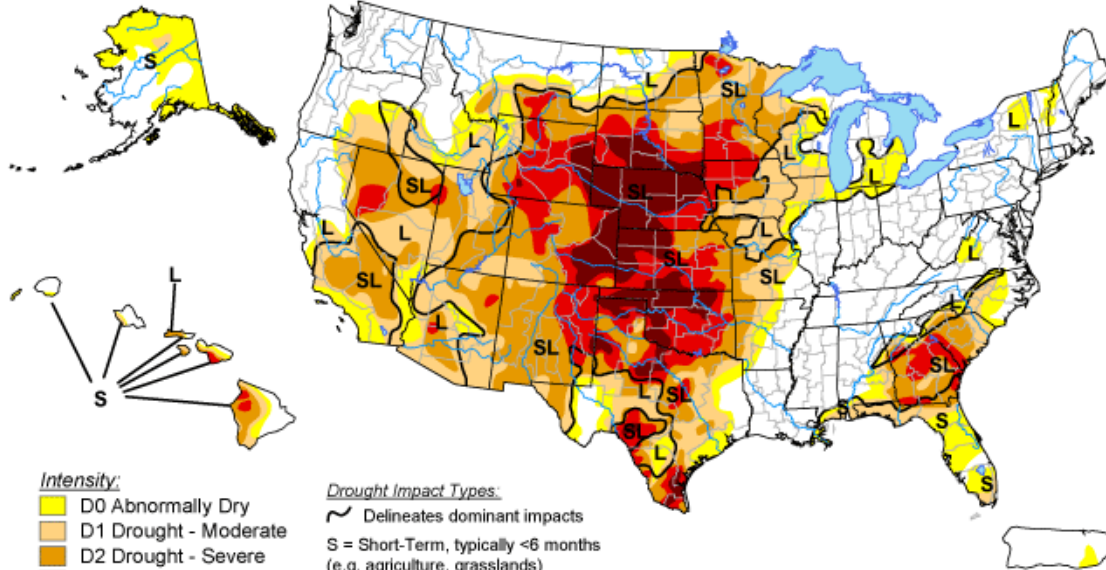


U.S. Drought Monitor

February 12, 2013

Valid 7 a.m. EST



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)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://droughtmonitor.unl.edu/>



Released Thursday, February 14, 2013

Author: Michael Brewer/L. Love-Brotak, NOAA/NESDIS/NCDC

Drought Early Warning and Preparedness

Winter Season Outlook and Impacts Forum
October 25, 2016

Chad McNutt
NOAA, National Integrated Drought Information System (NIDIS)



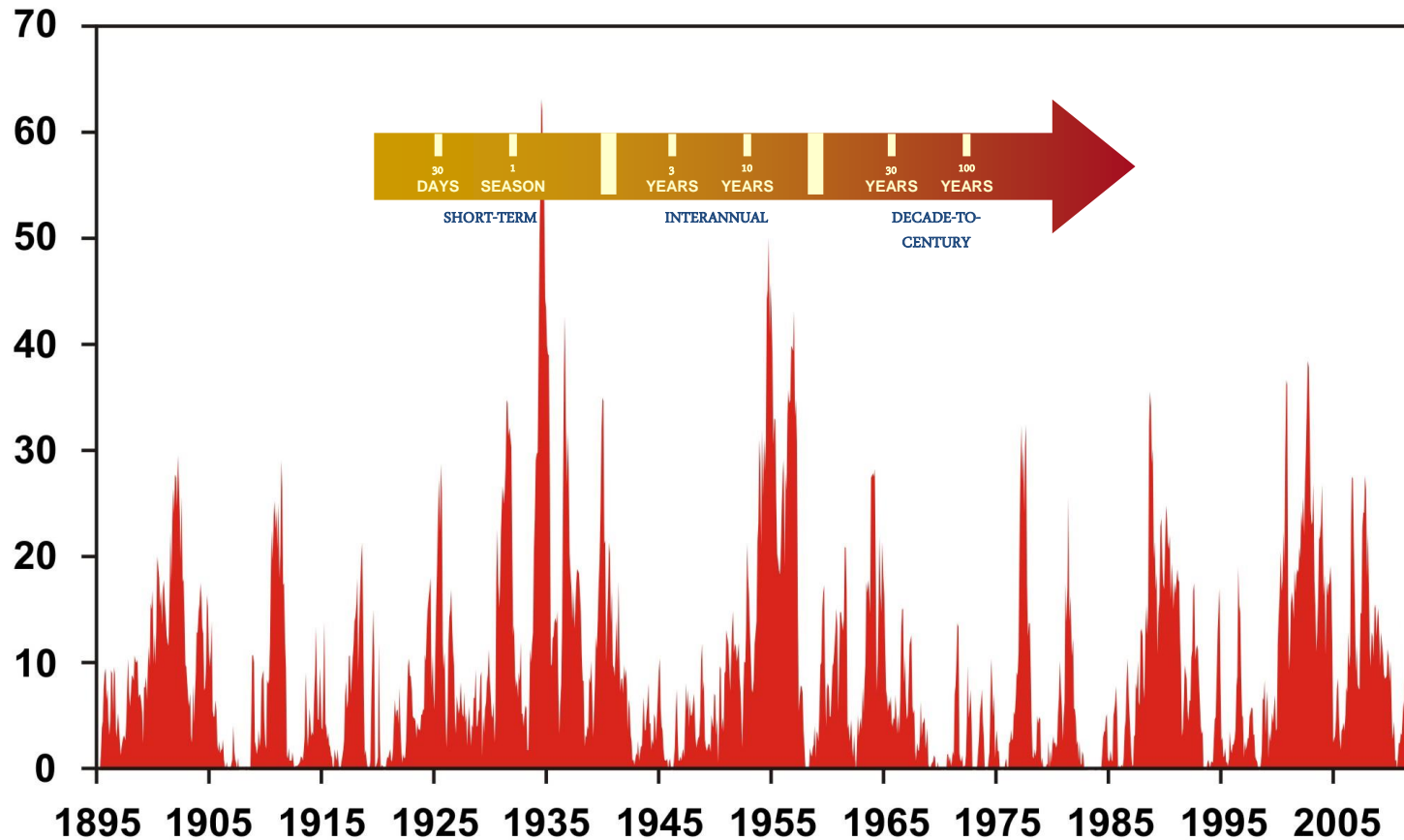
.....as with rainbows each person experiences their own drought
-Kelly Redmond

Why worry they said. It would rain this fall. It always had. But it didn't. And many a boy would become a man before the land was green again.

--Elmer Kelton, *The Time it Never Rained*

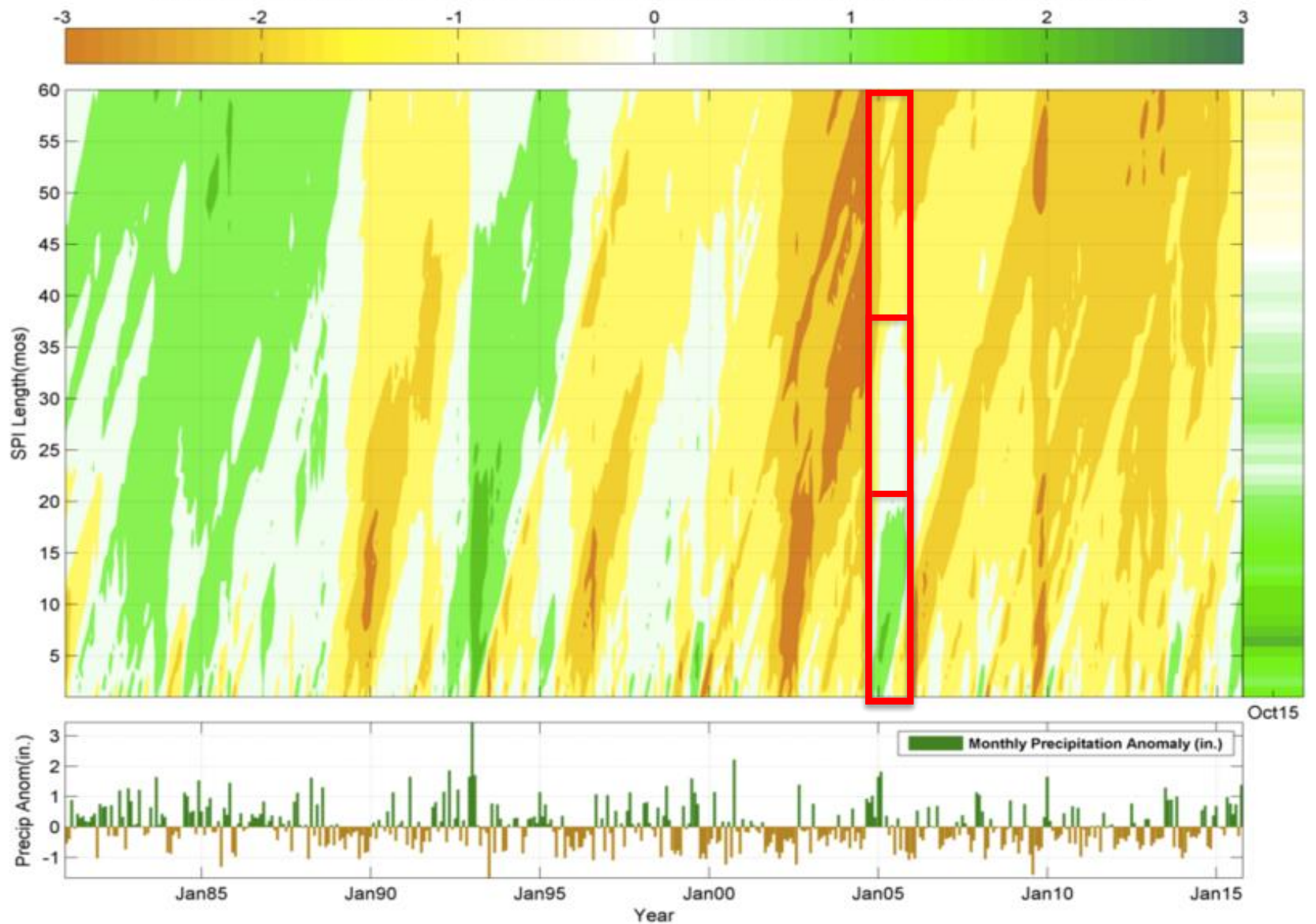
Percent Area of the United States in Severe and Extreme Drought

January 1895–July 2011



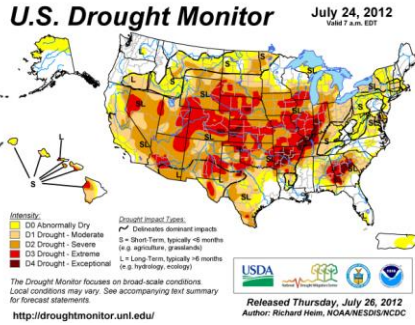
Based on data from the National Climatic Data Center/NOAA

Arizona Climate Division 2, Standardized Precipitation Index - (1-60 mos, Jan1981 - Oct2015)

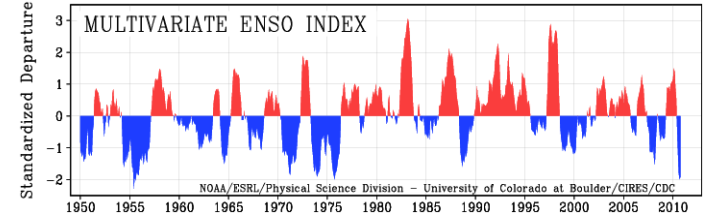


Seasonal Climate Outlook Forum

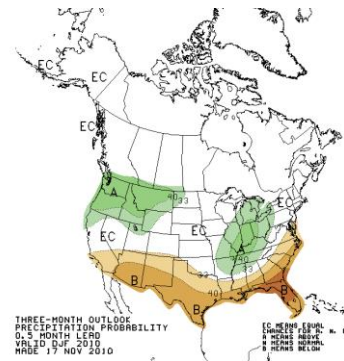
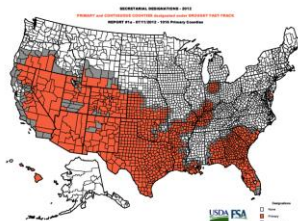
Current Conditions



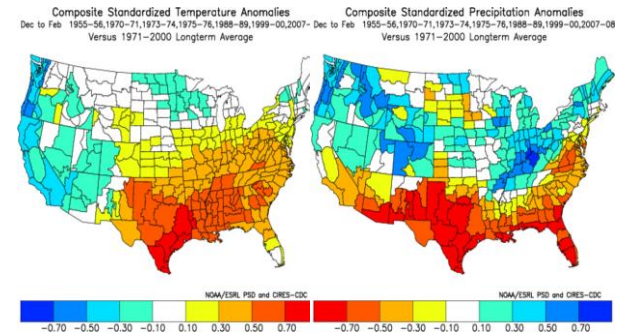
El Nina/La Nina (ENSO)



Impacts & Vulnerability



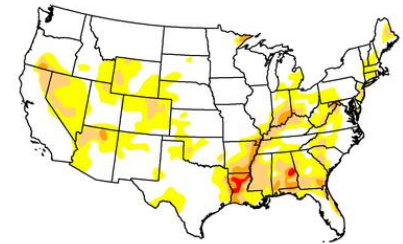
Seasonal Forecasts



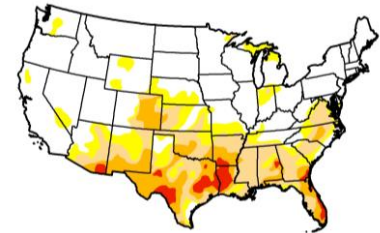
Effects of ENSO

Southern Plains Drought

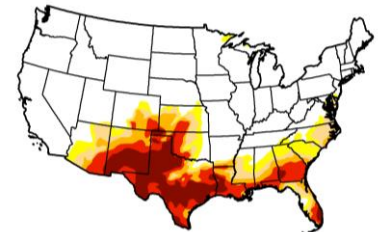
- 2011 drought was predicted
 - Seasonal outlooks picked up on it as early as Nov. 2010.....BUT, rapid intensification and the extreme magnitude were not anticipated
 - Only partially explained by La Nina
 - Aggressive and intense nature of the drought left many struggling to prepare and respond



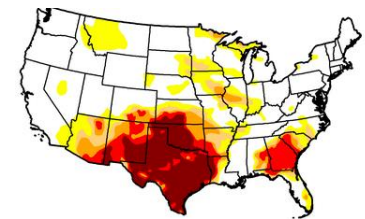
October 5, 2010



March 8, 2011



June 7, 2011



September 27, 2011

So. Plains Outlook Forums 2010-Present

- Multiple sectors: water supply, agriculture, emergency managers
- Focus: Current status and potential change in drought and communicating the message
- Coordinated with several federal and state agencies, universities and professional organizations:
 - TXDEM, TX Water Development Board, NM Office of State Engineer, OK Water Resources Board
 - USACE, USGS, USDA-Extension
 - State Climatologists
 - Cattle Raisers, Plains Grains Inc., Cotton Growers



Media Outreach and Engagement

- Media has somewhat unique requirements for information delivery, format, and timeliness. Thus, need to engage as a distinct constituency
- Media-specific webinars (April and May 2011)
- Press conferences and advisories for outlook forums
- Participation in NOAA winter outlook teleconference
- Press releases and op-eds to regional media outlooks



Drought Management Webinars

- Southern Climate Impacts Planning Program (SCIPP) & NIDIS
- Webinars on various drought topics
 - La Niña
 - Flash Drought
 - Water Resources
 - Cattle Industry
 - Seasonal Forecasts
 - Wildfire
 - U.S. Drought Monitor
 - Wildlife
- Webinars are posted on YouTube

MANAGING DROUGHT
IN THE SOUTHERN PLAINS

You are invited to join us in a webinar (web-based seminar) series to discuss drought conditions, impacts and resources available to help manage drought in the Southern Plains. Webinars will be held on the 2nd Thursday of each month at 11:00 A.M. Central Time. A shortened briefing will also be offered on the 4th Thursday. The content is geared toward a general audience – anyone who has responsibility to manage or assist others in managing drought and its related impacts.

If you would like to join in these webinars, you need to register via the SCIPP website: <http://www.southernclimate.org> or e-mail scipp@mesonet.org. For each webinar, you will receive an e-mail with the link to access the webinar. Each webinar will last 45-60 minutes.

Each webinar will include an overview of the current drought assessment and outlook, summary of impacts across the region, and a topic or resource, such as La Niña or wildfire conditions. You will have an opportunity to suggest topics for following webinars. The primary focus is in the states most heavily impacted from the current drought - Texas, Oklahoma and New Mexico – but participation from surrounding states is encouraged.

The webinar series is sponsored by a partnership of the National Integrated Drought Information System (NIDIS), National Oceanic and Atmospheric Administration (NOAA), National Drought Mitigation Center, Southern Climate Impacts Planning Program, Climate Assessment for the Southwest, and the region's State Climatologists.

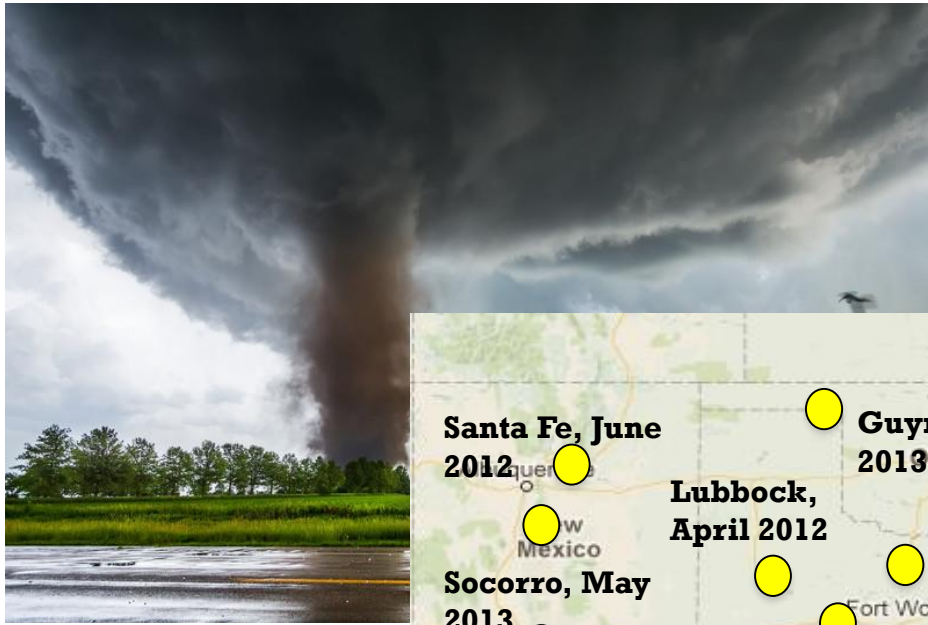
Information from the webinars will be posted on a website linked through <http://www.southernclimate.org>. A two-page summary will be produced and posted for each webinar. Please pass on this announcement to relative organizations or groups that are involved in managing or monitoring drought and its related impacts.

To register or for more information, contact:
Southern Climate Impacts Planning Program
<http://www.southernclimate.org>
405-325-2541 or scipp@mesonet.org

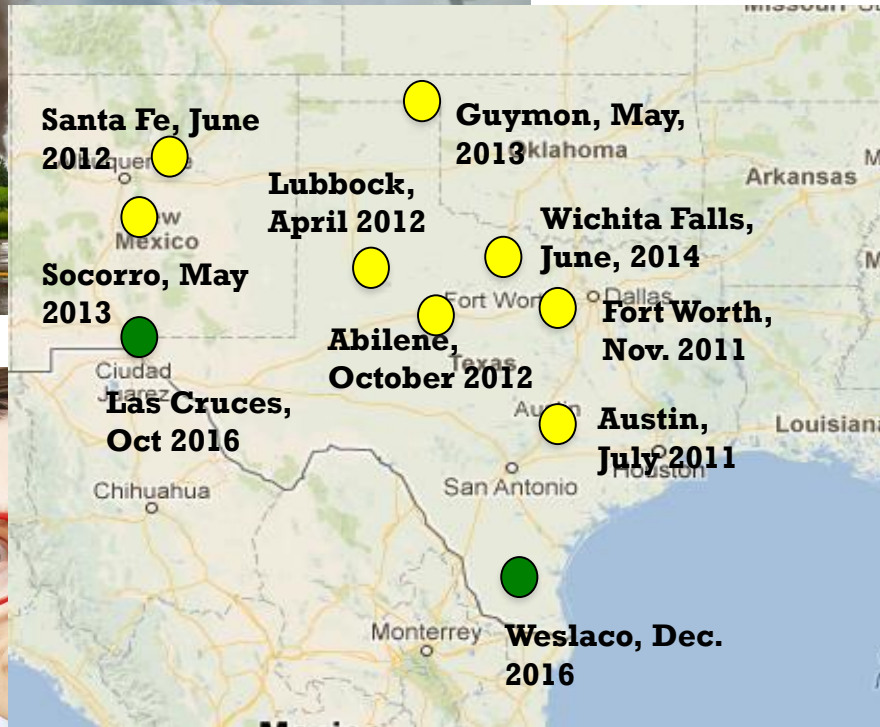
Webinar Topics:

- La Niña
- Cattle & Livestock
- U.S. Drought Monitor
- Ecological Impacts
- Seasonal Forecasting
- Flash Drought
- Water Supply
- Wildfire
- Drought Ready Communities
- Agricultural Impacts

<http://www.southernclimate.org/>



Storm Chasers

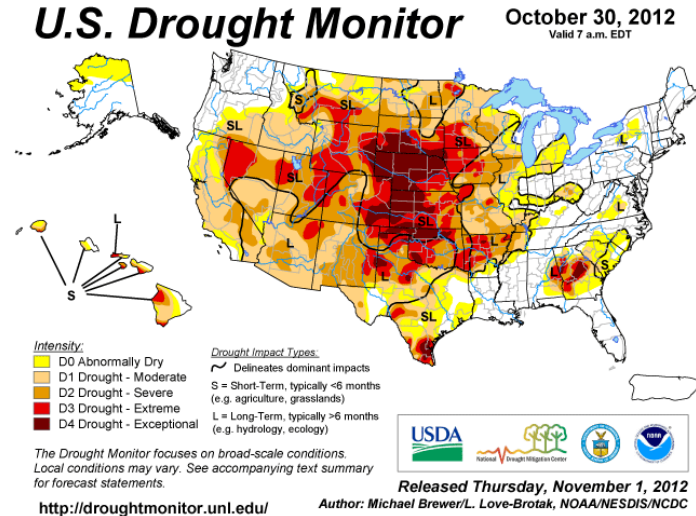


sers

Opening Slide Abilene, TX, Oct. 12, 2012

Setting the Stage: Purpose of the Meeting

- What are current conditions?
- What can we say about the drought continuing into 2013?
- What can we say about long-term trends?
- What are information needs going forward?



Southwest drought ending with onset of El Niño

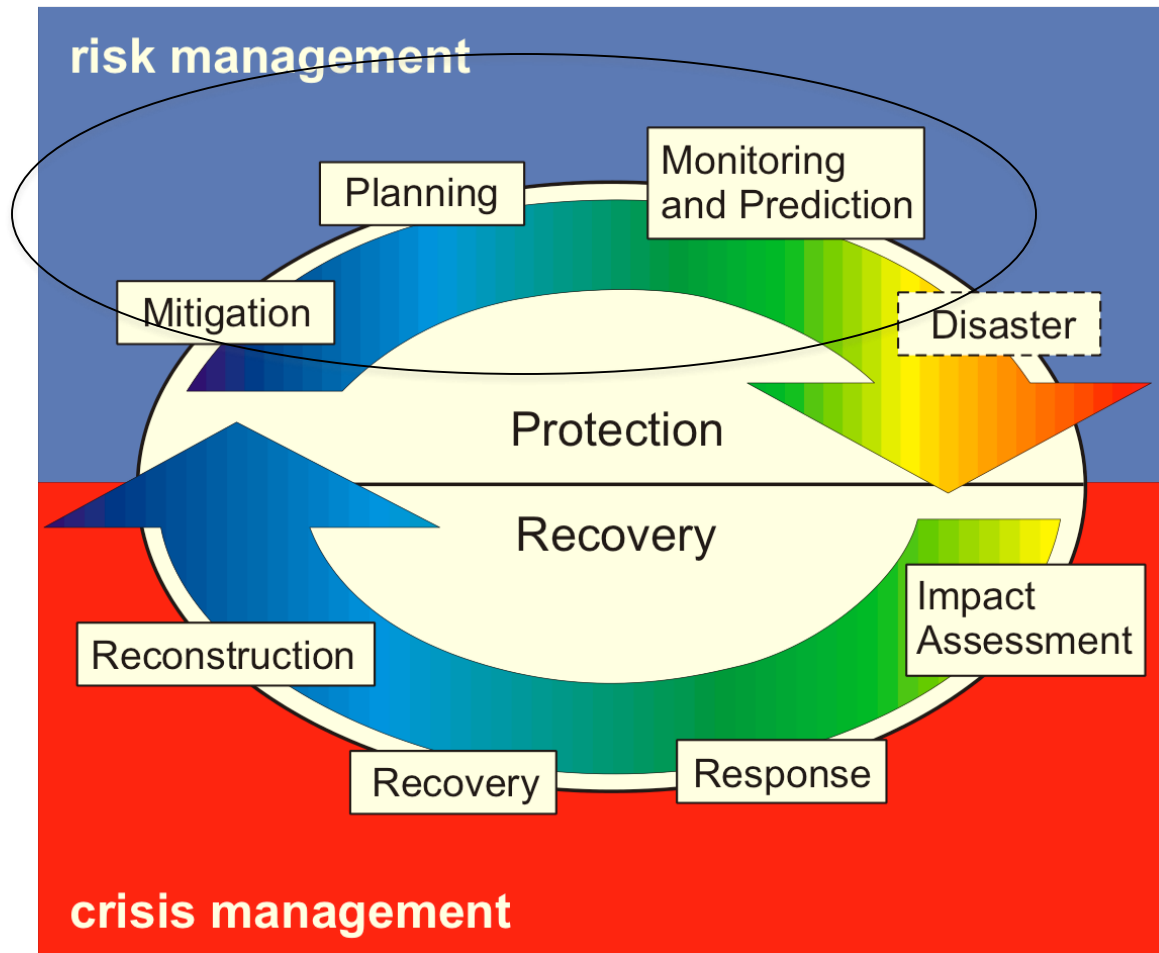
Southwest Farm Press

Aug. 28, 2012

Limping El Niño Offers Little Hope for Drought Relief

By John Fleck / Journal Staff Writer on Thu, Oct 4, 2012

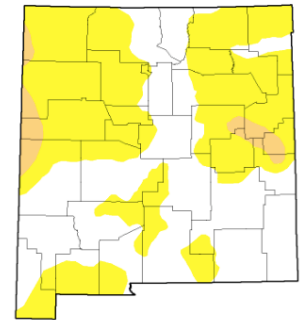
Crisis-Risk Management



Risk Management

- **Monitoring & Prediction**
 - New Mexico Drought Monitoring Group
 - Weather Service: local forecast offices
 - Rio Grande/Bravo Outlook
- **Planning**
 - Ranch management in the context of drought

U.S. Drought Monitor New Mexico



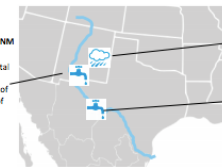
Rio Grande/Bravo CLIMATE IMPACTS & OUTLOOK

SUMMARY

Forecasts through November favor above-average temperatures in the Rio Grande/Basin area.

AT A GLANCE

Elephant Butte Reservoir, NM
As of September 16, the reservoir was at 6.5% of total capacity. Statewide, total reservoir storage was 24% of capacity at the beginning of September.



New Mexico
Precipitation totals were 71% of average precipitation during the first 7 months of 2016.

Northern Coahuila, Mexico
Gauges recorded between 5.3 inches (134.5 mm) and 7.5 inches (190 mm) during a 24-hour period from August 19-20, due to an influx of moisture from the Gulf of Mexico.

REGIONAL CLIMATE OVERVIEW

JUNE | JULY | AUGUST

From June 1st through August 31st the Rio Grande/Bravo Basin received precipitation ranging from 50-300% of average (Figure 1, left). New Mexico received average to below-average precipitation for the majority of the state, while the border region in Texas recorded precipitation 110-300% of average, except in the far west and southern corners of the state, which recorded precipitation 25-90% of average. Temperatures were average to 3°F (1.6°C) above average for almost all of the region for the same time period (Figure 1, right). During the first half of September, precipitation varied from above average (400%) around the New Mexico/Texas border to below average in western New Mexico and eastern Texas. Temperatures varied from 2°F (1.1°C) below average to 2°F (1.1°C) above average in the basin region during the same period.

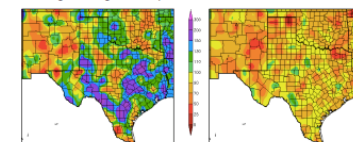


Figure 1: Percent of normal precipitation (left) and departure from normal temperature (right), for 6/1/2016 - 8/31/2016. Maps from HRBC.

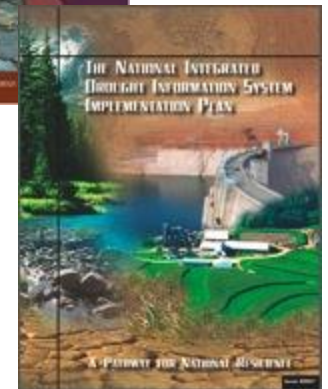
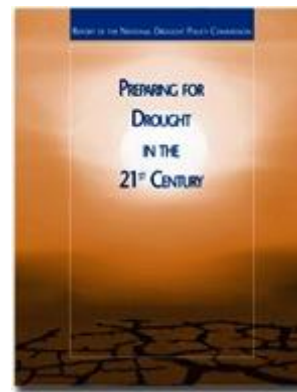
Two men walk into a bar.
One man orders H_2O .
The other says,
"I'll have H_2O , too."

The second man dies.

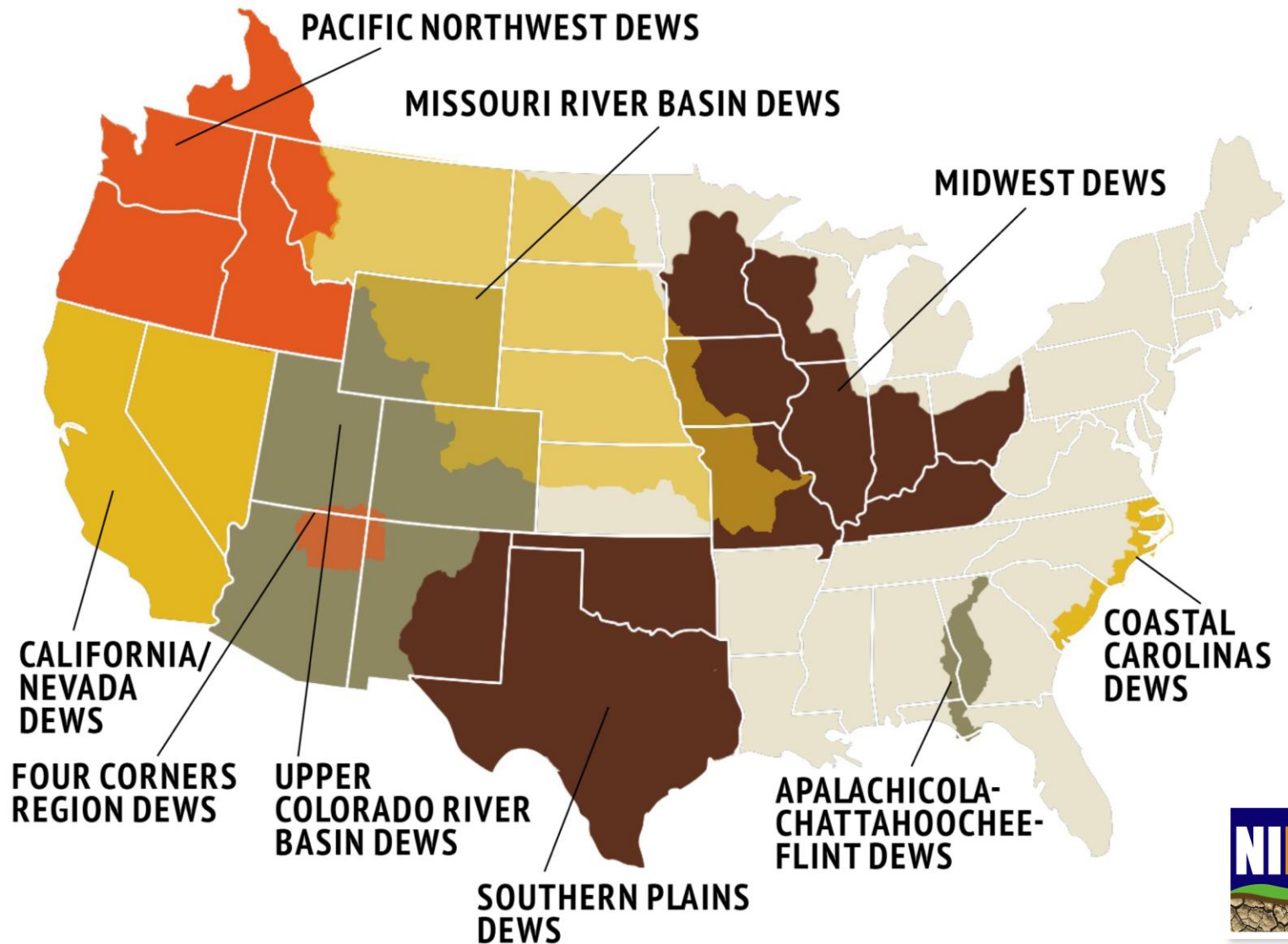
THANK YOU

NIDIS: Creating a drought early warning information system

- Public Law 109-430
(The NIDIS Act 2006)
 - “Enable the Nation to move from a reactive to a more proactive approach to managing drought risks and impacts”
 - “better informed and more timely drought-related decisions leading to reduced impacts and costs”



NIDIS Regional Drought Early Warning Information Systems



Drought Early Warning?

- Early warning: provision of timely and effective information, through identified institutions, that allows individuals exposed to a hazard to take action to avoid or reduce their risk and prepare for effective response-
ISDR
 - A practical tool for implementing timely and appropriate responses to droughts and famine in the form of food aid and other mitigation strategies
 - Early warning involves forecasts based on climate projections and the area's drought history, possible outcomes of developing drought events, and answering questions about how long a drought might last and how severe it might be.
 - Effective early warning systems should involve both technology and all interested parties in drought planning and response.

Discussion

- **2012 drought is not over, what will spring/summer look like?**
- National Drought Forum: conversation on 2012 drought and ways to better plan and prepare for 2013 and beyond
- National Drought Outlook Forum-2/21
- USDA drought response efforts
- Western Governors' Association

National Drought Forum:
**The 2012 Drought and U.S. Preparedness
in 2013 and Beyond**
December 12-13, 2012
Hall of the States
Washington, DC



Pilot Implementation Upper Colorado River Basin

Actions from the Scoping Workshop

- Perform a monitoring networks gap analysis for the UCRB (NIDIS Program Office)
- Begin efforts to develop an Upper Colorado basin-specific drought monitor (CSU)
 - Coordinate with NWS CBRFC water supply webinars

Interdisciplinary Research and Applications

- Analysis of the UCRB water demand: Characteristics, spatial patterns & assessment of potential vulnerabilities (NCAR)
- Enhancements to Water Supply Forecasting (NOAA/NWS)
- Reconciling Projections of 21st Century Colorado River Stream Flow (NOAA Coping with Drought)
- UCRB low flow impacts database (NDMC)

NIDIS: Developing Early Warning Framework

- *Year 1: Scoping the Drought Early Warning Information System*
 - **Gap analyses:** What information exists and how is it being coordinated and used?
 - Characterize and communicate risks across timescales-with existing information for **2-3 critical issues**.
 - Develop subteams to assess (1) Monitoring and forecasting; (2) Impact indicators and triggers (3) Preparedness and education:
 - Assemble drought-sensitive planning **indicators** and management **triggers** database; Assess present drought information coordination partnerships and processes
 - Identify **Federal and state-level partnerships**, decision support tools and actions needed (to improve information development, coordination and flow for preparedness and risk reduction)
 - Develop an operational plan for designing and implementing an EWS process

NIDIS: Developing Early Warning Framework

- *Year 2. Implementation of the Drought Early Warning System (seasonal, multi-year, longer term trends):*
 - Develop drought **sub-portals**
 - **Embed information** into preparedness and adaptation plans
 - **Establish network** for ongoing briefings on impacts and projections across climate timescales
 - **Develop decision support tools** for demand projections and revise triggering criteria
 - **Evaluation:** Given better data and information coordination would responses have been improved for past events? Assess (1) value of improved information using past conditions, (2) responses for projections/ scenarios (decadal, climate change), (3) feedback on priorities (e.g. data gaps) to Executive Council.