

Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Develop final restoration design and contract specifications for the Palo Alto Resaca, Palo Alto Battlefield NHS, Texas

Discipline: Natural
Type of Project: Technical Assistance
Funding Agency: National Park Service
Other Partners/Cooperators: Colorado State University
Effective Dates: 2/20/2009- 12/31/2012
Funding Amount: \$47,496

Investigators and Agency Representative:

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Project Abstract: Palo Alto Battlefield NHS (PAAL) is an approximately 3400-acre NPS unit near the mouth of the Rio Grande River in south Texas. In 1846, this site was an open prairie straddling the historic road between Port Isabel and Matamoros, Mexico. The Mexican army selected this strategic position to intercept United States forces that were moving to relieve the besieged Fort Brown (10 miles away on the banks of the Rio Grande). This was the first major battle of the War between Mexico and the United States. The battlefield is a broad, flat, largely undeveloped coastal prairie interspersed with small stands of mixed brush and several lengthy "resacas." Resacas are abandoned distributary channels on the Rio Grande delta that still retain wetland characteristics. One of these channels, the Palo Alto Resaca, is a key landscape feature of the core battlefield. As part of a wetlands restoration the CSU cooperators will (1) investigate reference areas as models for the restoration, (2) investigate the hydrology and native vegetation of the site, (3) survey the topography of the site, (4) investigate how to restore *Spartina* prairies at the site and (5) prepare a final restoration plan and contract specifications for this restoration.

Outcomes with Completion Dates: Due by February 28, 2011 - The products will include: 1) a final technical report documenting the data, analyses, and conclusions of all investigations, and 2) a final restoration design including:

- plan view drawings of existing and proposed contours and features
- existing and proposed cross sections
- cut and fill calculations
- revegetation (planting/seeding) plans
- specifications/sequencing for construction and revegetation phases

Specifications will include restoration of clay layers in highly disturbed areas such as stock ponds to restore former hydrologic processes and relationships. Drawings and technical specifications will be bid-ready (provided at a level of detail and accuracy suitable for earthmoving and revegetation contracts for the restoration implementation phase).

Project also includes performing construction oversight while restoration work is being performed to assure that it is done according to specifications, and advising on minor questions or issues that may arise once work begins. As-built topo surveys in the stock pond removal areas will also be completed. This on site assistance will occur prior to December 31, 2012.

Keywords: Palo Alto Battlefield NHS, Texas, wetland restoration, *Spartina*, Colorado State University