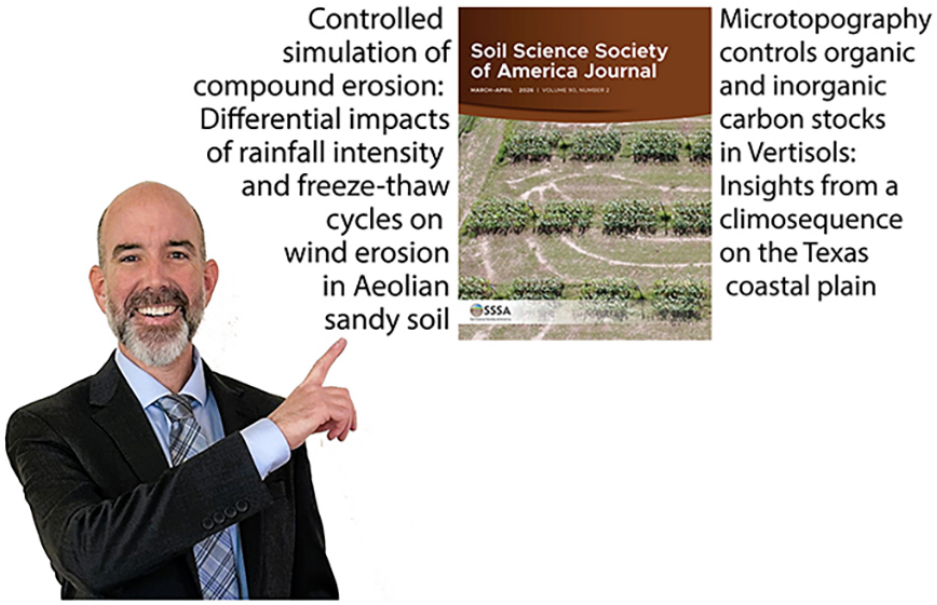
President's pick: SSSA research June 2026

By Aaron Lee M. Daigh

May 21, 2026



Exciting new research is shared every day among the scientific community in our journals. SSSA is the sole publisher of the *Soil Science Society of America Journal* and *Vadose Zone Journal* and co-publisher of the *Journal of Environmental Quality* and *Agricultural & Environmental Letters* with CSSA and ASA.

Each month, I will pick one or two articles among our journals that represent some of the most exciting, creative, and innovative research in our field of soil science. This month, I have chosen the following two articles from the *Soil Science Society of America Journal.* Congratulations to the authors and thank you for sharing your excellent work!

Controlled simulation of compound erosion: Differential impacts of rainfall intensity and freeze-thaw cycles on wind erosion in Aeolian sandy soil

Wind, water, and freeze–thaw rarely act on a soil in isolation, yet most erosion studies treat them that way. The authors used controlled rainfall simulations and freeze–thaw cycling on Aeolian sandy soil from northeast China and then tested each pre-conditioned soil in a wind tunnel. Antecedent rainfall sharply suppressed wind erosion by strengthening the surface and forming a cohesive crust, while repeated freeze–thaw cycles did the opposite, weakening shear strength and progressively amplifying wind erosion through 15 cycles. Their structural equation modeling further pinpointed fine aggregate fraction (<0.25 mm) as the central mediator linking these processes to wind erosion rate. This work is a clear reminder that the sequence of erosive forces matters as much as the forces themselves and that single-driver conservation strategies may underestimate risk where these processes overlap.

Authors: H. Li, M. Li, W. Hu, M. Guo, X. Zhang, Q. Shen

Journal: *Soil Science Society of America Journal*

Article link: https://doi.org/10.1002/saj2.70237

Microtopography controls organic and inorganic carbon stocks in Vertisols: Insights from a climosequence on the Texas coastal plain

Soil carbon accounting increasingly informs decisions at regional and global scales, but the soils themselves do not always cooperate with that resolution. The authors quantified organic and inorganic carbon stocks in 45 Vertisol pedons along a precipitation climosequence on the Texas coastal plain, paying close attention to gilgai microhighs and microlows separated by only a few meters. Expected regional trends with mean annual precipitation were obscured by this microtopographic variability; microlows were consistently enriched in organic carbon and microhighs in inorganic carbon, and the contrast was sharper in udic than ustic soil moisture regimes. Their findings highlight a meter-scale source of variability that current digital soil mapping rarely resolves and underscore the value of pedological detail when scaling carbon stock estimates upward.

Authors: S.J. Kogler and L.C. Nordt

Journal: *Soil Science Society of America Journal*

Article link: https://doi.org/10.1002/saj2.70226

Soil Science Society of America Journal

Back to issue

More science