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Fixing Niagara Falls: Environment, Energy, and Engineers at the World's Most Famous Waterfall by Daniel Macfarlane

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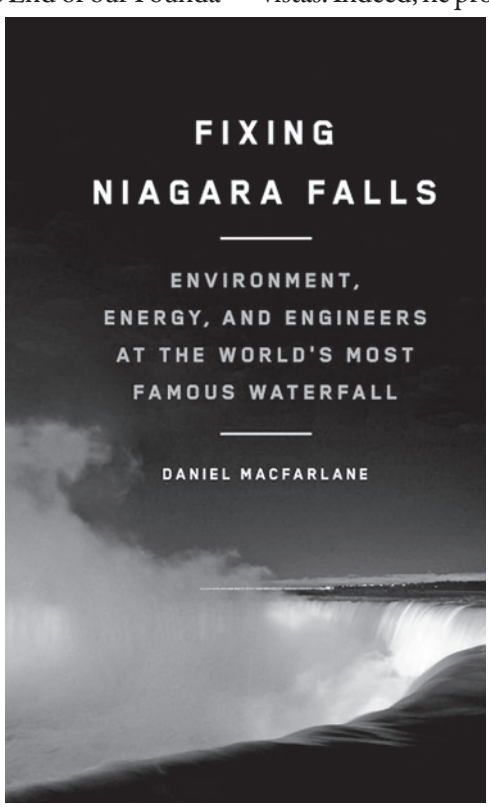
Fixing Niagara Falls

Environment, Energy, and Engineers at the World's Most Famous Waterfall

by Daniel Macfarlane

Vancouver: UBC Press, 2020. 295 pages. $89.95 hardcover. ISBN 978-0-7748-6422-0
(ubcpress.ca)

In Francis Bacon's seventeenth-century story *The New Atlantis*, shipwrecked European sailors are stranded on Bensalem, an unknown island utopia somewhere in the Pacific Ocean. Bensalem appears to be governed by an institution called Salomon's House, which seems to conduct secret scientific research. Near the end of the book, one of the sailors is given a personal interview by an officer of Salomon's House. The newcomer is told: "The End of our Foundation is the knowledge of Causes, and secret motions of things; and the enlarging of the bounds of Human Empire, to the effecting of all things possible."[1] Among with the many wonderous creations of Salomon's House, such as new species of plants and animals, buildings filled with new technologies, and miraculous cures, the sailor learns: "We have likewise violent streams and cataracts, which serve us for many motions."[2] The text does not explicate whether these features are natural, or creations of Salomon's House.



The motions of one violent stream and cataract, only anticipated by Bacon at the dawn of modern science, are the focus of Daniel Macfarlane's *Fixing Niagara Falls*. Far from a natural landscape that just happens to produce hydroelectric power, Macfarlane demonstrates that the Falls we see today have been substantially transformed to produce both energy and scenic tourist vistas. Indeed, he provocatively suggests that "one could almost say that Niagara Falls is *fake*" (3). The amount of engineering work completed at the site since the late 1880s means that the boundary between the natural and artificial elements of the site are now blurry, if not indistinct.

Following the "envirotech" approach, Macfarlane's great contribution is to provide a comprehensive account of the creation of the engineering complex at Niagara Falls, including not only the several power generating stations on either side of the inter-

national border, but also the unseen features and structures which regulate the flow of water around and over the Falls. The radical transformation of the area began with European settlement, but started to accelerate in the late nineteenth century with the twin developments of the scenic preservation movement and electrical technology. The former, organized into the "free Niagara" campaign, sought to create a "natural" landscape devoid of industrialism, while the latter enabled the creation of generating stations on both sides of the Niagara River. It could here be noted that the development of public ownership of hydroelectricity on the Canadian side, under the auspices of the Hydro-Electric Power Commission of Ontario (HEPCO), perhaps indicates that the modern project, rather than capitalism itself, may form the original impetus for the transformation of the Falls. Throughout the book, Macfarlane builds on themes in his excellent earlier work about the creation of the St. Lawrence Seaway, especially the state actors and interest groups which contribute to such international diplomacy. The conflicting goals of preserving scenery and diverting water for hydroelectric generation led to international disputes during the early twentieth century, but this came to be regulated by the Boundary Waters Treaty of 1909. The consummation of further agreements was prevented by decades of inaction in the U.S. Congress.

However, the main focus of *Fixing Niagara Falls* is on the aftermath of the Niagara Diversion Treaty of 1950, which enabled far greater amounts of water to be diverted from the Niagara River into the area's complex of generating stations. Construction work by HEPCO and the Power Authority of the State of New York (PASNY) began at a massive scale. The high modernist approach of HEPCO's and PASNY's engineers also involved the displacement of people. In New York State, the Tuscarora Nation lost a significant part of its reserve lands due to PASNY chairman Robert Moses' inflexible decision about the location of a reservoir. Engineers also created scale models and maps of the landscape, in order to better plan the re-creation of the real environment. In recent decades, a great amount of engineering work has been completed to slow the erosion of Niagara Falls and improve their appearance for tourism, including the construction of new land masses. As Macfarlane notes, this remedial work is designed to be invisible to most onlookers, thereby promoting widespread assumptions about the landscape's naturalness.

Macfarlane concludes that the re-engineering of the Falls is premised on an "ecological imperialism" (208) similar to the colonial thinking that led to the dispossession of the Tuscarora by PASNY. The Falls may have once existed with little interference from humans, but they have now been rebuilt to maximize their utility for hydroelectric power generation and tourism. Macfarlane notes: "To replace nature with technology is to lessen our ability to know and experience truth and the sacred, a connection to the transcendent" (209). The "bounds of Human Empire" may have been extended by the reconstruction of this violent stream and cataract, but at what cost?

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[1] Francis Bacon, *New Atlantis and The Great Instauration*, ed. Jerry Weinberger. 2nd ed. (Hoboken, NJ: Wiley Blackwell, 2017), 98.

[2] *Ibid*, 100.