A strong La Niña event delivered dry conditions to New Mexico this winter, and 61 percent of the state is currently classified with extreme and exceptional drought. Dry conditions of this magnitude are rare—exceptional droughts occur once in every 50 years. This issue catalogs the evolution of drought this winter in New Mexico and highlights some of the impacts that have recently cropped up.

**Drought Conditions on November 2, 2010:**
On November 2, only about 23 percent of New Mexico was characterized by abnormally dry conditions, according to the U.S. Drought Monitor (Figure; bottom Table). A wet winter followed by a monsoon season that flashed with periods of intense and copious rains furnished a relatively drought-free state. By the start of the 2010–11 winter, however, a sign that dry conditions would soon envelope the Southwest was mounting in the tropical Pacific Ocean. A La Niña event, which typically causes storms to pass north of the Southwest, was rapidly strengthening. It would eventually become one of the strongest La Niñas of the last 60 years, and by November was already flexing its muscle. October precipitation totaled less than 50 percent of average in many parts of the southern tier of the state, setting the stage for the next six months.

**Drought Conditions on January 4, 2011:**
Scant precipitation fell in November and December, and most places received less than 25 percent of average, with some areas seeing less than 5 percent. While several epic storms pummeled Southern California, Nevada, and northwest Arizona, those storms only provided moisture to northern New Mexico. Southern New Mexico remained bone dry, a characteristic pattern of La Niña winters. As a result, about 94 percent of the state was classified with abnormally dry or moderate drought conditions, up from only about 23 percent in early November (Figure; bottom Table). In the tropical Pacific Ocean, the La Niña event slightly strengthened to a moderate-to-strong event.

**Drought Conditions on March 1, 2011:**
January brought a peak in La Niña strength and virtually no precipitation fell. New Mexico experienced the driest January in the last 117 years, when official record keeping began. The strength of the La Niña event held strong in February, bringing more dry weather. The January–March period set a record as the driest for the Middle Rio Grande Valley and across much of southern New Mexico. Severe drought developed in the southern third of the state, covering about 33 percent of the state, and moderate drought draped another third (Figure; bottom Table). All but the northwest corner of the state was classified as abnormally dry or a more severe drought category. Impacts were also taking shape. Scant snowpacks portended low spring streamflows and signs began to point towards an active spring fire season and poor range conditions.

**Drought Conditions on May 3, 2011:**
Dry conditions continued in March and April and combined with warm temperatures to exacerbate drought conditions. On May 3 abnormally dry conditions or a more severe drought category blanketed the entire state (Figure; bottom Table). Almost all of the mountain snowpack had melted, earlier than average, and streamflow forecasts called for below-average flows in nearly all basins. Even the Rio Grande forecasts called for low flows despite above-average snowpack in Colorado. The May 3 U.S. Drought Monitor painted exceptional drought over the southeast corner of New Mexico, occupying about 14 percent of the state, while extreme and severe drought blankets another 47 and 26 percent, respectively. The last time exceptional drought covered more than 2 percent of the state was at the end of March 2004. Although the La Niña event began to wane in April, scant rain and snow during the winter set many records, including the driest start to the year in Albuquerque, Roswell, and Carlsbad.

**Drought Intensity**
- **D0 Abnormally Dry**
- **D1 Moderate Drought**
- **D2 Severe Drought**
- **D3 Extreme Drought**
- **D4 Exceptional**

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**Drought Conditions in New Mexico (Percent Area)**

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<th>Date</th>
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<td>100.00</td>
<td>96.54</td>
<td>87.36</td>
<td>61.02</td>
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</table>
Impacts Mounting in New Mexico:
New Mexico is mired in one of the driest spells in recent years, and extreme and exceptional drought conditions now occupy about 61 percent of the state. As a result, drought impacts are beginning to accumulate in many areas and economic sectors. Impacts will likely continue to mount until the monsoon rains begin in earnest sometime in late June or early July. Official monsoon forecasts currently do not call for either above- or below-average rainfall.

Water Impacts:
Snowpacks in the mountains of New Mexico were below average this winter. Winter precipitation in the Upper Gila, Pecos, and Rio Grande watersheds have been less than 36, 52, and 75 percent of average, respectively. Reservoir storage in New Mexico remains below average for much of the state, with several of the larger reservoirs seeing well below-average storage numbers. Total storage in the Rio Grande is about 1 million acre-feet, down from about 1.3 million acre-feet last year and well below the 30 year average of about 2 million acre-feet, which includes water volumes in the Elephant Butte, Conchiti, and Abiquiu reservoirs that are about 161,000, 23,000, and 30,000 acre-feet less than one year ago, respectively (Figure). Streamflow forecasts for Otowi Bridge on the Rio Grande call for 53 percent of average. As a result of the low flows, farmers in the Elephant Butte Irrigation District will receive only three inches of water per acre; onions, a main staple in the region, require about four feet of water per acre. A section of the Rio Grande near Socorro also dried, requiring that additional water be released from Cochiti Reservoir to protect the endangered silvery minnow (Figure). In Lincoln County, some cities have authorized water restrictions.

Fire Impacts:
About 240,000 acres have burned each year in New Mexico, on average, in the last 20 years. This year, the dry winter combined with warmer-than-average spring temperatures and windy conditions to fuel an active early fire season. By May 10, fire had enveloped more than 420,000 acres. This number is expected to grow, as lightning-ignited fires typically peak in the middle of June. Since April 20, five fires consuming more than 20,000 acres each have raged. The Last Chance Fire near Queen (Figure) has burned more than 53,000 acres and is the second largest fire in the state so far this year. By the end of April, fire charred more than 200,000 acres in the southeastern counties of Eddy, Lee, and Lincoln, where state drought conditions are worst, compared to just 12,000 acres last year.

Agricultural Impacts:
Agriculture fields in many parts of the state are in poor condition. The Weekly Weather and Crop Bulletin published by the U.S. Department of Agriculture reports that 89 percent of the dry winter wheat is very poor, impacting the major producing areas of New Mexico: the central eastern and northeastern areas of the state (Figure). Irrigated agriculture is faring better, but scant rain and low streamflows require more groundwater pumping. In the Hatch Valley north of Las Cruces, farmers are pumping groundwater to irrigate chili peppers and other crops at costs that can equal about $20 per hour. Elsewhere in the middle Rio Grande, farmers have been irrigating fields since mid-March—a month earlier than usual. Due to low water allocations in the Elephant Butte Irrigation District, many farmers are pondering growing cotton, which requires less water than other crops grown in the region and currently has a high market price. The losses incurred by extra groundwater pumping may be offset by additional revenue generated by high cotton prices. However, farmers who cultivate less flexible crops such as pecans grown in the Middle Rio Grande, will have to pump large quantities of groundwater this year and endure higher operating costs. Rangeland and pasture conditions have also been affected by the dry conditions. About 28 percent of the ranges and pastures in New Mexico is in very poor condition while another 44 percent is classified as in a poor state, particularly in southern New Mexico (Figure). In Otero County, some ranchers are spending $1,000 per month in feed for livestock to supplement poor pastures.