Storm Surge: Hurricane Sandy, Our Changing Climate, and Extreme Weather of the Past and Future

This remarkable book comes not from a science journalist, but rather from a top atmospheric scientist and professor. The distinction is evident both in the uncompromised sense and quality of the meteorological material, and in the scientist's professional care with which personal values are acknowledged yet methodically set aside in discussions of scientific matters. The book is fueled by civic passion for New York City in particular and hope for our human potential to respond rationally to risk in general.

Part one traces the story of Superstorm Sandy, from a glimmer of long-range forecast possibility to a fearsome reality in the New York and New Jersey area. That all spans about two weeks; afterward come glimpses of the months and years of aftermath. Terse forecasts, dramatic in their contained urgency of language and ALL CAPS typeface, drive the interleaved chapters explaining the meteorological and other background knowledge. Attentive readers gain a pitch-perfect education in the science, delivered in math-free—yet precise and accurate—prose. That material necessarily requires close reading; the author is fond of semicolons. But it is propelled by the drama of Sandy, so the pages seemed to turn themselves, at least for this meteorologist reviewer. Official forecast and media statements by public officials make natural springboards for background on the Madden-Julian Oscillation, the North Atlantic Oscillation, hurricanes, winter weather, their interactions, forecasting, public communication and its distortions, preparation, and finally the damage—much of it from the salt flooding process that gives the book its title and will occur on top of rising sea levels in the future. Another enjoyable thread is the author's journey to appreciate the limitations and strengths of media and other institutions, and the many irrationalities of the public mind during, after, and before such disasters—which is to say: all the time, including looking forward from now to the next one.

Part two describes implications and the prospects for rationally dealing with risks—especially flood risk—as exposed through the lens of Sandy. The author's summary of the climate science around sea level and hurricanes and flooding risks—rooted in footnotes to the scientific literature—is again pitch perfect to this reviewer. Sea level is rising and storms do happen, so there is an increasing problem even though greenhouse-driven hurricane changes are thought to be small and hugely uncertain. Material on flood engineering and risk are not the author's core expertise, but he has good contacts, and the key issues are explained well by the rational, compassionate voice a reader by now knows. Netherlands dikes were toured, of course, along with less glamorous geographies of the New York area.

The post-Sandy policy process responses of New York City come in for a lot of praise for their globally unprecedented depth and seriousness. Sensible reports may make sensible actions inescapable, one can hope. Some recommendations are no-brainers: Really, openings to below-sea-level electric subways had to be plugged with eleventh-hour plywood jerry-rigging? Costlier prescriptions (and proscriptions, like of irresponsible coastal development) run up against the human impulse to ignore small probabilities, even quite calculable ones with clear trends, especially when acute interests conflict with future and more public ones. But our public discourse deserves a higher standard, and "avoiding these questions entirely by simply denying the reality of the science is not an intellectually honest position. The United States (and the world) needs a conservative movement that will accept the reality of climate change and proceed from there to argue for the solutions that are most consistent with conservative values," argues the book.

Finally, again reflecting the soul of a true science educator (a field where buy-my-book suspense is not a virtue), a seven-page afterword summarizes the book quite neatly. Bookstore browsers are certainly encouraged to start there, but the whole book is equally well worth a read, with no more detail than the subject demands and just a few needed repetitions to make far-separated chapters cohere. Well written

and edited, this book is a much needed and truly scientific-minded contribution to an important conversation.

—Brian Mapes

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