

Rio Grande|Bravo

CLIMATE IMPACTS & OUTLOOK APRIL 2017

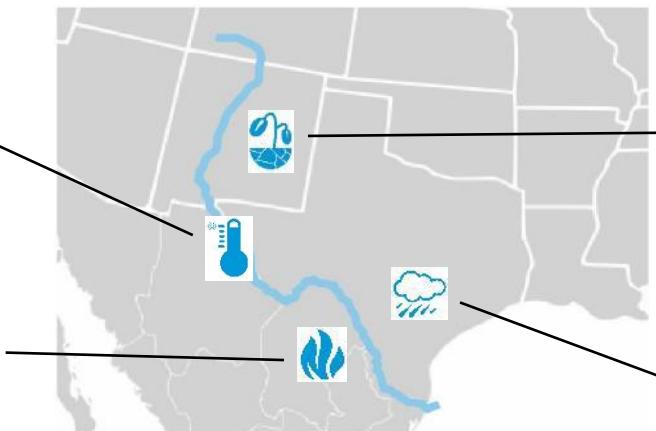
SUMMARY

Forecasts favor a continuation of above-average temperatures in the Rio Grande/Bravo Basin through July.

AT A GLANCE

Rio Grande/Bravo Region

The entire region registered above-average temperatures in January–March of 2017.



Sierra Madre Oriental

Above-average fire potential is forecasted through June.

Eastern New Mexico

New Mexico, east of the Rio Grande, was experiencing abnormally dry conditions by the end of March. Drought development is likely in the region by the end of June.

Southeast Texas

Forecasts indicate increased chances for above-average precipitation in May.

REGIONAL CLIMATE OVERVIEW

JANUARY | FEBRUARY | MARCH

Precipitation during January through March in New Mexico and Texas (Figure 1, left) was: 1) 5–90% below average along the Rio Grande from about El Paso to Laredo; 2) below average in central and southeastern New Mexico; and 3) 100–300% of average most everywhere else, including western and northern New Mexico and South Texas. The areas of above-average precipitation occurred mostly as a result of fronts that passed through in late January, mid-February, and late March that brought moisture from the northern part of the U.S., which has been experiencing La Niña-like atmospheric conditions.

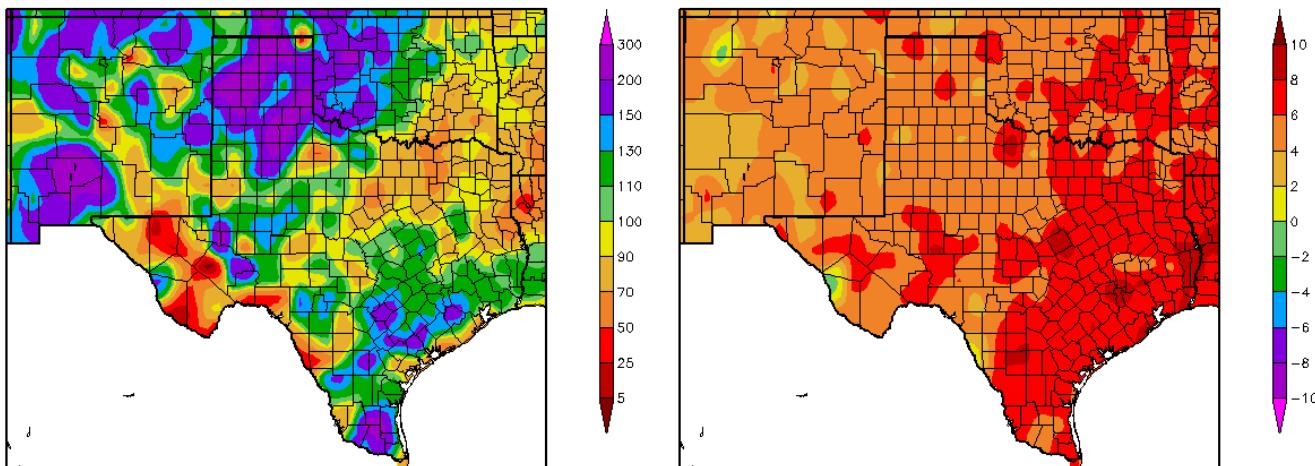


Figure 1 (above): Percent of average precipitation (left) and departure from average temperature in degrees F (right), compared to the 1981–2010 climate average, for 1/1/2016–3/31/2017. Maps from [HPRCC](#).

Continuing the trend over previous months, temperatures were 2–6°F (1.1–3.3°C) above average over almost all of New Mexico and Texas from January–March, with East and South Texas experiencing temperatures 6–10°F (3.3–4.4 °C) above average (Figure 1, right).

Temperatures during the first half of April (4/1/2017–4/16/2017) were 0–6°F (0–3.3°C) above average for almost all of New Mexico and Texas (figure not shown). Central and West Texas and eastern New Mexico experienced precipitation 200-800% of average, while southern and western New Mexico, and patches in Texas, experienced precipitation 0-75% of average.

Warmer than average temperatures continued in northern Mexico for January–March, with the exception of northern Baja California and southern Chihuahua that had cooler than normal temperatures. Anomalies of 3.6–5.4°F (2–3°C) (Figure 2, left) above average occurred from Chihuahua and Durango to the Northeast. Most of the frosty areas were located mainly in Chihuahua, Durango and Zacatecas; the largest number of frost days were located in the north of Durango with more than 75 days of minimum temperatures at or below 32°F (0°C) (Figure 2, right).

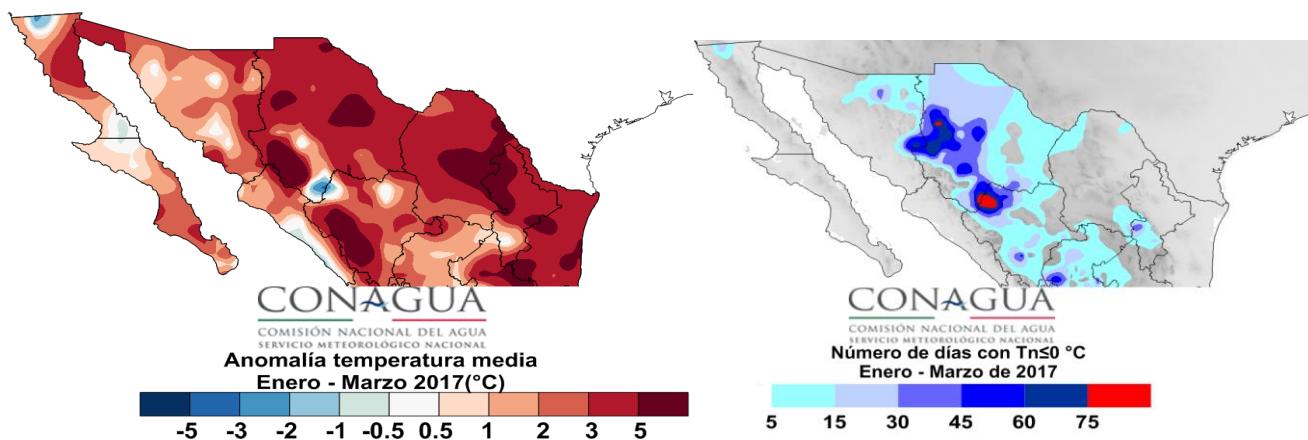


Figure 2: Temperature anomalies in °C (left) and number of days with minimum temperatures at or below 0°C (32°F) (right) for January–March. Maps from [SMN](#).

DROUGHT

According to the [North American Drought Monitor](#) (NADM), by the end of March most of New Mexico east of the Rio Grande was experiencing abnormally dry conditions, and the Northeast corner of the state was experiencing moderate drought conditions (Figure 3). Small areas of West Texas, Central Tamaulipas, and northern Nuevo León, Coahuila, and Chihuahua were experiencing abnormally dry conditions. Drought development is likely in the Texas panhandle and eastern New Mexico through June, according to the [U.S. Seasonal Drought Outlook](#) (figure not shown).

Intensity:

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

Drought Impact Types:

- ~ Delineates dominant impacts
- S = Short-Term, typically <6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically >6 months (e.g. hydrology, ecology)

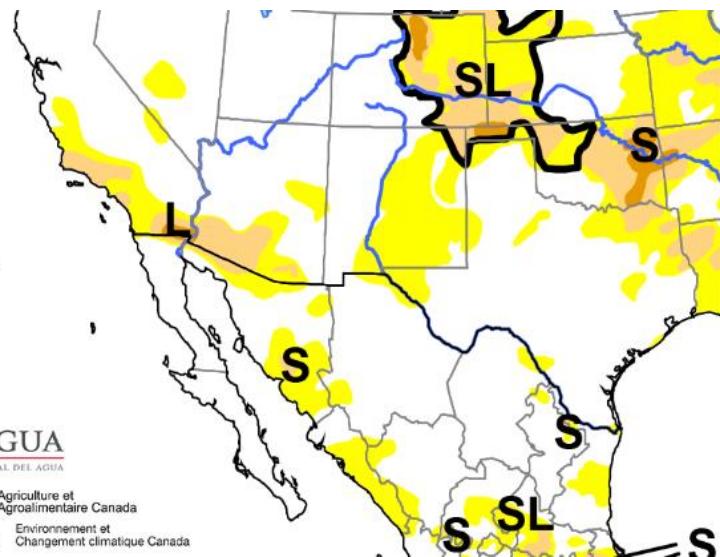


Figure 3 (left):
North American
Drought Monitor,
released April 14,
2017.

FORECAST

APRIL | MAY | JUNE

TEMPERATURE

Both the one-month (May; Figure 4) and three-month (May–July; figure not shown) NOAA temperature outlooks favor increased chances for above-average temperatures in the region. Forecasts from CONAGUA's Servicio Meteorológico Nacional (SMN) indicate above-average temperatures on the Mexico side of the border through May and June, mainly in the northern part of Chihuahua (Figure 5).

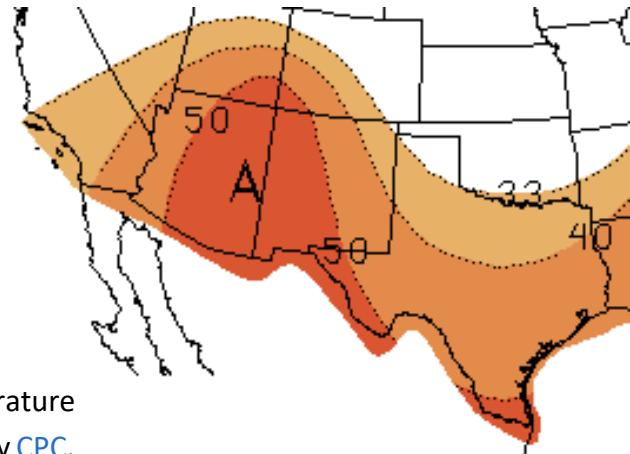


Figure 4 (right): NOAA one-month temperature outlook (May). Forecast made on April 20, 2017 by [CPC](#).

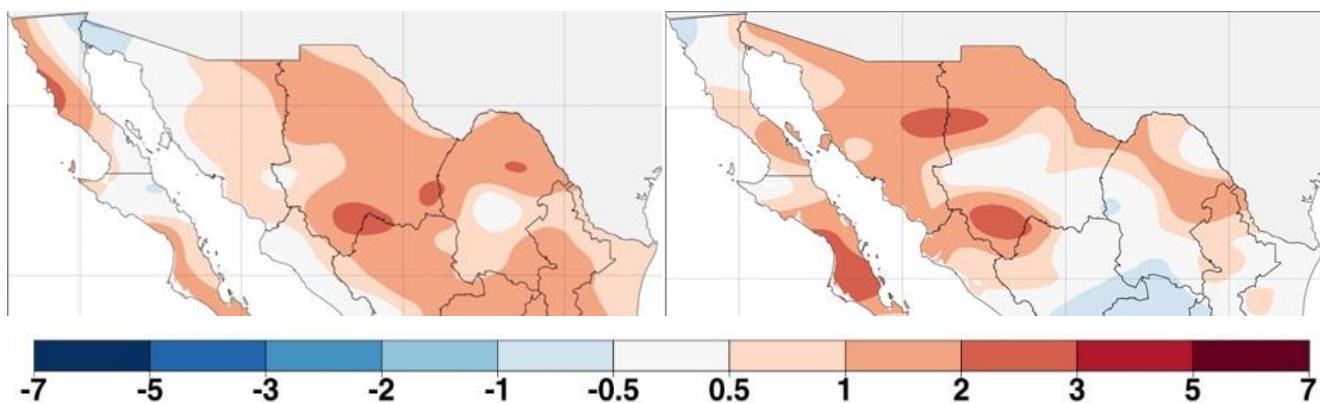


Figure 5 (above): Predicted maximum temperature anomalies for northern Mexico (in °C); May (left) and June (right). Forecast made on April 1, 2017 by [SMN](#).

PRECIPITATION

NOAA predicts equal chances of below-, average, or above-average precipitation for all of New Mexico and West and North Texas in May (Figure 6). Forecasts for May also indicate increased chances for above-average precipitation in Central, East, and South Texas. The three-month NOAA forecast (May–July; [figure not shown](#)) predicts increased chances for above-average precipitation in all of New Mexico and along the gulf coast in Texas, and equal chances for North and Central Texas.

For Mexico in April and May, SMN forecasts below-average precipitation in the state of Chihuahua. SMN also forecasts conditions near average for May and above-average for June for Nuevo León, Tamaulipas and eastern Coahuila (Figure 7). Differences between the NOAA and SMN forecasts could be due to several factors: (1) NOAA forecasts are based on a combination of statistical and dynamic models, whereas SMN forecasts use statistical models, analogue years and the output of climate global models, and (2) NOAA predicts shifts in the probability of precipitation, whereas SMN predicts precipitation amounts.

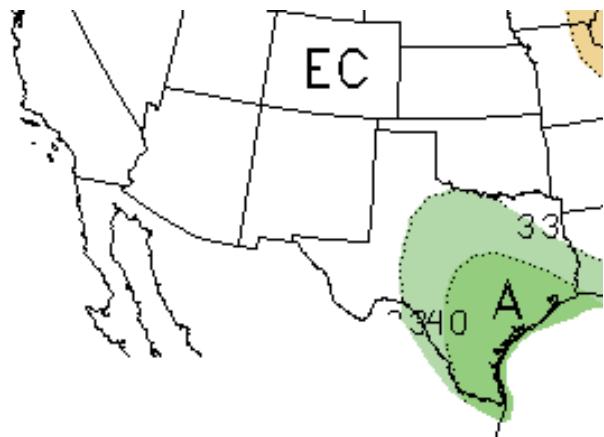


Figure 6 (above) : NOAA one-month precipitation outlook (May). Forecast made on April 20, 2017 by [CPC](#).

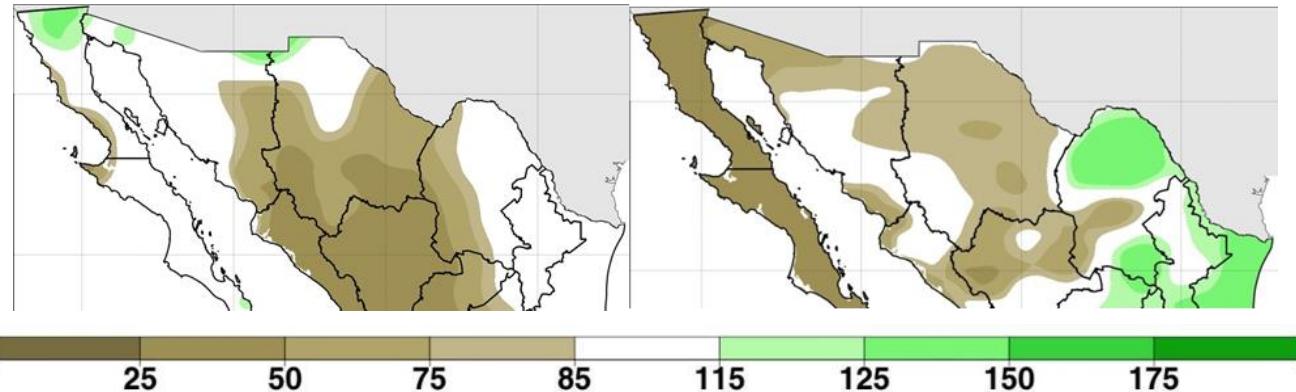


Figure 7 (above): Percent of average precipitation for northern Mexico; May (left) and June (right). Forecast made on April 1, 2017 by [SMN](#).

FIRE

The National Interagency Fire Center (NIFC) and SMN forecasts, made on April 10th, favor above-normal fire potential for West-Central New Mexico in June (Figure 8). In Mexico, above-normal fire potential is forecasted in the mountain ranges in May, decreasing from the South by June. Fire potential peaks for the Southwest U.S. and northern Mexico in May and June—just prior to the monsoon season—when warm, dry and windy conditions, with high fuel availability, contribute to grassland fire risks.

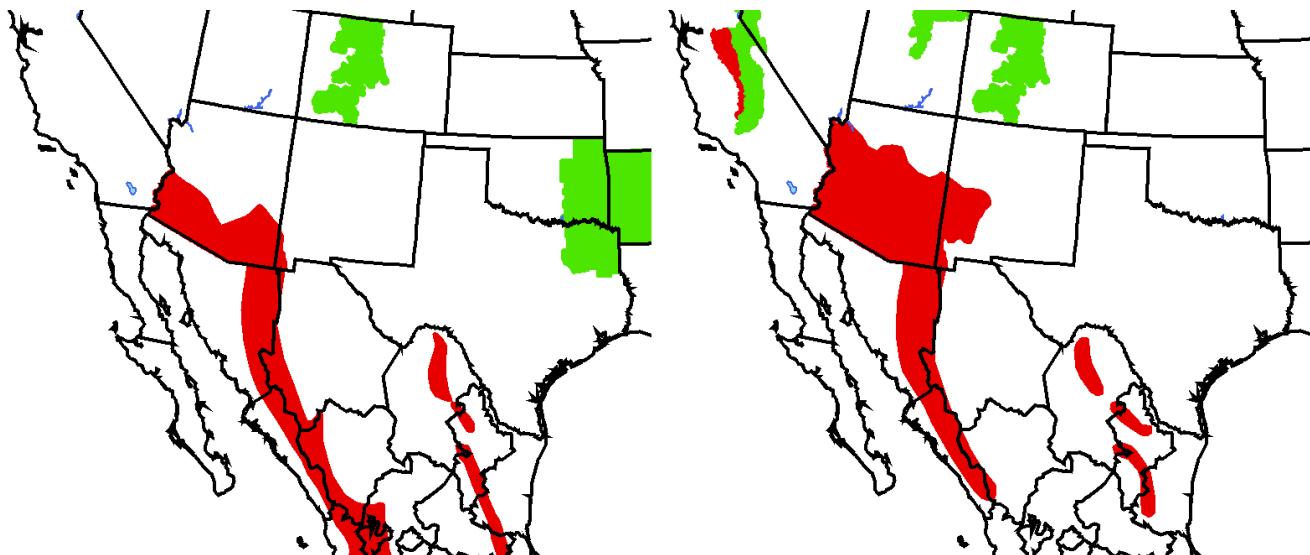


Figure 8 (above): Fire outlook for May (left) and June (right). Red shading indicates conditions that favor increased fire activity. Green shading indicates conditions that favor decreased fire activity. [Forecast](#) made on April 10, 2017 from NIFC and SMN.

EL NIÑO-SOUTHERN OSCILLATION (ENSO)

Sea surface temperatures (SSTs) and atmospheric conditions in the tropical Pacific Ocean indicate ENSO-neutral conditions, which decreases climate forecast skill. Nonetheless, warmer-than-average SSTs were observed in the eastern tropical Pacific, while atmospheric conditions (cloudiness and rainfall) in the central and western tropical Pacific continued to indicate weak La Niña conditions ([IRI](#); [NOAA](#)). Predictions show an approximately 50-60% chance of neutral conditions through at least June 2017, and increasing chances for development of El Niño conditions between August and December (Figure 9; [NOAA](#)).

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>

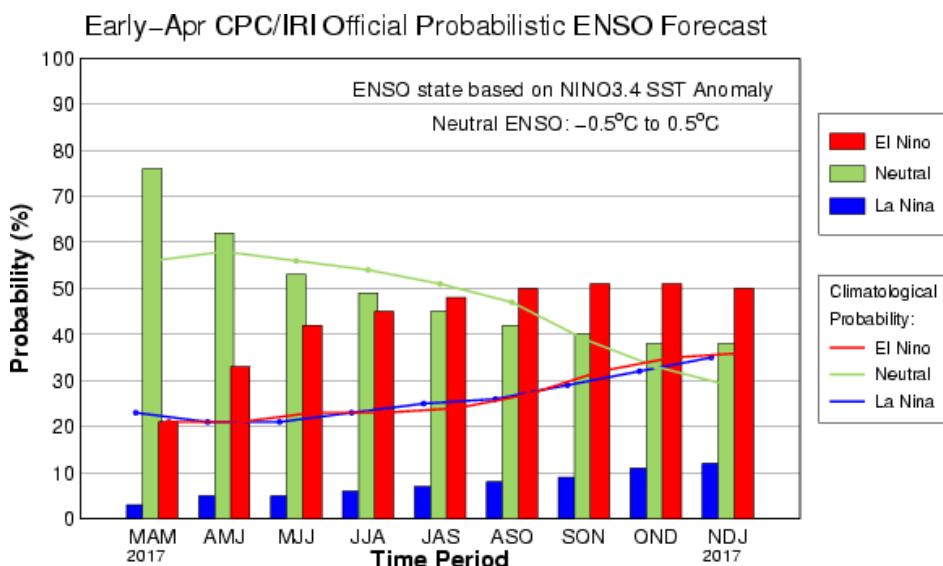


Figure 9 (left): ENSO probabilistic forecast from [IRI](#).

RESOURCES/TOOLS

DROUGHTVIEW

A new interactive website allows users to view satellite data of vegetation cover, greenness, and precipitation for the U.S. and northern Mexico. [DroughtView](#) enables users to choose a basemap, such as greenness or precipitation, and to overlay other information, such as grazing allotments, the current drought monitor, and fire (current and historical). Ranchers, land managers, and drought impacts groups (who can also input impact information), have used this tool to inform range management decisions, and to determine fire risk.

“WATER ON-THE-GO”

A new mobile app, developed by the U.S. Geological Survey, gives users information on current conditions of nearby streams across Texas. “[Water On-the-Go](#)” aims to reduce deaths from floods, and allows users to input a specific location or use their phone’s GPS to locate a nearby stream and learn about its flow and height, as well as local rainfall and lake levels. The app can also be used by recreationalists to determine where and when to go boating, fishing, or hiking.

UPCOMING FORUMS

NATIONAL ADAPTATION FORUM

The next meeting of the [National Adaptation Forum](#) will be on May 9-11, 2017 in Saint Paul, Minnesota. The call for proposals is now closed, but registration is still open to attend the forum. The National Adaptation Forum, which brings together members of the adaptation community that are focused on moving beyond awareness to adaptation action, will foster knowledge exchange among these members and will provide other opportunities for professional development through formal trainings and presentations by practitioners.

5TH GLOBAL PLATFORM FOR DISASTER RISK REDUCTION

Mexico will host the [5th Global Platform for Disaster Risk Reduction](#) in Cancún, Mexico on May 22–26, 2017. The global conference is the most important multilateral forum of its kind, aiming to “reduce loss of life and economic losses from disaster caused by man-made and natural hazards.”

23RD CONFERENCE ON APPLIED CLIMATOLOGY

Sponsored by the American Meteorological Society, the [23rd Conference on Applied Climatology](#) will be held in Asheville, North Carolina on June 26-28, 2017. Registration begins in late March.

98TH ANNUAL MEETING OF THE AMERICAN METEOROLOGICAL SOCIETY

The next meeting of the [American Meteorological Society](#) (AMS) is scheduled for January 7–11, 2018 in Austin, Texas. The meeting is “the world’s largest yearly gathering for the weather, water, and climate community.”

NEWS HEADLINES

Drought Planning: Water Shortages Expected in New Mexico March 31, 2017:

<https://www.usnews.com/news/best-states/new-mexico/articles/2017-03-31/drought-planning-water-shortages-expected-in-new-mexico>

Rio Grande water managers freed up from some ESA constraints March 28, 2017:

<http://nmpoliticalreport.com/237217/no-jeopardy-for-the-minnow/>

Lower Rio Grande Sees Highest Projected Water Allotment In 7 Years – But Challenges Remain April 10, 2017: <http://krwg.org/post/lower-rio-grande-sees-highest-projected-water-allotment-7-years-challenges-remain>

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United States

Victor Murphy

Climate Focal Point
NOAA-National Weather Service
Southern Region

Gregg Garfin

Climatologist
Climate Assessment for the Southwest
(CLIMAS)

Sarah LeRoy

Research Assistant
Climate Assessment for the Southwest
(CLIMAS)

Mark Shafer

Director of Climate Services
Southern Climate Impacts Planning Program

Meredith Muth

International Program Manager
Climate Program Office
(NOAA)

Mexico

Martín Ibarra | Óscar García | Martín Guillén

Seasonal Forecasts
Mexico National Meteorological Services
(SMN)

Reynaldo Pascual | Adelina Albalil

Drought
Mexico National Meteorological Services
(SMN)

Julio Martínez

Diagnostic Observations
Mexico National Meteorological Services
(SMN)

Darío Rodríguez Rangel

Mexico National Meteorological Services
(SMN)

Juan Saldaña Colín

Climate Services
Mexico National Meteorological Services
(SMN)