

# Community and Ecosystem Effects of a Nonnative Fish in Refugia in an Intermittent Stream: Implications for Native Fish Restoration

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## PURPOSE OF STUDY

The habitat of native fish in first- and second-order New Mexico streams is vulnerable to degradation, and the populations of the Rio Grande sucker, the Rio Grande chub, and the Rio Grande cutthroat trout are declining throughout the state. The researchers will study the effects of nonnative longfin dace on native fish species and their habitat.

## STUDY UNDERWAY

→ The researchers have studied the richness and abundance of invertebrates, periphyton, and detritus; the trophic interactions of native and nonnative fish, invertebrates, periphyton, and detritus; and the competitive interactions of the Rio Grande sucker and the Rio Grande chub in the seasonal drought refugia in Las Animas Creek.



*Ryan McShane collects fish with a backpack electroshocker for use in one of the experiments.*

## BENEFITS

→ Knowing the interactions of longfin dace with native Rio Grande fish species will help with native fish restoration and conscientious management practices that are informed and effective.



*Ryan erects an experimental enclosure used for investigating trophic interactions in the refugial habitats and competition among the fishes.*



*Ryan samples benthic invertebrates, periphyton, and organic matter with a vacuum sampler to be processed in the lab.*



*The Rio Grande Sucker (left), Rio Grande Chub (middle), and Longfin Dace (right): Mouth structure of the three fishes of interest, emphasizing potential niche overlap.*



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