



Delft University of Technology

Book review: Over the seawall: tsunamis, cyclones, drought, and the delusion of controlling nature

Verschuur, Jasper

DOI

[10.5194/nhess-24-2705-2024](https://doi.org/10.5194/nhess-24-2705-2024)

Publication date

2024

Document Version

Final published version

Published in

Natural Hazards and Earth System Sciences

Citation (APA)

Verschuur, J. (2024). Book review: Over the seawall: tsunamis, cyclones, drought, and the delusion of controlling nature. *Natural Hazards and Earth System Sciences*, 24(8), 2705–2706.
<https://doi.org/10.5194/nhess-24-2705-2024>

Important note

To cite this publication, please use the final published version (if applicable).

Please check the document version above.

Copyright

Other than for strictly personal use, it is not permitted to download, forward or distribute the text or part of it, without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license such as Creative Commons.

Takedown policy

Please contact us and provide details if you believe this document breaches copyrights.

We will remove access to the work immediately and investigate your claim.



Book review: *Over the seawall: tsunamis, cyclones, drought, and the delusion of controlling nature*

Jasper Verschuur

Department of Engineering Systems and Services, Faculty of Technology, Policy and Management,
Delft University of Technology, Jaffalaan 5, 2628 BX Delft, the Netherlands

Correspondence: Jasper Verschuur (j.verschuur@tudelft.nl)

Published: 12 August 2024

Miller, S. R.: Over the seawall: tsunamis, cyclones, drought, and the delusion of controlling nature, Island Press, Washington, D.C., 264 pp., ISBN 978-1-64283-256-3, USD 35.00, 2023.

Are our efforts to protect society from the adverse impacts of nature doing more harm than good? This is the main question that Stephen Robert Miller poses in his inaugural book *Over the Seawall: Tsunamis, Cyclones, Drought, and the Delusion of Controlling Nature*. Through three carefully selected case studies – in Japan, Bangladesh and Arizona – the author adds a human dimension to the often colossal infrastructure projects that were constructed to protect and serve those very same people. The main message of the author is that in the age of climate change such projects can be “maladaptive”. That is, adapting to changing environmental conditions can lock in unsustainable practices or undesirable outcomes in the long term or, as the author describes it, “solutions that backfire” (p. 3).

The book guides the reader through three case studies with an appealing writing style that combines descriptive information with detailed accounts of the author’s travels to the regions under examination. The first case study tells the story of Japanese communities whose lives were destroyed after the tsunami that hit the region in 2011. The extent of the disaster was driven in part by the false sense of safety provided by the huge concrete seawalls. The second case study tells the story of coastal communities in Bangladesh whose livelihoods are threatened by continuous mismanagement of, and underinvestment in, coastal and water infrastructure, which has locked them into unsustainable livelihood practices. The third case study provides a detailed historical account of

agricultural and urban developments in Arizona, which have been facilitated by unsustainable water provision that makes the region sensitive to extreme droughts.

The Japan case study showcases the curse of fortifying coastal areas: “Once the wall is in place, the local environment is fixed for the life of the infrastructure” (p. 49). This often leads to the so-called “levee effect”, a concept coined in Gilbert White’s seminal 1936 thesis: high levels of perceived safety can result in encroachment of people into otherwise hazard-prone areas. Moreover, high levels of protection can provide a skewed perspective on the residual risks that remain, leading to low levels of societal awareness and potential inadequate response when extreme events do occur. Miller emphasises the communities’ view that the catastrophe that occurred in 2011 was primarily a failure of government to adequately anticipate the impacts and acknowledge community perspectives. However, the case study also underlines the difficulties of having to set tolerable safety standards that are acceptable to all, as well as financially attainable. This is not unique to Japan, and the conundrum of how to balance safety, liveability and societal acceptability will only become more prevalent with climate change.

In Bangladesh, Miller describes his interactions with coastal communities – some of the most climate-vulnerable communities globally – that critically depend on coastal and water infrastructure for their livelihoods. Despite the promise of boosting human development, years of underinvestment in infrastructure maintenance and conflict between water users have trapped communities in a downward spiral of unsustainable livelihood practices. On top of that, with the enclosed land being cut off from vital sediment supplies, valuable land is sinking while water levels are rising. Miller shows how investments can have clear winners and losers, mak-

ing community involvement within adaptation planning essential. With some of the solutions proposed (e.g. tidal river management, TRM) equally marked by challenges, this case study conveys how shorter-term “fixes” should not come at the expense of longer-term (e.g. beyond the infrastructure lifetime) unsustainable outcomes: “Whose security do we want to ensure? If it is the third generation, then we should use nature-based solutions, like TRM. If only this generation, then we should build embankments” (p. 132).

The Arizona case study leaves the reader with a sense of desperation over how the needs of the economy could ever be met in the face of nature’s limits, ironically illustrated by the example of an entrepreneur starting a water park in the middle of the Arizona desert. Through his detailed historical accounts, Miller convincingly shows that water developments in the regions have not followed a gradual pathway but are driven by decisions made during episodes of water crisis and the result of strong political lobbies and self-interest. “There’s just so much money to be made on growth. All that’s left to do is to succumb to the quintessential American folly of believing that whatever it is, it won’t happen here, that some new technology will save the day, that we will somehow evade the worst-case scenario, and that despite a century of evidence to the contrary, history will not repeat itself” (p. 214). In Arizona, dependencies on the infrastructure system to provide water have become the region’s largest vulnerability. The case study reminds readers that the mutual dependencies between society and infrastructure systems are engrained in historical events and trends.

Miller’s book provides a voice to the people that did not get a seat at the table when decisions were made on the systems that were there to protect and serve them. While appreciated, it is also one of the shortcomings of the book, as the selective perspectives presented in the work provide a rather unbalanced view. Moreover, the book perpetuates the fallacy of not sufficiently appreciating the benefits that protective infrastructures have brought over the years to society. Similarly, the book fails to provide, maybe rightfully so, clear alternative solutions beyond the common narrative that embracing nature to adapt to climate change is key, leaving the reader questioning how we should move forward.

Over the Seawall is a concise yet comprehensive book that is accessible to both academics and the general public. It thoughtfully outlines the complexities of protecting society against nature, providing a glimpse of the challenges that are ahead of us in the coming decades. While it does well in conveying the main message it sets out from the onset, it does leave room for interpretation on how to move forward beyond learning from past mistakes.