



LANCIE MODIS RAPID RESPONSE TEAM AT NASA GSFC

Sara Grossman makes the case that weather data, like this satellite view of Hurricane Sandy from October 2012, can obscure the ways that people are affected by extreme events.

The sinister side of weather data

Data are not neutral. That argument has gained currency over the last several decades as various disciplines have come to terms with the fact that knowledge is produced at unequal institutions and with unequal results. Meteorology, historically, has been no exception.

In *Immeasurable Weather: Meteorological Data and Settler Colonialism from 1820 to Hurricane Sandy*, Sarah Grossman contends that data did more than just detail precipitation or temperature during the origins of American meteorology. In a volume that covers the data-collection efforts of meteorologists—like the work of Joseph Henry organizing a nationwide system for weather measurements

and the launching of the first meteorological satellites—Grossman shows that American settler colonists used weather data to distance themselves from the world around them. Data obscured human–environment relations, making environments into something to be studied and optimized, rather than understood in a network of mutual obligations with humans. Grossman, in line with the field of settler colonial studies, defines “settlers” as “white populations who historically dispossessed, or who participate in the present-day dispossessions of, Indigenous peoples from their homelands across the United States, and who participated—or whose

Immeasurable Weather Meteorological Data and Settler Colonialism from 1820 to Hurricane Sandy

Sara J. Grossman
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ancestors participated—in systems of enslavement.”

Environmental data helped American settler scientists form their understanding of what their “nation” and its boundaries actually were—with new weather stations sometimes driving the occupation of uncolonized regions. By positioning weather observers as objective and settlers and statistics as the only relevant frames for relating to the environment, American scientists used those data to understand their land and see Indigenous history and knowledge systems as irrelevant. Meteorology was not alone in that, but its history is utterly entangled with that of settler ideology in the 19th and 20th centuries.

It might surprise some readers that Indigenous peoples barely figure into Grossman’s narrative at all. Instead, she focuses on the legacies of settler colonialism that endured long after any active conflict. The processes of violent erasure and intentional forgetting made Americans less likely to feel indebted to or responsible for the environments they seized, with catastrophic consequences. That analysis fits *Immeasurable Weather* firmly into a growing body of historical work on settler colonialism, both as one of the principal structuring forces in American history and as an ongoing phenomenon.

The book also excavates an omnipresent gender inequality built into every level of the science. As early government weather observers were sparse, the National Weather Service and its precursors in the mid 19th century relied on voluntary data collection by settlers to get more consistent observational coverage across the country. Central offices consistently and quickly gave instruments and forms to the men who volunteered as observers and ignored requests for equipment from women, even when the latter proved more reliable. Women serving as computers—cleaning and curating data in the national offices—were

seen as a liability to institutional culture. At times sequestered in the basement, women were eventually entirely removed from the offices through ostensibly “meritocratic” measures. Those problems with 19th century data collection, Grossman notes, continued into the 20th century.

Immeasurable Weather also explores the way that notable natural disasters bring such issues to the forefront. The Dust Bowl, for example, juxtaposed two puzzles. First, how should airborne dust be quantified: as cloud, precipitation, or something else? Second, the worst-stricken counties lay far from the densest lines of official observers, which were along former railroad trunk lines and military fortifications. The most-affected settlements thus had minimal capacity to grapple with the problem, forcing US authorities to again rely on volunteer observers. Largely because settlers did not recognize that their agricultural practices helped produce dust storms, the settler imagination struggled to deal with the novel catastrophe—an apt (and concerning) historical analogue for climate catastrophe.

In her final chapter, Grossman con-

nects the rising use of computer and satellite imagery to the long history of the settler colonial state. Satellites, she argues, have continued and amplified the abstraction and obscuring of human relationships with the environment as well as the partnership of meteorologists and the military. Satellite photography has aided in military planning and resource extraction, both inside the US and globally. But in Grossman’s telling, one of satellites’ most complicated effects lies in how they turn deadly storms and messy data into aesthetic creations. As images of storms spread online, they become objects of awe.

“Put another way, the messiness of environmental data (and the nation-state relation to it) seems to melt away when these images circulate as aesthetic—beautiful and terrifying—visions,” Grossman writes. The culprits behind intensifying storm systems, the use of meteorological technology to maintain the nation-state, and the unequal harms of storms’ destruction are all hidden by the repackaging of environmental data into mesmerizing GIFs. The flaws in settler knowledge production are only magni-

fied in an era of anthropogenic climate change. As Grossman puts it, “The visual response to Hurricane Sandy manifests not a failure at ‘imaging’ better relations between the US settler state and nature but a failure to imagine any affective relation at all.”

Immeasurable Weather is a timely addition to the study of meteorology’s formative decades. Its introduction of settler colonialism as an analytical frame to the history of that field is both an interesting and valuable perspective. Perhaps the only area I might have wished to see unpacked a little more is the link between early weather observation and the military—while that has been partially explored before, it surely merits some space in an analysis about settler colonialism and its ties to weather and data. Otherwise, the book surely ought to find its way onto the shelf of anyone interested in the evolution of US meteorology, the history of settler colonialism and American nation building, or data in the history of science more generally.

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