

REVIEW ESSAY

Modernity's Confrontation with Water and Earth

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Kate Showers, *Imperial Gullies: Soil Erosion and Conservation in Lesotho* (Athens: Ohio University Press, 2005).

Sara Warner, *Down to the Waterline: Boundaries, Nature, And the Law in Florida* (Athens: University of Georgia Press, 2005).

In the fields here, it used to be very beautiful. It was a complete thing. But nowadays there are areas where one can't walk.
[Showers, p. 188]

Life is inseparable from its history, and the ecological structuring of life can only be understood by studying the histories of ecological processes and their interactions through time and space. By offering holistic descriptions of environmental events, historical studies of ecosystems provide the necessary empirical baseline for evaluating hypotheses from disciplines such as soil science, ecological economics and political ecology. In the face of impending global ecological collapse, such studies must be understood within the context of a paradigm shift: the ecological questioning of the modernist principle of economic development, or growth-based economics. Two recent studies in environmental history, Kate Showers' *Imperial Gullies: Soil Erosion and Conservation in Lesotho* and Sara Walker's *Down to the Waterline: Boundaries, Nature, and the Law in Florida*, reveal in minute detail the ecological irrationality of growth-based economic development by documenting how even the most seemingly innocuous patterns of "development" have led to the systematic destruction of biological life-support systems. What is striking about a comparison of the two studies is the geographical and political heterogeneity of the cases. The conflict between modernization and nature can be witnessed both in the European colonial domination of Africa, as well as the internal colonization of land by money interests within the American empire itself.

Kate Shower's book, *Imperial Gullies* attempts to settle a long-standing question about the soil ecology of the southern African state of Lesotho. In Africa, Lesotho is known for its *dongas*, or gullies, which began to appear at the beginning of the 20th century and has since turned what was a breadbasket nation a century ago into a barren, eroded landscape unable to support even subsistence farming. Showers is especially interested in evaluating the widely held view—originally advanced by frustrated British colonial administrators and soil scientists—that the Basotho (the name for people from Lesotho) themselves were to blame for two reasons. First, the Basotho was accused of tradition-based mismanagement of their land from overgrazing and destructive farming practices. The second reason was their folk-minded refusal to cooperate with British attempts to solve the soil erosion problems using elaborate and invasive technological solutions to stem the gully formation processes. But as Showers' history reveals, modernism is not the savior here but the culprit.

Untangling the causal factors behind something as holistically determined as soil erosion is no easy task, and historical perspective is decisive. Since soil erosion is a function of the structure and chemistry of the soil, the only way to answer the question is to offer an environmental history of the factors contributing over time to the condition of the soil.

Without a soil perspective, claims of undisturbed, symbiotically used, or degraded pre-colonial African landscapes cannot be seriously addressed, and disputes about the “sustainability” or wastefulness of indigenous technologies and practices cannot be resolved.
[Showers, p. 9]

According to Showers, what a correct soil analysis reveals is that the Western soil scientists and colonial administrators who attempted to save the Basotho from their primitivism by introducing a technological fix—the construction of hundreds of miles of contour banks to control water runoff on the grasslands—ended up exacerbating the donga problem by further destroying the soil’s ability to store and transfer water. The deterioration of the soil’s complex hydrological properties was caused by changes in the soil structure and chemistry, which were themselves the result of attempts by the Europeans to turn the Basotho culture into a growth-based economic system, a plan itself motivated by a need for food imports to feed unsustainable population growth in Europe.

The history of the ecosystem tells the story. Whereas the Basotho originally planted sorghum, beans, sweet reed and squash, they were compelled economically and politically to grow grain for export in order to get cash to buy new intriguing things introduced to them by the modernists, such as coffee, tea, sugar, Western clothing, and especially guns and horses; not to mention financing the new cost of tax paid to the British, in the style of a leveraged buyout, to manage the land the British had stolen from the Basotho. The planting of annual crops slowly reduced the organic matter and nitrogen in the soil, while the increased traffic of cattle-drawn carts, horses, and ox-drawn plows began to eat away at the fragile, increasingly exposed earth. Crop yields decreased, often dramatically as in the “Year of the Dust” (1933), which devastated the region with severe droughts followed by relentless rain. As young males began to leave Lesotho to work as migrant laborers in the gold mines of South Africa, the women, children and elderly were left to fend for themselves in the increasingly unreliable Ha Tsilo Valley ecosystem.

Towards the end of the 19th century, livestock numbers jumped with the rise in intensive farming of cash crops, and increasing yields pushed the Basotho’s “standard of living” beyond their traditional simple life. But the temporary increase in affluence—which ended abruptly in the 1880s when it suddenly became cheaper for England to import grain from North America—made the social conditions of their life more precarious and their food more vulnerable to harsh weather. As the centralized cash economy worked its magic by increasing the cost of living while keeping wages flat, the European attempt to replace subsistence with cash farming led to a sub-subsistence farming situation where the Basotho were now required to earn money—an artificially scarce commodity controlled by the Westerners—to buy imported food. A sustainable breadbasket had become an unsustainable basket case.

One of Showers’ conclusions is that the original grasslands ecosystem, which the settlers and other imperialists did not understand or value, is perfectly suited to maintaining

the kinds of moisture regimes needed to cope with periodic harsh droughts and fierce rains, and hence perfectly adapted to preserving the long-term bioproductivity of the soil.

Although different crops require different amounts of water for growth, in general, natural grasslands, with their complex and extensive root masses and greater soil organic matter content, will both store and transpire more water than will soils covered by annual crops, and thus limit internal water movement. [Showers, 19]

In short, the European modernists—in their hubris and ecologically irrational pursuit of development—violated what Wendell Berry calls the *law of the woods*, which states that: “...the ground must be protected by a cover of vegetation, and that the growth of the years must return—or be returned—to the ground to rot and build soil.”

Sara Warner’s book, *Down to the Waterline: Boundaries, Nature, and the Law in Florida*, uses an environmental historical perspective on another long-standing ecological controversy, in this case in Florida, that of the concept of the *ordinary high water line* (OHWL). The OHWL concept is an expression of the Public Trust Doctrine, which dates back to the Institutes of Justinian in the 6th century C.E., which enunciates the idea that the commons, in this case air, running water, the sea, rivers and ports, and especially the shores of water bodies, must be held in public trust to be used *in usufruct* rather than consumed by private interests. The OHWL marks the distinction between public and private lands by marking the boundary of navigable waterways in terms of the level at which the water stands vis-à-vis the shore. But ambiguities in measuring this line have set the stage for a series of legal battles between property rights advocates on the one hand, and state officials and environmentalists on the other. The complex history of the determination of this line, which is characterized as a move towards an ecologically informed understanding of the natural boundaries of marine ecosystems, is the subject of Warner’s fascinating study.

Like Showers’ book, Warner’s story also involves the attempt to ascertain the causal factors and the ideological elements underlying human interactions with a watershed that led to ecological calamity. The ecological transgression in Warner’s study is the canalization of the Kissimmee River in the 1960’s, which dredged canals, built dams and locks, and attempted to “develop” the surrounding areas of the river ecosystem by draining and filling the wetlands and marshes of the river system. As Warner documents, the plan to canalize the river goes back to the Disston Drainage Contract of 1881—at the time the largest real estate purchase by an individual in human history—in which the state of Florida sold 12 million acres of land, originally stolen from indigenous peoples during the Seminole War. The land encompassed the heart and soul of the Kissimmee river basin, the watershed which serves as the hydrological foundation of Florida’s Everglades. The aim of the project was to restructure the land in order to promote a cash economy of cattle grazing and farming on the marshlands, and to facilitate trade through the construction of a series of canals that would crisscross the state. What the state and the developer, Hamilton Disston, were oblivious to at the time was the invaluable bioproductive services provided by this mature and unique ecosystem. Without the water storage and transmission capabilities of the river-marshland ecosystem centered on the Kissimmee River, Florida’s landscape would resemble a tropical savannah ecosystem typical of areas located within same the latitudinal belt of the great deserts in the world.

It wasn't until the 1940s that people began to realize that the attempt to "add value" to the land by making the wetlands amenable to agricultural development might be backfiring by undermining the life-sustaining abilities of the river. Between 1962 and 1970, the 100-mile-long river and marsh system had been turned into "canal 38," a 50-mile, 30-foot-deep, 300-foot-wide canal involving water control structures with tieback levees and stair-step impoundment pools. [Warner, p. 63] The ecological calamity caused by the development plan was evident almost immediately. By 1965, over 90 percent of the waterfowl had disappeared as a direct result of collapsing food webs. Forty-three thousand acres of wetlands that had sustained rich habitats for fish had been destroyed and thousands more were polluted by eutrophication.

It was soon discovered that the man-made pools and canals acted as anaerobic sediment traps, accumulating and concentrating the pollutants and detritus in runoff water from upland pastures and agricultural lands. [Warner, p. 65]

On top of destroying the water filtration services of the marshlands, the canalization ultimately hurt the same agricultural interests who had supported the project in the name of economic development. As ranchers discovered to their dismay, dried out marshes—which is to say, *dead* marshes—do not make good grazing land for cattle. In short, the development project made it a lot more expensive to support the continuance and enhancement of life by severely damaging the hydrological system: "Thus, a low-cost, natural energy system was replaced with an expensive, artificial system that consumes nonrenewable fuels and wastes fresh water." [Warner, p. 65] The battle over where to draw the ordinary high water line must therefore be understood as a battle over which lands should be entrusted to the state as an ecological trustee of the larger biotic community of Florida. As the state ponders how to cope with the ecological devastation its attempts to modernize have wrought, the intrinsic value of healthy ecosystems begins to emerge along with the dubiousness of our modernist assumptions about the good life.

What environmental histories like these help us to see is that economic development as we have known it is based on false premises. To question the ethics of economic growth is to question assumptions that neither Karl Marx nor Adam Smith had the ecological awareness to question, namely, the assumptions that the human economic condition is intrinsically marked by scarcity and greed, or as Murray Bookchin puts it, the assumption that Mother Nature is "stingy." What the Lesotho undoubtedly understood that even their best-intentioned colonial administrators did not, was that nature does not need to be dominated technologically in order to provide enough material wealth for a thriving, creative and meaningful human existence. To the contrary, freedom and the material abundance that supports it are the result of a partnership between human beings and nature based on trust and a culturally embedded sense of ecological limits to human life. The concept of nature's abundance also involves love, as a metaphysical awareness of the beauty and life-sustaining energies of nature.

As both Showers and Warner help us to see, modernization assumes a condition of material scarcity, which it attempts to rectify in the name of human freedom by development, a process which then itself destroys an abundance already available, thereby generating the very scarcity it assumed. In turn, scarcity leads to hoarding, which destroys trust between human beings and creates a mistrust of nature, thereby justifying the

implementation of technological remedies and centralized autocratic political structures. Hence, aboriginal cultures thriving timelessly for millennia through careful practices of sustainable living and a deep understanding of their place in nature have been reduced in the course of decades to impoverished, fragmented parodies of Western “civilization,” hopelessly enslaved by a degraded environment and the need to service their financial debts to their Western saviors. In short, a self-fulfilling ideology of greed and scarcity in the name of democracy and capitalism has tried to wipe away abundance and destroy the ground of trust. So far, it is succeeding.