

# Book Reviews



## **The Soil Will Save Us: How Scientists, Farmers, and Foodies are Healing the Soil to Save the Planet**

Kristin Ohlson. 2014. Rodale Press, Emmaus, Pennsylvania. Hardcover (242 pp)

ISBN 978-1-60961-554-3/ \$23.99

*The Soil Will Save Us* is an exceptionally well-written and accessible resource on the importance of arguably our most vital natural resource. Having read many books and formally reviewed a few of them, it's easy for me to reach the not surprising conclusion that professional writers really do know how to capture the attention of an audience and then home in on the most critical issues around a theme. This chronicle about soils and how we depend on them by Kristin Ohlson is a marvelous example of that talent.

The author takes us on a compelling journey by telling stories about some of the most important scientists engaged in study of soils and their management – and the abuse of soils – in agriculture. She begins with historical reference to how this land was settled and cleared, with the initial destruction of biodiverse ecosystems and their conversion to monoculture croplands. The complicated story of development is observed through the perspectives of people in research, in farming and ranching, and in agencies including agricultural extension and the federal Natural Resources Conservation Service. Many of these sources trace their own history in relation to the soil and how it has been managed, and it is clear from these narratives that none of those interviewed is inclined to “treat soil like dirt”.

The fate of carbon because of clearing and agriculture is described in Chapter 1. Since the advent of crop production there has been an accelerating transfer of carbon from soil pools to the atmosphere, contributing to a now well-documented impact called “global warming.” Beyond the accepted understanding of causes for this climate change, there is hope in the projections of experts that the trend can be reversed, and the author is hopeful that “the soil will save us.”

A look underground is provided in Chapter 2, where we visit the complexities of soil biology and the myriad interactions that provide both nutrients for crop growth and a resilience to natural and agricultural systems. Despite the soil's capacity to absorb and detoxify many of the chemicals we apply, there is only so much that this incredible storehouse of nutrients and water can withstand. Learning more about how soil biological systems function, and how they interact with soil physical properties and weather events, we will be able to manage this valuable resource and reverse the loss of carbon that is happening because of human intervention and impact in nearly every square meter of the planet.

The story of crop/animal integration begins with a livestock herder in Zimbabwe, and his empirical observations of how cattle impact grasslands and how properly managed herds can restore rather than degrade these resources. The story of Allan Savory and how his grassroots observations as a game warden in southern Africa catalyzed a wealth of practical knowledge

that eventually led to development of Holistic Management workshops and publications is a compelling narrative of how science and practice can be brought together to improve soils and their productivity. There are no silver bullets, the process takes a long time, and attention to the entire system.

A focus on natural processes to restore soil fertility in Chapter 4 brings together the practical experiences of farmers learning from each other with the power of university laboratories to help explain why practices work. Using Gabe and Shelly Brown's farm in North Dakota as a relevant case study, the author describes their fascination with cover crop mixtures and intensive management even under severely limited rainfall conditions. Results in the improvement of soil quality including nutrients for field crops and pastures are reported to be spectacular, and the farm has become a model for others to emulate as the operators "let nature do its job" in healing the soil.

Importance of building carbon based on culture of perennial grasses in pastures begins in Chapter 5 with the author's visit to a ranch on sandy soil in Australia. But finding the methods to enhance carbon capture and storage is only the first step, and convincing those who control the marketplace to recognize and reward this activity is a larger step. There has been a voluntary market in the U.S. for several years, where polluting industries can "buy credits" from land managers to offset their pollution, but this financial incentive has been slow to catch on. Many individuals and groups are now practicing and promoting carbon capture on a small scale, and greater impact will only be achieved by widespread acceptance of the value of this strategy.

In chapter 6, the author explores the question, "Why don't we know this stuff?" Then she quotes a scientist's confession, "The farmers and ranchers are way ahead of the scientists on this" (p. 153). The current structure and financing of research as described is one of the great challenges to overcome, since much of what is accomplished today in the public-sector fields and laboratories depends on private and industrial grants. There is little incentive in the agri-industrial complex to finance practices and systems that will minimize the purchase of production inputs, and much research today that is supported by corporations is directed toward products that can be patented and sold for profit. Agricultural production recommendations once came from an unbiased system of extension agents in the land-grant universities. These have largely been replaced today by the dominant cadre of consultants who provide formulas for farming that are primarily supported by chemical fertilizers and pesticides, elegant but costly transgenic varieties and hybrids, and mechanical technologies that encourage the bundling of practices into "production packages" that take many decisions out of the hands of farmers who work the land.

There is an emerging consensus among environmentalists and many in agriculture as described in Chapter 7 that serious steps need to be taken to build a new focus on soil and food systems. National groups such as Sierra Club, Nature Conservancy, and the National Sustainable Agriculture Coalition are teaming with local organizations to organize grassroots activities to reverse the degradation of soils and landscapes. Using new research on the value of compost and the potentials to store carbon on a wide scale, groups are taking initiatives that will reduce the carbon loss footprint of present production systems and make substantial steps toward re-capturing and storing carbon in the soil. New partnerships of farmers and ranchers, public and private sector organizations, and universities with some in industry are coalescing

around the common challenge of changing the way we implement programs to sequester carbon and make this economically feasible for the key players.

The discussion comes full cycle in Chapter 8 where soil biology is taken seriously in some unlikely places, such as the built urban environment where there are viable alternatives to pavement and impervious rooftops. There is great potential for urban and peri-urban food production, activities that can have multiple benefits.

Beyond the need to recognize the vital importance of carbon and how to reverse global warming, Kristin Ohlson provides compelling stories of people and small organizations that recognize the challenges ahead and take practical steps to solve them right at home. Whether on a farm, an extensive ranch, or an urban garden there are positive things that each of us can do. We can first raise our own awareness of the challenges, and then examine their importance to shape our attitudes toward improving the situation. And most importantly we can act to achieving meaningful change. The author provides both incentives for improvement through the story of soils, and encouragement for individual actions through the stories of people engaged in the task. This is a clearly written book that would be valuable to anyone with limited appreciation of soils, as well as providing an exciting and convincing narrative for those already committed to action. It could be used by educators from high school level on up to raise awareness and generate changes in attitude about the soil, one of our most critical resources.

*Submitted by –*  
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