THE NATURE CONSERVANCY

JE Canyon Ranch & Lower Purgatoire Ecohydrology Study

Las Animas County, Colorado

In the dramatically dry landscape of southeastern Colorado canyonlands, strategic water management supports conservation values and resiliency for wildlife and ranching communities in the face of an uncertain future climate.

As part of an effort to protect more than 500,000 acres of prairie and create one of the largest conserved grasslands in the world, The Nature Conservancy (TNC) acquired the JE Canyon Ranch in southeast Colorado. Spanning more than 70 square miles and containing some of the most significant stretches of native grasslands in North America, the ranch is home to more than 850 known species of plants and animals, including the state's largest bighorn sheep herd. More than nine miles of the Lower Purgatoire River and more than 40 miles of tributary streams flow through the property.

For help in developing a science-based approach to address long-term management issues associated with water resources, grazing, fire, juniper expansion, and climate change, in a way that also protected the site's historical and cultural heritage, TNC turned to Biohabitats.

Biohabitats began by studying the site's hydrogeology as a foundation for developing management and restoration strategies. This work, which included desktop watershed mapping and analysis, field assessment, and a water budget approach, contributed to a deeper understanding of how water moves across the ranch and supports biodiversity.

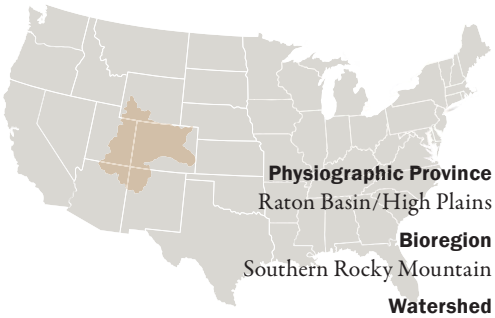
Biohabitats then developed conceptual models, identified restoration priorities, and recommended water resource strategies that prioritize water needs of high value conservation targets in vulnerable ecosystems, including shortgrass prairie, springs and ephemeral pools, creeks, and riparian areas. Strategies also took into consideration existing or potential future threats associated with changes in site hydrology including altered flow paths due to water diversions, changing land use and management including fire regimes, and associated shifts in plant communities.

The project resulted in the selection of three priority restoration objectives and strategies, all focused on improving soil water storage to support habitat. Specific actions included select juniper thinning, stock pond retrofits, and riparian and floodplain restoration. With this work complete, TNC is now poised to begin a second phase of the project, which will focus on design and implementation of the pilot strategies, as well as the demonstration and communication of these best practices to the local ranching community.

SERVICES

Inventory & Assessments
Planning
Management

conservation planning
ecological restoration
regenerative design



Physiographic Province
Raton Basin/High Plains

Bioregion
Southern Rocky Mountain

Watershed
Purgatoire

Biohabitats
SOUTHERN ROCKY MOUNTAIN BIOREGION
800.220.0919
www.biohabitats.com