

'Teach them to look, question, wonder and conserve AND do a better job than we have..'



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My first reef encounter was as a terrified 5 year old, clinging to my father's back, looking at the now long gone reefs off the northern Florida Keys. I was terrified, chiefly because my father was pre-Cousteau and was not a good swimmer, despite being a marine biologist. Every now and then, as he sank a bit, I caught glimpses of reef fish and corals below through my fogged mask. I remember sitting in the boat on the way home thinking that I had discovered a huge treasure beneath the water. I had, but now that treasure has been lost.



As current President of Australian Coral Reef Society and founder of CoralWatch, I am witnessing the same treasure being plundered in Australia, supposedly one of the last refuges for 'pristine' reefs worldwide. Now I have children and am teaching them to swim, snorkel and enjoy the colours and vibrant life of coral reefs. When they reach my age will they write the same sad story of mismanagement and exploitation for their children?

This book is an effort to prevent this from happening, even if it means being uncomfortably frank and a bit scary. Actually, along with many reef marine biologists who have had the same reef-loss experience that I have, I really hope I am wrong! Unfortunately, as a trained scientist with 40 years first-hand experience of reef systems and reef death, the majority of evidence I see says otherwise.

We must act now and act decisively. We must act more rapidly than our current governmental system will allow. Simple choice Australia! Do you want to see a Great Barrier Reef in 50 years or not?

This is a book that I hope will motivate children to question their parents and ask them (us, me) "Why did you let this happen? Why are you not doing more to rectify the situation, look, here is a book that shows us what to do to save the reef, can we do this Dad, Mum?" This is also a vital responsibility for the teacher, for whom this book is also written. You have the ears, minds and hearts of the future reef-guardians in your hands. Teach them to look, question, wonder, respect and conserve AND do a better job than we have.

Children going snorkeling.



Preface

This book is for anyone wishing to explore the natural wonder and beauty of coral reefs and understand the forces that create and destroy them. Reefs are already beyond 40% lost or unrecognisable and are disappearing five times faster than rainforests. Our current aim for carbon emission reduction, with 450 parts per million CO₂ in the atmosphere, is a future with no reefs. The best science published in late 2009 tells us that 350ppm CO₂ must be our upper limit.

The loss of this beautiful ecosystem, the corals, the colourful fish, invertebrates, algae and other life on the reef is a dreadful prospect for all of us. For the nations of the Coral Triangle and other regions for whom coral reefs are intrinsic for survival, the loss of reefs sows the seeds for potential humanitarian disaster. It is a problem that will affect our global community and extends beyond just this single ecosystem. We are in this together and together we must now work towards solutions. Human resolve and passion does have a history of responding well and rapidly when the moment arises. That moment is now.

The four authors of this book are from diverse backgrounds: a teacher, an environmental educator for council, a science professor and a graphic artist. All of us have lived and worked on reefs and have experienced first-hand their beauty and their destruction. We are not environmental extremists or catastrophists providing a negative and unbalanced side to a 'debate'. The debate is over and as you will see, there are no technical or economic barriers that prevent us re-balancing the world's climate. What is lacking is a committed response.

We have been both fortunate and careful to work with the world's top scientists and educators in constructing this book, many of whom have contributed personally with information, features and commentaries. We are very grateful to those who have peer-reviewed the book, including coral reef and climate experts Charlie Veron and Ove Hoegh-Guldberg, oceanographer, Scarla Weeks and high school teachers, Kelly Goodingham (Marine Teachers Association of Queensland), Kathy Steggles and Kay Channon. Dave Wachenfeld and The Great Barrier Reef Marine Park Authority have helped to validate and provide up to the minute data.

National Oceanic and Atmospheric Administration (NOAA - USA) have been particularly generous with creating maps and providing input. Thanks to Steve Parish here in Australia for his input and ideas and The University of Queensland (UQ) Vice Chancellors past and present, John Hay and Paul Greenfield, who supported the book's production and allowed us to set up an environment within UQ from which this book could grow. Thank you to everyone else who has provided images, text, reviews and support for the book and workbook, especially Chris Roelfsema for a large number of contributed images and Gabrielle Deschamps for many hours of patient proofreading and editing.

The CoralWatch program, from which this book grew, has had many advisors, students and volunteers and we are grateful to all involved, notably Uli Siebeck, Brad Cox, Tony Isaacson, Kylie Greig and Kylie McPherson for helping with the inception and use of this international monitoring and education program.

The Native American proverb saying that 'We do not inherit our environment from our ancestors but borrow it from our children' is nowhere more pertinent than on coral reefs. We hope this book will inspire you to begin to question the future we are all creating, provide you with the reasons for revolutionary change in the way we live and give you some of the tools and ideas to help you on the way.

Justin Marshall
Craig Reid
Dave Logan
Diana Kleine

*"Now that you're here,
the word of the Lorax seems perfectly clear.
UNLESS someone like you cares a whole awful lot,
nothing is going to get better. It's not."*

From 'The Lorax' by Dr Seuss, Random House 1971.
(Recommended reading for all adults)

