Louis Bromfield and the Pursuit of Agroecological Abundance: The Use and Limits of an Environmentalist Alternative

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Fairfield Osborn and William Vogt wrote the best-selling 1948 books *Our Plundered Planet* and *The Road to Survival*, respectively. The pair are credited with catalyzing emerging environmentalist alarm about looming worldwide scarcity, a declining quality of life, and ecological devastation. 'The tide of the earth's population is rising, the reservoir of the earth's living resources is falling', Osborn proclaimed. He argued that ecological disruptions were at the root of 'the present world-wide disturbances in human civilization'. Vogt blamed 'free enterprise', which 'must bear a large share of the responsibility for devastated forests, vanishing wildlife, crippled ranges, a gullied continent, and roaring flood crests'. To tackle the problems, Americans would have to 'abandon all thoughts of living unto ourselves' and become instead part of 'an earth-company'. Advertisers, rather than 'promoting an American standard of living', should instead 'promote a rational, national standard'. He summed up that 'unless, in short, man readjusts his way of living, in its fullest sense, to the imperatives imposed by the *limited* resources of his environment—we may as well give up all hope of continuing civilized life'. Humans would be left with 'a barbarian existence in the blackened rubble'.[1]

This article argues that, in the late 1940s and early 1950s, successful, well-publicized agricultural conservation work by the writer and activist Louis Bromfield and others was an important counterpoint to these neo-Malthusians' dire environmental predictions. Bromfield believed that solutions to environmental problems could not be found by limiting the economy, expanding heavyhanded New Deal interventions, and undermining the United States' international leadership. Rather, it was possible to reconcile care of the natural world with economic abundance and free enterprise. Successful soil conservation efforts meant Americans could confidently justify the pursuit of economic development at home and abroad while discounting pessimistic environmentalist concerns. Better use of science and technology, the free market, and leadership by natural elites could lead to abundant, ecologically sensitive production. Market-oriented conservation was also a tool against coercive government intervention; it contributed to elite justification of the exploitative and racist treatment of poor farmers and African Americans in the US South; and it had international implications for fostering Cold War alliances across the Western Hemisphere.[2] Only later did continuing ecological crises

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[1] Fairfield Osborn, *Our Plundered Planet* (Boston: Little, Brown, 1948) 201, 30; William Vogt, *Road to Survival* (New York: William Sloane, 1948), 133, 285, 275, 288. On Vogt and Osborn's importance, see, for example, Björn-Ola Linnér, *The Return of Malthus: Environmentalism and Post-war Population–Resource Crises* (Isle of Harris: The White Horse Press, 2003); and Thomas Robertson, *The Malthusian Moment: Global Population Growth and the Birth of American Environmentalism* (New Brunswick, NJ: Rutgers University Press, 2012), chap. 2.

[2] For context on a growing post–World War Two emphasis on economic growth, see Robert M. Collins, *More: The Politics of Economic Growth in Postwar America*

make apparent the limitations and unintended consequences of this enduring conservationist attempt to use technological expertise and elite leadership to reconcile economic growth and ecological stewardship.

Bromfield was an important transitional figure. He participated in the soil conservation work that was sparked by the 1930s Dust Bowl, but he recoiled at the postwar proposals for more radical change to US institutions. He defended the capacity of free enterprise to address the early Cold War overpopulation and quality-of-life issues that were hallmarks of the emerging environmentalist movement. He read voraciously in agronomy and ecology after entering full-time farming in 1939, and he traded on his pre-existing celebrity as a novelist to push for change. As part of demonstrating that abundance was compatible with care for the natural world, Bromfield conducted soil-improvement projects in three distinct regions. Bromfield's work on the deep glacial soils of Ohio brought his Malabar Farm into the context of mainstream US agricultural reform and outlined the links he saw between soils and potential economic abundance and environmental health. His subsequent work on acidic, leached soils and society in the US South, the subject of the second section, sought to show that if agroecological reform could lead to abundance even there, then surely dire Malthusian concerns were overblown.[3] The essay closes by using Bromfield's relationship with an experimental farm at a steep, eroded former coffee plantation in Brazil to show how the US pursuit of agroecological abundance, as

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(New York: Oxford University Press, 2000). Scholars have defined conservation as a pragmatic policy begun in the late nineteenth century to manage so-called natural resources in a rational way for efficient long-term use. Environmentalism is often depicted as a movement to address quality-of-life concerns that reflected consumer prosperity and that included a search for outdoor recreation, healthier surroundings, and the control of toxic substances. The years after World War Two are shown as a pivot point in the turn from the dominance of conservation to the rise of environmentalism. Scholars have begun to question this analytical scheme (growing consumption, after all, demands even higher levels of production from natural resources), but the dichotomy and chronology still wield considerable power. Samuel Hays, *Beauty, Health, and Permanence: Environmental Politics in the United States, 1955–1985* (New York: Cambridge University Press, 1987); Samuel P. Hays, 'From Conservation to Environment: Environmental Politics in the United States Since World War II', in Char Miller and Hal Rothman (eds), *Out of the Woods: Essays in Environmental History*, pp. 101–26, 320–6 (Pittsburgh, Pa.: University of Pittsburgh Press, 1997); Adam Rome, *The Bulldozer in the Countryside: Suburban Sprawl and the Rise of American Environmentalism* (New York: Cambridge University Press, 2001); Paul S. Sutter, *Driven Wild: How the Fight against Automobiles Launched the Modern Wilderness Movement* (Seattle: University of Washington Press, 2002); Sarah Phillips, *This Land, This Nation: Conservation, Rural America, and the New Deal* (New York: Cambridge University Press, 2007).

[3] See Paul S. Sutter, *Let Us Now Praise Famous Gullies: Providence Canyon and the Soils of the South* (Athens: University of Georgia Press, 2015). Catalyzing historians' use of the term *agroecology* was Donald Worster, 'Transformations of the Earth: Toward an Agroecological Perspective in History', *Journal of American History* 76 (Mar. 1990): 1087–1106.

applied in the humid southern states, could shape important transnational encounters with areas seen as similarly subtropical but in need of development in the context of international Cold War alliances. Conservation possibilities abroad reinforced confidence that international free-market economic growth could be compatible with responsible environmental stewardship in large parts of the world struggling with scarcity. The result was a hopeful but temporary transnational ideology of ecologically friendly and scientifically driven agricultural abundance under US guidance.

US Soil Reform and the Environment in the 1930s and 1940s

Louis Bromfield was born in 1896 in Mansfield, Ohio. His father, a farmboy who continued to dabble in agriculture, was a businessman and local official. A grandfather, Robert Coulter, also farmed, and during Bromfield's senior year of high school the family moved out of Mansfield to take over the Coulter farm, with poor results. Bromfield headed off to Cornell University to study agriculture in the fall of 1914, but after one semester he returned to help with the farm. In the fall of 1916, though, full of 'restlessness', he enrolled at Columbia University to study journalism. After serving in the United States Army Ambulance Service during World War I and trying journalism in New York, he broke through as a successful novelist in 1924. The next year he and his wife moved to France. Bromfield won the Pulitzer Prize in 1926 and continued to publish regularly and profitably. The family's sojourn to France lasted until 1938, when war loomed.[4]

Bromfield had long nourished a romantic view of rural life based on his early memories. In early 1939, he purchased three old farms totaling 640 acres in Lucas, Ohio, near Mansfield, and he began to fulfill his longtime dream of becoming a farmer. Bromfield soon expanded his holdings to more than a thousand acres and chose the name Malabar Farm. He sought 'permanence,

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[4] The quotation is from Louis Bromfield, *Pleasant Valley* (New York: Harper and Brothers, 1945), 50. The most analytical discussion of Bromfield is Randal Beeman, 'Louis Bromfield versus the "Age of Irritation"', *Environmental History Review* 17 (Spring 1993): 77–92; and Randal S. Beeman and James A. Pritchard, *A Green and Permanent Land: Ecology and Agriculture in the Twentieth Century* (Lawrence: University Press of Kansas, 2001), chap. 2. Bromfield's life has been chronicled in Morrison Brown, *Louis Bromfield and His Books: An Evaluation* (Fair Lawn, NJ: Essential Books, 1957); David D. Anderson, *Louis Bromfield* (New York: Twayne, 1964); John T. Carter, *Louis Bromfield and the Malabar Farm Experience* (Mattituck, NY: Amereon, 1995), and Ivan Scott, *Louis Bromfield, Novelist and Agrarian Reformer: The Forgotten Author* (Lewiston, NY: Edwin Mellen, 1998). Biographical material is also available in the writings of Bromfield's daughter Ellen. See Ellen Bromfield Geld, *Strangers in the Valley* (New York: Dodd, Mead, 1957); and Ellen Bromfield Geld, *The Heritage: A Daughter's Memories of Louis Bromfield* (New York: Harper, 1962). One would assume that even in a brief time at Cornell, Bromfield would have been influenced by horticulturalist Liberty Hyde Bailey, founder and longtime dean of the agricultural school there, but one finds in Bromfield's writings only the briefest mentions of Bailey. For one example, see Louis Bromfield, *Out of the Earth* (New York: Harper, 1950), 9.

continuity' and 'not the glittering life of New York and Washington'.[5] He soon learned that his new farm was worn down from poor cultivation practices, and until his early death in 1956 he worked to make Malabar Farm a model of how to restore ecological health to damaged land. Because he was a famous author, his opinions on soil and ecology reached large, receptive audiences.

Lying behind Bromfield's crusade for soil were the Dust Bowl and the awareness of soil erosion fostered by Hugh Hammond Bennett and the Soil Conservation Service (SCS). Bennett, a native of the southern state of North Carolina, had carried on a fight against soil erosion since soon after he became a soil chemist with the Bureau of Soils in the US Department of Agriculture (USDA) in 1903. In September 1933 he was chosen to head the Soil Erosion Service in the Department of the Interior. Rechristened the Soil Conservation Service and placed in the USDA in 1935, this department had the duty of preventing another Dust Bowl and bolstering eroded areas nationwide; Bennett was its chief until November 1951. He wrote in 1933, 'We can not go along indefinitely in the old way of heaping error upon error, of misusing land, wasting and destroying it—not if this is to be a paramount Nation'.[6]

In the early 1950s, Bennett reported that soil abuse was on the decline and US agriculture would thrive. He wrote in November 1951, 'Many remarkable advancements in agricultural science have contributed to increasing abundance here in America in production of food, fiber, vegetable oils, and the products of farm woodlands. Soil conservation, improved varieties, better land use, livestock breeding, disease and pest control, increased use of fertilizers, improved machinery, and sensible cooperation . . . have led the way toward this improvement'.[7] Science and technology, Bennett implied, could continue to overcome the ecological problems that Vogt and Osborn had seen as dire limitations to growth. Bromfield and his audience likewise embraced this view that abundance could be reconciled with environmental care. Bromfield rejected 'the prospect of half the world starving to death'. He believed that competent farmers wielding 'agricultural and scientific knowledge' and 'working with Nature rather than against her' would allow the world to 'feed itself'. His confidence even caught the positive attention of modernization-minded workers with the United Nations Educational, Social, and Cultural Organization, which translated and distributed worldwide his essay on the topic, titled 'The World Can Feed Itself If It Wants To'. 'I am by no means so pessimistic as the Neo-

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[5] Bromfield, *Pleasant Valley*, 8 (quotations), 10, 17–8, 65; Louis Bromfield, *The Farm* (New York: Harper, 1933).

[6] 'Soil Erosion Program Gets Under Way', Department of the Interior Press Release, 19 Nov. 1933, 6 (quotation), in Folder 3, Hugh H. Bennett Papers, 1923–56, #3527, Southern Historical Collection, Wilson Library, University of North Carolina at Chapel Hill (hereinafter Bennett Papers, SHC); 'Biographical Sketch of Dr. H. H. Bennett', Mar. 1944, Folder 23, Bennett Papers, SHC. Also see Wellington Brink, *Big Hugh: The Father of Soil Conservation* (New York: Macmillan, 1951); and Neil M. Maher, *Nature's New Deal: The Civilian Conservation Corps and the Roots of the American Environmental Movement* (New York: Oxford University Press, 2008).

[7] Hugh Hammond Bennett, 'That the Land May Be Fruitful', 3–4, address delivered in Kansas City, Mo., 18 Nov. 1951, Folder 36, Bennett Papers, SHC.

Malthusians', he explained to them. 'In the hands of a truly modern, intelligent farmer . . . "worn-out" farms can be restored rapidly and at an economically possible cost'.[8]

One of the earliest actions taken by Bromfield and his first farm manager was to seek the assistance of the local Soil Conservation Service in planning a conservation regime for the farm. As Bromfield became widely known as an advocate of conservation, he grew well acquainted with Bennett, and Bromfield always acknowledged that his experiments on Malabar Farm were a part of the larger national effort headlined by Bennett and other experts. The actions of Bromfield and his many employees at Malabar reflected the advice that the SCS and its predecessor agency had given untold numbers of farmers since 1933. Bromfield and his crew filled in gullies, plowed on the contour of the hills to control water flow, disked in weeds, rye, and other plants to add organic material to the soil and make it more absorbent, planted legumes such as clover and alfalfa to add nitrogen and root mass, fenced off forested areas to help keep them flourishing and able to hold water, and spread tons of manure from their livestock. They seeded pasture in high-protein grasses and added great amounts of lime and some chemical fertilizers to help restore balance and fertility. Bromfield put the methods in global perspective as an agricultural breakthrough: 'The revolution is still in progress, growing and expanding. It is not only important to the people of this nation, but to the people of other nations with similar problems of soil and climate'.[9]

Adding more organic content was the key material change to Malabar's soil. One of Bromfield's most significant changes was to largely stop using the traditional moldboard plow in favor of a chisel plow that 'worked in' cropland topsoil, roots, and leftover stubble 'to a considerable depth'. He reported good results when comparing a plot cultivated in the traditional way with one shaped by the new approach: 'During a period of three years we averaged from 10 to 12 bushels per acre more wheat off the rough-fitted than off the "clean"-fitted strips'. Organic material in the soil helped control erosive water flows by increasing absorption, and the change also contributed to robust microbial diversity within the soil, leading to healthier food and less use of chemical additives.[10] Comparing soil to 'a well-operating septic tank', Bromfield saw

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[8] Louis Bromfield, *Malabar Farm* (New York: Harper and Brothers, 1948), 273, 275 (fourth quotation), 281 (third and sixth quotations), 284 (first and fifth quotations), 292 (second quotation); Katherine Woods to Louis Bromfield, 5 Nov. 1949, Folder 1585, Louis Bromfield Collection, SPEC.RARE.CMS.95, Ohio State University Rare Books and Manuscripts Library, Columbus, Ohio, (hereinafter BC-OSU); Lars Lind, 'UNESCO's Work in Mass Communications', *Library Quarterly* 20 (Oct. 1950), 259–71, esp. 265. Under Julian Huxley's early leadership, UNESCO tried to inject conservationist concerns into international development discussion. Stephen J. Macekura, *Of Limits and Growth: The Rise of Global Sustainable Development in the Twentieth Century* (New York: Cambridge University Press, 2015), chap. 1.

[9] Bromfield, *Pleasant Valley*, 54–5, 96, 105 (quotation). In 1951 Bromfield called Bennett 'one of my best friends'. Brink, *Big Hugh*, viii.

[10] Bromfield, *Out of the Earth*, 177 (first quotation), 140 (second quotation). Since at least the early 1940s SCS experts had been evaluating 'stubble mulch

livestock manure as 'actually *inoculating* those fields with all sorts of fungi, moulds and benevolent bacteria which will thrive there *provided* the earth contains a high amount of organic material'.[11] Ed Babcock, an influential agriculturalist at Cornell, described hearing Bromfield talk of soil: 'I still remember how you used your hands to shape up the image of a cubic foot of soil, and how earnestly and intently you peered at it while you told your audience your idea of the life which should be in it'.[12] Particularly important to Bromfield was the generative potential of alfalfa, with its deep and extensive root system, to improve the soil's aeration and draw on minerals from within the subsoil. To assess his results, he dug a pit and found that 'The alfalfa roots (on the three-year-old plants) penetrated to an average depth of fifteen feet and the longest measured root had gone down to a depth nearly twenty feet'.[13] Beyond soil health, deep roots could tap deep pools of profit.

Bromfield emphasized that these methods were feasible for a wide range of property-owning agriculturalists; however, he believed some farmers were hopelessly unresponsive to modern approaches. When he first acquired Malabar Farm, Bromfield had romantic ideas of pursuing self-sufficiency, but over the course of the 1940s he reconciled a Jeffersonian emphasis on local independence and rural virtue with the powerful market forces of commercial agriculture and industrialization. Thomas Jefferson, Bromfield explained, wanted 'a great, free country, with abundance for all, in which each man could establish himself on a piece of land or in a business or profession and find on it or in it the dignity and security which came of his own work'. Some farmers abused that opportunity, however, and Bromfield came to a belief that not everyone should remain on the farm. Farming was not virtuous unless done correctly. He claimed that 'there are many men on farms in America who have neither that love of soils nor of animals. They are the bad farmers who have done us such great damage as a nation. . . . There are too many of them in America, and they have cost us dear'. They damaged economic abundance as well as the land. He saw in industrial decentralization an opportunity to send inefficient and environmentally destructive farmers into the workforce of cities and towns, while modern roads and development of parks would allow them to continue to benefit from rural contact. It was in 'factories where they properly belong', but if they retained at least some rural contact, they could find their own new form of Jeffersonian

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farming', which left decaying vegetation on or near the surface to protect against erosion and aid water infiltration. Bromfield closely followed the discussion as he shaped his practices. See 'Dangerous Loss in Natural Resources Reported at Meet', clipping labeled *Columbus Evening Dispatch*, 18 July 1941, Folder 43, Bennett Papers, SHC; Bromfield, *Pleasant Valley*, 162–7; Louis Bromfield, 'The Evangelist of *Plowman's Folly*', *Reader's Digest*, Dec. 1943, 35–9; Louis Bromfield, '"Plowman's Folly" Modified', *Saturday Review of Literature*, 5 July 1947, 19.

[11] Bromfield, *Out of the Earth*, 95.

[12] H. E. 'Ed' Babcock to Louis Bromfield, August 22, 1949, Folder 1561, Bromfield Collection, OSU.

[13] Bromfield, *Out of the Earth*, 102.

dignity. In that way, the abundance of rural life could even temper urban troubles.[14]

By 1948, when Bromfield published the well-received book *Malabar Farm*, he had refined his ideas about the proper techniques and technologies for environmentally sensitive farming.[15] It was a vision for modernization. Rather than seeking self-sufficiency, Malabar Farm began to specialize in dairy and beef production. As he wrote, 'The obsolescence of the pattern [of self-sufficiency] is one part of the enormous revolution in agriculture which has taken place almost unnoticed and which is still taking place'. Soil erosion had largely disappeared in the farm's hillside pastures, with their precise mix of grasses; and the growing of vegetables could be done intensively on selected smaller areas not threatened by runoff. The farm was 'a factory for grass', with the livestock processing it into beef and dairy products. Grain production could be left to farmers in regions with flatter topography and appropriate soils.[16]

Underneath Bromfield's detailed description of soil, vegetation, and cattle was an image of successful, market-driven production that incorporated environmental and economic concerns. In Bromfield's view, modernization, properly directed, could be environmentally friendly even as it brought abundance to consumers. Bromfield was well known for his postwar newspaper columns and political commentary that was not only ardently anticommunist but also opposed to early Cold War militarization. He detested many governmental intrusions into agriculture, arguing, for example, that the commodity support programs subsidized the very farmers who practiced the most damaging agriculture. Market forces, aided by good but noncoercive scientific advice from the SCS, were Bromfield's preferred path to agroecological abundance.[17]

Even more than his conservation peers, Bromfield always included human health in his consideration of abundance through agroecological reform. Improving the material endowment of his farm meant paying attention to the trace elements that contributed to human nutrition in ways that were only beginning to be understood. Bromfield was fond of quoting the old adage that poor soil makes poor people, but he extended *poor* beyond its economic sense to

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[14] Louis Bromfield, *A Few Brass Tacks* (New York: Harper and Brothers, 1946), 171; Bromfield, *Pleasant Valley*, 52.

[15] *Malabar Farm* came out the same year as Vogt's and Osborn's books, and the trio sometimes shared public attention despite being intellectually and politically at odds in some ways. All three spoke in October 1948 at the opening session of a widely broadcast New York Herald Tribune Forum. In 1949 Bromfield joined Vogt and Osborn in supplying dust-jacket endorsements for the first edition of Aldo Leopold's *The Sand County Almanac*, a seminal volume for environmentalists. *Our Imperiled Resources: Report of the 17th Annual New York Herald Tribune Forum, the Waldorf-Astoria, New York City, October 18, 19 and 20, 1948* (New York: New York Herald Tribune, 1948), 1–29; Aldo Leopold, *A Sand County Alamanac and Sketches Here and There* (New York: Oxford University Press, 1949).

[16] Bromfield, *Malabar Farm*, 46 (first quotation), 49 (second quotation), 276, 293.

[17] On politics, see, for example, Louis Bromfield, *A New Pattern for a Tired World* (London: Cassell, 1954); and Bromfield, *A Few Brass Tacks*.

also mean *poor-quality*, or unhealthy, people. Among the influences on Bromfield were the works of Albert Howard, the English soils expert who has long inspired advocates of organic cultivation.[18] Closer to home was Bromfield's relationship with Ollie Fink, an Ohio conservation educator, and Jonathan Forman, a physician who specialized in allergies and nutrition. Drawing on the work of, among others, William A. Albrecht at the University of Missouri, Forman and Fink cooperated throughout the 1940s to spread the word that if soils lacked minute quantities of elements such as manganese, boron, cobalt, copper, zinc, molybdenum, and selenium, then the animals, plants, and ultimately humans who lived on the products of that soil would be underdeveloped or diseased.[19] The environment and human health were intimately linked in this vein of conservationist thought; it was an important transitional moment for conservationists to acknowledge the ties between the material aspects of soil ecology and the health of vulnerable humans. That ecological understanding also had political implications that shaped Bromfield's understanding of geopolitics, within the United States and beyond.

Bromfield's discussion of the issue was often a negative discourse of defective people, but he argued that experts actively fostering good soils could improve human capacity in backward areas. Better health was key to more initiative and better productivity. Hope for abundance demanded good health. Public awareness of the role of vitamins and minerals in food and health heightened the stakes of agroecological reform.[20] On 2 June 1950, Bromfield appeared with Fairfield Osborn at the dedication of a dairy research facility. The two were in general accord on the relationship between soil and health. Osborn was commissioning research to test the growing belief 'that there is a significant correlation between the quantitative occurrence of certain elements in the soil and the health (or lack of it) of people who live on the foods grown on these soils'. Bromfield added, 'In a sense we are the soil itself, made out of the soil, its minerals, the vitamins which derive from the minerals, and their effects upon

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[18] Bromfield, *Pleasant Valley*, 148; Bromfield, *Malabar Farm*, 304–5, 400; Bromfield, *Out of the Earth*, 72; Louis Bromfield, manuscript of book review of Albert Howard, *The Soil and Health*, Folder 624, BC-OSU.

[19] Jonathan Forman and Ollie E. Fink (eds), *Soil, Food and Health: "You Are What You Eat"* (Columbus, Ohio: Friends of the Land, 1948); Jonathan Forman, 'The Trace Elements in Nutrition' (1943), in Pittman, ed., *From* The Land, 305–11; Bromfield, *Out of the Earth*, chap. 3, esp. pp. 46–7. For an accessible sample of Albrecht's important work, see W. A. Albrecht, 'Health Depends on Soil' (1942), in Pittman, ed., *From* The Land, 312–8. Bromfield relied as well on the research of Firman Bear, an agricultural chemist at Rutgers University. Bromfield, *Out of the Earth*, 46. Also important to his understanding was Karl B. Mickey, *Health from the Ground Up* (Chicago: International Harvester Company, 1946); and Gove Hambidge (ed.), *Hunger Signs in Crops: A Symposium* (Washington, DC: American Society of Agronomy and National Fertilizer Association, 1941).

[20] On vitamins and minerals at the end of the 1930s, see Gove Hambidge, 'Food and Life—A Summary', in US Department of Agriculture, *Food and Life: Yearbook of Agriculture, 1939*, pp. 3–99 ([Washington, DC]: US Government Printing Office, n.d.).

glands, growth, metabolism, and even character and intelligence'.[21] On his farm, he changed the formula of his fertilizers in search of the optimal amount of trace elements. Bromfield believed that the resulting healthy plants could then better resist insects, thus cutting down on farmers' use of inorganic pesticides, which also set back natural insect control by killing both beneficial insects and birds. Technology could go too far if it worked against nature. He already feared that farm chemicals harmed humans too by remaining on produce. Presaging environmentalist Rachel Carson, Bromfield, in testimony before a congressional committee in 1951, singled out DDT as a hazard that he was trying hard to avoid. In 1953 he claimed to 'use less than five per cent the amount of dusts and sprays that we used even five years ago'.[22] His conservationist emphasis on soil allowed Bromfield to address what became a key catalyst for later environmentalist concerns and, unlike many later environmental critics, to do so without compromising his belief that economic abundance would continue unhindered.

Bromfield's work in Ohio embodied American conservationists' pursuit of two inseparable desires—for the long-term use of natural resources in abundant quantities and for long-term health of both humans and their natural surroundings. These same quests helped form the emerging US environmental movement. Fertile and stable soil, nutritious food, easy access to outdoor recreation, and the limiting of pollution all came together in Bromfield's hands-on imagining of conservation for the changing times. But parts of the United States remained outside this rhetorical mainline. Bromfield saw in the US South an anomaly and a challenge. He tried to bring what he saw as national agroecological and economic values to this outlying region, just as he later tried to export those modernizing solutions to the tropical world.

Abundance and the Environment in the US South

Bromfield's understanding of soils and both human and ecological health shaped his conservation evangelism as he looked beyond Ohio to the US South. The South was his test case for modernizing people through ecologically appropriate modern agriculture. He advocated farming practices that would

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[21] Fairfield Osborn, 'Intercommunication between the Scientific Specialties', in *The Role of Research in the Conservation of Our Nutritional Resources: Proceedings, Scientific Conference at the Dedication of National Dairy Research Laboratories, Oakdale, N.Y., June 2, 1950* (New York: National Dairy Products Corp., n.d.), 31–42 (first quotation on 33); Louis Bromfield, 'Sources of Fundamental Nutrition', ibid., 51–68 (second quotation on 55).

[22] Lous Bromfield to H. K. Mason, Monsanto Chemical Co., 9 Sept. 1953, Folder 2194, BC-OSU (quotation); Louis Bromfield to 'Mr. Morian', 31 Mar. 1954, Folder 1565, BC-OSU; J. D. Ratcliff, 'The Town without a Toothache', *Reader's Digest*, Feb. 1943, 87–8; Bromfield, *Out of the Earth*, chaps 3–5; Bromfield, *Malabar Farm*, 298; 'Statement of Louis Bromfield, Malabar Farm, Lucas, Ohio', 11 May 1951, in *Chemicals in Food Products: Hearings before the House Select Committee to Investigate the Use of Chemicals in Food Products*, Part 1 (Washington, DC: US Government Printing Office, 1951), 289–314. Like Carson, Bromfield also emphasized the chemical-reducing health effects of his biological control of pests. Louis Bromfield, 'Good Farming and Wildlife', in *The Book of Knowledge Annual, 1952*, ed. E. V. McLoughlin (New York: Grolier Society, 1952), 97.

bring enlightenment to a benighted region and to a people whom Bromfield treated as inferior and in need of external help. His scientific understanding reinforced old regional stereotypes of the South's human inferiority as the basis of its poverty.[23] Reflecting the awareness of interdependency fostered by his ecological reading, Bromfield lumped humans and animals together as part of the same natural processes: 'Any cattle or horse breeder knows that poor or unbalanced nutrition can change completely the behavior, the breeding capacity, the physique and even the intelligence of an animal carrying the most carefully selected genes. This is notably true of some of our human stock in the Mid-South with fine and pure blood lines distorted and deformed by a poor nutritional environment'. In the *Atlantic Monthly*, he explained conservation's potential for the South: 'An improved agriculture means not only higher economic status and less ignorance, prejudice, and intolerance, but better physical specimens endowed with energy and active brains'.[24] Though he claimed to want 'the annihilation of ideas about the superiority of one race over another', he nonetheless described Deep South blacks who moved to northern industrial cities as 'scarcely above the level of an African savage'.[25] At a moment when civil rights was a growing concern of national politics, Bromfield saw southern African Americans as particularly inferior, doubly reinforcing the hierarchical nature of his science-driven conservation.

The message of abundance through conservation sometimes had the mass appeal typically attributed to later phases of environmentalism: as the fame of Malabar Farm grew, Bromfield welcomed thousands of visitors. Through interviews, speeches around the country, and his own writings, he kept Malabar and soil conservation regularly in the press. Farmers and agricultural officials from other parts of the United States and from other countries were among the guests, and they in turn appealed to Bromfield to travel to their towns to promote conservation. Late in the 1940s, as he met many southerners seeking solutions to the South's ills, Bromfield developed his particular interest in the region, and he traveled extensively there.

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[23] See, for example, David R. Jansson, 'Internal Orientalism in America: W. J. Cash's *The Mind of the South* and the Spatial Construction of American National Identity', *Political Geography* 22 (Mar. 2003): 293–316; James C. Cobb, 'An Epitaph for the North: Reflections on the Politics of Regional and National Identity at the Millennium', *Journal of Southern History* 66 (Feb. 2000): 3–24.

[24] Bromfield, 'Sources of Fundamental Nutrition', 55 (first quotation); Louis Bromfield, 'Go South, Young Man!', *Atlantic Monthly*, Nov. 1948, 57–62 (second quotation on 62); Bromfield, *A Few Brass Tacks*, 134–5. For context, see Kolson Schlosser, 'Malthus at Mid-century: Neo-Malthusianism as Bio-political Governance in the Post-WWII United States', *Cultural Geographies* 16 (Oct. 2009): 463–84. For an influential call to study health alongside conservation and environmentalism, see Gregg Mitman, 'In Search of Health: Landscape and Disease in American Environmental History', *Environmental History* 10 (Apr. 2005): 184–210.

[25] Bromfield, *Malabar Farm*, 100. Bromfield recommended better education as the cure for blacks, but the differentiation of this analysis from his argument that poor soils stunted Deep South poor whites is strained.

In keeping with his sense of American potential, Bromfield saw great opportunities in the South despite its lingering malignancies. He was part of a long tradition of seeing working in the South toward internal modernization as comparable to efforts abroad.[26] Soil-based ideas of human development, bordering on eugenics, helped Bromfield identify the obstacles to his vision of responsible national and international abundance. Soil conservation was a leading solution. With proper attention to good soil, a society could be transformed, and its people made more prosperous and mentally and physically fit to resist communist solutions and contribute fully to a democratic society.

The history of American agriculture was, to Bromfield, a long record of reckless exploitation; the South was worst, but with proper guidance even it could prosper. Its 'careless' monocropping had been so deeply rooted in the antebellum past that even in 1948 he could write, 'Over vast areas of the Deep South today the blight of a wretched agriculture still remains'.[27] Bromfield also recognized that the region's subtropical climate meant that heavy rains and high temperatures accelerated the loss of nutrients in the soil, making permanent agriculture more difficult than in Ohio.[28] But as he traveled in the South and met more likeminded reformers, he saw potential and hope in the 'tiny minority' of farmers making 'progress toward a better agriculture'.[29] New breeds of cattle and strains of grasses that could withstand the southern climate and even grow in the winter had made year-round beef and dairy operations feasible, and the consequent reduction in row crops meant less soil erosion. He also welcomed growing use of legumes such as kudzu, recommended by the SCS, to control the worst gullies. The new prosperity in North Carolina, Hugh Bennett's home state, particularly impressed him: 'It has been achieved largely through better and more balanced agriculture, through increases in technology, mechanization, the growth of the dairy and livestock industries, and most of all through soil conservation, good land use, and the gradual abandonment or reform of the old vicious system of single-crop tobacco and cotton agriculture'.[30]

To highlight this sense of opportunity for southerners themselves, Bromfield had to elide the crucial issue of racism.[31] With a rhetorical sleight of hand, he excused the major white landowners whose tenants would be displaced

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[26] See Natalie J. Ring, *The Problem South: Region, Empire, and the New Liberal State, 1880–1930* (Athens: University of Georgia Press, 2012); and Mona Domosh, 'Practising Development at Home: Race, Gender, and the "Development" of the American South', *Antipode* 47 (Sept. 2015): 915–41. Also see Jennifer Rae Greeson, *Our South: Geographic Fantasy and the Rise of National Literature* (Cambridge, Mass.: Harvard University Press, 2010).

[27] Bromfield, 'Go South, Young Man!', 57–8.

[28] Bromfield, *A Few Brass Tacks*, 130.

[29] Bromfield, *Malabar Farm*, 312.

[30] Bromfield, 'Go South, Young Man!', 59. Bromfield also singled out areas around Montgomery, Alabama, for similar achievements. Louis Bromfield, typescript 'The Come Back of the Cotton South', labeled as for *Dallas Morning News*, 16 Oct. 1950, in Folder 143, BC-OSU.

[31] For context on race and class in the environmental movement, see, for example, Robert Gottlieb, *Forcing the Spring: The Transformation of the American Environmental Movement*, revised ed. (Washington, DC: Island Press, 2005).

by the policies Bromfield supported: 'The bitterest racial feeling in the South has never existed between the Negro and the most prosperous elements of Southern society but between the handicapped Negro and the unfortunate and poverty-stricken elements of the white race'. White leaders, by fixing the soil and thus the health of the people and the economy, would be fixing the race problem. This view blithely ignored the structural racism in the southern rural exodus. Most blacks were blocked from the industrial jobs to which the inefficient, destructive white farming men were supposed to turn. But the obfuscation allowed Bromfield to transport his mainstream Ohio solutions to new ground without worrying about the fate of the many displaced farmers. In the *Atlantic Monthly*, he redefined the westward American myth by advising, 'Go South, Young Man!' He explained, 'Today the New Frontier in agricultural land offers as great opportunities as the First Frontier of virgin soil ever offered'.[32]

A November 1947 tour of Texas typified Bromfield's approach to helping meet the South's need for modernizing development of land and people. Solving agroecological problems required evangelism to create a large following. Sponsored by the Second National Bank of Houston, a train carrying more than 150 well-to-do agriculturalists and businessmen traversed the state with Bromfield as the featured guest at a series of events highlighting cutting-edge agriculture of various sorts. In a state with extensive agricultural lands, the damaged soils and forests hindered profitable investment possibilities, so in 1945 Second National had hired an expert away from the Soil Conservation Service to head up the bank's new Agricultural Department. In early 1947 the bank cooperated with the Burlington Lines railroad to hold conservation meetings in several towns. In November, the bank and the railroad expanded the effort with the 'Soil Conservation and Agricultural Development Tour'. From 7 to 9 November the Friends of the Land conservationist group, with Bromfield then a vice president, held its annual meeting in Houston; Hugh Bennett closed the gathering with a rousing speech on the need 'to feed the people of the world' in order to find 'permanent world peace'. He praised the 1,950 soil conservation districts that had been created by local farmers around the country, and undoubtedly the bankers in the audience had already adopted his belief that 'conservation pays back more than it costs', through increased fertility. The bank then arranged for the train tour to criss-cross the state from 9 to 16 November. Governor Beauford H. Jester proclaimed it Soil Conservation Week.[33]

The trip was to legitimate and catalyze the work of local Texans. Three Federal Reserve Bank branch presidents, numerous bankers, and leading agriculturalists heard Bromfield give 12 lectures on the trip. His face on the program's cover denoted his significance to the enterprise. In each town they

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[32] Bromfield, *Out of the Earth*, 194, 200–1 (first quotation); Bromfield, 'Go South, Young Man!', 62 (final quotation). On racism in southern industry, see, for example, William Boyd, *The Slain Wood: Papermaking and Its Environmental Consequences in the American South* (Baltimore: Johns Hopkins University Press, 2015).

[33] Bill Tipton, 'Texas Witnesses Soil "Revival Meetings"', *ACCO [Anderson, Clayton & Co.] Press* 25 (Dec. 1947): 1–7 (quotations on 3–4), copy in Folder 2255, BC-OSU; itinerary of 'Soil Conservation and Agricultural Development Tour of Texas, November 9–16, 1947', pamphlet in Folder 2285, BC-OSU.

visited, the group found local people already welcoming the soil-saving message. One of the train riders explained Bromfield's role: 'Bromfield is like a combine', he told a newspaper columnist. 'Local agricultural workers and bankers and businessmen have sowed the seed in this conservation work and Bromfield is coming along like a combine reaping the harvest for them'.[34] Like many phases of environmental concern since World War Two, this conservation crusade was led by elites but sought to amass a large and influential group of supporters.

Captivated by his vision of southern potential, Bromfield immersed himself in regional issues to aid the clear-eyed minority he thought had the wherewithal to address the soil erosion problem in the face of widespread passivity. For a series of columns in the *Dallas Morning News* in 1950 and 1951, Bromfield found many conservationists to highlight in Texas and Oklahoma. For example, the Texas Research Foundation, headquartered near Dallas, and its director Cyrus L. Lundell were researching native and transplanted grasses and legumes to restore East Texas soils and, with them, the 'vitality' and 'intelligence' of East Texas people. East Texas needed 'a permanent and prosperous agriculture'. Progressive southerners appreciated Bromfield's contribution to their cause. [35]

In 1949 Bromfield's passion for southern development—the better integration of the region's people into the nation's growth-oriented capitalism—led him to take a direct interest in a northeast Texas farm. Though the venture was not a long-lasting one, it deepened Bromfield's commitment to spreading the good news of soil conservation. Partnering with his former farm manager Robert Huge, who in December 1949 began work at the conservation-oriented Samuel Noble Foundation in Ardmore, Oklahoma, Bromfield created a 411-acre model farm near Wichita Falls that would be known as Texas Malabar. Local supporters provided the land for the experiment, which was encouraged by the Noble Foundation. Huge oversaw operations, first from Ardmore and later on-site. In February 1950, the restless Bromfield discussed his motivation, claiming, 'The Ohio Malabar no longer offers a challenge'. The Texas operation was to experiment with proper water management, the best grasses and legumes for alkali soils, and the possibilities for dairy production in the area. Using chisel plows, tractor operators there broke up hard soil and planted sorghum as an

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[34] Tipton, 'Texas Witnesses Soil "Revival Meetings"'; itinerary of 'Soil Conservation and Agricultural Development Tour of Texas'; 'Farm Prosperity Vital to All, Declares Bromfield', clipping labeled *Wichita Falls (Tex.) Record News*, 14 Nov. 1947, in Folder 2284, BC-OSU; Leon Hale, 'Panhandle Winds Stage Convincing Show for Conservation Tourists', clipping labeled *Houston Post*, 13 Nov. 1947, in Folder 2284, BC-OSU (quotations).

[35] Louis Bromfield, 'Renner Labors to Rejuvenate Blackland Soil', clipping labeled *Dallas Morning News*, 4 Dec. 1950, in Folder 150, BC-OSU (first and second quotations); Louis Bromfield, 'Good Land Use Would Banish Farm Problem', clipping labeled *Dallas Morning News*, 16 Apr. 1951, in Folder 168, BC-OSU (third quotation); Louis Bromfield, 'Renner Awards Set Pattern for a Nation', clipping labeled *Dallas Morning News*, 23 Apr. 1951, in Folder 169, BC-OSU. For one example of a southerner's positive response to Bromfield, see the introduction of Clarence Poe, an influential North Carolinian, to Paul W. Chapman, ed., *Pastures: Grazing, Hay, and Silage Crops* (Atlanta, Ga.: Turner E. Smith, 1949), xv.

enriching cover crop. Bromfield reported, 'On the chiseled field, a heavy two-inch rainfall disappeared deep down into the earth while on the adjoining unchiseled fields the water stood on the surface of the dead flat fields until at least 50 per cent of it was evaporated by the hot sun and the perpetual winds from the Great Plains'. Increasing organic mass in the soil was again a primary objective. Through contacts in Brazil, he worked to obtain for that purpose a shipment of seeds of colonial grass, a deep-rooting grass of African origins that had thrived in South America. With some limited progress, the farm hosted a conservation open house on its methods and hopes, attended by perhaps 300 Texans. But debuting to what Bromfield labeled 'one of the worst seasons in history' in the area, Texas Malabar did not thrive. Amid bitterness and accusations that Bromfield had not given it enough of his time and attention, the limping venture ended with a lawsuit settlement in 1954.[36]

Working in Texas had, nonetheless, whetted Bromfield's appetite to expand his conservation outreach, with all the attendant possibility for social reform that it entailed. He applied to the wider world what he believed about the US South: that conservation-oriented modern agriculture could produce abundance even in tropical environments with, as he saw it, backward populations. That intermingling of agroecological concerns and economic development has continued to define the environmental challenge in much of the world. Despite Bromfield's paternalist overtones, he may have rightly discerned that the challenges he saw for the US South, trying to reach prosperity in a degraded natural setting, resembled some areas outside the United States. Environmental movements that developed in much of the world have included, from their beginning, the concerns that US specialists label as conservation. That battle for ecologically sensitive development, however, has had only limited success in spite of the clarity with which Bromfield and his supporters outlined the important natural stakes of modernizing processes that were in their infancy in inland Brazil.

Modernization Ideology and the Brazilian Environment

Bromfield wrote of the world in 1946 that where 'the more feeble and backward races' live 'coincide[s] almost exactly with the areas which are poor minerally or where the fertility of the soil has been exhausted'. Addressing the problem would benefit international stability as well as the people and the

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[36] Jim Shade, 'Malabar Farm's Texas Project', http://www.malabarfarm.org/history/malabar-farms-texas-project; Don Miller, 'Texas Malabar Farm Being Located Near Wichita Falls', *Stephenville (Tex.) Daily Empire*, 24 Feb. 1950, 2, clipping in Scrapbook, BC-OSU (first quotation); Bromfield, *Out of the Earth*, 135 (second quotation); Louis Bromfield to Victor del Mazo Suarez, 4 Jan. 1953, Folder 1828, BC-OSU; Louis Bromfield, 'Economics Liquidating Bad Farmer', clipping labeled *Dallas Morning News*, 30 Apr. 1951, in Folder 170, BC-OSU; Louis Bromfield, 'Texas Weather Has Pack of Surprises', *Dallas Morning News*, 7 May 1951, clipping in Folder 171, BC-OSU (third quotation); Louis Bromfield, 'Bad Years Can Teach Farmers Good Lessons', clipping labeled *Dallas Morning News*, 14 May 1951, in Folder 172, BC-OSU; Bromfield, *Out of the Earth*, 135–6, 141, 208.

land.[37] Broad US schemes for international aid were still in their formative stages in the late 1940s and early 1950s. Bromfield approached the issue via some paths that became the modernizing mainstream, including elite leadership, scientific claims to expertise, and private enterprise, and some paths that were rarely taken, particularly his attention to concerns about the health of the land. Bromfield held a free-market view of international abundance both before and after the Cold War began. Even the New Deal at its height was too radical for Bromfield. He wrote, 'I have never believed in the superficial folly of Henry Wallace's program of scarcity', that is, the New Deal policy of suppressing production to keep prices high. The problem was that poor trade practices had damaged the 'system of distribution' that needed to take products where 'there is not only a market for them but where often enough they are desperately needed'.[38] By fostering trade and care of the soil, the world could have plenty of food, he argued, notwithstanding Vogt's and Osborn's dire forecasts of environmental collapse and scarcity.

As he turned his attention to Brazil in the early 1950s, Bromfield made the case for an aid program that would pay proper attention to soil conservation. He lamented the lost promise of the Good Neighbor Policy toward South America before and during the war. Morris Cooke, a New Deal administrator and Friends of the Land leader, had led a technical aid mission to Brazil in 1942 to help cement the wartime alliance, and the Truman administration's Point Four development aid program continued to send a trickle of government money into agricultural reform in the so-called developing world; nonetheless, Bromfield accurately tracked American politicians' declining interest in non-military aid. Decrying their policies, he pointed out that assuring long-term agricultural abundance was imperative to survival in the Cold War. The United States, Bromfield argued, should use every means, including direct aid, to encourage trade and agricultural productivity growth that could be carried out in a way that would protect the soil. In 1954, even as the Cold War had deepened, Bromfield made his broadest politico-ecological recommendations in *A New Pattern for a Tired World*. He proposed that the United States step back from old European alliances and leave those overpopulated societies to persist on their dwindling imperialist extraction. Instead, a focus on the Western Hemisphere, particularly Canada and Brazil, could assure US security if natural resources were developed with conservation-friendly methods.[39] Just as the South could be made safe for a

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[37] Bromfield, *A Few Brass Tacks*, 135.

[38] Bromfield, *Pleasant Valley*, 59–60. The FBI nonetheless kept a close eye on Bromfield's loyalty. See FBI Case File 100-HQ-30238, National Archives and Records Administration, College Park, Md.

[39] Louis Bromfield, 'Forthcoming Pan-American Conference To Be Held in Brazil Is Not Getting Attention from Our State Department', typescript of syndicated column This Is Your Country for 11 or 12 Sept. 1954, Folder 765, BC-OSU; Bromfield, *A New Pattern for a Tired World*; Britta Crandall, *Hemispheric Giants: The Misunderstood History of U.S.-Brazilian Relations* (Lanham, Md.: Rowman and Littlefield, 2011), chaps 4–5. On Cooke, see ibid., 53; Phillips, *This Land, This Nation*, 251–4; Maher, *Nature's New Deal*, 209; and Morris Llewellyn Cooke, *Brazil on the March—A Study in International Cooperation: Reflections on the Report of the American Technical Mission to Brazil* (New York: Whittlesey, 1944),

prosperous US democracy by restoring its decrepit plantation regions, postwar Brazil and other developing areas could be kept firmly in the anticommunist orbit through soil reform.

The process of development as explained by Bromfield required overcoming both human and ecological degradation developed over centuries. Many emerging development specialists in the United States shared Bromfield's sense of foreigners' pathology, but none of these intellectuals adopted such a long-term historical perspective linked to the environment. Bromfield saw Brazil and other tropical areas particularly through the lens of the South. His understanding of midwestern history as the core American pioneer story of small farms (where 'everyone started from scratch in a new country that was immensely rich and undeveloped') shaped his understanding of the history of the US South as a contrasting degenerate region of enslavers and would-be aristocrats who lagged far behind the rest of the nation.[40] In turn, Brazil was 'at about the stage represented by the U.S. a hundred years ago'.[41] He wrote that Brazil and the South had a 'similar social economy': 'Side by side with the old social pattern' of absentee ownership of large plantations, 'there have existed the evil agricultural practices with which we in the United States were also . . . guilty during a similar pioneer stage of our development'.[42] And he likewise saw the arrival of immigrants as a solution for Brazil's troubles, much as he urged young northern and midwestern farmers to go South to new opportunities in the United States. It was 'the Italians, the Germans, the Dutch, the Japanese and others' who were at the forefront of Brazil's conservation-oriented farming. Similar to benighted southerners, the 'mass of Indian, Negro or mixed blood citizens existing at very low standards of material comfort, income and education' were not, he thought, the ones able to lead the way.[43] Bromfield's matter-of-fact tone downplayed the eugenic implications, though such bio-politics was common in emerging US development strategies.[44]

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chap. 6. Closely linked to Point Four aid beyond agriculture was the desire to ensure US access to other natural resources needed for Cold War capitalism. Megan Black, 'Interior's Exterior: The State, Mining Companies, and Resource Ideologies in the Point Four Program', *Diplomatic History* 40 (January 2016): 81–110.

[40] Bromfield, *A New Pattern*, 88 (quotation); Bromfield, *Pleasant Valley*, 188.

[41] Louis Bromfield, 'Agriculture in Brazil', typewritten manuscript labeled 'sent to James', 26 June 1952, 6, Folder 6, BC-OSU. Also see Louis Bromfield, 'Brazil: Frontier with a Future', in *The Book of Knowledge Annual, 1953* (New York: Grolier Society, 1953), 32–7. Bromfield shared with other development intellectuals the tendencies to overlap temporal and geographic categories and to think of development as having stages. Nils Gilman, *Mandarins of the Future: Modernization Theory in Cold War America* (Baltimore: Johns Hopkins University Press, 2003).

[42] Bromfield, *A New Pattern*, 88, 91 (quotations).

[43] Ibid., 90 (first quotation), 86 (second quotation). On the good soil management of immigrant farmers in Brazil, see Warren Dean, *With Broadax and Firebrand: The Destruction of the Brazilian Atlantic Forest* (Berkeley: University of California Press, 1995), 269.

[44] Schlosser, 'Malthus at Mid-century'.

Building on his experience in Texas, Bromfield in the early 1950s decided to join the new faces changing Brazilian land use patterns. His involvement in a for-profit initiative there fit perfectly Harry S. Truman and Dwight D. Eisenhower's desire that private capital take the lead in US involvement in Brazil's political economy. Brazilian visitors to Malabar Farm in 1941 had sparked Bromfield's interest in the country, and the men he came to know were influential business owners in São Paulo. As in Texas, he pushed for elite direction of a broad-based reform effort. Foremost among the Malabar Farm visitors was Manöel Carlos Arañha, a glass manufacturer from a long-influential São Paulo family. He had recently taken possession of 'an ancient half-ruined coffee *fazenda* called Rio de Prata' that he intended to restore to fertility. As that friendship grew with repeated visits, Bromfield, working with Braniff Airlines, led two farm-themed tours of Brazil and other parts of South America for wealthy American ranchers and other businessmen. In his recollection, as he met more Brazilians, more and more of them suggested he begin a Malabar Farm in Brazil. (At least ten of Bromfield's books had been published in translation in Brazil, making him already well known there.) The idea became a reality after the 1952 tour as Bromfield partnered with Arañha, industrialist Francisco Matarazzo Sobrinho, wealthy businessman Mario Wallace Simonsen, and others to take over a large but run-down former coffee plantation near Itatiba (just outside Campinas, around sixty miles north of the city of São Paulo). Bromfield argued that the history of the hilly, once-forested countryside in that area 'was not much different from that of our own cotton South. . . . Both areas were ruined by their own proprietors' who had exploited the land without care. 'There was nothing the matter with the soil', he reported, 'but the way it had been farmed for a couple of centuries'.[45]

In the years before Bromfield's early death in March 1956, the partners and their managers tried many of the same methods they thought had made such a difference in the United States. Bromfield's daughter and son-in-law became managers of the new Malabar-do-Brasil, and Bromfield spent time there during North America's winter months. Reflecting the sense that tradition-bound Brazilian laborers were not reliable (perhaps not prepared to fulfill Bromfield's Jeffersonian ideals), they hired European immigrant and second-generation families, mostly Italians, to operate the farm, which would specialize in carefully tended truck crops for the growing city of São Paulo. By sowing high-quality grasses and legumes on steeper slopes, they could also support dairy and beef cattle while improving organic soil content and avoiding the erosion that plowing would have caused. The deep root systems and bulky growth of tropical grasses (particularly colonial grass) and legumes would help restore the soil's health and fertility. Because heavy rains and heat would rapidly destroy the leached, acidic soil's organic matter, as was true in the US South, Bromfield recommended composting some forage for use in enhancing organic content on the more intensely cultivated gently sloping spots. Malabar-do-Brasil also used

[45] Bromfield, *From My Experience*, chaps 5 and 6 (first quotation on p. 94; second quotation on p. 103; third and fourth quotations on p. 114); Lawrence A. Sharpe, 'Brazilian Translations', *South Atlantic Bulletin* 19 (Mar. 1954): 7–8. On coffee plantations and their environmental impact, see Dean, *With Broadax and Firebrand*, chap. 8.

livestock to foster soil microbes in ways redolent of Bromfield's approaches in the United States: 'we are able to incorporate considerable quantities of the manure produced by subsidiary livestock enterprises . . . . which can be mixed with the coarse fast-growing legumes and grass in the process of decomposing'. Reforestation of particularly steep areas, along with building farm ponds, would control the water flow in beneficial ways. Corresponding directly with manufacturer William Graham in Amarillo, Texas, Bromfield worked as well to minimize erosion and deepen water penetration and organic mixing by bringing the Graham-Hoehme chisel plow to Brazil, where farmers were using little gasoline-driven machinery. New technology could aid the incorporation of organic mass into worn soils.[46]

When Bromfield died and the usefulness of his international fame waned, his partners shifted their priorities away from the farm.[47] It was more than Bromfield's personality, however, that had made Brazil a likely spot for such a model farm. As was true of leading conservationists in Texas, many conservationists in Brazil were working in their own right to reach economic abundance while promoting the conservationist ideas Bromfield had helped popularize. To ease the friction from denying extensive postwar financial assistance to Brazil, the Truman administration in 1948 had agreed to a Joint Brazil–United States Technical Commission, in which teams of experts from the two nations worked to identify obstacles to successful economic growth. The commission's Abbink Report, delivered in spring 1949, included considerable material on Brazil's agriculture because '[t]oday approximately two thirds of its inhabitants gain their livelihood from agricultural pursuits'. The report described the abandonment of 'old coffee lands' as 'the tide of coffee culture has passed from east to west', that is, from Espírito Santo and Rio de Janeiro to São Paulo and parts of Paraná. As a result of coffee plantations' neglect, the commissioners reported, 'the maintenance and restoration of soil fertility is one of the most important problems facing Brazilian agriculture'.[48]

Brazilians were looking for far more than the validation of outsiders like Bromfield. Influential leaders wanted conservation expertise, and they sought such knowledge both domestically and abroad. US development ideas often had support from those segments of a target nation's citizenry who could channel US outreach toward their own economic and social ends. These exchanges on soil

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[46] Bromfield, *From My Experience*, 187–8 (quotation) and chaps 5, 6, and 16; Geld, *Strangers in the Valley*. Charles L. Eubanks, Graham-Hoehme Plow Company, to Bromfield, 10 Aug. 1954, Folder 2170, Bromfield Collection, OSU; Bromfield to William Graham, 5 Apr. 1954, Folder 2170, Bromfield Collection, OSU. Brazil's 1940 census found only about 3,500 tractors in use in the nation's agriculture. US Department of State, *Report of the Joint Brazil–United States Technical Commission*, 70.

[47] George DeVault, 'Bromfield's Brazil', in DeVault, ed., *Return to Pleasant Valley*, 285–302, esp. 294; Ellen Bromfield Geld, *View from the Fazenda: A Tale of the Brazilian Heartlands* (Athens: Ohio University Press, 2003).

[48] US Department of State, *Report of the Joint Brazil–United States Technical Commission* (Washington, DC: US Government Printing Office, 1949), 68 (first quotation), 69 (second quotation), 74 (third and fourth quotations). John Abbink was the US co-chairman of the commission.

erosion fit that pattern.[49] Reminiscent of government-sponsored efforts in the United States, Brazil had long pursued its own research in agriculture and the natural sciences: São Paulo state's Instituto Agronômico de Campinas (IAC) was established in 1887, with soil fertility and soil erosion among its priorities. Among those welcoming Bromfield to Brazil was the Sociedade Rural Brasileira (SRB), a progressive farming group in São Paulo since 1919. Drawing on both aesthetic and utilitarian arguments, Brazilian conservationists and botanists in the 1920s and 1930s made modest progress on encouraging reforestation and the creation of national parks and preserves. In 1938 the national government created the Instituto de Ecologia Agrícola; and in 1939 in São Paulo, a leading botanist formed the Sociedade de Amigos da Flora Brasílica, which also included 'experimental farmers'. The IAC established a Soil Conservation Section in 1943, and in 1947 the Brazilian Society of Soil Science was founded. By the late 1940s Brazil also hosted agricultural research work at a subsidiary of Nelson Rockefeller's American International Association for Economic and Social Development.[50] These varied institutions demonstrated a tendency to situate

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[49] For example, see Gilman, *Mandarins of the Future*; Nick Cullather, *The Hungry World: America's Cold War Battle against Poverty in Asia* (Cambridge, Mass.: Harvard University Press, 2010); Amanda Kay McVety, *Enlightened Aid: U.S. Development as Foreign Policy in Ethiopia* (New York: Oxford University Press, 2012); and a fine synthesis, Michael E. Latham, *The Right Kind of Revolution: Modernization, Development, and U.S. Foreign Policy from the Cold War to the Present* (Ithaca, NY: Cornell University Press, 2011). Contrast the science-based, top-down approach of Bromfield and his partners with the community-oriented development ideology examined in Daniel Immerwahr, *Thinking Small: The United States and the Lure of Community Development* (Cambridge, Mass.: Harvard University Press, 2015).

[50] Instituto Agronõmico, http://www.iac.sp.gov.br/; Sociedade Rural Brasileira, http://www.srb.org.br/; Tiago Santos Telles et al., 'Institutional Landmarks in Brazilian Research on Soil Erosion: A Historical Overview', *Revista Brasileira de Ciência do Solo* 37, no. 6 (2013): 1431–40; Igo Fernando Lepsch, 'Status of Soil Surveys and Demands for Soil Series Descriptions in Brazil', *Soil Horizons* 54 (Mar. 2013), 1–5; Benjamin H. Hunnicutt, *Brazil: World Frontier* (New York: D. Van Nostrand, 1949), 342–3; Kathryn Hochstetler and Margaret E. Keck, *Greening Brazil: Environmental Activism in State and Society* (Durham, NC: Duke University Press, 2007); José Luiz de Andrade Franco and José Augusto Drummond, 'Wilderness and the Brazilian Mind (I): Nation and Nature in Brazil from the 1920s to the 1940s', *Environmental History* 13 (Oct. 2008): 724–50; José Luiz de Andrade Franco and José Augusto Drummond, 'Wilderness and the Brazilian Mind (II): The First Brazilian Conference on Nature Protection (Rio de Janeiro, 1934)', *Environmental History* 14 (Jan. 2009): 82–102 (quotation on 89); José Drummond and Ana Flávia Barros-Platiau, 'Brazilian Environmental Laws and Policies, 1934–2002: A Critical Overview', *Law and Policy* 28 (Jan. 2006): 83–108, esp. 84–9. For more on Brazil's tradition of scientific and conservationist organizations, see Dean, *With Broadax and Firebrand*, chaps 10–12. The presence of the Rockefeller group hints at the important modernizing work and ideology of private foundations and, in Rockefeller's case, of his related for-profit International Basic Economy Corporation.

their concern for natural processes within goals for human and economic development. Reconciling environmental care with agroecological abundance had transnational appeal.

As was true of several countries, Brazilian soil conservation experts drew heavily from the ideas of Hugh Bennett and the US Soil Conservation Service, and they mined that expertise for ideas applicable to local conditions. During one of Bromfield's stays in Brazil in 1954 he visited with Bennett, who by coincidence was there on a consulting trip at the behest of São Paulo state officials. Like Bromfield, Bennett saw great opportunities ahead but urged that care be taken with the soil: 'An excellent start has been made with soil conservation in the State of São Paulo. However, the greater part of the work remains to be completed—as is true in most countries'.[51] Bennett was right that attitudes were changing with particular vigor in São Paulo—understanding regional differences is as important in Brazil as in the United States.[52] In formally celebrating Bromfield's visit in 1952, the SRB acknowledged that the early development of São Paulo had come at the expense of the state's forests and soils. Now the SRB members were 'repentant' and sought to 'remake the soil' as their agricultural sector continued to grow.[53] In the late 1950s, after Bromfield's death, organized conservation efforts grew with the creation of several groups in São Paulo along with the prominent Brazilian Foundation for the Conservation of Nature in Rio de Janeiro. Agronomists took leading roles alongside biologists in a process that, according to one recent study, was similar to the 'first generation of conservation movements' in the United States and several European countries.[54]

Bromfield only glimpsed an area that would become a major test of Brazil's commitment to conservation principles as it expanded its commercial agriculture. Malabar-do-Brasil was on the Rio Atibaia on Brazil's Atlantic plateau, with a subtropical humid climate at an elevation of around three thousand feet. The Campinas area of the São Paulo hinterland, however, is an ecotone between the Atlantic forest biome and the cerrado, a large savanna region rich in biodiversity. In the early 1950s, agriculturalists were accelerating the cerrado's transformation into what is now one of the world's important farming regions (particularly for soybeans and cattle). Developing the cerrado meant obliterating

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[51] Hugh Bennett, 'Soil Conservation in the State of São Paulo, Brazil', typewritten report to the Secretary of Agriculture, State of São Paulo, Mar. 1954, in Folder 6, Box 9a, Hugh Hammond Bennett Papers, MS 164, Special Collections, Iowa State University Library, Ames, Iowa.

[52] On São Paulo's role as a leading state on conservation issues, see Dean, *With Broadax and Firebrand*, 231–8. In contrast, Thomas D. Rogers has shown that sugar planters in the state of Pernambuco at this time were hesitant to follow the advice of agronomists and other agricultural reformers. See Rogers, *The Deepest Wounds: A Labor and Environmental History of Sugar in Northeast Brazil* (Chapel Hill: University of North Carolina Press, 2010), chap. 4.

[53] Typed translation of a toast to Bromfield delivered at the SRB meeting, Folder 1828, BC-OSU. Before Bromfield's visit, a Brazilian correspondent described the SRB as 'an organization assembling practically all farmers of the State of São Paulo and very powerful socially and economically'. Fernando Gama Rodrigues to Bromfield, 6 Jan. 1952, Folder 1829, BC-OSU.

[54] Hochstetler and Keck, *Greening Brazil*, 66–70 (quotation on 69).

forests and altering complex ecosystems rather than restoring damaged old plantations.[55]

Bromfield recognized the enormous ecological stakes of intensifying development of the cerrado. Despite having no direct involvement in the region, he urged Brazilians to approach the project with conservation foremost in mind. It was important for them to learn the lessons he took from the US South. 'For days I have been dodging thunderstorms, flying over a country so rich and so vast that it makes Texas seem an overgrazed, eroded township', he reported to readers of his syndicated newspaper column in April 1952. He had been flying over the cerrado in São Paulo, Mato Grasso, and other states. He compared the area to the subtropical area he knew best. That part of Brazil, he wrote, 'is less hot than in Southern states' but had 'no frosts and no freezes to kill the tropical and citrus fruits which grow in abundance all year round'. He rejoiced at having 'just seen the opening of what is probably the last great world frontier'. Bromfield assumed correctly that commodities-oriented agricultural development would proceed in the growth-hungry nation. He wrote presciently, 'The area, when developed, could easily supply the whole Western Hemisphere with cereals, meat, citrus and tropical fruit'. Farmers there were fortunate, he thought, because 'Brazil has an advantage in opening up this vast area which no other country has ever had in all history—not merely the heavy machinery . . . but also the huge advantage of having a vast and new agricultural science which can move in directly behind the bulldozers and maintain and even improve the soil'.[56] With science and proper leadership, Bromfield argued, Brazil could foster both modern conservation and economic abundance as it fulfilled its development goals.

Conclusion

Farmers helped confound William Vogt's and Fairfield Osborn's alarming predictions of environmental scarcity at the end of the 1940s. Louis Bromfield's activism took place at a moment when the prevalence of soil problems made it possible to reconcile advocacy of major agricultural development with a push for sustainability. When fears of food shortages and worries about soil erosion from plantations were seen as major problems, his grass farming for cattle and truck

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[55] Philip F. Warnken, *The Development and Growth of the Soybean Industry in Brazil* (Ames: Iowa State University Press, 1999); Robert W. Wilcox, '"The Law of the Least Effort": Cattle Ranching and the Environment in the Savanna of Mato Grosso, Brazil, 1900–1980', *Environmental History* 4 (July 1999): 338–68; Carlos A. Klink and Ricardo B. Machado, 'Conservation of the Brazilian Cerrado', *Conservation Biology* 19 (June 2005): 707–13; Selma Simões de Castro and José Pereira de Queiroz Zeto, 'Soil Erosion in Brazil from Coffee to the Present-Day Soy Bean Production', in Edgardo M. Latrubesse (ed.), *Natural Hazards and Human-Exacerbated Disasters in Latin America*, pp. 195–221 (Amsterdam: Elsevier, 2010).

[56] Louis Bromfield, 'One of World's Future Great Powers Being Opened in Brazil', *Beckley (W.Va.) Raleigh Register*, 20 Apr. 1952, 6. Also see Louis Bromfield, 'Brazil's Frontier Beckons, Opening May Produce One of the Future Powers of World', typescript of syndicated column This Is Your Country for 19 or 20 Apr. 1952, Folder 692, BC-OSU.

farming for urban markets could be environmentally friendly solutions. Agriculture in the 1950s and 1960s became, as Bromfield had anticipated, extraordinarily productive in the United States as well as in developing nations such as Brazil; and, as he and other reformers advocated, the two nations' rural development has for the most part been a story of efficient, large-scale production. In spite of pressure from active sustainability movements, however, those agribusiness producers have not lived up to the conservationists' optimistic early expectations. In the long run, modernizing development ideology did not foreground environmental care. Abundance trumped ecology as agricultural science and technology evolved, an outcome that has come to seem nearly inevitable.[57]

Environmental historians in recent years have insightfully explored modern nations' commitment to ideologies of abundance and consumption.[58] Analyzing Bromfield's vigorous advocacy of an ecologically responsible, market-based pursuit of abundance enriches that scholarly discussion. Bromfield convinced himself and many of his contemporaries that a healthy populace, a healthy global economy, and a healthy environment had to grow in tandem. By better understanding how and why his ideas seemed attractive and plausible, historians can now assess more fully how the spirited environmentalist jeremiads of the early post–World War Two era failed to scotch resource-intensive economic growth.

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[57] Bruce L. Gardner, *American Agriculture in the Twentieth Century: How It Flourished and What It Cost* (Cambridge, Mass.: Harvard University Press, 2002); Carlos A. Klink and Adriana G. Moreira, 'Past and Current Human Occupation, and Land Use', in Paulo S. Oliveira and Robert J. Marquis (eds), *The Cerrados of Brazil: Ecology and Natural History of a Neotropical Savanna*, pp. 69–88 (New York: Columbia University Press, 2002); Giselda Durigan et al., 'Threats to the Cerrado Remanants of the State of São Paulo, Brazil', *Scientia Agricola* (Piracicaba, Brazil), 64, no 4 (July–Aug. 2007): 355–63; Lepsch, 'Status of Soil Surveys'; Telles et al., 'Institutional Landmarks in Brazilian Research on Soil Erosion'; Marieke van der Glas, *Gaining Ground: Land Use and Soil Conservation in Areas of Agricultural Colonisation in South Brazil and East Paraguay* (Utrecht: Universiteit Utrecht, 1998), esp. chap. 3.

[58] Macekura, *Of Limits and Growth*; Paul Sabin, *The Bet: Paul Ehrlich, Julian Simon, and Our Gamble over Earth's Future* (New Haven: Yale University Press, 2013); Donald Worster, *Shrinking the Earth: The Rise and Decline of American Abundance* (New York: Oxford University Press, 2016); Gregory T. Cushman, *Guano and the Opening of the Pacific World: A Global Ecological History* (New York: Cambridge University Press, 2013), esp. chap. 8; J. R. McNeill and Peter Engelke, *The Great Acceleration: An Environmental History of the Anthropocene since 1945* (Cambridge, Mass.: Belknap Press of Harvard University Press, 2016); Matthew Schneider-Mayerson, *Peak Oil: Apocalyptic Environmentalism and Libertarian Political Culture* (Chicago: University of Chicago Press, 2015), esp. chap. 2.