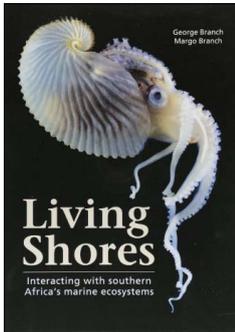




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Living shores: Interacting with southern Africa's marine ecosystems



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# Celebrating a century of marine discoveries in South Africa

When the first edition of *The Living Shores of Southern Africa* came out in 1981 it very quickly became a firm favourite of professional scientists, a favourite textbook used by lecturers and students at universities around South Africa, a favourite book for amateur marine citizen scientists around the coast and, perhaps most importantly, a favourite book for hundreds of budding marine biologists, young people fascinated by the ocean, for whom the book revealed a new world. What made this book stand out was the way that it was written – in a language accessible to all – and illustrated, in clear black and white drawings and excellent photographs. The book invited the reader to share the authors' fascination with our living shores and in so doing inspired the current generation of South African marine scientists and educators.

There was a great deal of excitement when George and Margo Branch made it known that they were working on a new edition (after nine reprints the 1981 edition had become dated). And, after many years of eager anticipation, the *Living Shores: Interacting with Southern Africa's Marine Ecosystems* was published in 2018. This book is not just an updated version of the popular 1981 *Living Shores*, but a whole new book. And when you start to read it, the reason it took so long to write becomes clear.

The selection of topics must have been incredibly difficult, but the authors have succeeded in including a broad range and have managed to cover each topic in sufficient depth to make each chapter a meaningful overview. The book is divided into two parts – 'The Ecosystems' and 'The Human Factor', each sub-divided into several chapters. Part one, 'The Ecosystems', consists of nine chapters – starting with an introduction to the world's ocean in the 'Surging seas'. From the properties of sea water to the global currents, seabed mapping, waves and tides, the chapter then focuses attention on southern Africa, its currents, coastline, biodiversity and climate, thereby providing a sound introduction to the rest of the book. The chapter on 'Restless continents' focuses on the geology underlying the coastline and gives a solid foundation upon which the other chapters are built. Naturally, given George and Margo's passion, the following chapter is the longest in the book and explores the 'Rocky shores'. It is in this chapter that the depth and breadth of science covered in the book becomes clear. In this one chapter the authors have managed to convey the results of hundreds of papers in a way that draws the reader in, eager to learn, as they explore this ecosystem through the many stories of complex interactions between animals and between animals and plants, and fascinating adaptations of species to their harsh environment. A myriad of biological mysteries is resolved on this journey through South African researchers' work on this ecosystem. The chapter on 'Sandy beaches' is notable for its ability to transform this often-overlooked ecosystem into a treasure trove of fascinating stories about beaches, their formation, and the life that they support. The vital role of estuaries to humans is clearly addressed in the 'Estuaries' chapter, which also contains recent information about the variable nature of estuaries and the importance of appropriate management of these complex ecosystems. Most people are unaware of the fact that the South African coastline is dotted with 30 rocky outcrops large enough to qualify as islands. In the chapter covering 'Islands', the fascinating life on these offshore rocky outcrops is revealed. Rather than being offshore refuges, safe from human impact, this chapter describes the plunder that has taken place over centuries. From seals to seabirds, guano to eggs, nothing has been safe from human impact. Back to the coast, 'Kelp forests' is a richly illustrated chapter filled with new insights and fascinating stories of the interactions between the various components of this ecosystem. The implications of these complex interactions for the management of some of South Africa's most valuable marine resources – abalone and rock lobster – are also addressed. The diversity and complexity of South Africa's 'Coral reefs' and the difficult to study connections between species within 'The open ocean' bring part one to a close.

While much of the science that has been undertaken in South African coastal ecosystems may be thought of as 'fundamental' science, the complex interactions between species that has been revealed has critical implications for the management of many valuable marine resources. And this leads us to the next part of the book. 'The Human Factor' starts with a look backwards. 'The Cradle of Mankind' introduces the reader to our distant past and explains the links between the evolution of humans and coastal resources. Moving rapidly into the present and with a few glimpses into the future, the following nine chapters deal with human use, and abuse, of the ocean. Given human reliance on seafood, the 'Harvest of the seas' chapter is a natural starting point. This chapter provides a succinct introduction to the different resources harvested along the South African coast. The sobering figures in the chapter clearly demonstrate how, with some notable exceptions, many of South Africa's marine resources have been overexploited. The next chapter, 'Sustaining the catch', provides an excellent overview of marine resource management in South Africa. Complicated topics such as stock assessments, Maximum Sustainable Yield, bioeconomic models, operational management plans, ecological risk assessments, the ecosystem effects of fishing' and the even more difficult issues of co-management are explained clearly, without losing detail. The next few chapters introduce issues facing our coast that are not as well known, but equally important. In 'March of the aliens' the impact of alien marine plants and animals on biodiversity is covered – including their origins and possible management solutions. While it is often difficult to understand the impact of 'Development & Pollution' on the ocean, the impact on the coast is more obvious. These impacts are clearly demonstrated through well-illustrated and relevant case studies, while the impacts of a wide variety of sources of pollution are also addressed. 'Marine mining' has recently become topical and this chapter provides a good introduction to the origins, value and impact of this industry. 'Climate change' is one of those topics that many people talk about, but few truly understand. In this chapter, climate change is explained clearly and the complex interplay between the ocean and the climate is addressed. In fact, this chapter, with its clear artwork and photos could be used by anyone as a fundamental introduction to climate change, and its impact.

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The last three chapters, 'Spreading sea wisdom', 'Marine protection' and 'Policy', ensure that the book ends with a look into the future. In 'Spreading sea wisdom', the crucial role of marine education, and of inspiring care for the ocean is discussed. Given South Africa's track record in Marine Protected Areas (MPAs), it is fitting that this tool in the conservation toolbox should be included. 'Marine protection' covers everything from the rationale for MPAs to the selection of where and how large MPAs should be, assessments of the effectiveness of MPAs and, critically, MPA management challenges and solutions. The last chapter on 'Policy' pulls together the previous chapters on human interaction with the ocean and provides an overview of South Africa's plethora of policies pertaining to the ocean. While the implementation of these policies is often found wanting, the spirit with which they were drafted remains a powerful message of hope.

*Living Shores* is so many things.

It is an excellent **reference** book. As described above, the science in the book represents the best of South Africa's marine science over the last 60 years. The sheer volume of research covered is astounding, as the book provides a synthesis of over 1250 papers, books and research reports. More remarkable is that the complexity of the research has been explained in such a way as to be not only understandable but also fascinating. It should be the recommended textbook for every undergraduate studying marine biology, every marine communicator, and anyone passionate about the ocean. There is no comparable text that I am aware of anywhere in the world.

Just as its predecessor did, this is a book that **inspires**. The book is richly illustrated to portray the diversity and magnificence of our living shores. The photographs (most from George and Margo's own collection), artwork, diagrams and maps deserve a special mention – they complement and bring the text alive and make many of the more complex research results and concepts much easier to understand.

The book is filled with interesting anecdotes and stories that reinforce a personal connection with marine life.

The book is an example of **science communication** at its best. George and Margo Branch were science communicators long before it became fashionable. George's many years of lecturing and Margo's skills as an artist and experience in marine education are evident in the style of writing, the selection of stories and the illustrations. Good science communication relies increasingly on 'telling stories' and the book is filled with such stories – stories that are easy to share and that marine educators will be able to use, again and again.

Most importantly the book is a **celebration** – of our living shores, the landscapes, the plants, the animals and, most importantly, the people who have dedicated their lives to exploring and conserving it. Unusually in a book of this nature, the authors have elected to name individuals in the text. Rather than a list of impersonal references, they have introduced individuals, almost all of whom they know personally after their lifetime of work in marine research and conservation in South Africa. From Gilchrist Medal winners to young and upcoming students, the book reflects the life work of hundreds of passionate marine scientists, educators and conservationists. This feature of the book serves several purposes. Scientific writing is generally depersonalised, meaning that most people have little connection to science. People connect with people first, then science. Using names in the book reconnects people to the research and brings that critical human element into the research. The use of names is also a wonderful way to recognise the many people who have dedicated their lives to South Africa's marine research and conservation. And lastly, the names generate a sense of pride, pride in our colleagues and friends, and pride in South Africa's marine science.

This is a book to cherish, to enjoy, to explore and to share with the next generation of young marine champions. It is a book to inspire our youth to continue the work that George and Margo Branch have celebrated so beautifully.