

# ACHIEVEMENTS OF THE RII3 GRANT

The third round (RII3) of New Mexico EPSCoR funding, Climate Change Impacts on New Mexico's Mountain Sources of Water, ended in 2013 but results from our research teams continue to make an impact on the state's infrastructure. As a result of NM EPSCoR's investments, New Mexico's meteorological and hydrological observational network is now on a par with other western states. NM EPSCoR provided information and education about climate change science to thousands of New Mexicans and accepted a leadership role in developing computational interoperability standards that allow for wider use and sharing of climate data. Here are some recent publications, achievements, and outcomes from the RII3 grant:

- Data from the NM EPSCoR weather station on the Valles Caldera National Preserve was compiled by New Mexico Tech. Live and archived data can now be [viewed online](#)—data from NM EPSCoR research and equipment specifically is collected in “Hidden Valley” on the map.
- In November 2014, research on ecosystems and acequias (local irrigation ditches) by Bill Fleming, José Rivera, and two EPSCoR funded graduate students, Amy Miller and Matt Piccarello, was published in the *International Journal of Biodiversity Science, Ecosystem Services & Management*. The paper, “[Ecosystem services of traditional irrigation systems in Northern New Mexico](#)”, explains how Fleming, Rivera, and their team developed a system to rate ecosystem health along the banks of acequias on the Rio Hondo using GIS and field methods. The evaluation and rating system provide “scientific support for the protection of traditional irrigation as an important cultural and ecosystem landscape of value to the broader society.”
- Water Quality team members at UNM—Cliff Dahm, Roxanne Candelaria-Ley, Chelsea Reale, Justin Reale, and David Van Horn—published their EPSCoR research in the journal *Freshwater Biology*. The paper, “[Extreme water quality degradation following a catastrophic forest fire](#),” focuses on water affected by the 2011 Las Conchas fire in the Jemez Mountains. According to their findings, sensors recorded a high level of particulates and degraded water quality in runoff coming from the burned areas and flowing into the Rio Grande. The team concluded that the low water quality after the fire carries “significant implications for the ecosystem health of this crucial river that supplies water to cities and agriculture,” and that “sudden, dramatic changes to [mountain watersheds] from severe forest fires... are very likely to be among the strongest impacts of global change and river ecosystems” in the western United States.

