Rio Grande|Bravo

CLIMATE IMPACTS & OUTLOOK April 2016

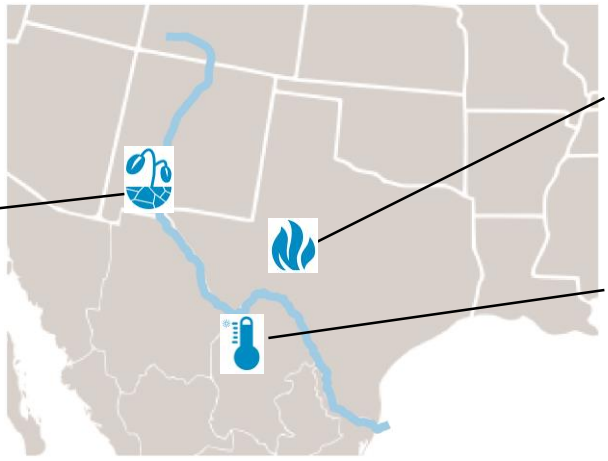
SUMMARY

Forecasts through June favor average to below-average temperatures for the northern Mexican states and above-average precipitation for the U.S. Rio Grande/Bravo Basin region.

AT A GLANCE

New Mexico

The U.S. Drought Monitor shows western and central New Mexico currently experiencing moderate drought conditions



New Mexico/Texas

Above-normal wildfire potential forecasted for May, June, and July

Northern Mexico

SMN forecasts average to below-average temperatures through June

REGIONAL CLIMATE OVERVIEW — JANUARY | FEBRUARY | MARCH

From January 1st through March 31st the Rio Grande/Bravo Basin received below-average precipitation. Most of the region experienced precipitation 5-50% of average, with the lower Texas/Mexico border region receiving precipitation 130-200% of average (Figure 1). Temperatures fell 1-4°F (0.5-2.2°C) above average for most of the region, with a few small pockets in New Mexico and western Texas experiencing average to slightly below-average temperatures (1-2°F; 0.5-1.1°C). Precipitation from March 25-April 7 was 5-25% of average for almost the entire region, with one area on the border of southeastern New Mexico and Texas experiencing precipitation 200-300% of average. Temperatures during the same time period varied from 2°F (1.1°C) below average along the border of Coahuila and Texas to 2°F (1.1°C) above average in New Mexico and southern Texas.

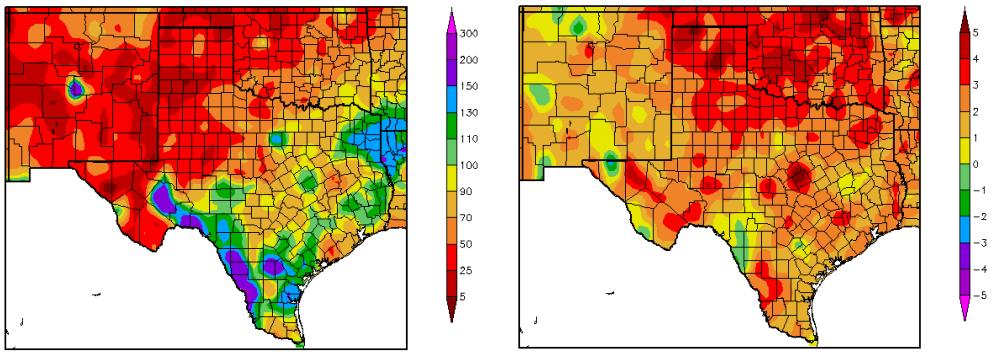


Figure 1: Percent of normal precipitation (left), and departure from normal temperature (right), for 1/1/2016 – 3/31/2016. Maps from HPRCC.

DROUGHT

The North American Drought Monitor (NADM) has classified most of the Rio Grande/Bravo Basin as drought free. The NADM shows western New Mexico in moderate drought and eastern New Mexico, western Texas, western Chihuahua, and central Nuevo León as abnormally dry. Current drought conditions in the U.S. are expected to remain unchanged through July 2016 according to NOAA's Climate Prediction Center (CPC; figure not shown).

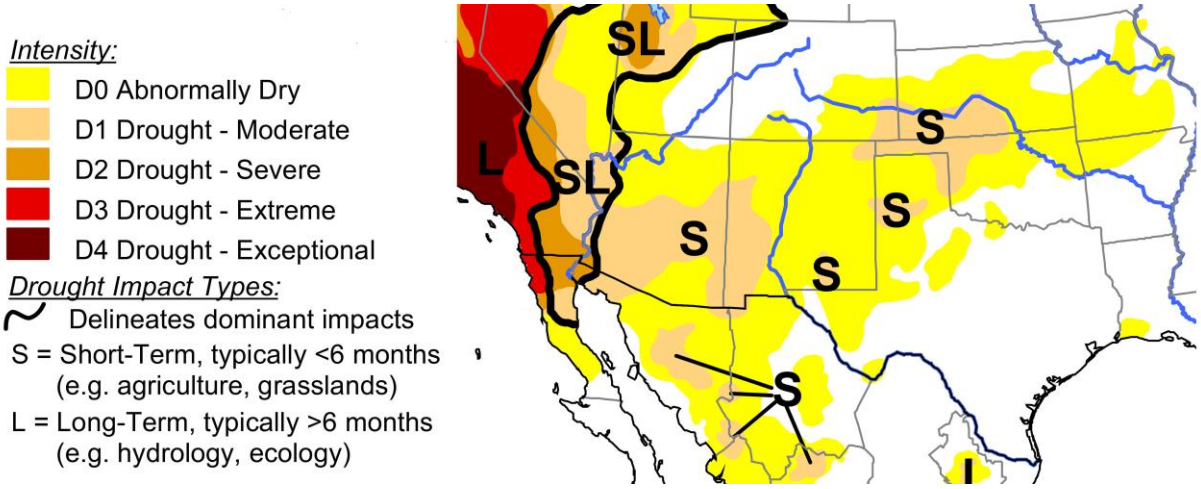
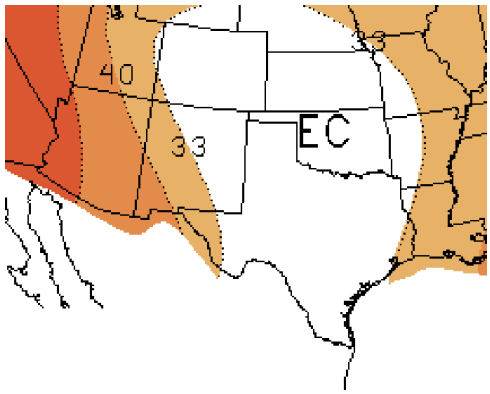


Figure 2: March North American Drought Monitor, released April 15, 2016.

FORECAST — MAY | JUNE | JULY

TEMPERATURE



The three-month NOAA temperature outlook favors increased chances of above-average temperatures in western New Mexico and a small area of western Texas, and equal chances for below-average, average, and above-average temperatures in eastern New Mexico and the majority of Texas (Figure 3). CONAGUA's Servicio Meteorológico Nacional (SMN) forecasts average to below-average maximum temperatures in May for most of the Rio Grande/Bravo region. For June, SMN forecasts average maximum temperatures for most of northern Chihuahua and northern Coahuila and above-average temperatures for northern Nuevo León and Tamaulipas (Figure 4). Differences between these forecasts are mostly based on different methods of prediction, and the differences in time periods covered by each nation's forecast.

Figure 3 (above right): NOAA May through July seasonal temperature outlook. Forecast made on April 21, 2016. Forecast from CPC.

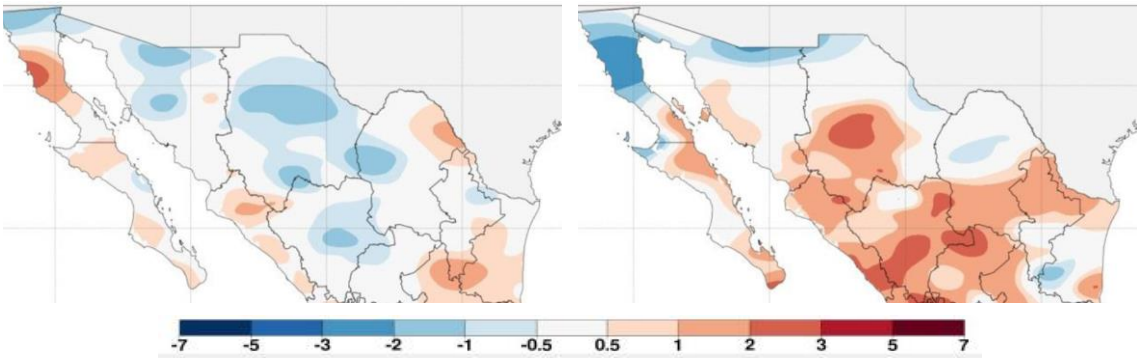


Figure 4: Predicted maximum temperature anomalies for northern Mexico (in °C). May (left) and June (right). Forecast made on April 5, 2016 by SMN.

PRECIPITATION

The NOAA precipitation forecast favors slightly increased chances of above-average precipitation for the entire U.S. Rio Grande Basin region through July (Figure 5). In May, SMN forecasts average to above-average precipitation along the Rio Grande/Bravo corridor region, Nuevo León, and Tamaulipas, but below-average precipitation in central Chihuahua and Coahuila. SMN forecasts for June favor below-average precipitation along the U.S./Mexico border and southeastern Coahuila, and average precipitation in central Coahuila and Chihuahua (Figure 6).

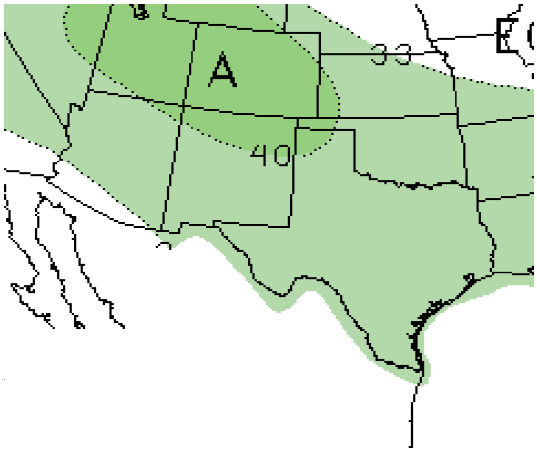


Figure 5 (above right): NOAA May through July seasonal precipitation outlook. Forecast made on April 21, 2016. Forecast from CPC.

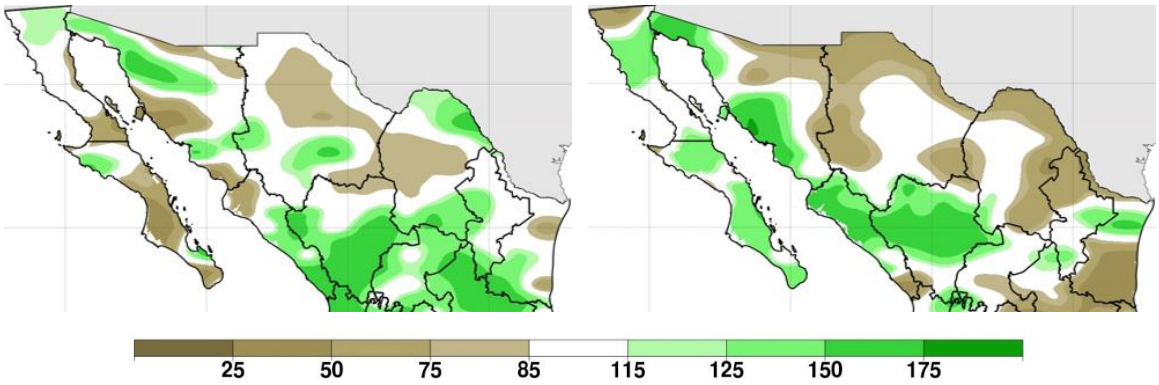


Figure 6: Percent of average precipitation for northern Mexico. May (left) and June (right). Forecast made in April 2016 by SMN.

FIRE

The National Interagency Fire Center (NIFC) forecasts above-normal fire potential for southern New Mexico and western Texas in May, June, and July due to continuing precipitation deficits and abundant dry, fine fuels (NIFC). Central, southern, and eastern Texas is predicted to have increasing to above normal fire potential in June and July (Figure 7). In May, SMN forecasts above-normal fire potential in the southwestern portion of Chihuahua and Durango and the southeastern portion of Coahuila and Nuevo León (Figure 8). In June, fire potential will remain above-normal in the southwestern portion of the Basin. In March, there were 457 hotspots detected in Mexico, with 25 detected over natural protected areas.

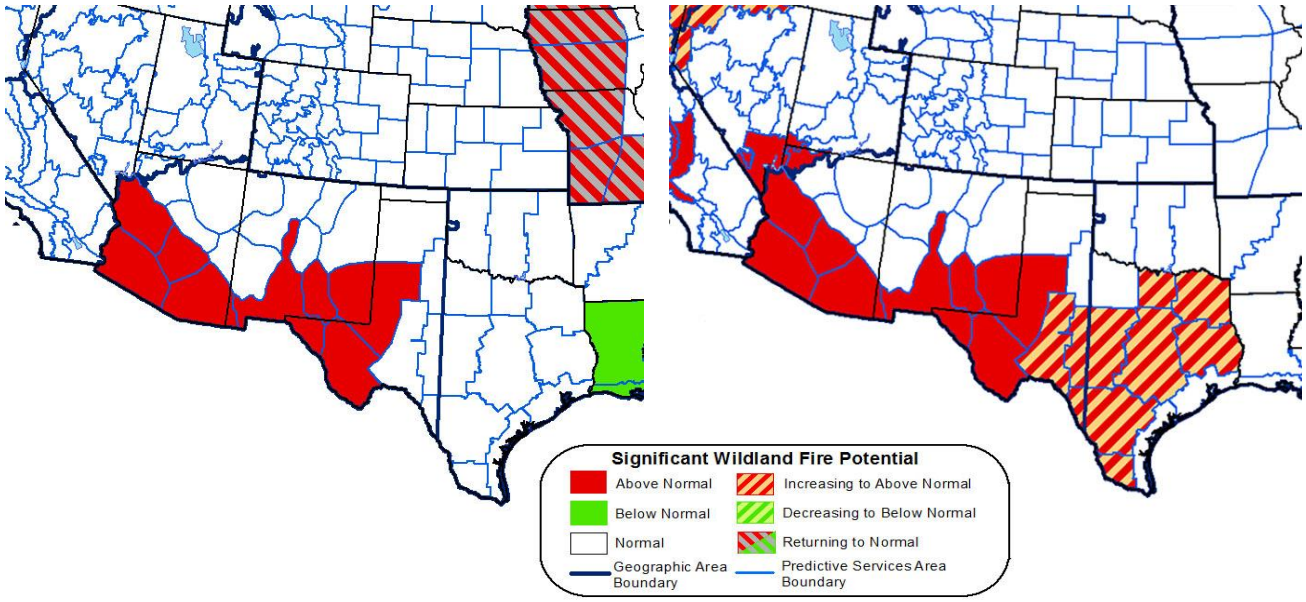


Figure 7: Significant wildfire potential outlook for the U.S. for May (left) and June/July (right). Forecast made on April 1, 2016 from NIFC.

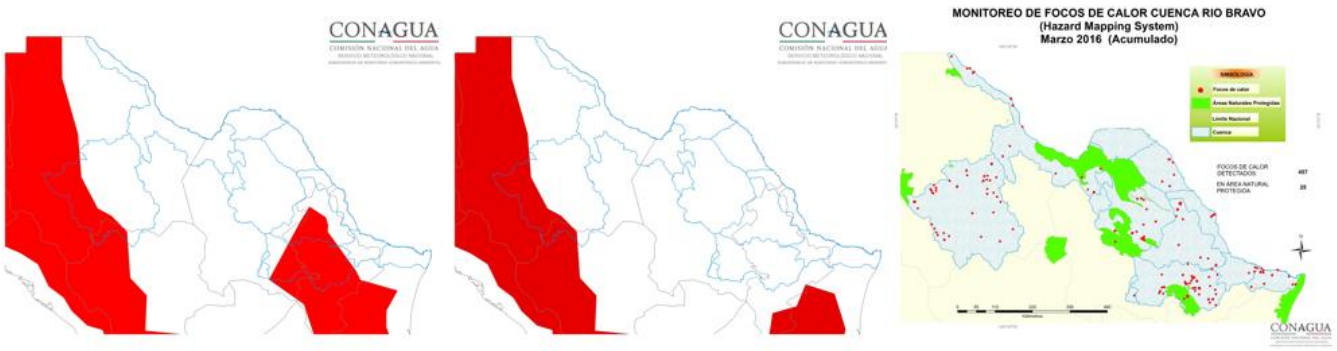


Figure 8: Significant wildfire potential outlook in Mexico for May (left) and June (middle). Hotspots detected in the Rio Grande/Bravo Basin during March (right). Forecast made on April 1, 2016 from SMN.

EL NIÑO

The El Niño-Southern Oscillation (ENSO) is a natural climate phenomenon that originates in the equatorial Pacific Ocean and affects weather around the world. El Niño conditions, although still present in the tropical Pacific Ocean, weakened in March, as indicated by decreasing SST anomalies.

While recent NOAA forecasts have favored increased precipitation in the U.S. Southwest, precipitation has fallen below average for most of the region thus far in 2016. As both NOAA and CLIMAS acknowledge, ENSO is not the sole climatological event impacting precipitation regimes. Following the early January rainstorms in the region, a high-pressure ridge above the Southwest limited the influx of moisture to the region, decreasing the probability of heavy precipitation (CLIMAS). The Pacific Jet stream remained powerful during this El Niño season, but was shifted further north than in past El Niño events, leading to increased precipitation in northern California and the Pacific Northwest and decreased rainfall in the Southwest (NOAA). The interaction of these, and additional climatological events, have all contributed to below-average precipitation in the region.

Conditions are predicted to gradually shift to ENSO-neutral conditions by late spring or early summer, as indicated by a probabilistic ENSO forecast (Figure 9) produced by The National Weather Service's Climate Prediction Center (CPC) and the International Research Institute for Climate and Society (IRI). Preliminary forecasts also show approximately a 50-60% chance for La Niña development in the fall, indicating the possibility of a dry 2016/2017 winter for the region.

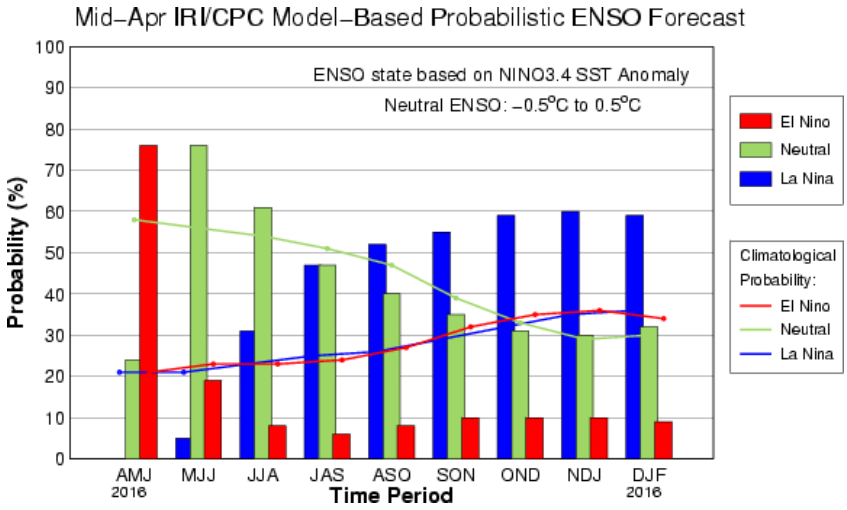


Figure 9 (left): ENSO probabilistic forecast from IRI.

For more ENSO information:
English: http://iri.columbia.edu/our-expertise/climate/enso/enso-essentials/ and http://www.ncdc.noaa.gov/teleconnections/enso/.
Spanish: http://www.smn.gov.ar/?mod=biblioteca&id=67 and http://www.smn.gov.ar/?mod=biblioteca&id=68

NORTH AMERICAN DROUGHT FORUM

The 2016 North American Drought (NADM) Forum, titled "2016 North American Drought, Wildfire, and Climate Services Forum," will be held June 21-23 in Fort Worth, Texas. The NADM Forum is held every other year, and the location of the forum shifts between Mexico, the U.S., and Canada. The NADM Forum focuses on activities that foster and support the operation and improvement of the NADM and the partnership between the three countries. The 2016 agenda includes the NADM Forum, a North American Fire Monitoring and Forecasting Workshop, and a North American Climate Services Partnership (NACSP) workshop, with the NACSP Rio Grande/Bravo pilot serving as a theme that bridges the foci on drought and fire monitoring and forecasting.

NEWS HEADLINES

New Mexico Farmers Faced with Early Dry Spell, April 7, 2016:
http://krqe.com/2016/04/06/new-mexico-farmers-faced-with-early-dry-spell/

Feds Issue Warning as Group Fights for More Rio Grande water
http://www.washingtontimes.com/news/2016/mar/22/lawsuit-targets-decades-old-permits-to-use-rio-gra/?page=all

Rio Grande Water Reaches Las Cruces, South County, March 28, 2016
http://www.lcsun-news.com/story/news/local/2016/03/28/rio-grande-water-reaches-las-cruces-south-county/82360224/

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