




Story by Leslie Jordan





Dr. Mark McFarland, professor in Texas A&M's Department of Soil and Crop Sciences and Texas AgriLife Extension Service soil fertility specialist, hopes to make an impact on the quality of Texans' water while also helping growers throughout the state. For his work, he received the 2008 Regents Fellow Service Award.

Photo by Tami Hons, Department of Soil and Crop Sciences.
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McFARLAND'S MISSION

Professor's research helps save Texans money and water



Dr. Mark McFarland centers his research at the intersection of economics and environment. With the goal of using agricultural best management practices to benefit both natural and financial resources, McFarland hopes to impact the quality of Texans' water while helping growers throughout the state.

To accomplish this, he serves dual roles for the Texas AgriLife Extension Service in the Department of Soil and Crop Sciences: state water quality coordinator and state soil fertility specialist.

"The main focus of all of the work that I do is trying to look at both economic and environmental issues in Texas agriculture," McFarland said. "The role of AgriLife Extension soil fertility specialist gave me the opportunity to deal with both sides of the nutrient management issue in Texas: optimizing the use of plant nutrients while simultaneously helping minimize potential for their loss and adverse impacts on water quality."

McFarland is a member of the AgriLife Extension team that was presented with a 2009 Texas Environmental Excellence Award from the Texas Commission on Environmental Quality for its Nutrient Management Education program in the Rio Grande Valley. With

support from the Rio Grande Basin Initiative and the Texas Water Resources Institute (TWRI), the multicounty team started the program in 2002. Through soil testing training and education, the program has so far saved farmers more than 7 million pounds of fertilizers, with a combined value of more than \$2 million.

"Nitrogen and phosphorous play an important role because they are the most costly fertilizer nutrients and the most closely tied to water quality impairment concerns in Texas," McFarland said. "Over the last six years, as the cost of fertilizer has gone up dramatically, we have focused renewed attention particularly on nitrogen, trying to optimize use of the nutrient throughout the state. Our research on deep soil sampling for nitrogen has demonstrated both economic and environmental benefits, and the level of producer interest and adoption is expanding tremendously."

McFarland's diligence also earned him a 2008 Regents Fellow Service Award, which honors exemplary service not only to the Texas A&M System but also to the community, the state, and the nation. An award announcement commended him for obtaining more than \$6 million in external funding for nutrient

Dr. Mark McFarland gives a presentation at the 2008 Stiles Farm Field Day.
Photo by Tami Hons.



management and water quality programs in Texas since 2003. McFarland credits this success to the increasing importance of water research.

“I think it’s not so much that I’m a unique talent in funds acquisition, but that water resources work has become more critical than ever before,” he said. “In part because of water woes like extended drought state- and nationwide, there is an enhanced focus on protecting and restoring water resources. By identifying and targeting that need, we’ve been fortunate to garner primarily federal funds to do work in Texas and the southern region.”

McFarland also leads the Southern Regional Water Program, a partnership between the U.S. Department of Agriculture’s Cooperative State Research, Education, and Extension Service (CSREES) and land grant colleges and universities. The regional program coordinates water quantity and quality education and research programs among 21 institutions in 13 states.

Watershed planning is another major area of work for McFarland and his team. With support from the Texas State Soil and Water Conservation Board, and working with TWRI, the Spatial Sciences Laboratory, and Department of Biological and Agricultural Engineer-

ing faculty, the team developed a watershed protection plan (WPP) for the Plum Creek Watershed, one of the priority watersheds in Texas. TWRI now uses that plan as a model for training future watershed planners in Texas.

“We’re hoping our work will be helpful for those who come after us, making the whole process more efficient and effective,” McFarland said. “Once a plan is developed by the local community, they need support to put that plan into action, improve water quality, and protect their watershed into the future.”

To facilitate that process, McFarland led development of the Texas Watershed Steward program. (See p. 11.) This program educates community stakeholders about water quality and the development of WPPs, and encourages them to take leadership.

“Local involvement is absolutely key to water resource management, and this program helps build that partnership,” McFarland said.

By researching how to reduce water pollution and developing effective watershed education programs, McFarland hopes to help improve and protect vital water resources in Texas. 🌱

