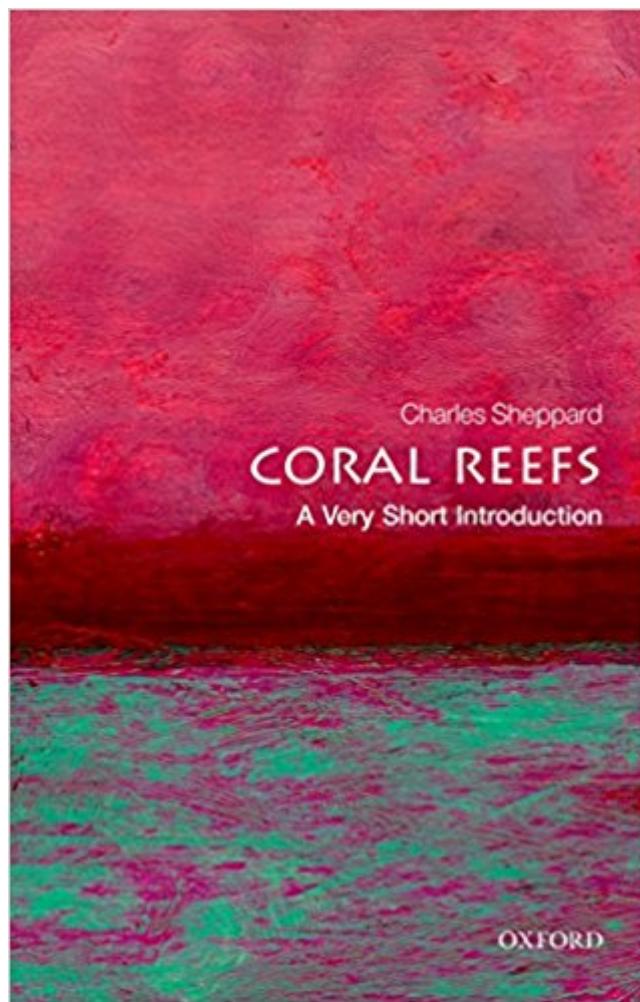


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# Coral Reefs: A Very Short Introduction (Very Short Introductions)



## Synopsis

Coral reefs have been long regarded with awe by the millions of people who have encountered them over the centuries. Early seafarers were wary of them, naturalists were confused by them, yet many coastal people benefited greatly from these mysterious rocky structures that grew up to the surface of the sea. They have been rich in their supply of food, and they provided a breakwater from storms and high waves to countless coastal communities that developed from their protection. Their scale is enormous and their value high. Found in countless locations around the world, from the Indo-Pacific coral reef province to the Caribbean and Australia, they support both marine and human life. In this Very Short Introduction, Charles Sheppard provides an account of what coral reefs are, how they are formed, how they have evolved, and the biological lessons we can learn from them. Today, the vibrancy and diversity of these fascinating ecosystems are under threat from over exploitation and could face future extinction, unless our conservation efforts are stepped up in order to save them.

**ABOUT THE SERIES:** The Very Short Introductions series from Oxford University Press contains hundreds of titles in almost every subject area. These pocket-sized books are the perfect way to get ahead in a new subject quickly. Our expert authors combine facts, analysis, perspective, new ideas, and enthusiasm to make interesting and challenging topics highly readable.

## Book Information

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## Customer Reviews

It is Jacques Cousteau who is largely credited with being the prime inventor of the "on-demand" air regulator for what is now called Scuba diving. It was only after the Second World War that diving, as a sport, became available to the general public, thanks to this regulator and tanks of compressed air that could be worn by the diver. 70% of the planet therefore could now much more readily be explored, at least to 50 meters, which is generally considered the limit for sports diving. I commenced diving in the late 70's, and the vast majority of it was done in the 80's, in the Red Sea, the Arabian Gulf and the Maldives. Virtually all of the books on the diving world that I have read date from that area, and thus I have been largely unaware of subsequent developments, save for the occasional articles in the general media about the coral reefs dying due to global warming. An update was long overdue. And I have found other works in the "very short introduction" series extremely informative. Charles Sheppard, is a professor of Life Sciences at the University of Warwick, Coventry, UK. He credits Charles Darwin, and his famous trip on the "Beagle" as being a turning point in coral reef science, positing correctly how they develop on atolls. Those vast limestone reefs are the remains of many small creatures. Reefs are mainly found in warm tropical waters, and there is a useful map showing their distribution. I found much new information, in regards to the advances in our knowledge, as well as confirmations that much is still unknown. In particular I found chapter five most informative on the microbial and planktonic engines of the reef. Microbes on grains of sand, as well as viruses, can be filtered by sponges for food. The reproductive times for some cells are prodigious, with ten doublings recorded in a single day. In terms of confirmations of the unknown, Sheppard states that we still do not know why clown fish are not stung by the tentacles of the host anemones. Likewise, we have no idea, still, what causes outbreaks of starfish epidemics that will devastate a reef. I did have several problems with this work. Mindful that this is a "short introduction," nonetheless, I did not find that Sheppard provided sufficient and concise explanations on various topics. Sometimes he would use a label without defining it. For example: "The main reef-building animals of today, the scleractinian corals, came to

dominance about 240 million years ago. These are cnidarians, but what exactly they developed from is debated. Neither are defined, nor differentiated from their Cnidarians non-fcnids. Later, he says: I found the use of the ratio between two isotopes of nitrogen to be a useful tool for determining consumption patterns, but Sheppard omits the explanation why it changes as one moves up the food chain from herbivores to carnivores. I also had no idea that butterfly fish were territorial. Sheppard mentions an experiment that proved it, but did not provide the details. And I had never heard of the Chagos Archipelago, where he has obviously dived. I had to rely on Google to find it for me. Turns out that it is 500 km south of the Maldives. I did not know that all that natives were forced to move from this island chain, in the late 60s, so that the Americans could create an airbase for their B-52s, at the largest island, Diego Garcia. As a result of this forced move, the biomass of the surrounding reefs are much higher than anywhere else in the world, since there are no natives (or others) fishing there. The elephant in the room, as Sheppard correctly terms it. Despite some of my frustrations, he deserves kudos for frankly stating what the main causative factor is in the degradation of the reefs, essentially in the span of one lifetime: Carefully avoided in many scientific discussions, conferences, government reports, and papers is the issue of human population. Indeed, in many conferences, it is deemed to be a subject that is out of bounds. Rising numbers of people, and their desire for higher standards of living, put increasing demands on natural resources. The problem, in that proverbial nutshell. And that is the underlying reason behind global warming. Overall, for noting both the problem and its avoidance at conferences, Sheppard deserves a plus after my 4-star rating.

A fairly good introduction to coral reefs from both a biological and geological perspective. The section dealing with reef biology could have probably benefited from some illustrations showing what various reef species (particularly the micro-scale species) look like, because that section tends to ramble off a list of names with little context to help the reader not already familiar with those species understand what exactly is being talked about). After dealing with basic reef science, the book transitions to a good discussion of challenges that reefs worldwide face, including anthropogenic stresses and natural stresses. This is a fairly typical entry in the "A Very Short Introduction" series in terms of quality and presentation. Very happy with both this book and others

in the series.

Easy to read with great information

Excellent - clear, concise, well-written.

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