Retreat from a Rising Sea: Hard Choices in an Age of Climate Change

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BOOK REVIEWS

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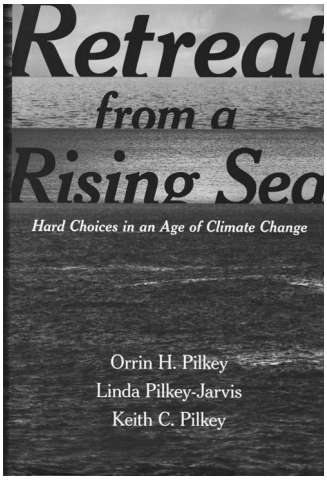
Pilkey, O.H.; Pilkey-Jarvis, L., and Pilkey, K.C., 2016. *Retreat from a Rising Sea: Hard Choices in an Age of Climate Change*. New York: Columbia University Press, 214p. $US 25.55, color illustrations.

This is an intriguing book as it deals with an obvious global problem (sea-level rise) and presents a logical solution (retreat from the shore) before major worldwide calamities occur. The stance of the book is politically correct and strongly opinionated, but that should not be regarded as detraction from the message. Positionalities of the authors are clear, and whether one agrees is not the point. Parsing 'the medium is the message' (a phrase coined by Marshall McLuhan), this book has plenty of content, the message of which intends to direct or influence human action. The message here is that too many people live too close to shores that are moving landward due to sea-level rise. Contextually, the implication is that humans build permanent structures on shores that are being transgressed by rising sea levels, and, given the perception that sea level will continue to rise, eventually a day of reckoning of Noachian proportions will occur.



The concept of cities lost at sea may not be something most coastal dwellers wish to think about, but it is something they must think about. In a very big sense, at least from the reviewer's point of view, the battle has already been lost. Nature always wins all battles because she has time on her side, whereas humanity is finite and civilizations are cyclical. Witness the remains of past civilizations (*e.g.*, Gobekli Tepe, Dwarka—sunken city of Cambay, the original Egypt, the Rama Empire; the Incas, Aztecs, Roman, Persian, Greek, Chinese, Mayan, and Mesopotamian civilizations) and one is prompted to consider what happened and why or how. Something must have gone wrong for the people to leave their cities, and there are many theories. Are coastal conurbations next on the list of failed civilizations? The authors try to warn of pending inundations that will cause great suffering, human migrations, and socioeconomic calamity. Let's see how they approach the problem.

The book is organized into 11 chapters: (1) Control + Alt + Retreat; (2) The Overflowing Ocean; (3) The Fate of Two Doomed Cities: Miami and New Orleans; (4) New and Old Amsterdam: New York City; (5) Cities on the Brink; (6) The Taxpayers and the Beach House; (7) Coastal Calamities: How Geology Affects the Fate of the Shoreline; (8) Drowning in Place: Infrastructure and Landmarks in the Age of Sea-Level Rise; (9) The Cruelest Wave: Climate Refugees; (10) Deny, Debate, and Delay; and (11) Ghosts of the Past, Promise of the Future. This is the layout or plan of attack, the purpose of which is to inculcate a sense of awareness or to inure a higher level of consciousness in the public arena. Perhaps these are impossible tasks, but the authors make a valiant effort to make known the dangers of sea-level rise to coastal conurbations. Perhaps most of the book can be summed with a poem by Bela Fleck and Abigail Washburn located on one of the book's frontice pages that asks, "What'cha gonna do. . .When the land goes under the water?" Clearly a takeoff from a popular theme song in a TV show about police and criminals ("What'cha gonna do when they come for you?"—Bob Marley, *Bad Boys*), the message and medium here are patently clear. What did some prior civilizations do when environmental changes were so great that human life could no longer be sustained or supported? They simply left, walked away, and today we see the vestiges of what were once great or powerful civilizations.

The book delves into the nature of the problem, initially looking at the causes of sea-level rise and then reviewing projections of future rise. No one knows for sure what will happen to coastal cities nor can they predict rates or extents of sea-level rise, no matter how fancy their models may be. Pilkey and Pilkey-Jarvis (2007) themselves admit that many modelers have recklessly employed fudge factors in their models to ensure a desired outcome that is politically correct. Disregarding politics, hubris, and perceptions of sea-level rise scenarios, it seems safe to admit that a problem with near-the-shore coastal construction exists, and the problem needs to be understood and comprehended forthwith. Potential solutions are few, as dikes and seawalls in most cases are not practical, as in the book's case examples of Miami and New Orleans. The slow rise in sea level lulls coastal populations into thinking they can manage shore erosion and inundation by engineering shore-protection structures. The mean or average rise in sea level is not the point, as most biologists know that life is not regulated by means but by extremes. The same is true in geology, where extreme events such as hurricanes and typhoons can produce monster storm surges that will do more

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damage in a few hours than many years of slow sea-level rise. Extreme events coupled with increasing water levels over time do not bode well for coastal dwellers.

On the penultimate page of the book, the authors offer a sliver of hope while at the same time recognizing that humanity will probably not act until forced by water up to their ankles. Although I agree in principle with the authors that by good planning, building density should not increase and that large buildings and infrastructure must be prohibited. Although optimistic, such actions are probably too little too late. So, we are left with the most obvious of solutions: retreat. Abandonment of coastal conurbations is inevitable, and it is just a matter of how societies decide to deal with the impending crises. In addition to what the authors suggest, it would seem that a proactive retreat in many critical (over populated) coastal areas would be appropriate.

This book is written in an easy to understand vernacular and avoids technical jargon as much as possible. The hard-cover version that I have is handsomely prepared and includes an informative color section. There is an extensive bibliography and index, making the book useful for researchers as well as the layperson. Although most coastal researchers are aware of the sea-level rise problem, the message of the medium (this book) needs to be more widely disseminated for broader public consumption. Whether humanity steps up to the plate to make hard choices in an age of climate change remains to be seen. For now, I recommend the book to young and old who are interested in making a better future by encouraging managed retreat from developed shores.

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Pilkey, O.H. and Pilkey-Jarvis, L., 2007. *Useless Arithmetic: Why Environmental Scientists Can't Predict the Future*. New York: Columbia University Press, 248p.

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