Long-term Agroecosystem Research in the Central Mississippi River Basin

The January–February 2015 issue of the Journal of Environmental Quality (JEQ) includes a special section titled “Long-Term Agroecosystem Research in the Central Mississippi River Basin.” Guest editor John Sadler, USDA–ARS, Cropping Systems and Water Quality Research Unit, University of Missouri, Columbia, MO, provides some details about the special section below:

CSA News: How did this special section come about?

Sadler: The rationale for this special section is discussed in some detail in the Introduction, but, in brief, we wanted the extensive database from our long-term Goodwater Creek Experimental Watershed (GCEW) to be made available to the scientific community. It is available in the ARS STEWARDS database system, but that needed substantial support documentation because much of the metadata is not structured and therefore could not be contained within the database. We started with the premise that if we were to document the data, we would need to provide metadata and physical context that would allow others to interpret it for their use. In short, what supporting information would we want to have if we were to try to use it? This special section provides support for others to use the database.

CSA News: Briefly describe some of the main research areas addressed.

Sadler: Documentation of a database is a little different than a special section from a symposium, but it is relevant to research in hydrology, climatology, water quality, erosion, soil change, and, in general, many aspects of the study of cropping systems. The long-term nature (>40 years for much of it) makes it relevant to problems such as climate change. The coast-to-coast extent of the LTAR network adds visibility to a wide audience through JEQ's publication of this special data section.

CSA News: Briefly describe any major research gaps you've identified from editing this special collection.

Sadler: The gaps we have identified in the introduction include quantifying watershed-scale fluxes of N, P, K, sediment, and energy; accounting for fluxes involving non-crop sources; scaling from near-term point-scale results to increasingly long and broad scales; and considering whole-system interactions.