The Blackland Center was established in 1909 by the Texas Legislature and named for the region’s unique soil characteristics. Its early purpose was to conduct research on soil and crop issues, with special attention to the control of cotton root rot. The station was moved in 1927 to its present site of 542 acres on the southeastern edge of Temple in the south-central Blackland Prairie region. Soil and water conservation has been the key research area since the 1920s.

Today, programs at the Blackland Center are closely allied with those of the USDA Agricultural Research Service (ARS) Grassland, Soil and Water Research Laboratory; the USDA Natural Resources Conservation Service (NRCS); and the U.S. Environmental Protection Agency (EPA). Other major collaborators are the USDA National Institute of Food and Agriculture, the U.S. Agency for International Development, and the U.S. Department of Defense.

The Blackland Center focuses on ecosystem research and modeling, agricultural systems and hydrologic modeling, and water quality assessment and investigations. Specific conservation activities have included a range revegetation and natural resource sustainability project for Fort Hood, one of the world’s largest military reservations and contributor of $35.4 billion annually to the Texas economy. Armored military training contributes to soil and vegetation loss, soil erosion, and the sedimentation of area streams and lakes. The Blackland Center also conducts watershed protection planning and developed an urban stormwater control program for the Temple metropolitan area.

CURRENT RESEARCH

DEVELOPING COMPUTER SIMULATION MODELS TO ADDRESS CONSERVATION ISSUES

Blackland Center and USDA scientists are leading the development and use of computer simulation models to assess the impacts of changes in agricultural and urban land use and to help manage natural resources. The state-of-the-art models address soil, nutrient, and pesticide losses that affect water quality. They also help researchers identify best management practices for enhancing agricultural productivity and profitability and for managing water supplies during extreme weather events such as drought and flooding. These models are the primary tools used worldwide for developing conservation programs, identifying limitations to agricultural productivity, and finding sources of non-point pollutants affecting water quality.

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RESEARCH IMPACTS

- Under the Conservation Effects Assessment Program (CEAP), the Blackland Center works with USDA NRCS and USDA ARS to conduct national assessments of the effects of soil and water conservation practices that are in use. These findings inform the U.S. Congressional Agriculture Committees as they make decisions about future farm conservation policies and programs.

- The center assists the Fort Hood military reservation by conducting extensive hydrology-based erosion monitoring to maintain training lands integrity. Receiving reservoirs Belton and Stillhouse Hollow provide flood protection and are major water sources for more than 900,000 residents in the area. Protection of these resources is critical to Central Texas.

- The center’s Grazingland Animal Nutrition Lab receives over 20,000 samples annually from farm operators for livestock forage quality analysis. This management practice is financially supported by the USDA NRCS Conservation Stewardship Program. The lab is studying DNA-based sequencing to assess plant species in the diets of cattle, providing a monitoring technique to identify plants that are indicators of nutritional stress. This could aid in mitigating livestock weight loss during drought.

- The U.N. Food and Agriculture Organization uses the Blackland Center’s Livestock Early Warning System in Kenya to help policy makers decide which Kenyan counties will receive emergency response and disaster recovery funding. The system’s water and forage monitoring component was expanded to include new areas in northern Kenya. The Kenya Drought Monitoring Authority uses the system as part of its national drought contingency and mitigation plan.

- The USAID Feed the Future Innovation Lab for Small-Scale Irrigation is a project in parts of Africa to improve the effective use of water, along with other site-specific enhancements to crop production. Modeling facilitates decisions that increase food productivity, improve natural resource management, reduce poverty, and empower women farmers.

BLACKLAND CENTER FACILITIES

AgriLife Research facilities at the Blackland Center include a 12,000-square-foot office building and shared resources (offices, laboratories, greenhouses, shop facilities, and land) in the USDA ARS Grassland, Soil and Water Research Laboratory, where AgriLife and ARS scientists have worked cooperatively for more than 70 years. Researchers also work with scientists from the USDA NRCS who are located at the lab.

ABOUT TEXAS A&M AGRILIFE RESEARCH

A member of The Texas A&M University System

Established in 1888, Texas A&M AgriLife Research is the state’s premier research and technology development agency in agriculture, natural resources, and the life sciences. Headquartered in College Station, AgriLife Research has a statewide presence, with scientists and research staff on other Texas A&M University System campuses and at the 13 regional Texas A&M AgriLife Research and Extension Centers. The agency conducts basic and applied research to improve the productivity, efficiency, and profitability of agriculture, with a parallel focus on conserving natural resources and protecting the environment. AgriLife Research has 550 doctoral-level scientists, many of whom are internationally recognized for their work. They conduct hundreds of projects spanning many scientific disciplines, from genetics and genomics to air and water quality. The annual economic gains from investments in Texas’s public agricultural research are estimated at more than $1 billion. Through collaborations with other institutions and agencies, commodity groups, and private industry, AgriLife Research is helping to strengthen the state’s position in the global marketplace by meeting modern challenges through innovative solutions.