

# Drought Monitoring Technical Committee Update

to the

Arizona Interagency Coordinating Group

May 9, 2011

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Arizona State University  
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# Arizona Drought Monitoring Technical Committee



ARIZONA DIVISION OF  
EMERGENCY MANAGEMENT



OFFICE OF THE ARIZONA  
STATE CLIMATOLOGIST



In January MTC adjusted our Arizona watershed long-term drought map scale to match the National Drought Monitor scale.

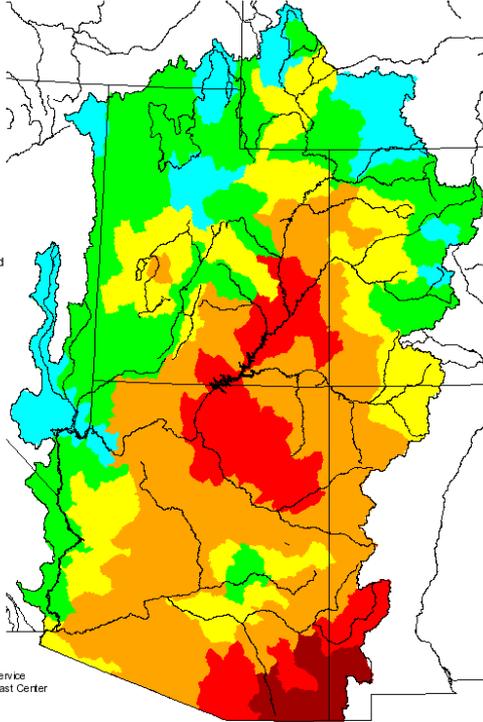
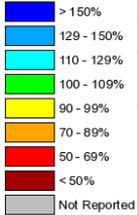
Drought Category	Old Percentile	New Percentile
D0 - Abnormally Dry	26 <sup>th</sup> - 40 <sup>th</sup>	21 <sup>st</sup> - 30 <sup>th</sup>
D1 - Moderate drought	16 <sup>th</sup> - 25 <sup>th</sup>	11 <sup>th</sup> - 20 <sup>th</sup>
D2 - Severe drought	6 <sup>th</sup> - 15 <sup>th</sup>	6 <sup>th</sup> - 10 <sup>th</sup>
D3 - Extreme Drought	< 5 <sup>th</sup>	2 <sup>nd</sup> - 5 <sup>th</sup>
D4 - Exceptional Drought	N.A.	< 2 <sup>nd</sup>

# Precipitation Comparison Colorado River Basin

## WY 2009 to April

Seasonal Precipitation, October 2008 - April 2009  
(Averaged by Hydrologic Unit)

% Average

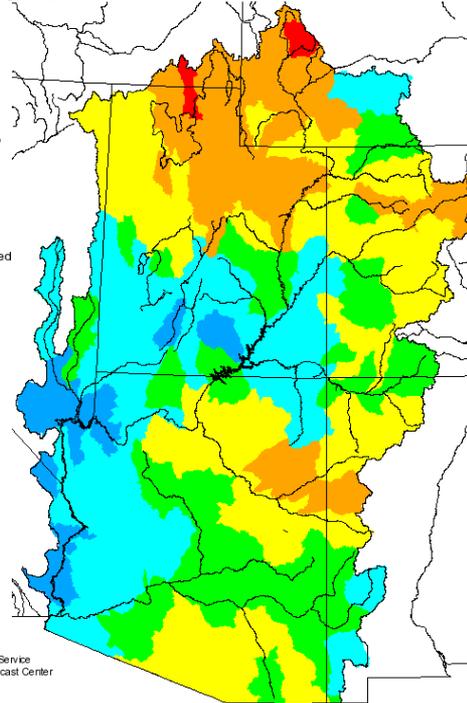
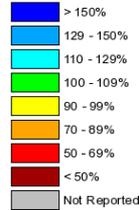


Prepared by  
NOAA, National Weather Service  
Colorado Basin River Forecast Center  
Salt Lake City, Utah  
www.cbffc.noaa.gov

## WY 2010 to April

Seasonal Precipitation, October 2009 - April 2010  
(Averaged by Hydrologic Unit)

% Average

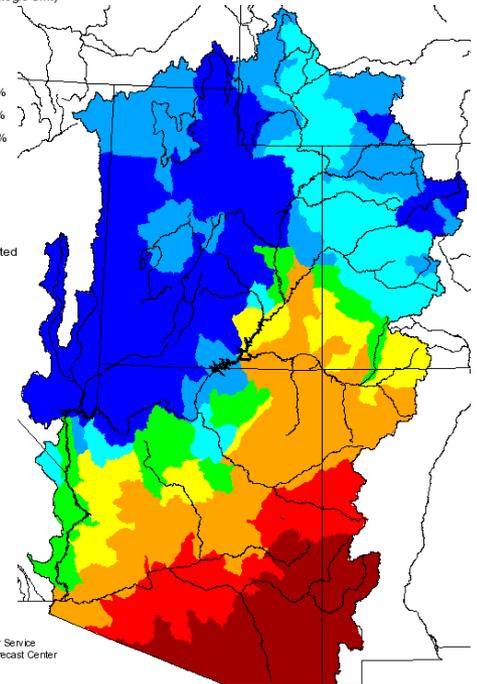
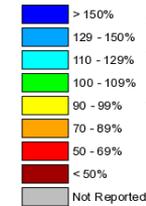


Prepared by  
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## WY 2011 to April

Seasonal Precipitation, October 2010 - April 2011  
(Averaged by Hydrologic Unit)

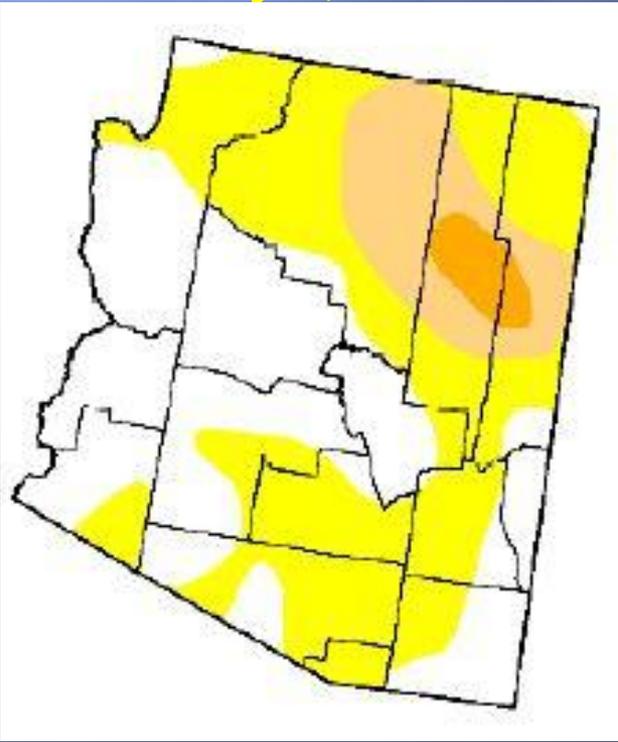
% Average



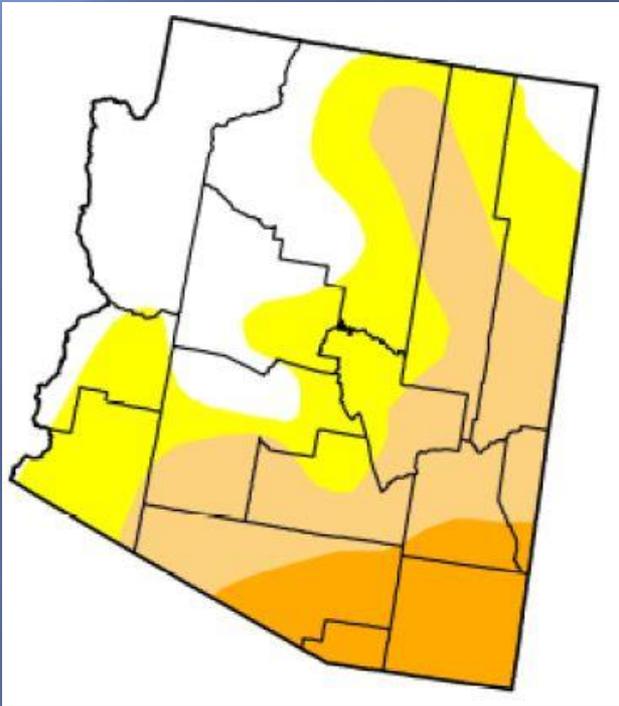
Prepared by  
NOAA, National Weather Service  
Colorado Basin River Forecast Center  
Salt Lake City, Utah  
www.cbffc.noaa.gov

# National Drought Monitor Comparison (Short-Term)

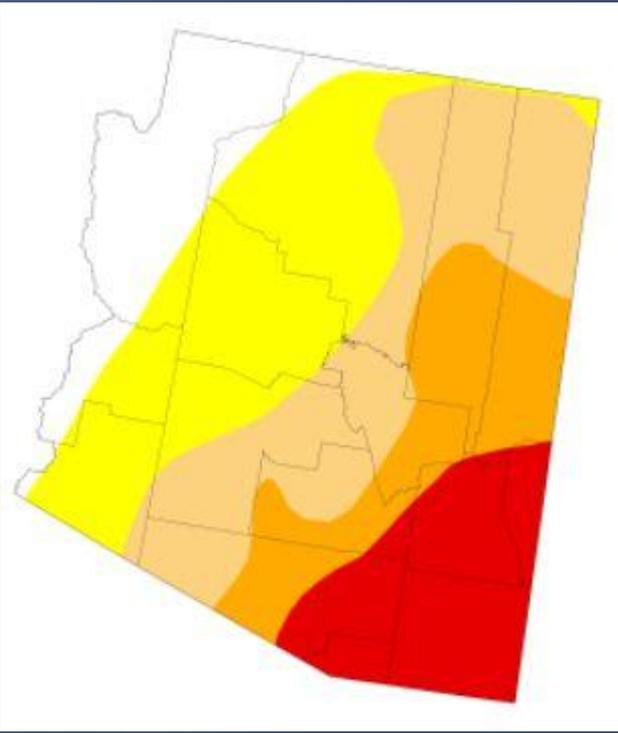
May 4, 2010



Mar 3, 2011



May 3, 2011

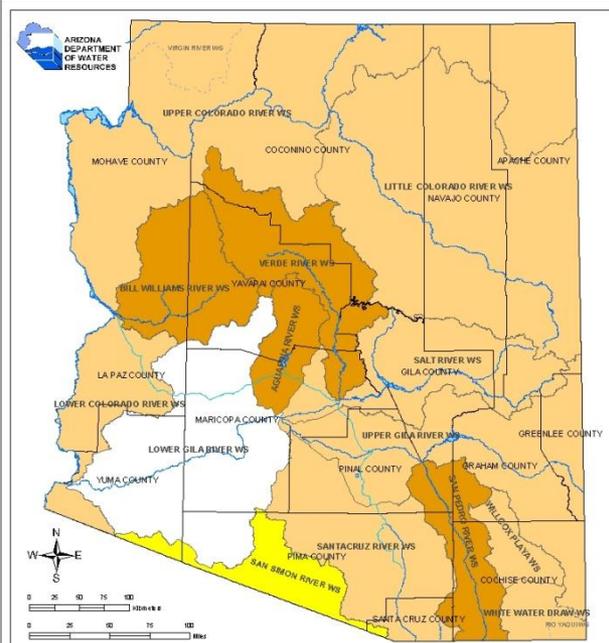
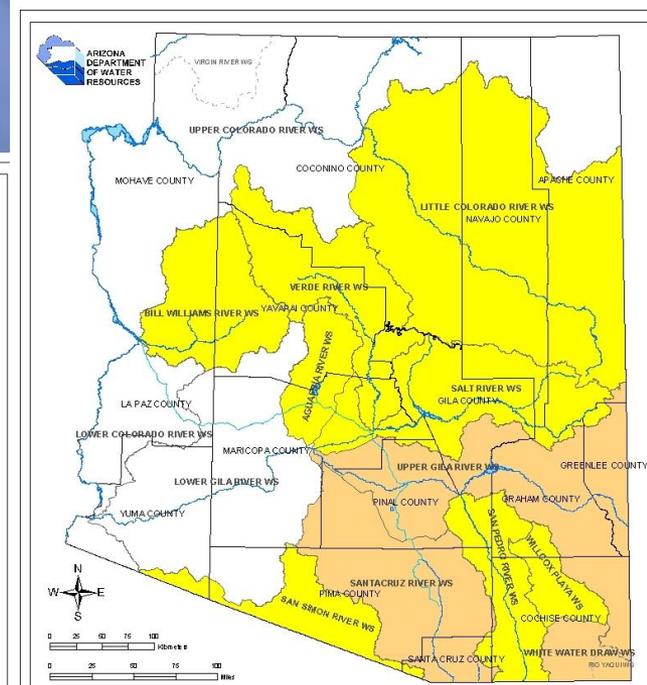
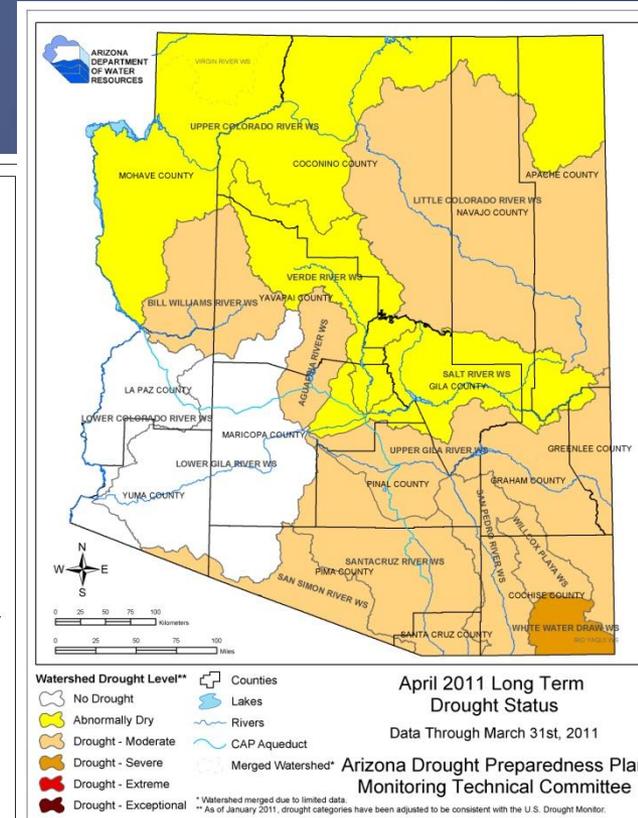


# Long Term Drought Status Comparison

April 2010

January 2011

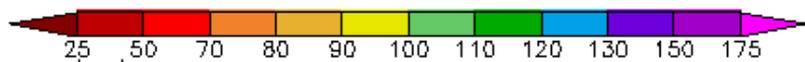
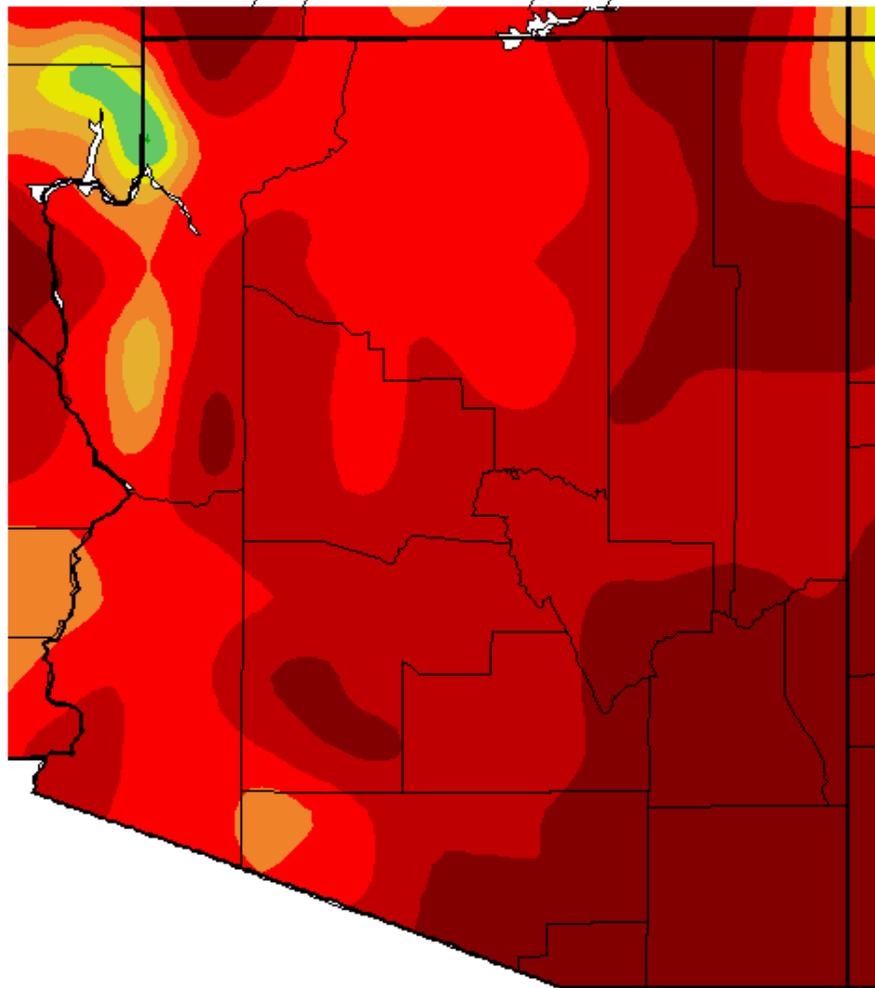
April 2010



# Precipitation

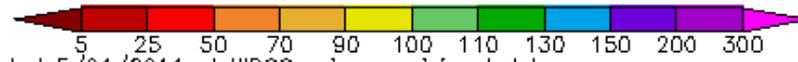
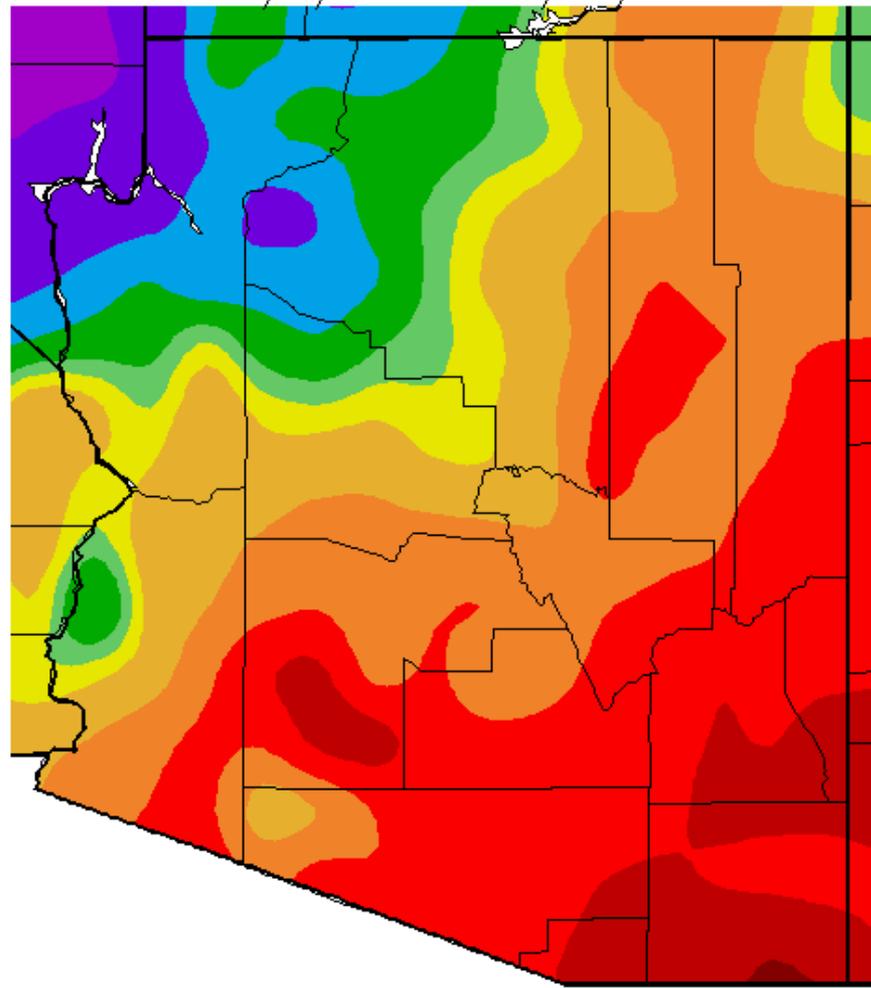
## Since Jan 1, 2011

Percent of Average Precipitation (%)  
1/1/2011 – 4/30/2011



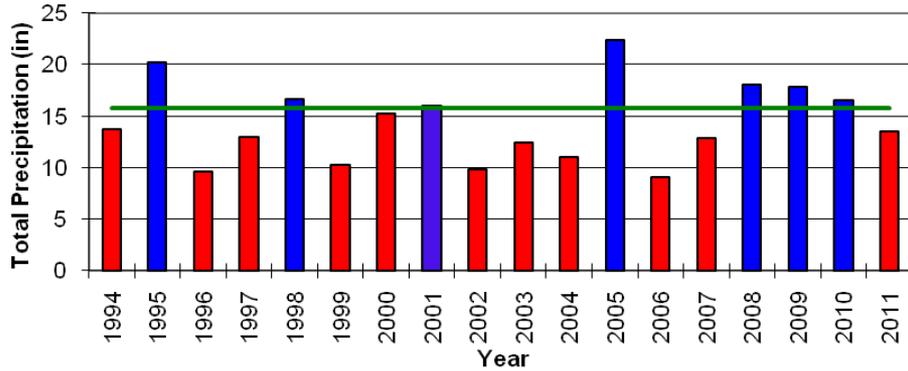
## Since Oct 1, 2010

Percent of Average Precipitation (%)  
10/1/2010 – 4/30/2011

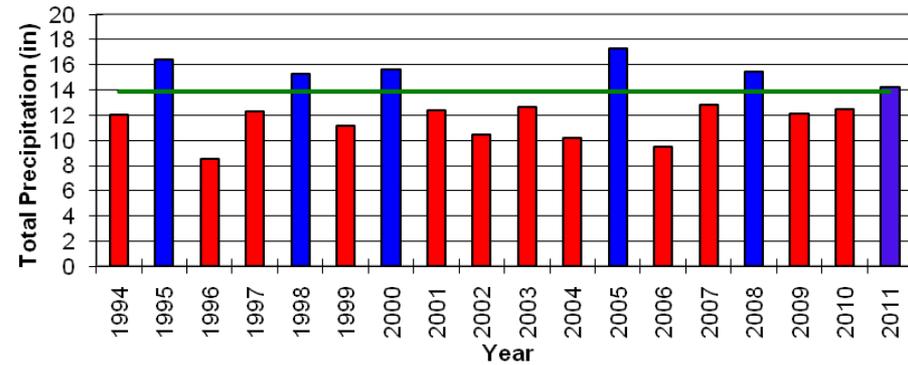


# Precipitation in Selected Watersheds for Past 18 Years

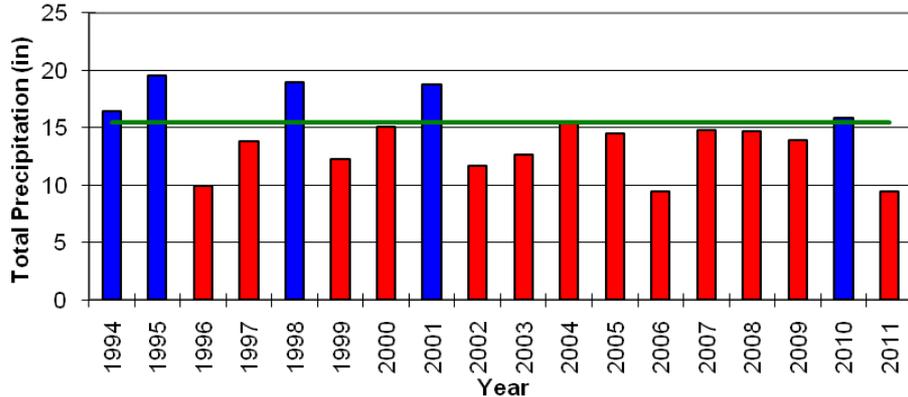
**Salt Watershed 12-month Precipitation**  
(Apr-Mar) Median 15.77"  
7 of last 18 years > median



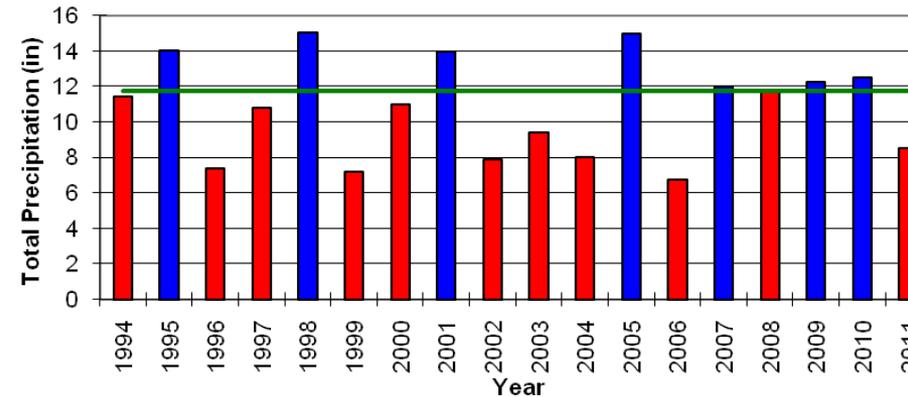
**Little Colorado Watershed 12-month Precipitation**  
(Apr-Mar) Median 13.87"  
6 of last 18 years > median



**Santa Cruz Watershed 12-month Precipitation**  
(Apr-Mar) Median 15.50"  
5 of last 18 years > median



**Upper Gila Watershed 12-month Precipitation**  
(Apr-Mar) Median 11.73"  
7 of last 18 years > median



**Thank you !**

**Questions ?**

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Arizona State University**

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[selover@asu.edu](mailto:selover@asu.edu)**

**<http://azclimate.asu.edu>**

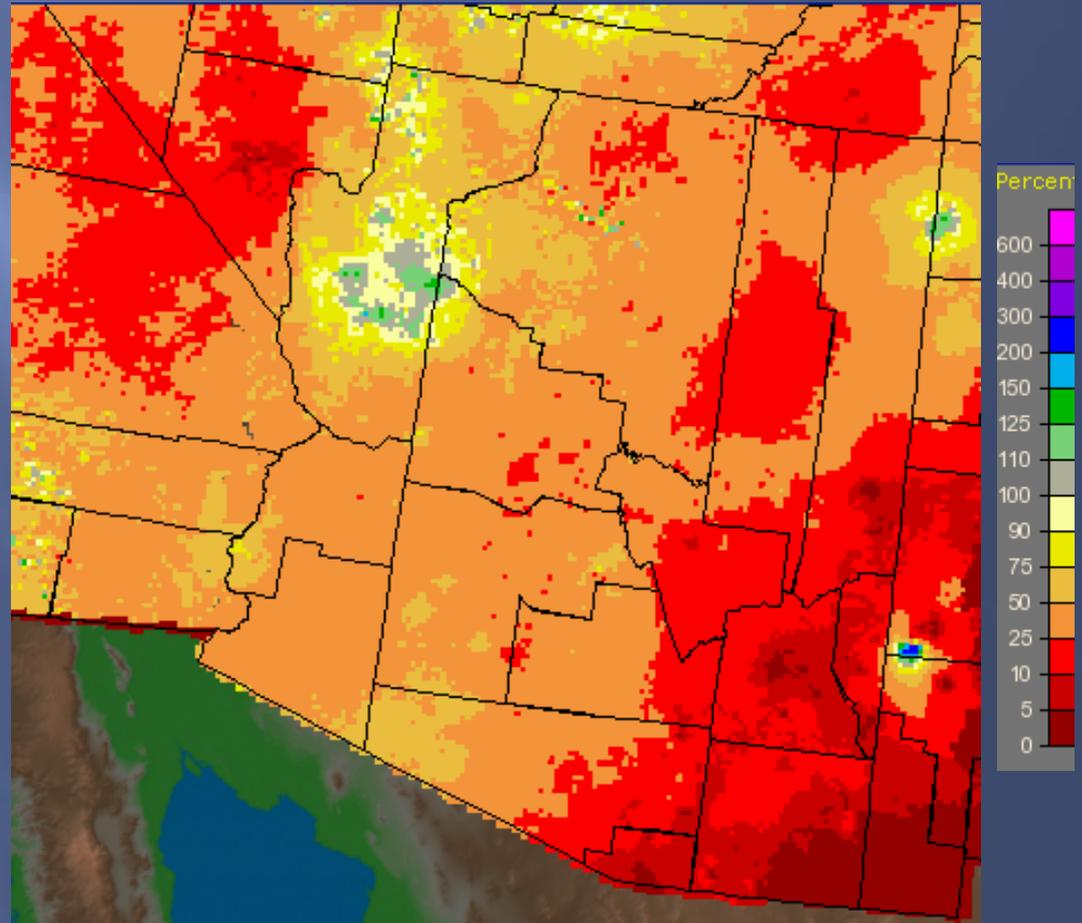
# SUMMER 2011 OUTLOOK

Gary Woodall  
NOAA/National Weather Service  
Phoenix, AZ  
[www.weather.gov/phoenix](http://www.weather.gov/phoenix)



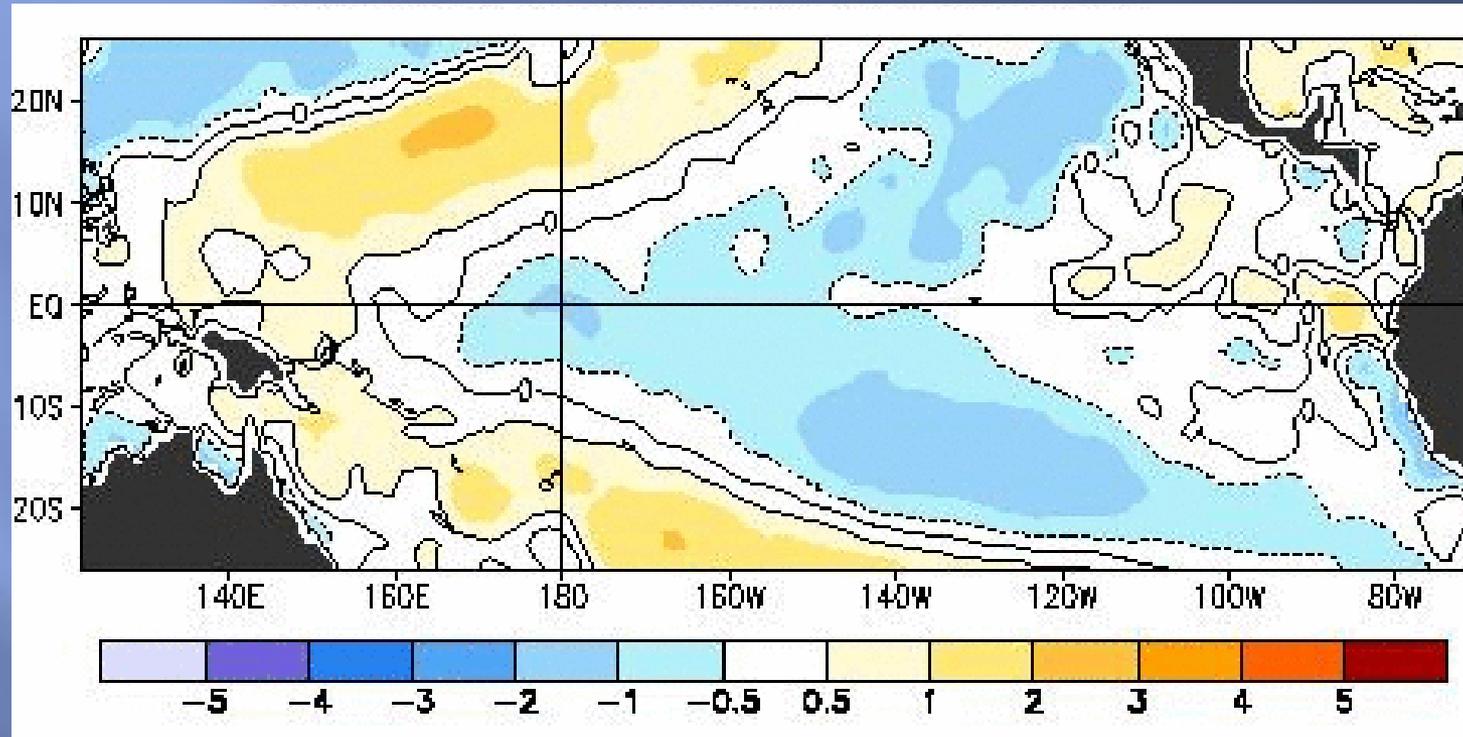
# Winter/Spring Summary

- ▣ La Nina winter
- ▣ Slightly cooler than normal
- ▣ Much drier than normal
- ▣ Aggravating drought conditions in SE AZ
- ▣ Overall reservoirs are OK



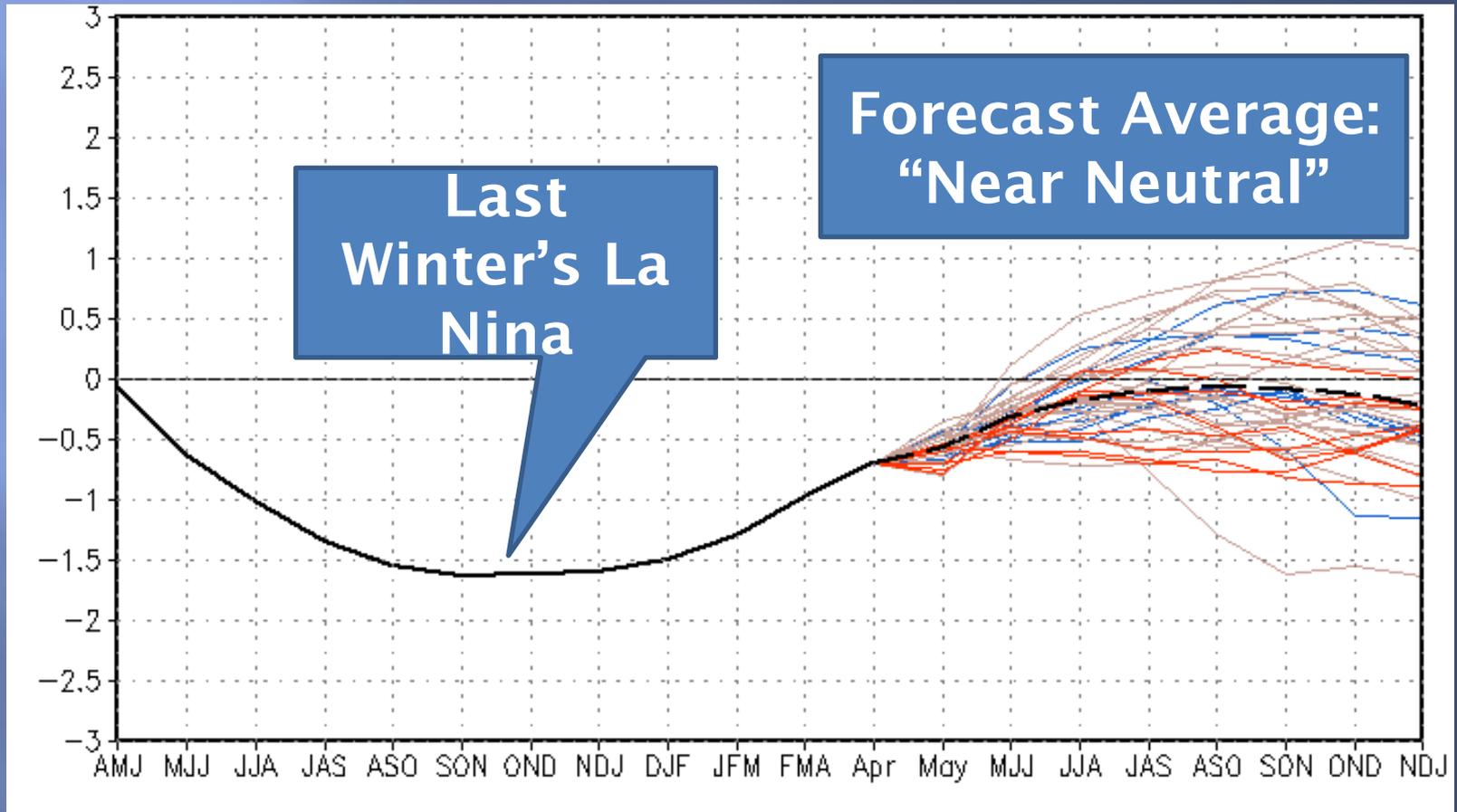
Precipitation (% of normal) since January 2011

# Sea Surface Temperature Anomalies

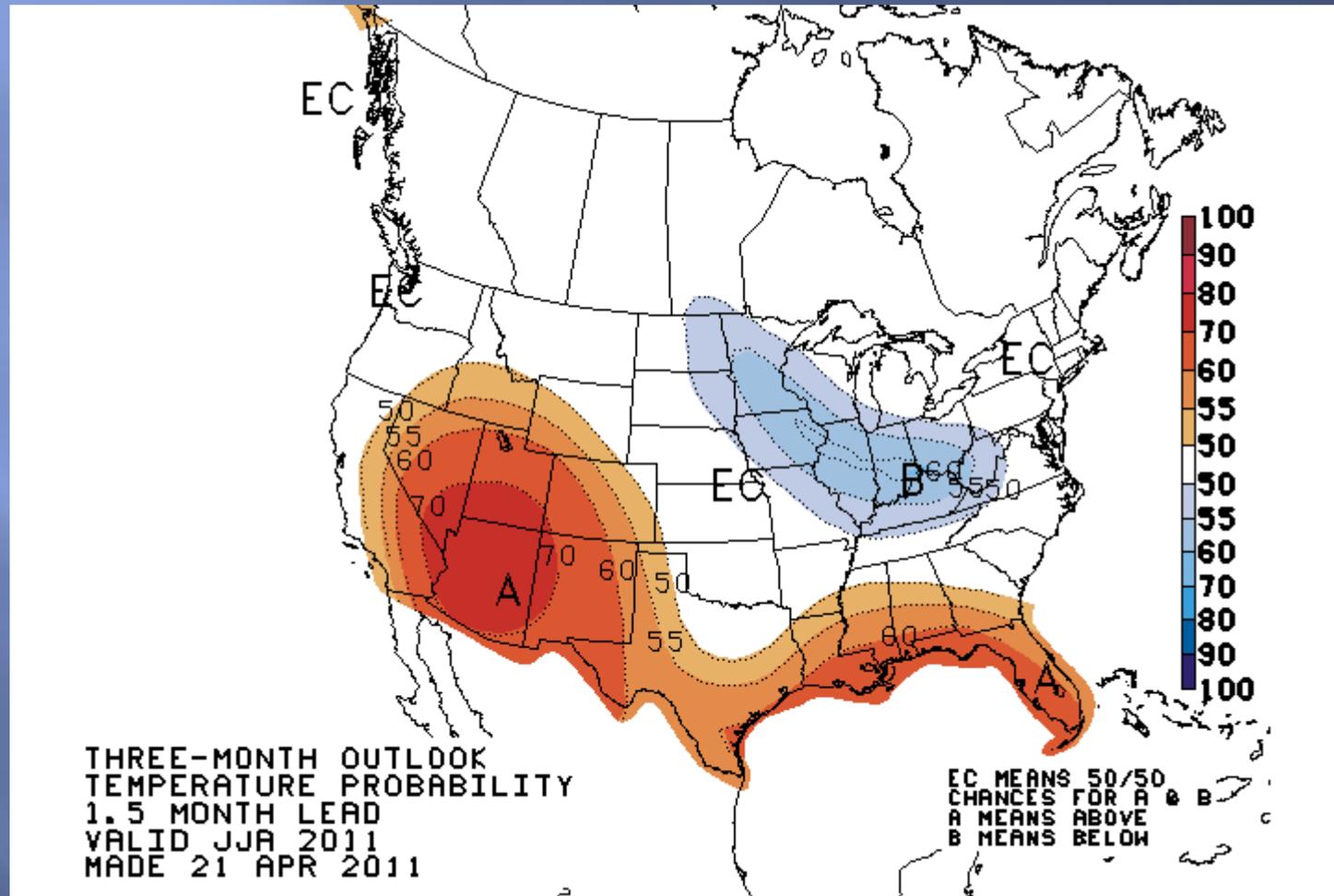


Focus on tropical Pacific  
Weakening cool anomalies = end of La Nina  
Overall conditions “near neutral”

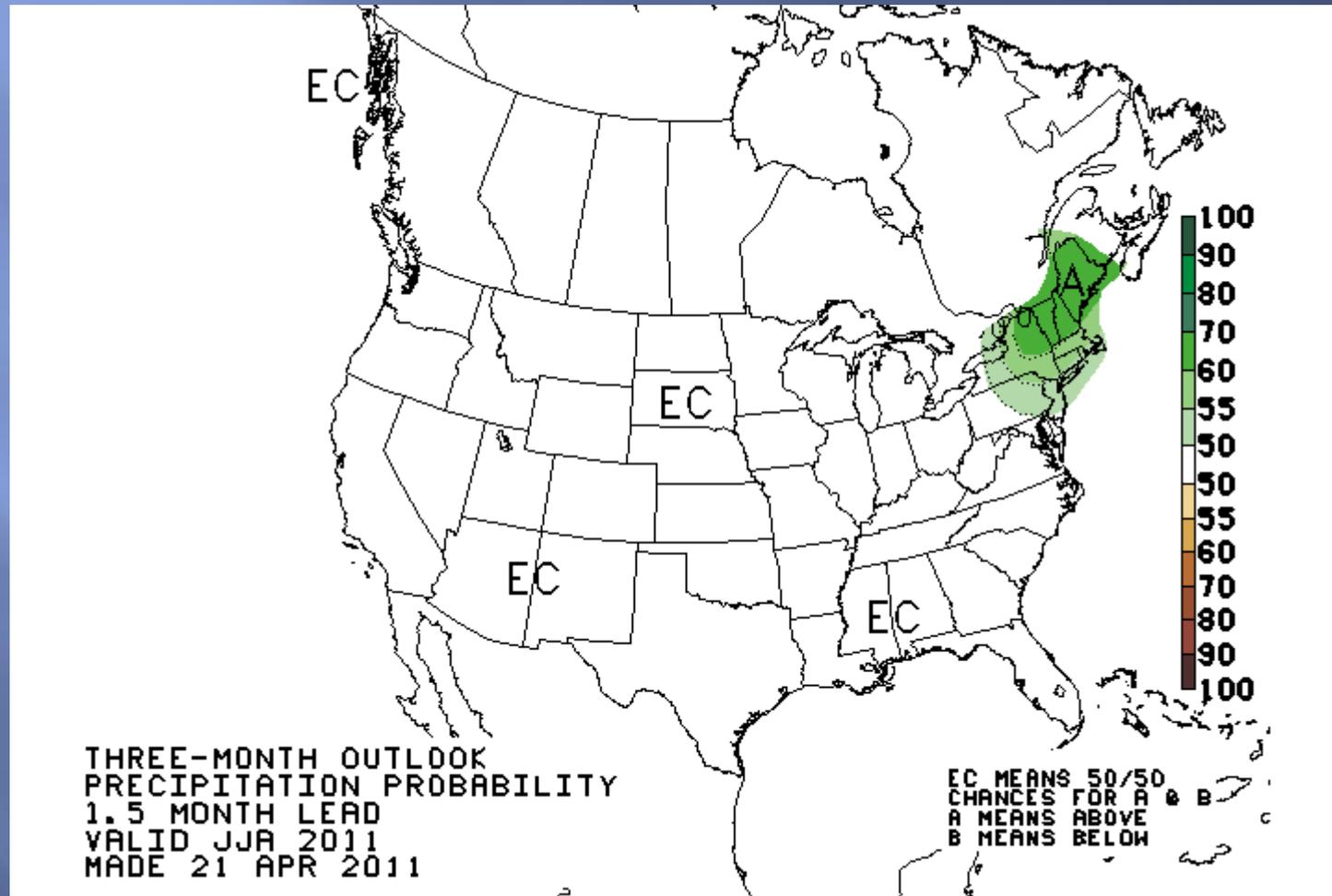
# Long-Range Computer Guidance



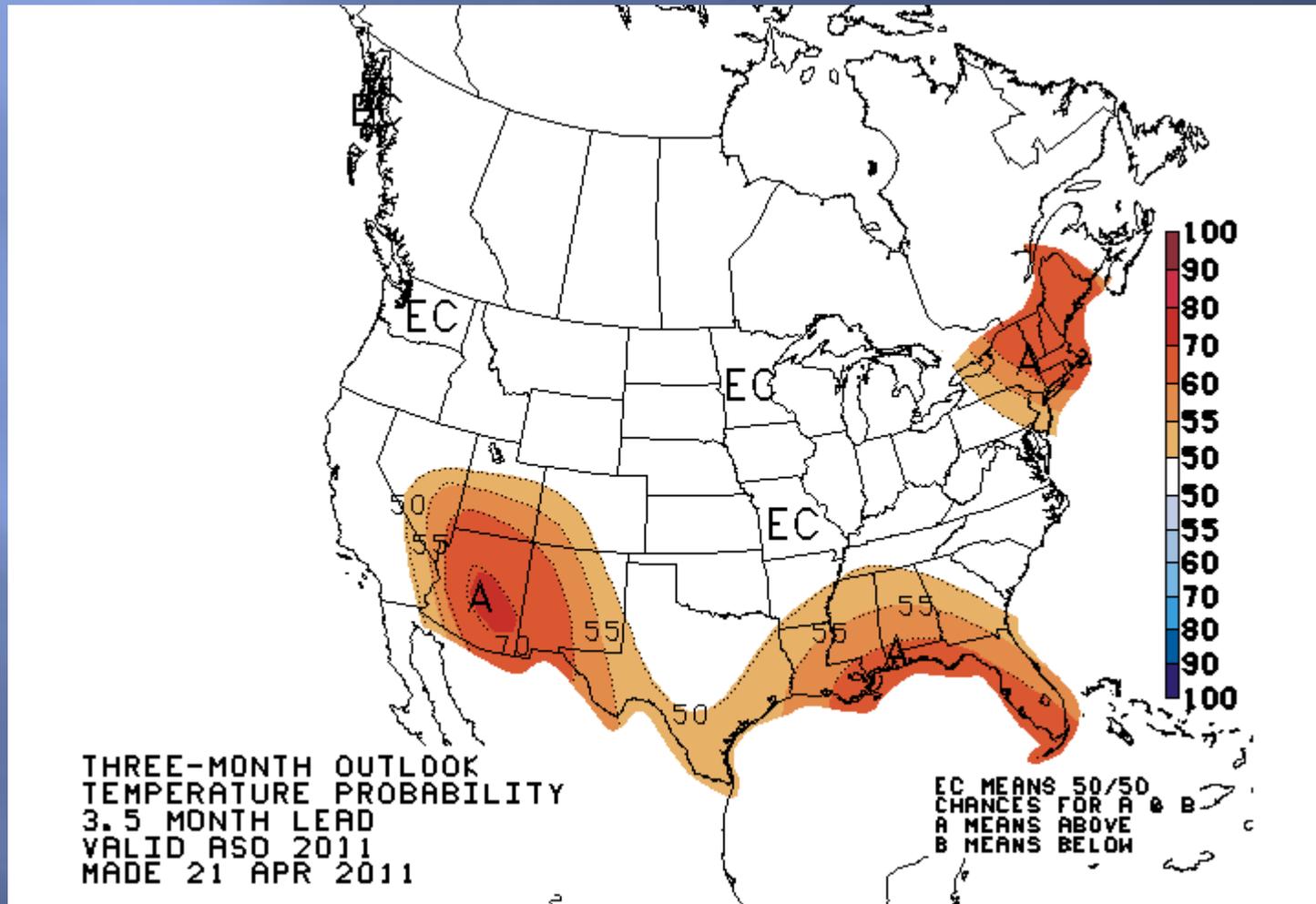
# Temp Outlook - JJA 2011



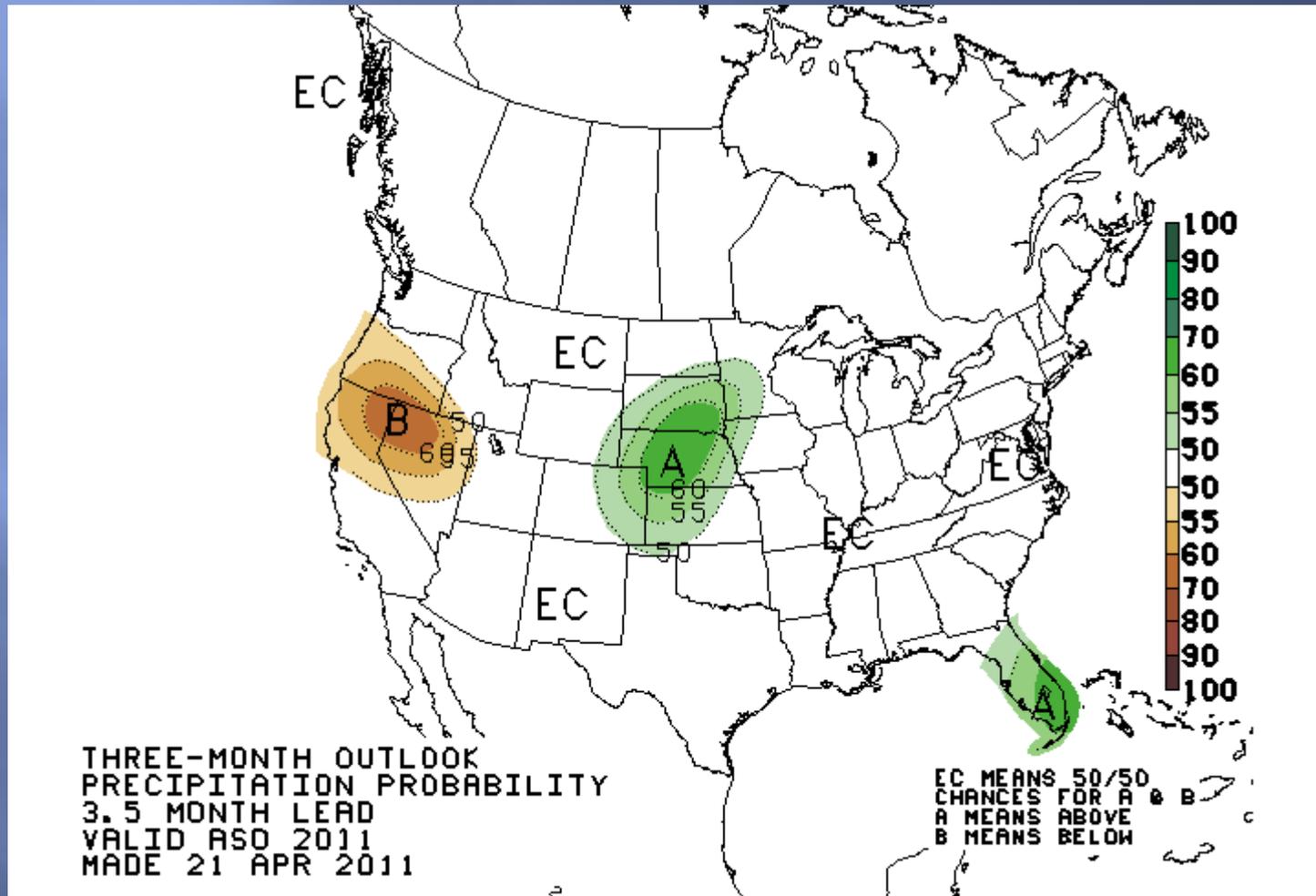
# Precip Outlook - JJA 2011



# Temp Outlook - ASO 2011



# Precip Outlook - ASO 2010



# Drought Outlook



## U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period Valid April 21, 2011 - July 31, 2011 Released April 21, 2011



### KEY:

- Drought to persist or intensify
- Drought ongoing, some improvement
- Drought likely to improve, impacts ease
- Drought development likely

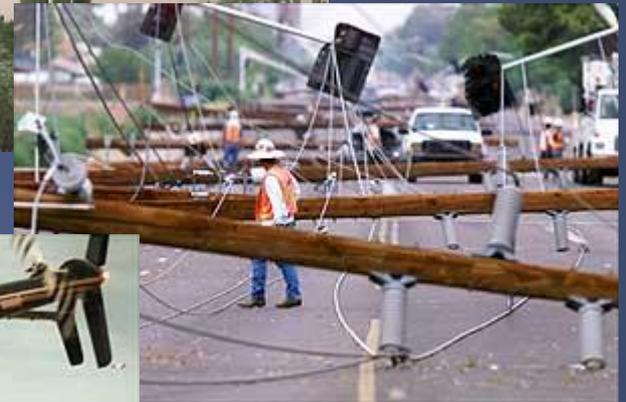
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

# Hazards Analysis

- ▣ Warmer than normal signal – not unexpected.
- ▣ Normals are 1971-2000, new normals (1980-2010) implemented this summer.
- ▣ No strong precipitation signal.
- ▣ Small-scale features may cause local heavy rain threat.
- ▣ Increased fire danger – dry winter, vegetation dried out and cured (fuels).
- ▣ Thunderstorm wind and dust – typical threat levels.

# Monsoon Awareness Week

- ▣ June 5–10, 2011
- ▣ Southwest U.S. regional campaign
- ▣ Highlight threats
- ▣ Discuss safety tips
- ▣ “Monsoon Safety” link will be set up on NWS web page
- ▣ Help spread the word!



# Summary

- ▣ El Nino/La Nina typically have less impact during the warm season.
- ▣ With “near neutral” outlook, smaller-scale features may play a more important role.
- ▣ CPC outlooks do not suggest overall dramatic water gains over the summer.
- ▣ We still need to prepare for whatever the summer and monsoon season has in store.

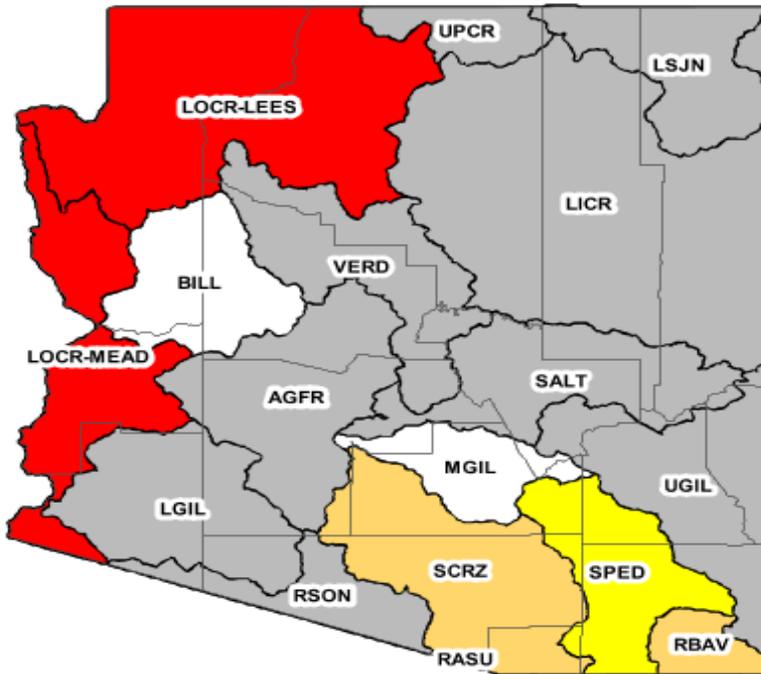
# Questions? Contact Us

**Gary Woodall  
National Weather Service  
P.O. Box 52025  
Phoenix, AZ 85072**

**602-275-0073  
gary.woodall@noaa.gov**

**[www.weather.gov/phoenix](http://www.weather.gov/phoenix)**

### Drought Impacts: Mar-Apr/2011



### Summary Reports

[County and watershed summary tables](#)

[Detailed impact reports](#)

#### Impacts Reported

- in 0 of 6 categories
- in 1 of 6 categories
- in 2 of 6 categories
- in 3 of 6 categories
- in 4 of 6 categories
- in 5 of 6 categories
- in 6 of 6 categories
- No reports made

#### Categories

- Water
- Agriculture
- Livestock
- Society
- Tourism
- Ecology

#### Watershed Abbreviations

AGFR	Agua Fria River-Lower Gila River
BILL	Bill Williams River
LGIL	Lower Gila River below Painted Rock Dam
LICR	Little Colorado River
LOCR-LEES	Lower Colorado River, Lees Ferry to Lake Mead
LOCR-MEAD	Lower Colorado River below Lake Mead
LSJN	Lower San Juan River
MGIL	Middle Gila River (Local Drainage)
RASU	Rio Asuncion
RBAV	Rio Bavispe
RSON	Rio Sonoyta
SALT	Salt River
SCRZ	Santa Cruz River
SPED	San Pedro River
UGIL	Upper Gila River
UPCR	Upper Colorado River of Lake Powell Area

### About AZ DroughtWatch

AZ DroughtWatch is a tool designed to collect qualitative reports of drought impacts across Arizona. This impact information is used in conjunction with meteorological and hydrological data to characterize drought conditions.

[Access recent drought status reports compiled by the Governor's Drought Task Force Monitoring Technical Committee](#)

[Find out more about AZ DroughtWatch](#)

[What's new at AZ DroughtWatch](#)

### Arizona Drought Links

[AZ Dept. of Water Resources - Drought Program](#)

[Rainlog Precipitation Monitoring Network](#)

[U of A Climate Science Applications Program](#)

[Climate Assessment for the Southwest](#)

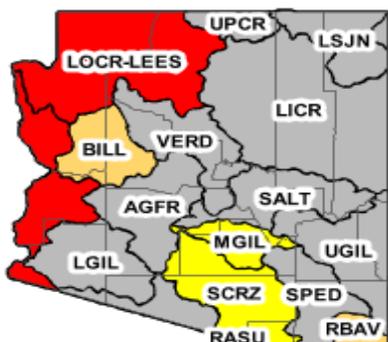
[AZ State Climate Office](#)

[Arizona Climate Maps - Western Regional Climate Center](#)

[National Integrated Drought Information System](#)

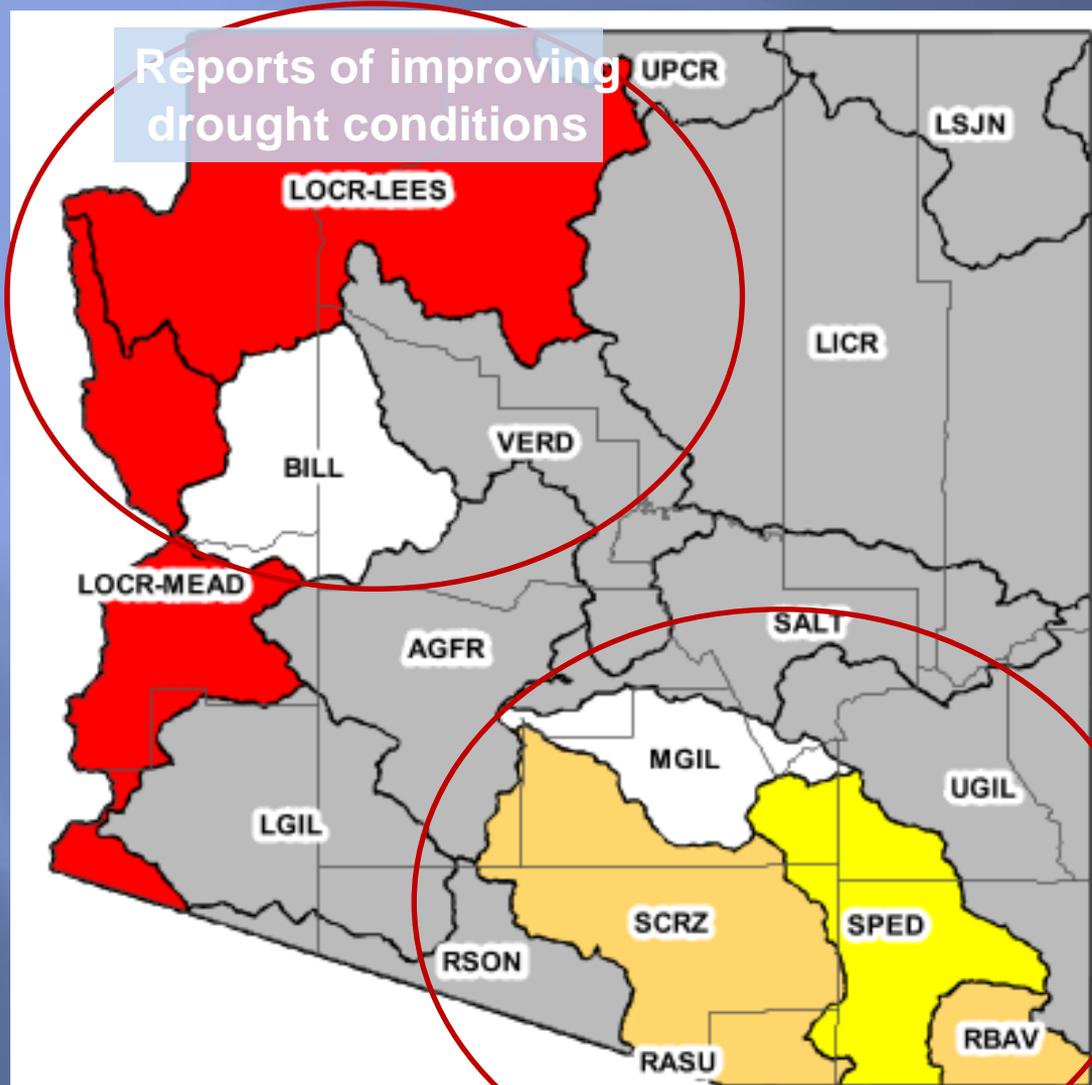
[Western U.S. Weather and Climate - National Weather Service](#)

### Jan-Feb/2011:



<http://azdroughtwatch.org>

# Drought Impacts – March/April 2011



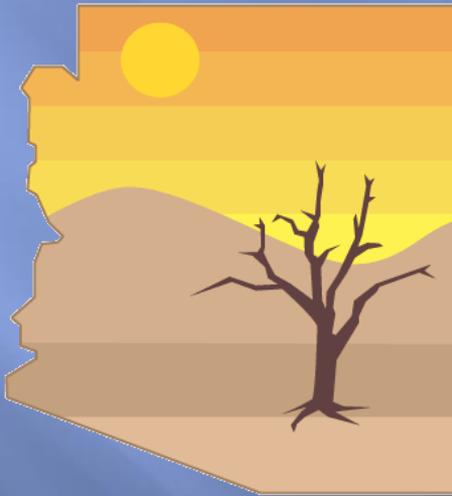
Impacts: 55  
Surveys: 12  
Observers: 8

Reports of worsening drought conditions

# Example Impact Descriptions

- ▣ **Lower Colorado River Watershed (April 2010):** *THE ANNUALS ARE VIGOROUSLY GROWING. WE HAVE THE START OF A GOOD SPRING; All water tanks are full to the max at this time; Rain was perfect timing to continue plant growth, range looks the best it has in 5 yrs. (Mohave County LDIG)*
- ▣ **Rio Bavispe Watershed (April 2011)** *Many ponds that normally have water at this time are dry; Little to no green forage exists in the grasses or forbs. (NRCS Field Office)*
- ▣ **Santa Cruz River Watershed (April 2011, Santa Catalina Mtns)** *For the first time (in the period 1984-2011) I have seen browsing (probably by white-tailed deer) on Agave schottii (shindagger) and Yucca schottii (Schott yucca). On agaves, leaves are eaten down to about 4"; on yuccas, younger growth in center of plants has been eaten. (Amateur Naturalist)*
- ▣ **Santa Cruz River Watershed (April 2011, Cienega Creek)** *Drought impact is present and severe. The flow is less than last year and about half the average flow seen within drought years. Rising severity. (Pima County LDIG)*

# AZ DROUGHTWATCH H



[HTTP://AZDROUGHTWATCH.ORG](http://AZDROUGHTWATCH.ORG)

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[HTTP://CALS.ARIZONA.EDU/CLIMATE](http://CALS.ARIZONA.EDU/CLIMATE)