Science Societies

New Books

Salinity and Sodicity: A Growing Global Challenge to Food Security, Environmental Quality, and Soil Resilience

By Tess Joosse

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Salinity and Sodicity

A Global Challenge to Food Security, Environmental Quality, and Soil Resilience



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ASA American Society of Agronomy | CSSA Crop Science Society of America | SSSA Soil Science Society of America

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With rising sea levels, declining freshwater availability, increasing land use intensification, and a changing climate, the world's soils face a serious threat from salt. Roughly 1 billion ha of the world's agricultural land is affected by salinity, the accumulation of dissolved minerals and salts in soil, and sodicity, the specific proportion of sodium cations in soil.

The new book *Salinity and Sodicity: A Growing Global Challenge to Food Security*, *Environmental Quality and Soil Resilience* explores these topics and provides vital solutions for managing the issue in dryland environments without irrigation or with only supplemental irrigation. Edited by Tom DeSutter of North Dakota State University, and David Clay, Sharon Clay, and Thandiwe Nleya of South Dakota State University, the book is both a reference guide and a tool for students and crop advisers. *CSA News* magazine discussed the book's aims and scope with co-editor DeSutter. The following interview has been edited for clarity and length.

CSA News: How would you describe *Salinity and Sodicity: A Growing Global Challenge to Food Security*, *Environmental Quality and Soil Resilience* in a few sentences?

DeSutter: This book encompasses concepts of dryland management of saline and sodic soils. I would say [it] provides a better understanding of the management of saline soils under dryland conditions without ignoring the importance of irrigation and how irrigated soils in some regions are greatly impacted by salinity.

CSA News: Why is this information necessary, and why now?

DeSutter: Salinity is a growing problem, and we have many acres in the United States that are impacted by dryland salinity. There hasn't yet been a book [on] the management of everything from coastal inundation of salt water to geogenic sources of salts and how to manage those under dryland conditions. There are a lot of very good books on irrigation-induced salinity, but we felt that now was a good time to keep people aware of the importance of managing dryland salinity and sodicity.

CSA News: Who is this knowledge for, and who could benefit from reading this book?

DeSutter: The target audience of the book ranges from students to our Certified Crop Advisers to farmers to land managers to regulatory policymakers. The book isn't written in a way that's over the head of most audiences.

CSA News: Why should people read the book?

DeSutter: I would say that the encroachment of soluble salts on agricultural lands is ever growing. You may not have salts in your soils today, but through sea inundation, through increased evapotranspiration, through the application of municipal wastewaters—these are all sources of soluble salts. These are the things that we've wanted to target in this book to bring about the awareness of dryland salinity but also provide some context on how to manage these soils.

CSA News: What else should readers know about salinity and sodicity?

DeSutter: The study of salinity and sodicity has been ongoing for generations. We are trying to provide a book that builds upon all of that knowledge but also adds some current topics that would be perhaps more relevant to the areas of the United States that do have more dryland salinity issues. We're blessed in this country to have the U.S. Salinity Lab out of Riverside [California]. A lot of phenomenal work has come out of

that lab. Here in this book, we are adding to that with new information, building upon those ideas that were grown through that laboratory and from others. Globally, salinity, compaction, flooding, erosion—these are the main degraders of soil quality. By offering the audience [a book on] salinity and sodicity, we feel like we've done justice to the science but also provided some pragmatic and some conceptual ideas on how to manage this problem in soils.

Salinity and Sodicity: A Growing Global Challenge to Food Security, Environmental Quality and Soil Resilience is available for purchase through the Wiley Online Library here: bit.ly/4d4QGDF.

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