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Book Review: Science Be Dammed: How Ignoring Inconvenient Science Drained the Colorado River

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BOOK REVIEW

Science Be Dammed: How Ignoring Inconvenient Science Drained the Colorado River by Eric Kuhn & John Fleck (University of Arizona Press, 2019)

John Fleck and Eric Kuhn weave together two narratives in *Science Be Dammed: How Ignoring Inconvenient Science Drained the Colorado River*. One is a narrative of place, as the hydrology of the Colorado River shifts, capitulates, and finally collapses due to westward expansion. The second is a narrative of time, as people waste precious days, months, and years haggling over their slices of water—without ever asking just how big the pie is that they are fighting over.

The cost is clear. As Kuhn and Fleck show, by 2013, Lake Mead was less than half empty (though some politicians might say it was less than half full). A “bathtub ring” already surrounded the banks as minerals dried out in the sun. The Las Vegas Bay was already an abandoned, dry plain. In a sense, the place at issue was already out of time. And the story of how this came to pass is long and complicated: a series of meetings, various commissions, and engineers and hydrologists arguing over the numbers.

The book’s key contribution comes from a difficult dance of balancing the policy and the science; keeping the reader situated in time and place. The authors build a picture of how the hydrology of the river shifts from place to place. They successfully show how that picture was fairly complete before negotiations even began. But, as those negotiations go on, the picture becomes distorted by attempting to fit the numbers into the vision, instead of fitting the vision to the numbers. Wet years were seen as the norm while dry years were ignored. Hydrology became a marketing tool. And yet, scientists were not silent. They gave plenty of warnings.

The years before negotiations began were unusually wet, and the levels of the Colorado River were higher than they would ever be again. These abnormally high readings were accepted as the norm, as what the river would always be in the future. Even though, using cross sections from local trees, and other means, scientists knew those years were wet beyond normal expectations. And so, the baseline of all negotiations was a false, elevated, and unrealistic measurement of what the river could provide.

The authors explain the frenzied fixation on appropriating as much water as possible in various ways. They use vague terms like “momentum” behind the Hoover dam project. The reader is left to infer what concepts this term encompassed. From the reportage, answers are alluded to, but never fully discussed. One was the competition between the Bureau of Reclamation and the United States Geological Survey (“USGS”). These two competing organizations backed different views of the River’s capacity. One USGS scientist, E.C. LaRue, did not reason with the appropriation commission so much as berate it for ignoring his science. The commission appeared disinterested in any factual discussion of the real hydrology. Simple disinterest might be the underlying reason. If that is the case, perhaps LaRue was justified.

But I find another answer more compelling for the commissions disinterest: loss aversion. People prefer avoiding losses to embracing gains. From the events

described, each negotiating faction was afraid of missing out on possible water, so they all fought for the largest slice of the water they could get. No matter the motivation, policy makers made promises the river could not keep.

One of the main virtues of the book is it does not spoon-feed its readers an explanation for why the events unfolded the way they did. It simply lays out the narrative and leaves readers free to make up their own mind about the psychological and sociological mechanics of willful ignorance, even when that ignorance will lead to “inescapable” failure.

At times, the policy narrative obscured the scientific picture. More visuals of the River and significant hydrological points would have helped cure this overshadowing. There was only one diagram in the whole book, forcing frequent flip-backs, which disrupted the narrative. At other times, the authors could not balance the two narratives—of time and place, policy and science—or make a clear choice over which was more important. The authors highlight key scientific oversights in the policy discussions. However, without a clearer picture of the hydrology, the interaction between these two elements is difficult to follow. The book mentions how policy makers ignored key data points, but the book focused more on the policy drama surrounding how decisions were made and followed suit by leaving out many of those same data points.

Yet, on the whole, the authors balance these two pictures fairly effectively. Rather than dump a complete picture of the hydrology at the beginning, they wisely chose to develop the audience’s understanding of the science chronologically, alongside the policy debates. General audiences will likely understand the key scientific points and how the policies ignored said points, holding curious readers as both the science and policy drama evolve. The research was thorough, never giving readers a reason to doubt the authors’ expertise. By the end, both stories were clear: the development of hydrological warnings and the development of overzealous appropriations. In short, it was a dam good book.

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