PRIVATE CLIENT

Galisteo Creek Stream Restoration

Santa Fe County, New Mexico

from top: Initial conditions; Restored creek after large flood event

An innovative restoration approach withstood several large flood events and protected old growth cottonwoods from impending demise.

Galisteo Creek winds down from the Sangre de Cristo Mountains through semi-arid ranch land and centuries old pueblo Indian archaeological sites. The ephemeral creek is subject to extremes between dry conditions and flash floods. The variable hydrologic regime creates a stream dynamic where banks tend to be unstable and new meanders can suddenly cut through established riparian forests.

After a devastating flood event in 2013 washed out newly installed channel restoration structures and threatened his home, the owner of a small ranch contacted Biohabitats in 2014 to rethink the problem.

The first step was to conduct a geomorphic assessment of the site to identify the characteristics of the project reach compared with a more stable reach downstream. A current topographic survey was prepared to serve as a base for design of channel restoration. Biohabitats analyzed locally stable channel geomorphic parameters to establish design width, depth, slope, and meander curvature for the new channel.

The outside bend of the meander was reinforced with timber post vanes to keep the channel thalweg away from erodible banks. Large boulders were placed on the upstream side of the post vanes and live willow cuttings were installed to deter end-around erosion of the post vanes. The outside bend flood plain overbank was kept low to allow early flooding and willow and cottonwood cuttings were installed on the bench to reduce velocities near the bank.

During the 2014 summer monsoon season, Galisteo Creek experienced several high-intensity flood events. The restored channel withstood the flood stress and riparian plantings took hold.

SERVICES

Inventory & Assessments
Channel Restoration Design
Construction Oversight

conservation planning
ecological restoration
regenerative design

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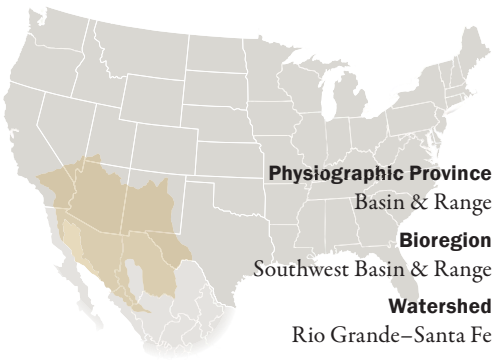

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