

**Project Summary**  
**Rocky Mountains Cooperative Ecosystem Studies Unit**

**Project Title:** Remove Artificial Levee and Connect Glorieta Creek to its Recently Restored Floodplain at Pecos National Historical Park, NM

**Discipline:** Natural

**Type of Project:** Technical Assistance

**Funding Agency:** National Park Service

**Other Partners/Cooperators:** Colorado State University

**Effective Dates:** 7/1/2007- 6/1/2010

**Funding Amount:** \$8740

**Investigators and Agency Representative:**

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**Project Abstract:** Pecos National Historical Park in New Mexico is responsible for managing riparian and wetland habitats along Glorieta Creek and the Pecos River. One such area, a half-mile stretch of floodplain and terraces along lower Glorieta Creek, was mined for sand and gravel before becoming part of the park. Once mining ended in the mid-1980s, ranchers bulldozed the remaining material into a series of levees and dams, creating two reservoirs on 5.6 acres. These reservoirs soon became a threat to the ecology of Glorieta Creek. Floodwaters periodically swept thousands of fish from the creek into the reservoirs, where they were trapped and later died as the ponds dried. Flooding also caused breaches in the progressively weakening reservoir walls, washing sediment into the creek and toward the Pecos River, approximately ½ mile downstream. In fall of 1999 restoration began, with approximately 30,000 cubic yards of material were excavated from the levees and reservoir bottoms to achieve the wetland-riparian features of the Glorieta Creek floodplain as specified in the restoration design. In the spring of 2000, approximately 1000 willows and cottonwoods were planted and nearly 10,000 sedges, rushes, bulrushes, and spike rushes were installed to promote establishment of native wetland and riparian species. It is now time to complete the restoration. The Colorado State investigators and NPS cooperators will perform the following:

1. Obtain topographic data (survey cross-sections) along Glorieta Creek, from channel edges across the levees and into the restored floodplain area;
2. Conduct hydrologic monitoring to determine a final grading plan for levee removal;
3. Develop a grading plan for removal of remaining levees and establishment of target wetland and riparian communities and then implement the grading plan;
4. Revegetation will be conducted in spring and early summer following excavation (2009); and
5. Monitoring wells and vegetation plots will be established and topographic survey work will be completed on the restored areas to assess plant survival and to confirm establishment of the targeted wetland and riparian elevations and communities.

**Outcomes with Completion Dates:**

Topographic survey	July 2007
Hydrologic network installed	July 2007
Hydrologic monitoring (target and reference sites)	July 2007 - July 2008
Develop grading and planting plan	August 2008
Contracting for earthwork and revegetation	October 2008
Earthmoving	November 2008
Revegetation	April-June 2009
Establish monitoring wells and vegetation plots to evaluate restoration success	June 2009 - August 2010
Complete monitoring and assessment report	December 2010

**Keywords:** Pecos National Historic Park, riparian restoration, native vegetation, Pecos River,

Glorieta Creek, Colorado State University

**For Administrative Use Only:**

Date Annual Report Received:

Date Final Report Received:

Publications, etc. on file: