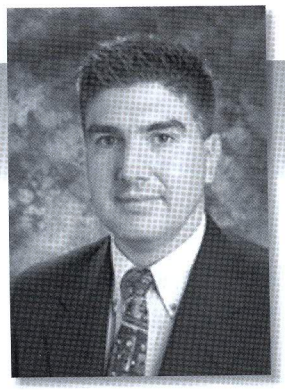

By Justin Derner, Rangeland Scientist

Agro-ecosystem Research Network

"The USDA Agricultural Research Service (ARS) is coordinating 10 of its well-established research watersheds and rangelands as a Long-Term Agro-ecosystem Research Network. These locations will engage in synergistic, network-wide research to address questions related to the condition, trends and sustainability of agricultural systems and resources on large scales of space and time. Sustainable agricultural systems that provide a safe, nutritious, ample and reliable food supply; produce bio-energy; provide essential ecosystem services; and mitigate climate change are needed for the well-being and welfare of future generations.

One of the sites in the Long-Term Agro-ecosystem Research Network is coordinated by the Rangeland Resources Research Unit in Cheyenne. The site is located at the Central Plains Experimental Range near Nunn, Colo. The Central Plains Experimental Range has served as a key research site for livestock grazing and grassland ecosystem dynamics in the central Great Plains since it was established in 1937. The collaborative partnership from 1937 to present with Crow Valley Livestock Cooperative, Inc., the oldest grazing association in the US, has been instrumental in conducting research that is relevant for land managers and livestock production in the shortgrass steppe.

For example, research at the Central Plains Experimental Range during the 1940s–1960s led to the development of grazing management strategies that sustain forage and livestock production in the region and continue to influence the management of semiarid rangelands from Iceland to Africa. The Central Plains Experimental Range became part of the International Biosphere Program in the late 1960s with Colorado State University as the primary research collaborator, and this collaboration extended from 1982 to current with the Shortgrass Steppe Long-term Ecological Research (SGS-LTER) project. This collaborative effort has supported ecological process-based research that substantially advanced our understanding of the structure and function of semiarid rangeland ecosystems.

New collaborations with the National Ecological Observatory Network (NEON) through the Central Plains Experimental Range being the core site for Domain 10 will provide an exciting frontier in the collaboration potential with additional scientific investigators. The shortgrass steppe exemplifies the ongoing challenges faced by semiarid rangelands around the world to simultaneously sustain livestock production, conserve native biodiversity, and restore soils and hydrological functions in the face of global climate change.

OTHER LONG-TERM AGRO-ECOSYSTEM RESEARCH SITES:

1. Ames, Iowa (Upper Miss. River Basin)
2. Columbia, Mo. (Goodwater Creek)
3. El Reno, Okla. (Little Washita River/Fort Cobb Reservoir)
4. Las Cruces, NM (Jornada Experimental Range)
5. Mandan, ND (N. Great Plains Research Lab)
6. Pullman, Wash. (R.J. Cook Agronomy Farm)
7. Tifton, Ga. (Little River)
8. Tucson, Ariz. (Walnut Gulch)
9. University Park, Pa. (Upper Chesapeake Bay)

Enhanced resources in the ARS program initiative on Environmental Stewardship in the FY 2013 President's Budget will strengthen ARS' capacity to conduct network-wide research in diverse agricultural production systems and large drainage basins across the country, and to collect environmental data enabling integration and synthesis of findings with the Long Term Ecosystems Research (LTER) network and the National Ecological Observatory Network (NEON) sponsored by the National Science Foundation. ●