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CLIMATE IMPACTS & OUTLOOK

March 2018

Summary

Forecasts favor above-average temperatures and below-average precipitation for the Rio Grande/Bravo Basin through June.

AT A GLANCE

- 1 Rio Grande/Bravo Region
Dry, pre-greenup fuels coupled with windy and dry spring conditions will increase the potential for ignitions and rapid fire spread rates.
- 2 Tamaulipas and Chihuahua
Abnormally dry conditions continued in parts of Chihuahua and moderate to severe drought conditions developed in southern Tamaulipas.
- 3 New Mexico and North Texas
Precipitation was 0-70% of average from December-February for New Mexico and Northwest Texas
- 4 North New Mexico and Texas
Extreme drought conditions have developed in northern New Mexico and persisted in northern Texas.



REGIONAL CLIMATE OVERVIEW DECEMBER | JANUARY | FEBRUARY

Temperatures over the past three months (December-February) were 2–5 °F (1.1–2.8 °C) above average for most of New Mexico and parts of North and West Texas (Figure 1; left). For the remainder of Texas, temperatures over the past three months were 0–3 °F (0–1.7 °C) below average. Precipitation over the same time period was 0–70% of average for most of New Mexico and Northwest Texas, and 110–150% of average for Northeast Texas (Figure 1; right).

Temperatures from March 1–19 were 4–8 °F (2.2–4.4 °C) above average throughout most of southern Texas and 0–2 °F (0–1.1 °C) below average for several areas along northwestern New Mexico (figure not shown). Precipitation over the same time period was 0–5% below average for almost all of Texas and 25–90% below average for New Mexico and East Texas.

The winter was especially warm in Northwest Mexico for the period from December 2017 to February 2018. Only the lower basin of the Rio Bravo had colder than normal temperatures. Departures ranged from more than 9 °F (5.0 °C) in Southwest Durango to less than 3.8 °F (-1.0 °C) in northern Coahuila, Nuevo León and Tamaulipas (Figure 2, left). There were between 50 and 70 days with minimum temperature at or less than 32 °F (0 °C) that occurred in the Chihuahua-Durango border; however, the footprint between 1 and 5 days at or below 32°F also extended toward the Northeast (Figure 2, right).

This winter, in addition to being warm was also dry for the Northwest part of Mexico, despite seasonal accumulated precipitation between 3.9–7.8 inches (100–200mm) in Sonora (Figure 3, left). This situation contrasted with Central and northern areas where winter systems provided enough moisture, although dryness continued toward the Northeast. Main highlights include rains that fell in northern Sonora and southern Chihuahua that helped reduce some drought conditions (Figure 3, right).

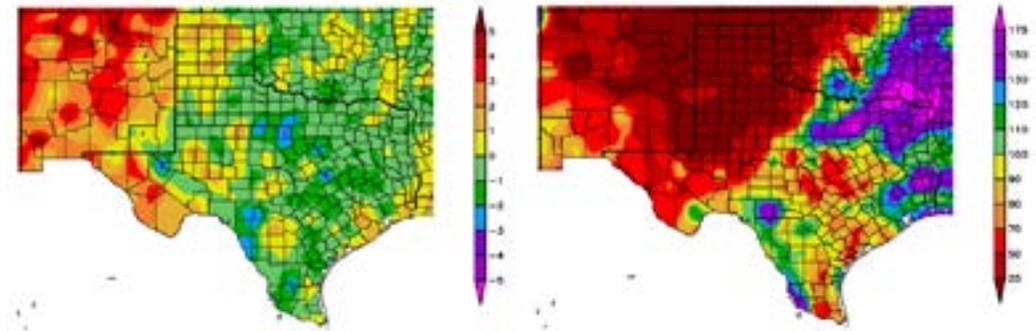


Figure 1 (above): Departure from average temperature in degrees F (left) and percent of average precipitation (right), compared to the 1981–2010 climate average, for 12/1/2017–2/28/2018. Maps from HPRCC.

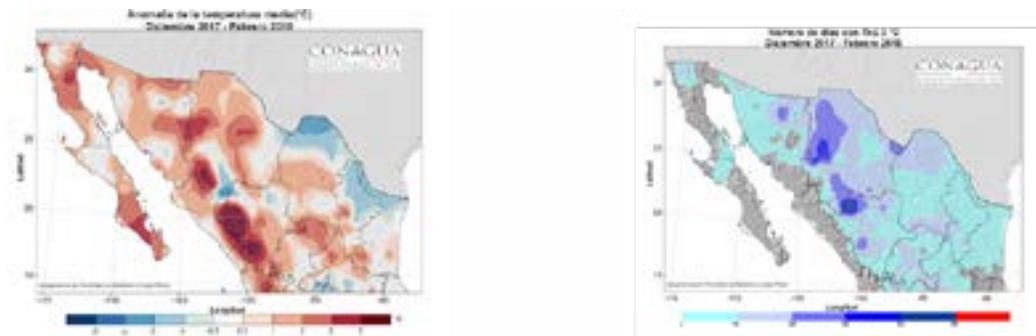


Figure 2 (above): Temperature anomalies in °C (left) and number of days with minimum temperatures at or below 0 °C (32 °F) (right) for December-February. Maps from SMN.

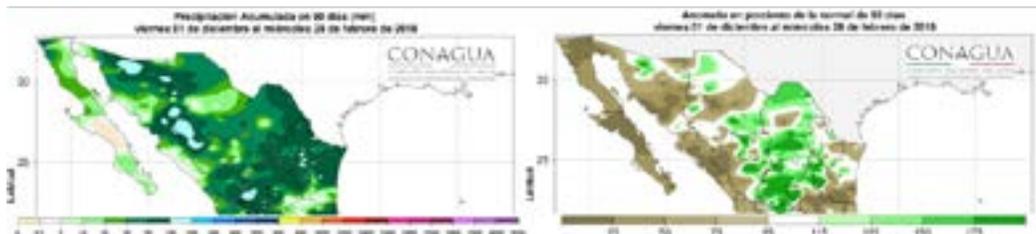


Figure 3 (above): Accumulated precipitation in mm (left) and percent of normal (right) for December-February. Maps from SMN.

DROUGHT

Dry conditions in the past month have expanded drought conditions in New Mexico and North Texas, according to the [North American Drought Monitor](#) (NADM) (Figure 4). Extreme drought conditions have developed in northern New Mexico and spread towards northern Texas. Severe drought conditions remained in most of New Mexico, and moderate conditions developed in South and West Texas. Mexican states bordering the Rio Bravo remain mostly drought-free. However, abnormally dry conditions continued in parts of Chihuahua and moderate to severe drought conditions developed in southern Tamaulipas. Conditions are predicted to persist through June in New Mexico and the West half of Texas, according to the [U.S. Seasonal Drought Outlook](#), and drought is predicted to develop throughout South and West Texas.

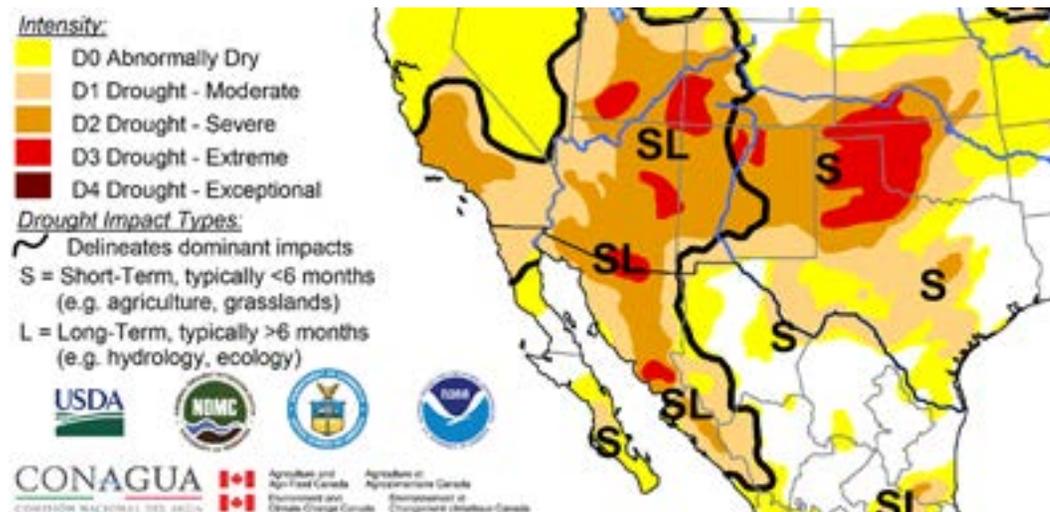


Figure 4 (above): North American Drought Monitor, released March 12, 2018.

FORECAST

APRIL | MAY | JUNE

TEMPERATURE

The one-month NOAA temperature outlook (April; Figure 5) favors chances for above-average temperatures for most of New Mexico and Texas through April. Chances for above-average temperatures increase further into the spring and summer, according to the three-month NOAA temperature outlook (May-June; figure not shown).

The forecast from CONAGUA's Servicio Meteorológico Nacional (SMN) for April, predicts maximum temperatures with above-average anomalies in Tamaulipas, Nuevo León, Coahuila, Sonora, Baja California, and some regions of the middle and southern Chihuahua, and below-average anomalies are expected in Northeast Chihuahua. For May, SMN predicts above-average temperature anomalies in Tamaulipas, Nuevo León, Coahuila, Chihuahua and in the border between Sonora and Baja California (Figure 6).

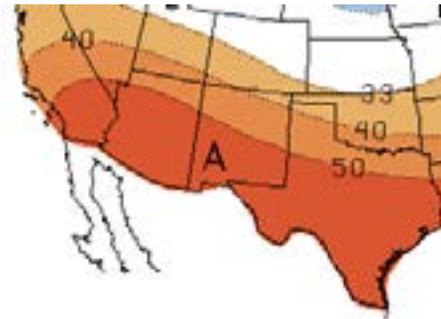


Figure 5: NOAA one-month temperature outlook (April). Forecast made on March 15, 2018 by [CPC](#).

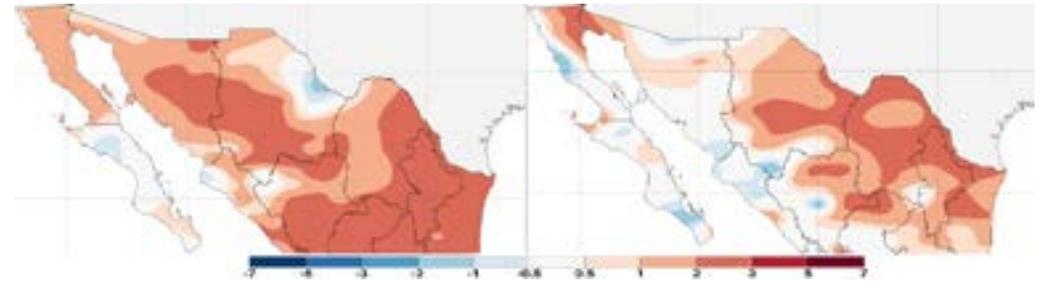


Figure 6 (above): Predicted minimum temperature anomalies for northern of Mexico in (°C), April 2018 (left) and May 2018 (right). Forecast made in March 1, 2018 by [SMN](#).

PRECIPITATION

The NOAA one-month precipitation outlook predicts increased chances for below-average precipitation for most of New Mexico, and parts of West and South Texas (April; Figure 7). Chances for below-average precipitation increase further into spring and summer, with increased chances covering almost all of both states, according to the three-month NOAA temperature outlook (May-June; figure not shown).

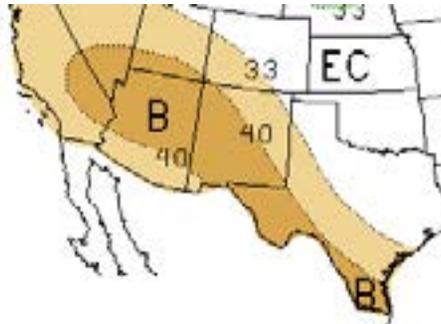


Figure 7 (above): NOAA one-month precipitation outlook (April). Forecast made on March 15, 2018 by [CPC](#).

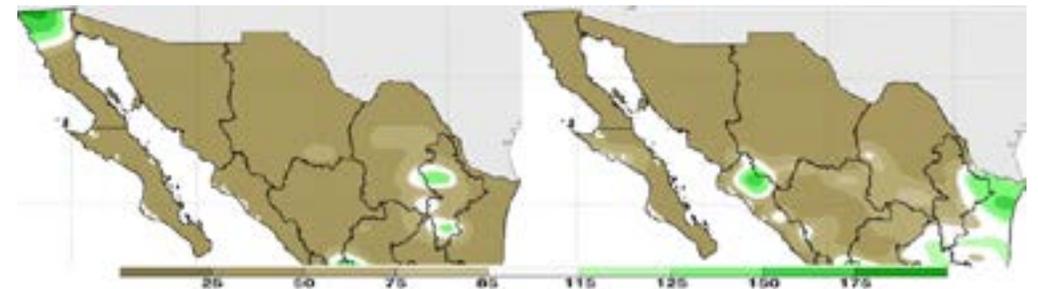


Figure 8 (above): Predicted precipitation anomalies for northern of Mexico (in %), April 2018 (left) and May 2018 (right). Forecast made on March 1, 2018 by [SMN](#).

For April, the SMN precipitation outlook predicts above-average conditions in northern Baja California and below-average conditions in Tamaulipas, Nuevo León, Coahuila, Chihuahua and Sonora. The precipitation forecast for May shows above-average conditions in Northeast Nuevo León and Tamaulipas and below-average conditions in the rest of Nuevo León, Coahuila, Chihuahua, Sonora and Baja California Peninsula (Figure 8).

FIRE

According to the North American Seasonal Fire Assessment and Outlook, fire potential will expand from the southern plains to the Southwest deserts due to below-average temperatures and precipitation forecasted through the end of spring. Fire risk will expand across the Southwest U.S. region and northern Mexico through May, as dry conditions spread quickly and support potential for ignitions (Figure 9). Dry, pre-greenup fuels coupled with windy and dry spring conditions will increase the potential for ignitions and rapid spread rates. In Mexico, forecasts for warm and dry conditions greatly increase fire potential across northeastern Mexico from the southern states and across the Yucatán.

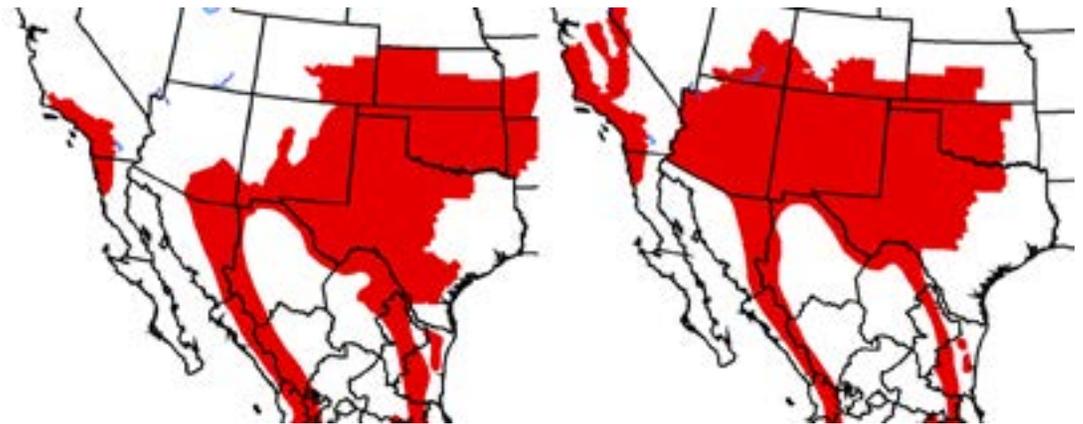


Figure 9 (above): Fire outlook for April (left) and May (right). Red shading indicates conditions that favor increased fire potential. Green shading indicates conditions that favor decreased fire potential. [Forecast](#) made on March 12, 2018 from [NIFC](#) and [SMN](#).

EL NIÑO-SOUTHERN OSCILLATION (ENSO)

As of early March, La Niña conditions have weakened, but are still present in the east-central Pacific Ocean, as reflected by below-average sea surface temperatures ([IRI](#); [NOAA](#)). Forecasts favor a transition from La Niña to ENSO neutral conditions during the March-May season with ENSO neutral conditions continuing through the summer (Figure 10).

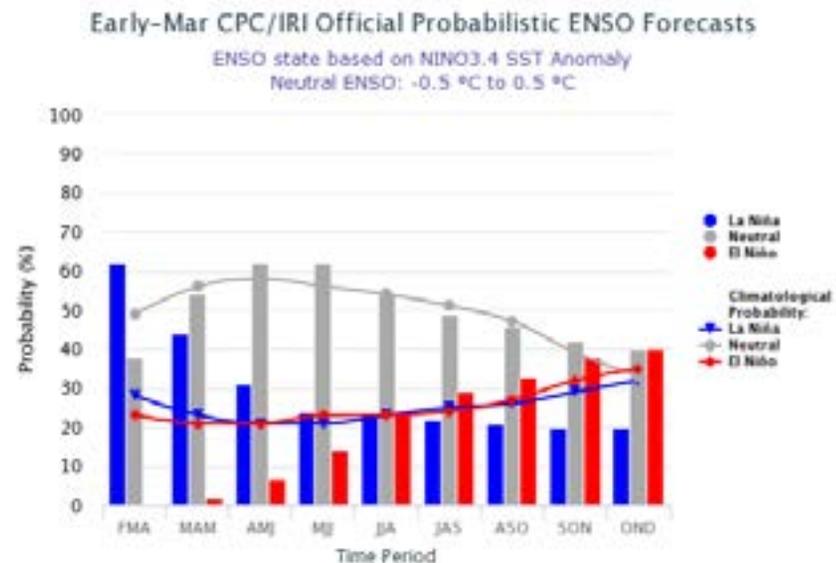


Figure 10 (above): ENSO probabilistic forecast from [IRI](#).

For more information in:

English: <http://iri.columbia.edu/our-expertise/climate/enso/enso-essentials/> and <http://www.ncdc.noaa.gov/teleconnections/enso/>.

Español: <http://smn.cna.gob.mx/es/climatologia/diagnostico-climatico/enos> and <http://www.smn.gov.ar/?mod=biblioteca&id=68>

ANNOUNCEMENTS

[NORTH AMERICAN DROUGHT MONITOR FORUM](#)

The meeting will focus on trilateral advances in the North American Drought Monitor (NADM). The forum will be held May 1-3, 2018, in Calgary, Alberta, Canada.

[FLOW 2018: MANAGING RIVERS, RESERVOIRS, AND LAKES IN THE FACE OF DROUGHT](#)

This three-day problem-solving workshop, held April 24-26 in Fort Collins, Colorado, will provide presentations that focus on practices for dealing with drought and extreme flow variability around the globe. The [workshop](#) will provide unique perspectives and experiences for any state, federal agency, staff, non-governmental organization, private sector water managers and scientists interested in water resource management.

[ADVANCES IN DISTRIBUTION SYSTEM MODELING WEBINAR](#)

Hydraulic modeling is an essential tool for planning and for day-to-day operations of water distribution systems. This webinar taking place on April 11, is the fourth edition of the [AWWA](#) Manual of Water Supply Practice and is open for anyone interested in learning and discussing the basics of advances in model maintenance and data management.

[MEXICO'S CLEAN ENERGY AND MOBILITY EXHIBITION AND CONGRESS](#)

This event will take place May 21-24. In line with the explosive growth of Mexico's renewable energy sector, [MIREC WEEK 2018](#) will be held at the WTC in Mexico City, Mexico and will continue the successful combination of over 300 speakers providing insights across 6 streams of content including solar, wind, grids & storage, and finance, and an exhibition for sponsorship and networking opportunities. The MIREC WEEK team has also just published a free [new report](#), called the 'The Big Mexico Renewable Energy Report', that outlines opportunities in Mexico's renewable energy sector.

NEWS

[Two Nations One Water Summit looks at possible solutions](#), March 03, 2018

[Supreme Court issues opinion on Rio Grande water dispute](#), March 06, 2018

[Fire Season 2018: Hotter, faster fires expected this year](#), March 18, 2018

[Bracing for the big one this wildfire season](#), March 17, 2018