



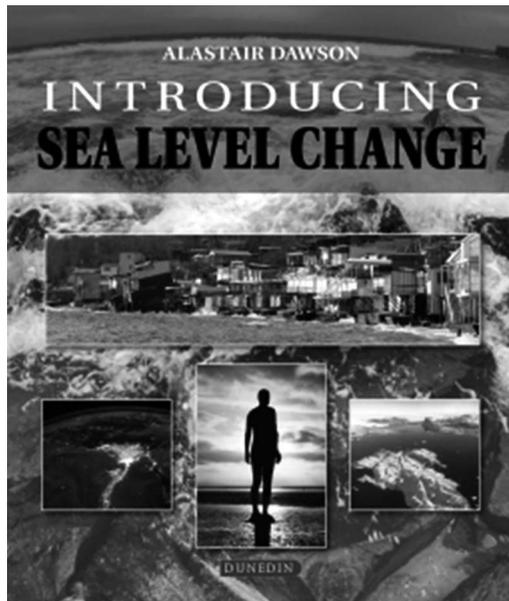
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BOOK REVIEWS



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Dawson, A., 2018. *Introducing Sea Level Change*, 1st edition. Edinburgh, UK: Dunedin Academic Press Ltd., 101p. Paperback and eBook (ISBN 9781780460871); Color Illustrations; Language: English.



Alastair Dawson's book, *Introducing Sea Level Change*, provides a comprehensive guide to how and why sea levels change on the world's coast. Comprising 12 chapters that cover topics from definitions of crustal processes to ice sheets, this book is full of colour illustrations, with clearly highlighted keywords, making it easy to read. The book starts from the past describing historic sea-level change, with the final chapters focusing on present and future sea-levels.

The initial chapters include evidence of relative sea-level change, chronologies, and methods of reconstructing changes, including sampling and evidencing. Colour illustrations include Holocene tree stumps, shoreline notches, coral reefs, and salt marshes from Fiji, Wales, and America Samoa. The coastal processes behind these are well described to the nonexpert with clearly explained terminology throughout.

The middle third of the book focuses on relative sea-level change, including the role of ice. Reconstruction of past sea levels are also described, including sea-level curves, isolation basin studies, stratigraphy, shoreline reconstruction in areas of glacio-isostatic rebound, isotopic fraction, and radiocarbon and sidereal timescales. Crustal processes are also described. One chapter is dedicated to processes of relative sea-level change, including the topics of eustasy, isostasy, and steric changes, which are well-illustrated by colour photographs evidencing

sea-level change from around the world, including Philippines, Scotland, Italy, and Greece. Ice sheets and meltwater also contribute to changes in sea level, and their sea-level change are described from millennia to the present day. This includes discussions of glacial lakes, surface mass balance, sea-level curves, and forebulge collapse. Undertaking science in extreme environments can be very challenging; this book introduces ideas and questions about the assumptions scientists need to make and provides big questions that remain to be answered, such as whether all the ice sheets during the last glacial maximum were in glacio-isostatic equilibrium.

The final third of the book considers present and future changes, describing the large uncertainties associated with melting ice sheets and the complications of measurements. Contributions to sea-level rise from the Intergovernmental Panel on Climate Change's 5th Assessment report are included, complementing the evidence of change seen today. Big questions are asked about the future of sea-level rise, including likelihood of future collapse of the West Antarctic ice sheet and Greenland's contribution to future sea-level rise. These questions are answered in the book by presenting a wide range of evidence and methods, which demonstrate the challenges of predicting future change.

I like that *Introducing Sea Level Change* has a clear past, present, and future outlook on sea-level change, presenting a range of well-illustrated evidence of changing sea levels through time. On a personal note, I would have liked more content on present changes in sea level and the effects of relative sea-level change on the physical environment particularly at the local level. For instance, pumping groundwater in deltaic cities can have a significant effect on relative sea-level rise, much more so than eustatic sea-level rise alone. For people living on the coast or for coastal ecosystems, these local processes can be very important, contributing to changes to everyday lives and livelihoods.

One of the book's strengths is the range of topics covered, particularly long-term historical change. Whilst there is some repetition of topics in chapters, this does not distract the reader, as it offers a more complete understanding where processes overlap. I also liked the clear glossary at the end of the book. Additionally, a nice aspect of the book, which is suitable for students at an undergraduate level, is that it informs the reader not just of the broad content, but it names the scientist behind the discoveries. This helps the stories of the science come out more strongly, rather than being based on pure fact. A nontechnical, beautifully presented book, Alastair Dawson's book would appeal to oceanographers, geologists, and geographers alike who have a special interest in the coast.

Dr. Sally Brown
Bournemouth University
browns@bournemouth.ac.uk