The San Angelo Center serves the people of West Central Texas. It was established as Substation 14 in 1916, with the help of area ranchers, on 3,462 acres located between Sonora and Rocksprings. Initial research was on diseases and genetic improvement of sheep and goats. The substation grew in 1938 with the addition of the 3,160-acre Texas Range Station located south of Barnhart, where scientists collaborated with The University of Texas on grazing management and bitterweed control. The Texas A&M AgriLife Research and Extension Center at San Angelo opened in 1972 as a cooperative effort with local citizens, West Texas agricultural producers, and Angelo State University. The Sonora and Barnhart locations remained substations.

The center has continued to grow through generous donations by sheep and goat producers expressing their appreciation for benefits received from the research. This includes the 5,000-acre Carl and Bina Sue Martin Texas A&M Research Ranch in Menard County and the 5,000-acre Read Ranch in Crockett County. Collaboration with the Rolling Plains Quail Research Foundation provides both a 4,700-acre research ranch and about $400,000 annually in private donations to support quail research.

The mission of the San Angelo Center is to provide ranching solutions through research efforts to improve livestock production, restore degraded rangelands, and reverse quail decline. Much of the work done at this center is focused on providing sustainable and economically viable solutions to the problem of brush encroachment. These solutions include prescribed fire, brush sculpting, super juniper-eating goats, and using juniper as a livestock feed.

Center scientists also conduct research on breed evaluation and selection for performance traits, including the longest-running sheep and Angora goat central performance tests in the United States. The first vaccine for ovine ecthyma (soremouth) was developed at the Sonora Station, and we continue to improve the vaccine.

Current Research

**Determining the role of disease in quail decline**

Operation Idiopathic Decline is a three-year, large-scale, collaborative effort to determine the role of infectious diseases in quail decline on the rolling plains of Texas. Designed to encompass all types of disease agents, this is the first study of its kind for quail. So far two parasites, eyeworms and cecal worms, have been identified as possible causes of quail decline.

**Promoting the benefits of prescribed burning for rangeland restoration**

Prescriptions for the use of extreme fire for rangeland restoration and the development of prescribed-fire cooperatives for safely conducting burns are leading the way for reestablishing a fire culture among land managers and improving the ecological condition of rangelands. The Edwards Plateau Prescribed Burn Association, the first prescribed-fire cooperative, was established in 1997 and has received numerous awards recognizing the environmental benefits of prescribed burning on rangelands. Today, 11 prescribed-fire associations represent 109 Texas counties.
Incorporating invasive brush species into ruminant diets
The Wood to Feed program is establishing the nutrient content of invasive brush species and recommendations for their incorporation into the diets of both domestic and wild ruminants. The goal of this program is to reduce the costs of animal feed and brush control. Research has shown that ground juniper leaves and stems can replace cottonseed hulls and ground oat hay, significantly reducing feed costs and cost per pound of gain.

Evaluating production traits in sheep and goat breeds
The San Angelo Center animal-breeding program has evaluated many breeds of sheep and goats — most recently Dorper sheep and Boer goats — to provide producers with unbiased information on the differences in production traits among breeds. The program also conducts selection projects to improve economically important traits such as early season breeding in goats and prolificacy in sheep.

Selecting juniper-eating goats for invasive species control and diet research
The super juniper-eating goat project is selecting goats to increase their consumption of this invasive species while providing insight into the genetic and physiological factors that affect diet selection. Two lines of goats have been developed, one for high and the other for low juniper consumption. The extremes of these lines have differences in the breeding value for this trait of about 20 percentage units; that is, the top high-juniper-consumption goats have a genetic ability to consume about 20% more juniper than the bottom low-consumption line.

Research Impacts
- Restoring quail abundance on West Texas rangelands would increase annual revenues to ranchers by 30% and revitalize struggling rural communities by $5,500 per quail hunter.
- Internal parasites are a major problem limiting the expansion of sheep and goat production. Feeding a ground juniper-based supplement reduces fecal egg counts and in vitro larval viability.
- Technology to increase prolificacy in sheep can result in a 40% increase in lambs weaned per ewe. A 10% adoption rate of this technology would provide additional $1.4 million in net income to the industry.
- Approximately 1 million acres of Texas rangeland have been improved through the use of prescribed fire, creating greater livestock carrying capacity, more wildlife habitat, better wildfire mitigation, and increased public safety.

San Angelo Center Facilities
- The San Angelo Center facilities include 25,024 square feet of office and laboratory space; 51,236 square feet of shop, storage, and livestock barns; and 23,869 acres of rangeland.

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.