

## About Our Project

In 1991, several of the camp staff conferred with faculty from the University of Texas at Tyler, and the U. S. Soil and Water Conservation Service, to concluded that a prairie restoration project might be a suitable long term project through which to enhance science education for the fifth grade students that participate in the residence camping program at Camp Tyler. The 35 acre site was set aside for prairie restoration by the Camp Tyler Foundation Board in 1996. Since its inception, several small scale plantings of tallgrass and wildflower seeds had been carried out thanks to several small gifts from the Texas Garden Clubs Inc. and from propagule gathered by the camp maintenance staff. In 2005, we received a matching grant from the National Fish and Wildlife Foundation for the restoration of prairie and implementation of education day programs and residence camp lessons on prairie restoration as well as two workshops that were designed for local landowners to learn how they might benefit from prairie restoration on their property.

The site was a seriously degraded beef cattle pasture prior to being designated as a restoration site. Prior to that it was part of the McElroy dairy farm and was used for growing cotton before that. Whether the location was forest or prairie prior to becoming a farm is unknown at this time. We do know that the Caddo Indians lived here prior to European settlement and that the Caddos made extensive use of fire to keep the forests in check and open land for agriculture and hunting. Even areas that were forested were probably burned frequently enough to allow the sustained growth of many of the tallgrass components.

Once designated as a restoration site, the livestock were removed and the area sat fallow and mostly undisturbed for the next eight years. The camp staff noted that increase in wildlife in the fallow field and the area became a favorite location for early morning wildlife viewing. Members of the local Audubon Society also realized that this was an excellent local for birding, especially viewing of wintering sparrows. One year, an over-wintering group of five Henslow's Sparrows attracted birders from as far away as Canada.

With the help of the Texas Master Naturalists, we have constructed approximately 3 miles of hiking trail that forms a winding loop through the site. The trail is mowed weekly through the growing season, enabling an up close and personal inspection of the tallgrass community without the discomfort of wet feet when there is dew on the grass. The TMN volunteers have also constructed and installed directional and interpretive signs at various locations along the trail. Other volunteers have built and placed bluebird houses along the trail and wood duck boxes near the ponds.

There are three permanent ponds that are associated with the prairie; Homestead Pond, Prairie Pond and Rose Pond. There are also several low areas that seasonally inundated, we call them Post Oak Bog, Sphagnum Bog, and Indian Bog. Recently, Wal-Mart funded a project to dig a series of vernal pools in the forest that surrounds the restoration site. We hope that these will enable us to introduce several species of mole salamanders, *Ambistoma* *sps.* to the prairie fauna. Collectively, these water features contribute greatly to the biodiversity.

A giant step in our restoration effort happened with the advent of the “Returning to Our Roots” grant from the National Fish and Wildlife Foundation. The grant has provided funds to purchase enough seed to plant the entire 35 acre tract with the “Big 4” tallgrasses; big bluestem, little bluestem, switchgrass and Indian grass. We also purchased enough seed to start several populations of 20 different perennial forbs and 18 annuals. In addition to funding the acquisition of propagule, the grant provides for surveying and monitoring work, picnic tables and water fountains, and the equipment and supervision necessary to conduct one day field investigations for 1500 students. The grant has also paid for two restoration workshops targeting local landowners and is supporting this web site. Many thanks to the NFWF!

From 01Sep 05 thru 25 Apr 2006, 1174 students, grades K-5, have participated in the Field Investigations Day Program. This program was designed to involve students in the day-to-day restoration work, conduct scientific field investigations, and document the

prairie restoration progress. The activities are designed to supplement the classroom teachers' efforts to meet the objectives set forth in the Texas Essential Knowledge and Skills. It is our philosophy that every student should be immersed in the activity and has a hands-on experience. Thus, each student is equipped with thermometers, a loupe, a field microscope, a pH test kit, and a journal. While in the field, the students measure the air and soil temperatures, soil pH, precipitation, and observe the flora and fauna present at three replicates of three different management treatments. Each replicate consists of three 20m x20m plots. One plot is mowed periodically, one is burned and one serves as a control. Each of the three plots has been saturated with seed balls containing a mixture seeds from the "Big 4" tallgrasses. Each plot contains 12 – 2'x2' plywood cover-boards that are painted and equipped with handles. The cover-boards are used by small animals as shelter and provide a safe and convenient way for the students to sample the animal populations. The students compare and discuss the differences in the flora and fauna in each of the treatments and have been looking for the presence of the tallgrasses. Each student participates in throwing seed-balls, which are manufactured by our Texas Master Naturalist volunteers. The students also help to dig and cut invasive species.

In addition to the Field Investigations Day Program, approximately 8,000 5<sup>th</sup> graders attend the residence camp program at Camp Tyler annually. Many of these students engage in experiential lessons in the prairie such as the Aquatic Biologist program. Each student is equipped with rubber boots, a dip net, a water quality test kit, a field guide and a specimen tray. They learn to assess the quality of the water in the prairie ponds by examining the composition of the macro invertebrate populations. Some classes participate in a capture/recapture study of the rodents in the prairie. The prairie trail is also used for bird watching, owl hikes, and star gazing. We also have a social studies program called "Wagons West" in which 4<sup>th</sup> grade students pull miniature models of Conestoga wagons, "across the prairie" and simulate westward expansion.

The prairie is also utilized by biology students from the University of Texas at Tyler for field work in Plant Taxonomy, Vertebrate Natural History and Independent Study.

In addition to serving as an awesome outdoor classroom the prairie produces a large number of small animals that serve as prey for the predators within the tallgrass and the surrounding forest.

Though we have witnessed many exciting changes in our restoration site during the last two years, the restoration effort is still in its infancy. The plant community is still much more like that of an abandoned pasture than a true stand of tallgrass prairie. The early season is dominated by Italian ryegrass, *Lolium perenne* and Japanese brome, *Bromus japonicus*. The last two years have seen an increased presence of little barley, *Hordeum pussillum*, Carolina canarygrass, *Phalaris caroliniana*, and Scribner's Panicum, *Panicum oligosanthos*.

In 2006, we received a grant from the American Hiking Society for the construction of a barrier free trail from the end of the paved road to a water fountain that is situated in the prairie. This ½ mile of crushed granite surface allows campers with disabilities to enjoy the short trek through the forest, around the Homestead Pond and into the tallgrass.

In 2007, Tyler Building Systems agreed to donate a 30' x 60' pavilion, with restrooms and a storage room, designed to support programming in the prairie. Construction is underway and the structure will soon provide shade and shelter from the rain for as many as 70 students at a time.

Starting this spring, March 2008, the prairie will serve as the site for the GLOBE program at Camp Tyler. GLOBE (Global Learning and Observations to Benefit the Environment) is a worldwide hands-on, primary and secondary school-based science and education program. GLOBE's vision promotes and supports students, teachers and scientists to collaborate on inquiry-based investigations of the environment and the Earth system working in close partnership with NASA and NSF Earth System Science Projects (ESSPs) in study and research about the dynamics of Earth's environment. Initially we will be targeting 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grades. We are also working with the national

coordinator of GLOBE to establish Camp Tyler as the regional training center for GLOBE for the Texas Education Agency, Region 7.

The conversion from pasture to prairie has been slow, especially in light of the drought conditions that have prevailed during most of the last five years. However, even with limited success in that aspect of the project, the educational successes have been tremendous. We encourage anyone who might be considering a similar project to move forward with haste; you will really enjoy the experience.