ECOLOGICAL SITE DESCRIPTION: ASSISTING THE NATION'S MILITARY MISSION

Assisting the Nation's military mission is not something the Natural Resources Conservation Service (NRCS) does regularly. But a little more than 10 years ago, the 27,887 acre Camp Bullis Training Site, a sub-post of Fort Sam Houston, Texas, needed natural resource guidance to help manage vegetation to support its training mission. It was about that time that NRCS was in the early stages of developing what now are called Ecological Site Descriptions (ESD), so it became a perfect opportunity for both parties. Dusty Bruns, Camp Bullis Natural Resource Manager, and also an ex-NRCS rangeland management specialist, knew the concepts of the ESDs and fostered the first agreement with NRCS to develop the local range site descriptions into Ecological Site Descriptions. That was in 2000.

Joint Base San Antonio – Camp Bullis, as it is now called, is currently the home of military medicine just on the outskirts of the 7th largest city in the United States. In addition to field medicine, its' mission includes management of endangered species, recreation, watershed protection, resource education, hunting, cultural resources and a realistic training opportunity for troops that do not use tracked vehicles. Parts of Camp Bullis are located on the recharge zone of the Edwards Aquifer that serves as the water source for more than 2-million people including San Antonio.

With a mission for dismounted personnel, not all the diverse landscapes on Camp Bullis are compatible. For instance, one of the endangered species requires old growth Ashe juniper for a portion of its habitat and old growth Ashe juniper is not hospitable to soldiers training on foot. Too dense and too many

snags. Ashe juniper is native to some of the ecological sites on Camp Bullis, but over time has increased to many other sites and is much thicker now then historical studies suggest. However, it is habitat for the Golden Cheeked Warbler; just one of the endangered species on Camp Bullis. The dilemma to accomplishing the military mission is to not only maintain or improve existing habitat but also to maintain a landscape useable by dismounted personnel.

Camp Bullis has a conservation plan with the Alamo Soil and Water Conservation District and had been using NRCS assistance for a long time. Building upon the earlier ESD's, which are correlated to the soils, Lucas Cooksey, Senior Wildlife Biologist, approached NRCS with the idea that a long term monitoring program was needed. The monitoring would not only measure progress toward Camp Bullis goals, but also assist in evaluating the many conservation practices being implemented. The State and Transition models (STM) in the original ESD's were good, but newer concepts and technology are now available within NRCS. These newer products can be leverage for Camp Bullis to meet their mission requirements over the long haul.

A particularly useful feature is the State and Transition Model (STM). The STM is a roadmap to the plant communities that could exist on a particular group of soils depending upon the management. Even the consequences of "no management" are important. Especially helpful are the identification of Thresholds within the STM. Simply said, a threshold represents a change in the soils and vegetation that can no longer be restored with practices such as grazing management or prescribed fire. By then, high energy type equipment is needed. A well done ESD will provide the milestones and time required for

Transitions to reach a Threshold. Camp Bullis wants to know those milestones so that remedial management can be scheduled in time to maintain their desired plant community.

A multifaceted approach to natural resources management is more important than ever for Camp Bullis. This request could not have come at a better time. According to Mark Moseley, NRCS Ecological Site Specialist and project manager, "The ESD concept has evolved and matured, and now we are in the final stages of a national handbook and are cooperating with many partners. We felt we could parlay the Camp Bullis inventory project into a real life example of the many ways ESD's can serve landowners. We would also be able to explore these concepts to strengthen and enhance the national guidance," said Moseley. "So it all came together with the right folks, right time and right place."

The first range site concepts and descriptions emerged about 1958. Most were simple documents containing the best science and experiences of the day with ranchers and NRCS employees being the target audience. They still are the target audience but now, the ESD has evolved into something that Moseley referred to as "range site descriptions on steroids!" Meaning that well crafted and documented ESD can serve a diversity of landowners with a wider variety of goals than the early range site descriptions. This includes Camp Bullis who wanted the information collected to also support the private landowners of the area.

Before doing any monitoring, a detailed inventory was needed to establish the baseline. This brought Camp Bullis back to the NRCS door. After several consultations with Cooksey and his staff it was

apparent this was not your average NRCS inventory. There were several monitoring elements not common to routine NRCS range inventory work. Some examples include 1-hr. fine fuel loading, snags, canopy density, plant diversity and depth of hydro mulched wood chips. There were also the routine elements such as bare ground, canopy and structure and annual production. Some creativity was applied to gather other information. This included invasive plants, stand densities, height categories, spacing and species richness. These are not currently data elements in an ESD or in the NRCS national database but NRCS teams are working to craft updated databases. It is hoped this inventory will spawn enhanced capabilities in the NRCS data system. Again, timing is everything, according to Moseley.

All of this is to help "keep good habitat as good habitat and manage the rest to preserve the mission of Camp Bullis," added Moseley.

To accomplish this, Camp Bullis analyzed its resources and selected 100 geo-referenced points. A team of range trained NRCS employees then used GPS's to navigate to each point and collect the data specified for the inventory. Photos were taken of each transect. Once the data was collected in the field, it was entered into a customized database for analysis. The outputs from this database were summarized and linked to Arc Map for visual interpretation.

This data is now being analyzed to update the 2000 version of the ESD with the new data explained Moseley. "An ESD is also a scientific document that has legal standing. It contains scientific data and interpretations and is updated as new science becomes available." But he also made it clear that NRCS

is not a regulatory agency. The ESD provides “what is the best science available at the time and what ecological process change as plant communities change,” he stressed. “It provides information designed to help the land owner make informed choices—choices designed in the best interest of the land.”

Many tools are available to assist landowners evaluate their management choices such as Range Health Assessments to quantify the impacts of various land management scenarios.

Camp Bullis has a huge task in maintaining the landscape over time to meet a very diverse military mission. They are using many partnerships in the process. Not only will the newer ESD be one of the tools in their military arsenal to guide them but this work will also serve a greater good for NRCS technical assistance to private landowners.

Moseley concluded by making it clear that this was a collaborative effort that involved more than 30 individuals all who had a significant role in making this project a success. “It’s the day to day work of collecting data; creating inventories or developing databases that contribute to the overall results,” said Moseley. “A finer team of natural resource professionals couldn’t be found anywhere,” he added. “The fact that this project can serve as the template for all other Ecological Site Descriptions says it all.”

This Deep Redland Ecological Site is in near historic or reference condition.

David Hinojosa, ESS, Robstown, is establishing weight units to expedite the composition of vegetation.

Darren Clark, ESS, Bryan, David Hinojosa, ESD, Robstown and Bryan Theall, NRI Specialist, Breckenridge make technical determinations of vegetation characteristics along a transect.

David Hinojosa, ESS, Robstown and Bryan Theall, NRI Specialist, Breckenridge clip to determine plant composition.

Camp Bullis is a diverse landscape in the southeastern portion of the Texas Hill country.