

Independence Creek Preserve

PROTECTING THE LOWER PECOS RIVER WATERSHED

The Nature Conservancy 
Protecting nature. Preserving life.™

Conservation Profile

Ecoregion: Chihuahuan Desert

Conservation Elements:

Independence Creek, Caroline Springs, the lower Pecos River, riparian corridor habitats, mesatop and alluvial valley grasslands, lower Pecos tributary streams, black-capped vireo, proserpine shiner, headwater catfish, Rio Grande darter, Trans Pecos river cooter, Trans Pecos copperhead, plateau loosestrife, Warnock's coral root.

Stresses: Invasive and exotic species, both terrestrial and aquatic, overabundant white-tailed deer population, fire suppression, the possible degradation of inactive oil and gas well casings.

Strategies: Continued land and water stewardship, research and monitoring of Caroline Springs and Independence Creek, research to determine the restoration potential of the terrestrial and aquatic habitats, encourage best management practices at upstream oil and gas operations, build community conservation ethic, collaborate with local landowners to manage wildlife populations.

Partners: U.S. Geological Survey, Robert N. McCurdy II, Sul Ross State University, Texas State University, Natural Resource Conservation Service, National Fish and Wildlife Foundation, Texas Commission on Environmental Quality, Texas Parks & Wildlife Department, private landowners.



Independence Creek Preserve © Erika Nortemann.

At The Nature Conservancy's Independence Creek Preserve in Terrell County, **land and water combine to create some of the most spectacular and varied terrain in the state.** Flattop mesas are dissected by dramatic canyons and the preserve is marked by woodlands, desert scrub and honeycolored prairie grasses. Along the eight-mile-long creek, the banks are lined with scattered stands of large Plateau live oaks, ancient remnants of the vegetation that grew in this area thousands of years ago.

The diverse landscape is due to the fact that the **nearly 20,000-acre preserve sits in the transition zone between the Chihuahuan Desert, Edwards Plateau and Tamaulipan Thornscrub ecoregions.**

In 1991, the Conservancy of Texas made its first investment in Independence Creek by permanently protecting 702 acres of the surrounding watershed through a conservation easement with the Chandler Family. The 1998 purchase

of the Bailey Tract on the Pecos River added nearly 1,400 acres to the conservation area.

In 2000 and 2001 respectively, we purchased the Oasis and Canon ranches, creating a 19,740-acre preserve adjacent to the existing holdings. And the following year, the Conservancy entered into a lifetime lease with conservationist Robert McCurdy; a staunch conservation partner, **McCurdy is active in the ongoing stewardship of the land and water as well as the restoration efforts.** Our efforts have protected seven miles of the spring fed creek.

Independence Creek is **the most important of the few remaining freshwater tributaries of the lower Pecos River**, all of which flow into Amistad Reservoir, a key source of water for agricultural users and residents of Texas' Lower Rio Grande Valley and portions of Mexico.

Caroline Springs, located at the preserve headquarters, produces



Above: Independence Creek Preserve © Erika Nortemann. Below (top to bottom): Musk flower © Rich Kostecke, Painted bunting © Rich Kostecke.

3,000 to 5,000 gallons per minute of freshwater and comprises about 25 percent of the flows into Independence Creek. The spring also supports a globally significant array of subterranean and spring invertebrates, including a recently discovered species of beetle that is named for The Nature Conservancy; its flows into the creek move through vertical fractures in the Edwards limestone formation, with the water upwelling from the deeper Trinity Sands formation under artesian pressure.

Independence Creek contributes 27 million gallons of freshwater a day to the Pecos River, increasing the river's water volume by more than 40 percent at the confluence and vastly improving the river's water quality. Unsustainable groundwater management and contamination from oil and gas operations are two primary threats to the creek, but the Conservancy works with partners to establish monitoring programs to detect the impact of such operations. Keeping Independence Creek pristine is vital to the Pecos River watershed. The land and water sustain diverse

and abundant flora and fauna—including several rare, declining, and threatened or endangered species.

The canyon oak shrub community around Independence Creek **provides nesting habitat for the black-capped vireo**, a federally endangered songbird. Other birds found on the property include the indigo, painted and varied bunting, vermilion flycatcher, three species of kingfisher, scissortailed flycatcher, osprey, golden eagle, zone-tailed hawk, wood duck and great blue heron.

Many different fish species inhabit the creek. The most threatened aquatic inhabitant is the proserpine shiner, a conservation element with limited and declining distribution. It and several other small fish species are disappearing from the Pecos River, the result of the vanishing spring-fed stream habitat, as well as declining water quality and quantity. For native fish, **Independence Creek is an important refuge during stressful river conditions**. Following periods of low water quality and toxic algal blooms on the Pecos

River, Independence Creek fish populations help to repopulate the river.

The Conservancy is in the midst of a multi-year study to determine what sustains the river and what might threaten its health in the future. In addition, McCurdy and staff are in the process of **establishing eight acres of wetlands on the property and converting non-native Bermuda pastures back to native prairie grasses**.

This conversion is an arduous process that involves handseeding fields until native grasses can take hold. These native grasses will be more water efficient and nutritionally beneficial to wildlife. Eventually, **seeds from these fields will be collected and banked for use on the preserve and with our neighbors** in the lower Pecos River area.

Conservancy staff also diligently control brush and wildlife populations on the preserve to maintain a healthy, balanced ecosystem. These combined efforts are crucial to the ongoing stewardship of the land and water of the Independence Creek Preserve.

