6th U.S. Drought Monitor Forum

Drought monitoring is vital to helping our nation and its communities...

to be more resilient!

LCRA Redbud Center
Austin, TX - Oct. 7, 2009

Bill Proenza, Regional Director
National Weather Service
Southern Region
NWS has 4 large contiguous Regions and 2 “oconus” Regions
14 Drought/heatwave events = 25% of the total U.S. dollar losses... ~ $180 Billion!
Drought has many kinds of **dangerous** and costly impacts!
Drought is a naturally recurring feature of our climate.

Percent Area of the United States in Severe and Extreme Drought

January 1895–January 2006

Based on data from the National Climatic Data Center/NOAA
Drought can certainly be persistent but also can end abruptly as we see in this Texas historical chart.

<table>
<thead>
<tr>
<th>Decade</th>
<th>Precipitation</th>
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<tbody>
<tr>
<td>1900s</td>
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<tr>
<td>1910s</td>
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<td>1920s</td>
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<td>1980s</td>
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<td>1990s</td>
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</table>

- **42” in 1919**
- **37” in 1957**
- **15” in 1917**
- **15.5” in 1956**
From a May, 1999 start...

Areas depicted on chart are derived by consolidating information from a number of sources based on surface observation networks and satellite. "Drought" is used to mean abnormal moisture shortages resulting in imminent or actual damage to crops or pastures; high wildfire risk; or water shortages. Only relatively large areas are shown; local conditions may differ markedly from those shown on the map.

LEGEND:
D0 = Abnormal dryness but not currently classified as a drought.
D1 to D4 = Droughts ranging in severity from standard to exceptional.
a = impact on plant life (agric. or forests)
h = impact on water supplies (reservoirs, streams, wells)
+ or - refer to forecast 2-wk trend, where "+" means intensifying and "," means weakening. No sign means no significant change.
To a vitally important, renowned and dependable service to the Nation.
...now with GIS County Level Drought Assessments since 2007!

The data cutoff for Drought Monitor maps is Tuesday at 7 a.m. Eastern Standard Time. The maps, which are based on analysis of the data, are released each Thursday at 8:30 a.m. Eastern Time.

U.S. Drought Monitor

Texas

September 29, 2009
Valid 7 a.m. EST

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

http://drought.unl.edu/dm

Released Thursday, October 1, 2009
Author: D. Miskus, JAWF/CPC/NOAA
Ten Years of Drought Monitoring and Forecasting

The USDM is a most successful example of interagency cooperation

Your NWS CPC plays a vital role in producing important weather and climate products, such as this new drought forecasts
Creating the Drought Monitor:
An Impact Based Product
An excellent example of interagency collaboration.

www.drought.unl.edu/dm/monitor.htm

Interagency Partners:
- NWS/CPC
- USDA/JAWF
- NDMC
- WRCC

Outside Experts:
- USGS
- State Climatologists
- RCCs
- NWS WFO/RFCs

U.S. Drought Monitor

September 29, 2009

Posted on the Internet every Thursday morning

Media/Public

Government & EM officials

Academia & Private Sector
The USDM is the product of an excellent team of partners, their tools and data plus local impacts from across the U.S.
An illustration of the partners and local participants each week from...

Number and Breakdown of USDM Local Participants
Your National Weather Service is strategically located to provide you the latest drought data and impacts.

NWS: 122 WFOs, 13 RFCs, 21 CWSUs
6 ROs, 25 WSOs, NCEP Centers
Some USDM uses by decision makers to mitigate drought impacts and improve our nation’s resiliency

- USDA: Farm Service Agency and Risk Management Agency.
- State Climatologists & Drought Committees.
- County Judges, EMs and other local officials for declaring burn bans.
- Water management authorities to declare water use restrictions.
- Emergency managers for federal disaster declarations.
...declaring burn bans based on the USDM and current weather.
USDM as a statewide trigger for proactive mitigation...

Alabama Drought Management Plan

April 22, 2004
NOAA continues to work towards being a strong USDM partner

Creation of NIDIS Program Office and the US Drought Portal and Regional NIDIS Pilot Projects e.g. in NWS.
Two NIDIS drought warning pilot projects underway by NWS

Upper Colorado River Basin

Apalachicola/Chattahoochee/Tallapoosa Basin
NOAA/NWS continues focus on data stewardship

#1: Each WFO maintains a Local COOP Network to meet local, state and national weather/climate data needs.

#2: Map above shows all 114 Climate Reference Network sites installed.
Existing NWS COOP Network consists of over 11,000 sites and 1220 HCN sites.
COOP Program Updates

- Fischer Porter punch tape gauges are being rebuilt with kits purchased from Sutron. These kits will be deployed across NWS over the next 3 years.
- NWS Southern Region has awarded a contract for the next generation telephone based IV-ROCS. System should be deployed in late summer of 2010.
- Weather Coder continues to be the internet based COOP data collection system.
- 1100 daily IV-ROCS users and 2200 daily Wx Coder users at latest count.
Modernized Historical COOP Network (HCN-M)

- Plans are to deploy 1000 stations at uniform grid points for regional climate monitoring of temperature and precipitation across the nine US climate regions in the lower 48 states.
- Expansion capacity exists to collect additional data sets (i.e. snow).
- Site selections being completed and first few sites installed in the AZ, NM, CO, UT climate region.
HCN-M grid-points for the top 1000 locations

Gridpoints: HCN-M sites
Red Crosses: HCN sites
US HCN-M Pilot Site
24N Stratton

- GOES antenna
- Shielded aspirated Temp sensor
- Data logger
- Solar panel & batteries
- Double alter shield
- Weighing Precip Gauge
Also, in cooperation with NIDIS, the CRN deploys soil moisture/temperature probes at depths of 5, 10, 20, 50, and 100 cm.
The National Weather Service has a seamless suite of national and local climate services.

These services are delivered 24x7 from the NWS network of 141 Forecast Offices, River Centers and Regional Headquarters serving the nation. Further, the WFOs downscale the very latest outlooks from the NWS Climate Prediction Center to their local areas.

The NWS Forecast Offices downscale NWS CPC products and issue e.g. drought status statements.
NWS Putting Together the U.S. Seasonal Drought Outlook

NWS Climate Prediction Center incorporates models and existing forecasts to produce this relatively new timely product.
The current “El Nino” event, supports an optimistic outlook for a continued break in the south Texas drought.
We Have Seen Recent Improvement

- As per the US Drought Monitor, 27% of Texas was in exceptionally Extreme Drought on August 18, 2009. With recent rainfall, this number is now down to 12%.
Challenges: Creating High Resolution Products that can be used as is or ingested by customers to create further value added products.

NWS RFC 4km x 4km observed precipitation values created hourly and compiled to produce daily, weekly, monthly, etc. values.
Examples of Customer Driven Value
Added Products from NWS Base Data

Assessment of the Meteorological Severity of the 2008-2009 Texas Drought through July 2009 (PDF format)

SPI Products

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<th>Accumulation Period</th>
<th>DM Overlay</th>
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<td>October 5, 2009</td>
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Create Map

SPI Blend Products

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More on this new tool later on today!
To gain a greater National *resiliency* to climate variability...

your NOAA National Weather Service (NWS) proudly serves the U.S Drought Monitor in line with the NWS’ legislated mission to *climate services* since 1870.

NWS does this 24x7 with a network of 166 field/regional offices working with our national experts at the NWS Climate Prediction Center. A service approach that epitomizes: Government closest to the people, serves *best.*
“A nation monitoring, preparing and investing in climate services today... assures its resiliency to climate variability!”

Bill Proenza, Regional Director
National Weather Service, Southern Region

www.SRH.weather.gov