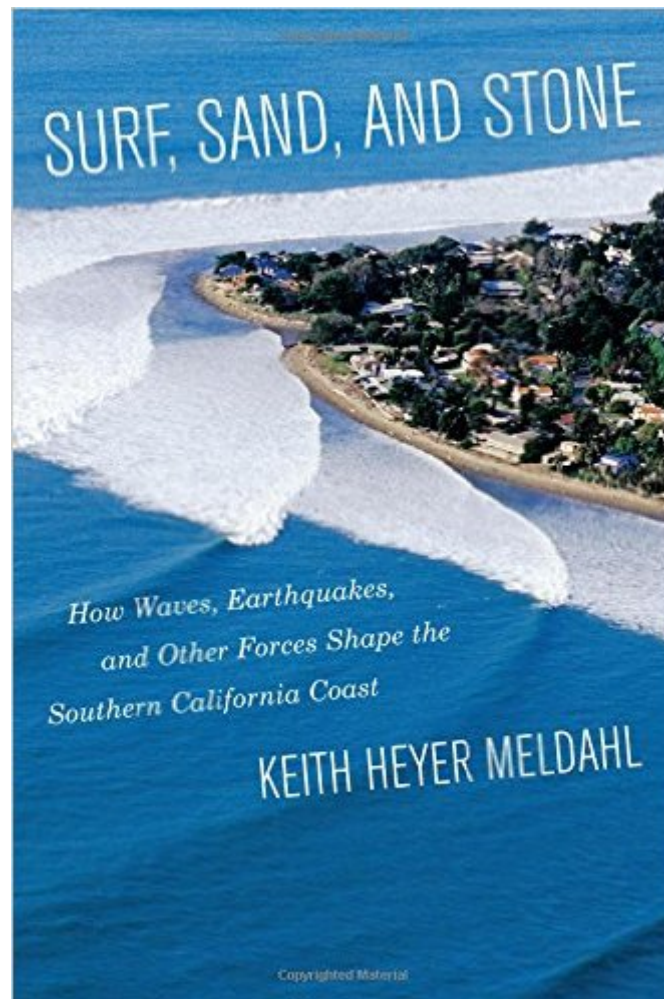


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# Surf, Sand, And Stone: How Waves, Earthquakes, And Other Forces Shape The Southern California Coast



## Synopsis

Southern California is sandwiched between two tectonic plates with an ever-shifting boundary. Over the last several million years, movements of these plates have dramatically reshuffled the Earth's crust to create rugged landscapes and seascapes riven with active faults. Movement along these faults triggers earthquakes and tsunamis, pushes up mountains, and lifts sections of coastline. Over geologic time, beaches come and go, coastal bluffs retreat, and the sea rises and falls. Nothing about Southern California's coast is stable. *Surf, Sand, and Stone* tells the scientific story of the Southern California coast: its mountains, islands, beaches, bluffs, surfing waves, earthquakes, and related phenomena. It takes readers from San Diego to Santa Barbara, revealing the evidence for how the coast's features came to be and how they are continually changing. With a compelling narrative and clear illustrations, *Surf, Sand, and Stone* outlines how the coast will be altered in the future and how we can best prepare for it.

## Book Information

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## Customer Reviews

This is an unusual book--geology made not only comprehensible but almost fun. Meldahl's writing is extremely good and sometimes funny, and he explains very clearly a sizable number of difficult concepts. There are many graphics, diagrams and photos, and they are unusually good at helping a reader understand the text. California has complex geology, as does its coast. The book does in fact explain why the coast is the way it is. He covers it all: continental drift, rising and falling sea levels, earthquakes, tsunamis, subduction zones, ocean currents. Meldahl is a college professor and if he teaches as well as he writes, his classes must always be full. The book's format is more or

less taking a class on a field trip, as he states in the preface. The graphics emphasize that. Among other detail, he explains how that in 15 million years Los Angeles will be next to San Francisco, or in another scenario, LA will be a bit west of Reno on a large island while Reno has become a coastal city. Meldahl makes that future entertaining. Another intriguing detail is the chapter on tsunamis, in which he describes one hitting Long Beach, explaining how the geologic structure interacts with waves and what would happen to the port. The book is excellent throughout, but I found two chapters especially interesting. Chapter 5, "Waves and Surfing" explains how waves work and why certain points in Southern California are excellent for surfing. Chapter 6 concerns beach erosion and coastal bluffs, which includes discussion of how expensive property on seaside bluffs can be secured through a complex process; the chapter also includes discussion of beach erosion and replenishment. He does this matter-of-factly, without the strong environmental bias some books on the subject have. He is nonetheless an environmentalist in the sense of anticipating global warming and its effects, and also in his long-term view, almost a necessity in a professional geologist.

I just read this book and had a difficult time putting it down. The author begins with a simple observation about puzzling geology in Southern California and then later describes the mystery. I have a basic knowledge of geology of the area but I understand a great deal more now. What I like most is how Meldahl puts things into perspective in geologic time and his many analogies that help the reader to understand the complexities of California geology. At the back of the book Meldahl makes suggestions on places to visit and the interesting geology for each place. I'm hoping to go visit a few.

I got the book for an earth science class in college for assigned readings. Anyways I'm not a big fan of assigned readings, but I really enjoyed this book a lot of information and really scoped towards California and the West coast. It was cool.

Dr. Meldahl has a gift for explaining complex subjects easily. Lots of diagrams so people can visualize the concepts. His writing style is very clear.

outstanding

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