

ECOLOGY

A planet remade in our image

As Anthropocene impacts accumulate, a sometimes-unrecognizable Earth emerges

By **Mary Ellen Hannibal**

The essays in *Second Nature* can be sorted into roughly two categories: powerful investigative pieces, and stories that intersect with author Nathaniel Rich's philosophical musings and consider the boundaries between human-made and nature-made. The latter of these is a categorical quagmire, because humans are inherently inseparable from nature, but, as Rich notes, there are arenas in which we are exceeding prior limits.

Readers learn about so-called “de-extinction” efforts, which seek to bring back the woolly mammoth, among other species. Rich focuses mostly on efforts to bring back the passenger pigeon, flocks of which were once so dense that they blackened skies on the East Coast of the United States. This work is supported by a nongovernmental organization led by entrepreneur Ryan Phelan and her husband, writer Stewart Brand—Brand's conservation bona fides can be traced back to his counterculture publication, the *Whole Earth Catalog* (1968–1998). The time frame for this project is years and perhaps decades, but the organization's efforts are already yielding results in other species (1).

Rich ventures into the kitchen, where adventurous chefs are making meals out of molecules, and then on to the exclusive enclave of Aspen, Colorado, where wealthy fossil fuel guzzlers attend high-priced “ideas festivals” to discuss ambitious carbon-reducing efforts for the world. In nearby Gothic, Colorado, he meets Billy Barr, a citizen-scientist exemplar, who has painstakingly documented the disappearance of the region's snow for more than 40 years.

In an investigative piece called “Dark Waters,” a farmer in West Virginia enlists the help of a corporate attorney to uncover

what is poisoning his cows and his water. The ensuing saga stretches over decades and revolves around the production of perfluorooctanoic acid (PFOA) used to make Teflon. The Environmental Protection Agency eventually reached a \$16.5 million settlement with Teflon producer DuPont in 2017, but as Rich dryly observes, despite being the largest civil administrative penalty ever obtained by the agency, “The fine represented less than two percent of the profits earned by DuPont on PFOA that year.” Today, he notes, thousands of PFOA knockoffs pervade everyday products, from computer cables to implantable medical devices.



Billy Barr has traced the disappearance of Colorado's snow for decades.

In “Here Come the Warm Jets,” an otherwise beautiful Southern California landscape is invisibly marred by suffocating fumes emanating from a gas well in Aliso Canyon. Local Porter Ranch residents seal their windows and doors, but many continue to experience troubling symptoms, including severe headaches, problems with balance, and shortness of breath. The natural gas provider impedes efforts to investigate the potential leak, which eventually results in the release of 109,000 metric tons of methane into the atmosphere.

“Engineering is clearly the dominant idea of the industrial age,” wrote conservation

Second Nature: Scenes from a World Remade

Nathaniel Rich
Farrar, Straus and Giroux,
2021. 304 pp.



icon Aldo Leopold in 1938. He wondered whether ecology might contend with the human proclivity for building things and help characterize “a new order.” The unsteady tension between nature's mechanisms of growth and humanity's command and control of these processes is expressed in reporting on an unruly panoply of plants and animals that quickly recolonize a neighborhood razed by

Hurricane Katrina.

In the three-part centerpiece of the book, entitled “Bayou Bonjour,” Rich recounts the geomorphological relationship of the Mississippi River and the spit of land that it simultaneously creates and erases. Southern Louisiana's racial and social history are intertwined with dubious decisions about how to grapple with the oil and gas industry, which takes as much as, if not more than, it gives to the region. Rich reports on herculean engineering plans to bulwark coastal wetlands despite the scientific consensus that the Gulf of Mexico will inevitably wash over the lower third of the state.

The essays in *Second Nature* reveal important truths that gather power when they are read together. In ranging across so many fields, Rich makes implicit connections between the way

we treat nature and the way we treat each other. Although shortsighted geoengineering and corporate malfeasance ultimately affect everyone, not all of us are currently bearing the consequences equally. “Ecological degradation, by exacerbating the inequalities that poison our society, degrades democracy itself,” cautions Rich. ■

REFERENCES AND NOTES

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