

Drought Monitoring Technical Committee Update

to the
Arizona Interagency Coordinating Group

April 29, 2008

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National Weather Service
Phoenix



Arizona Drought Monitoring Technical Committee



ARIZONA DIVISION OF
EMERGENCY MANAGEMENT



OFFICE OF THE ARIZONA
STATE CLIMATOLOGIST

Local Drought Impact Groups

LDIGs are contributing with:

- Current Conditions
- Credible Information on Local Impacts
 - Impacts provided to decision-makers
- Precipitation Totals through Volunteer Rain Gage Network
 - Spatial variability
- Other Conditions, e.g. Wind, Vegetation and Rangeland Status
- Verification

MTC Highlights

- Monthly Meetings to Analyze Data + Provide Status
 - **LDIG** Participation via Tele-conference
 - Lengthened Long Term Update to Quarterly
 - ***Drought Monitor*** Author Participation via Dial-in
- Continued Expansion and Distribution of Monthly Updates via:
 - Press Release
 - ADWR + AFWS Web sites
 - Local Distribution by LDIGS
- Numerous Interactions with Established LDIGs (*Cochise, Yavapai, Santa Cruz, Pinal, Pima, Graham/Greenlee, and Navajo* Counties)
 - Spin up LDIGs in Apache and Mohave Counties
 - LDIGs "Coming Soon" in Coconino, Maricopa, La Paz, Yuma and Gila Counties
- Arizona Drought Impacts Reporting System Nearing Completion

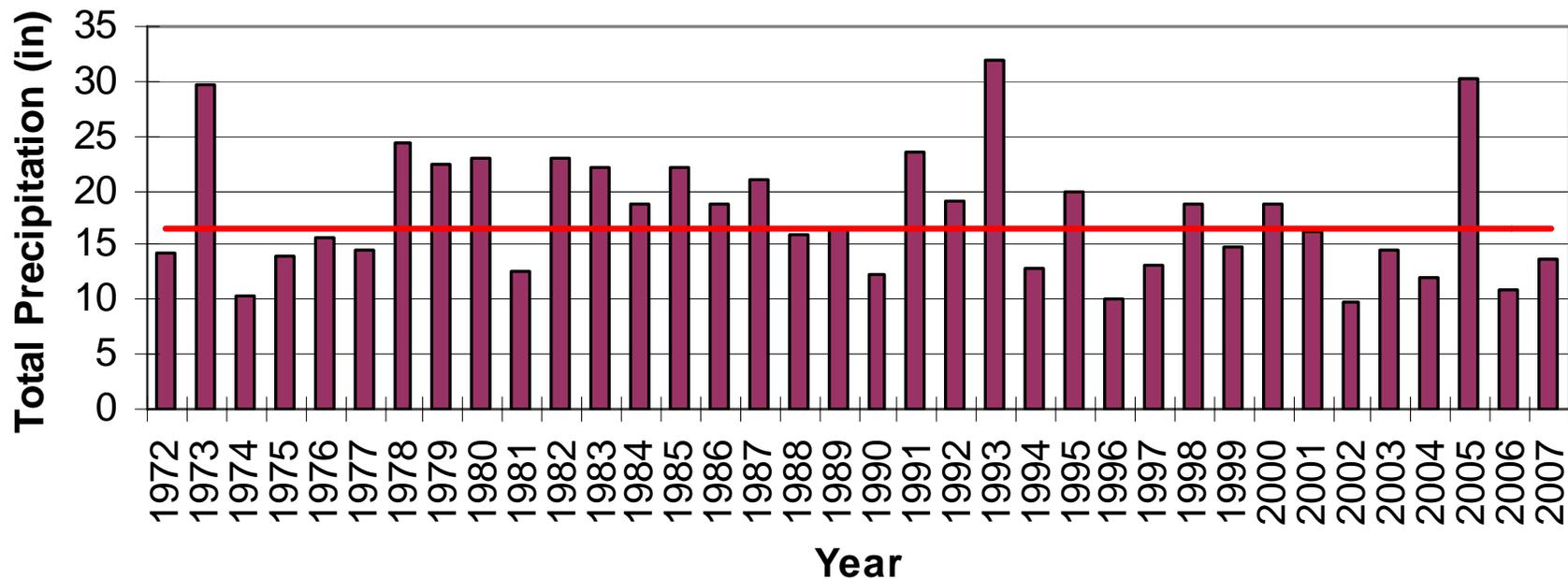
Drought Monitoring Technical Committee Projects

- **LDIG Expansion** to include *Coconino, Maricopa, La Paz Mohave, Yuma and Gila Counties*
- Continue Integration and **Expanded Distribution of Drought Information** on the Web + Press Releases
- **Sensitivity Analysis** of Present Drought Model
- Develop A **Dynamic Drought Index Web Tool**
- Implement the New and Improved **Drought Impacts Reporting System**

Precipitation Perspective

(Part One)

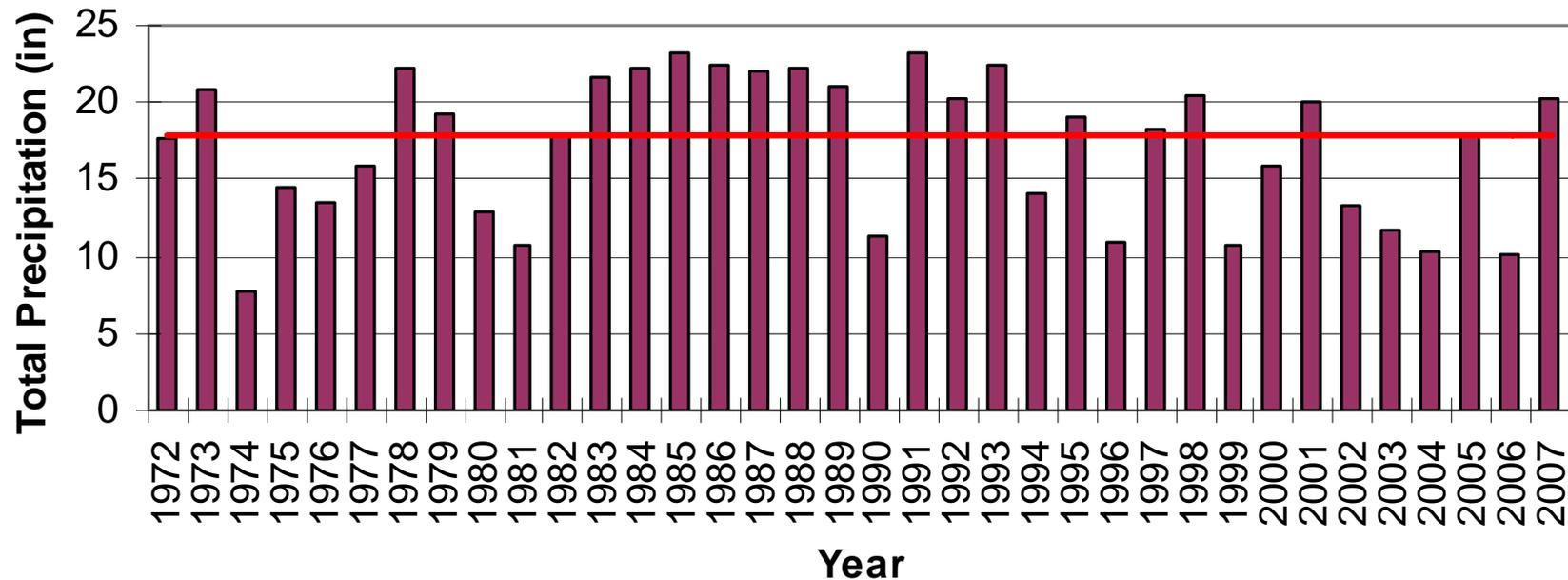
**Verde Watershed 12-month Precipitation
(Apr-Mar) Median 16.54"**



Precipitation Perspective

(Part Two)

**Willcox Playa Watershed 12-month Precipitation
(Apr-Mar) Median 17.92"**

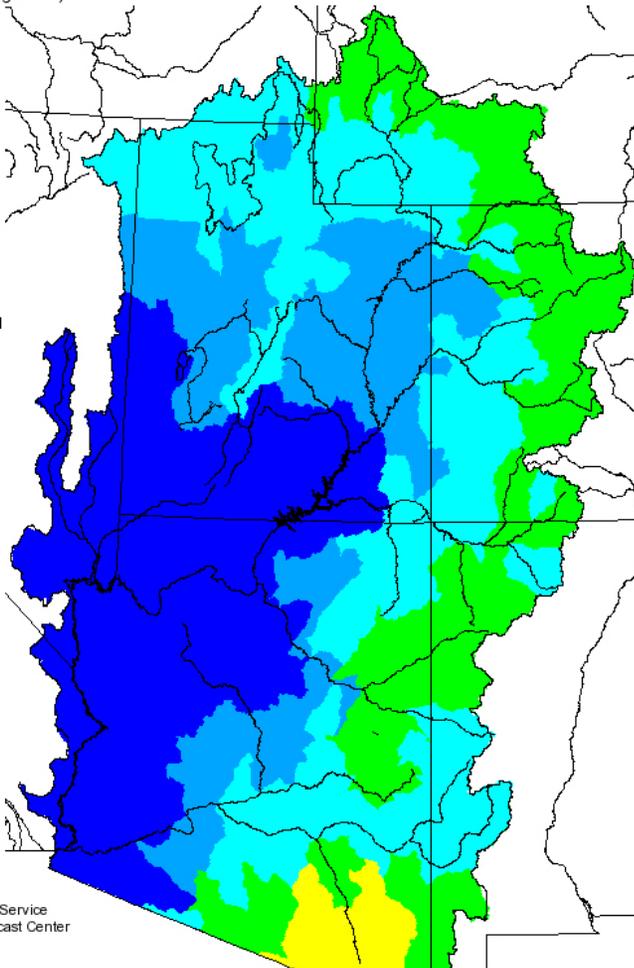
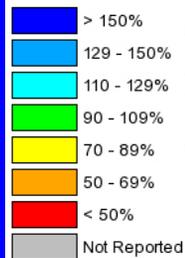


Precipitation Comparison

Water Year- 2005

Seasonal Precipitation, October 2004 - September 2005
(Averaged by Hydrologic Unit)

% Average

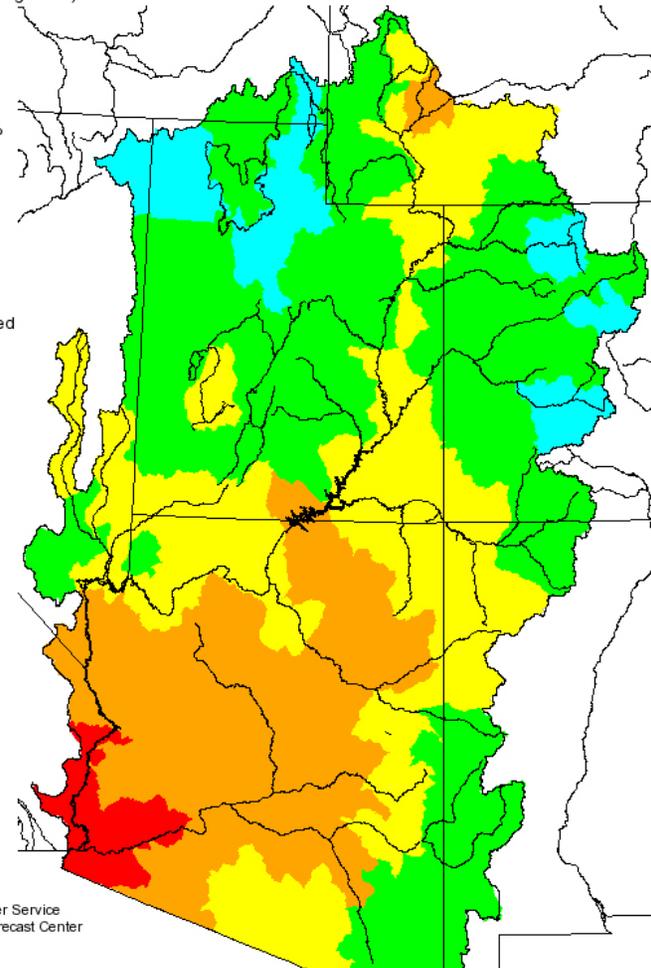
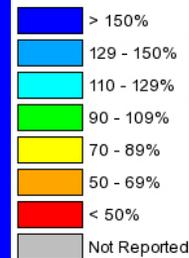


Prepared by
NOAA, National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah
www.cbrfc.noaa.gov

Water Year 2006

Seasonal Precipitation, October 2005 - September 2006
(Averaged by Hydrologic Unit)

% Average



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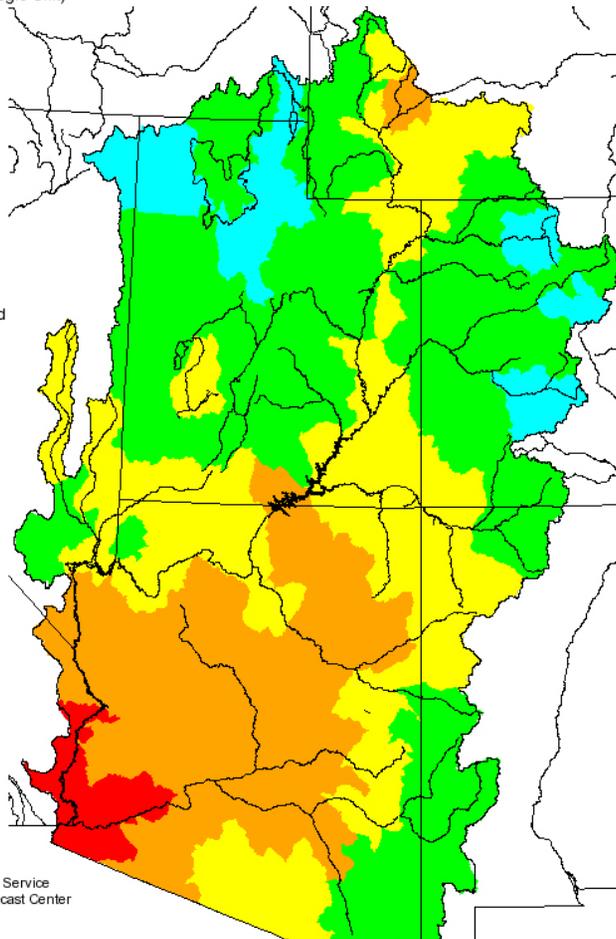
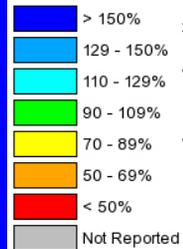
Precipitation Comparison

Water Year - 2006

Water Year - 2007

Seasonal Precipitation, October 2005 - September 2006
(Averaged by Hydrologic Unit)

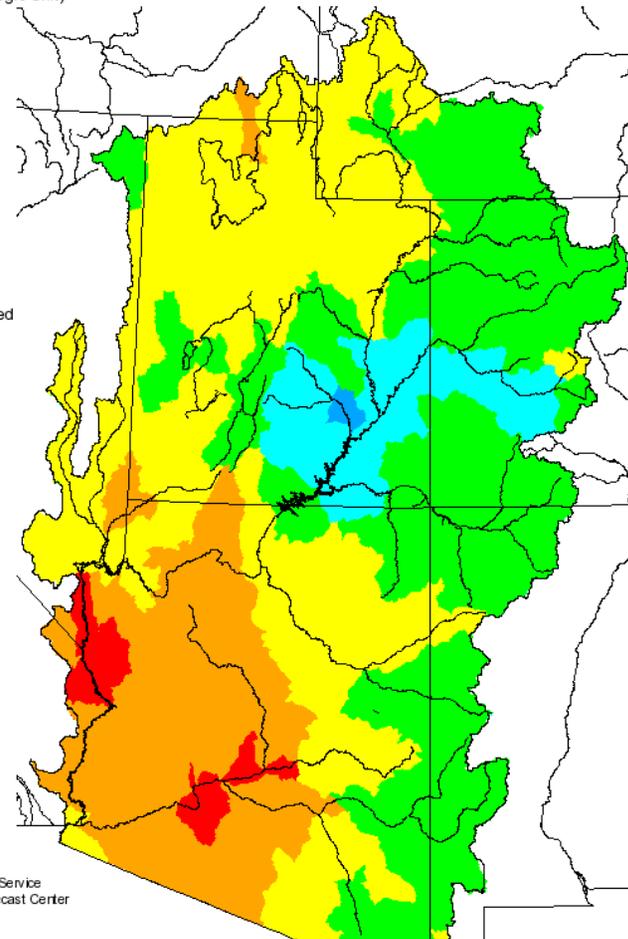
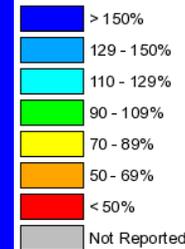
% Average



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Salt Lake City, Utah
www.cbrfc.noaa.gov

Seasonal Precipitation, October 2006 - September 2007
(Averaged by Hydrologic Unit)

% Average



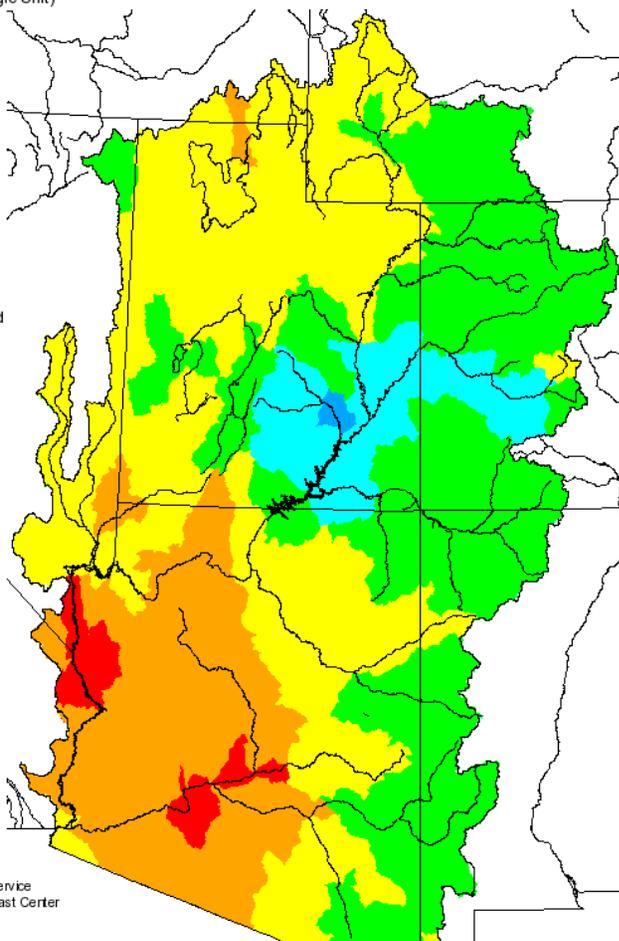
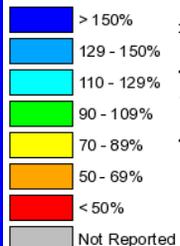
Prepared by
NOAA, National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah
www.cbrfc.noaa.gov

Precipitation Comparison

Water Year - 2007

Seasonal Precipitation, October 2006 - September 2007
(Averaged by Hydrologic Unit)

% Average

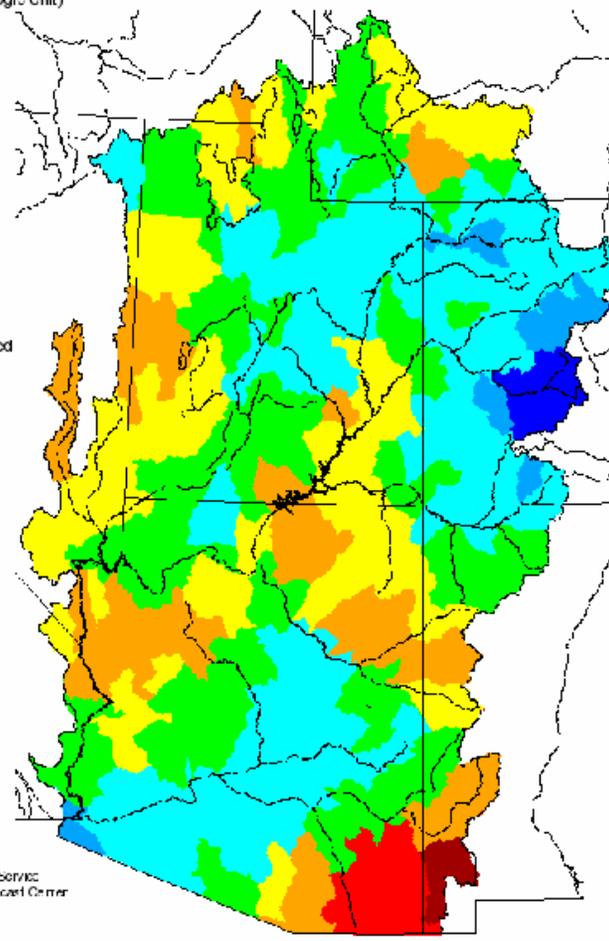
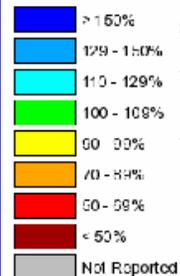


Prepared by
NOAA, National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah
www.cbrfc.noaa.gov

Water Year - 2008
(First Half only)

Seasonal Precipitation, October 2007 - March 2008
(Averaged by Hydrologic Unit)

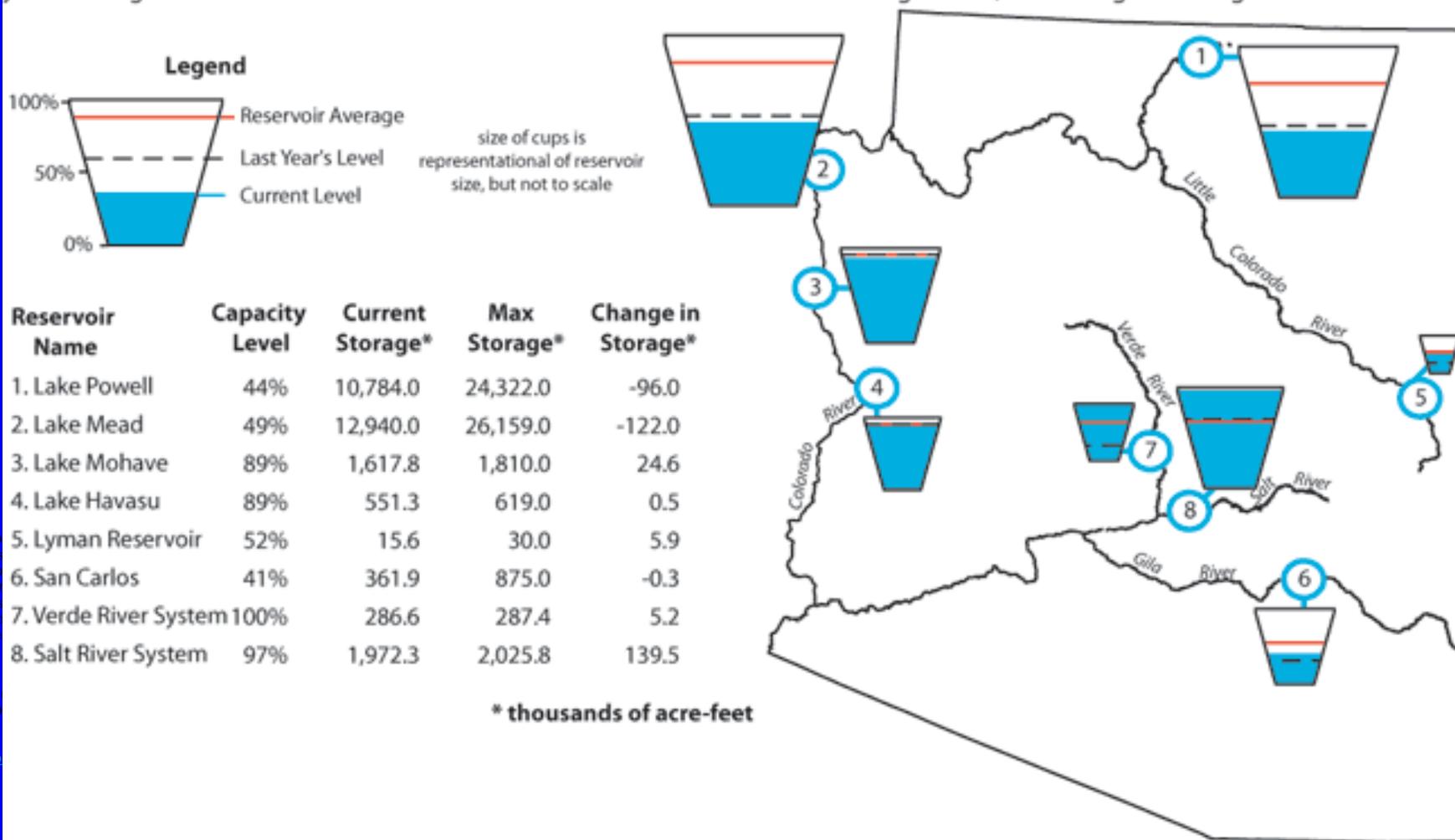
% Average



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Reservoir Status

Figure 6. Arizona reservoir levels for March 2008 as a percent of capacity. The map also depicts the average level and last year's storage for each reservoir. The table also lists current and maximum storage levels, and change in storage since last month.



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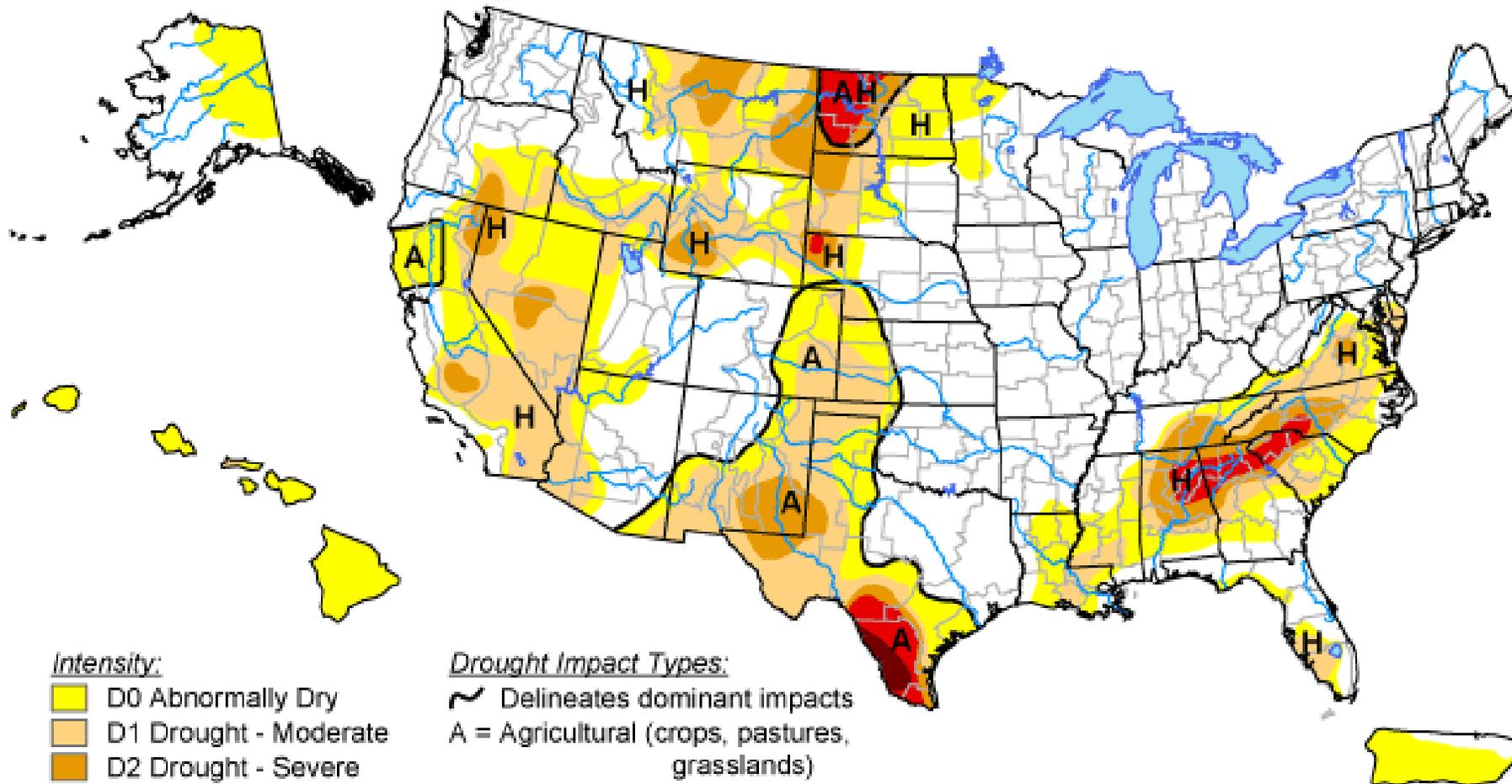
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The *National* Drought
Perspective...

U.S. Drought Monitor

April 22, 2008

Valid 8 a.m. EDT



Intensity:

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

Drought Impact Types:

-  Delineates dominant impacts
- A = Agricultural (crops, pastures, grasslands)
- H = Hydrological (water)

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



Released Thursday, April 24, 2008

Authors: Jay Lawrimore/Liz Love-Brotak, NOAA/NESDIS/NCDC

<http://drought.unl.edu/dm>

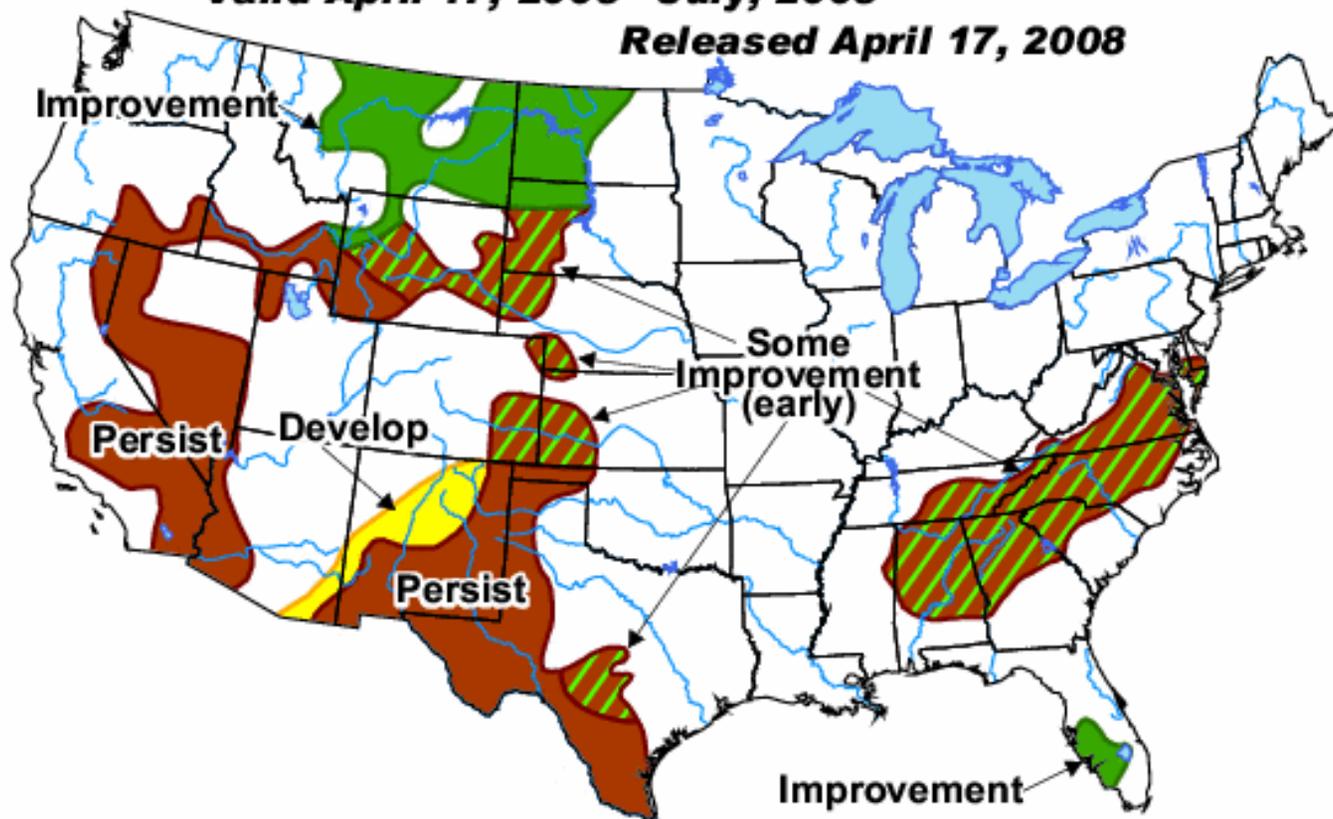
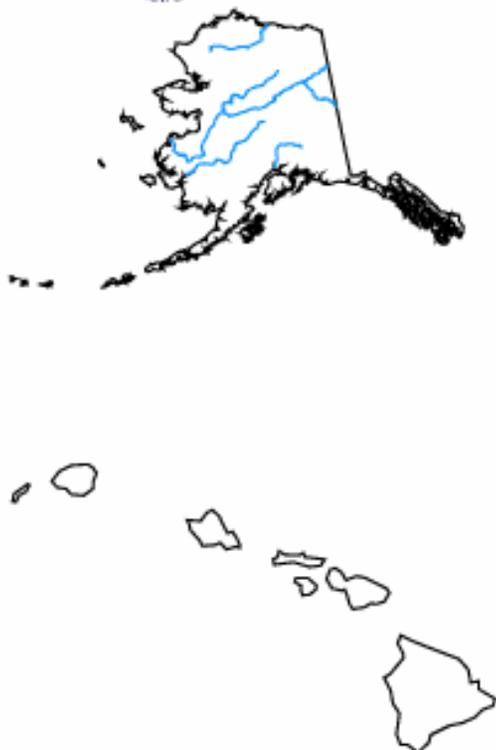


U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid April 17, 2008 - July, 2008

Released April 17, 2008



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.

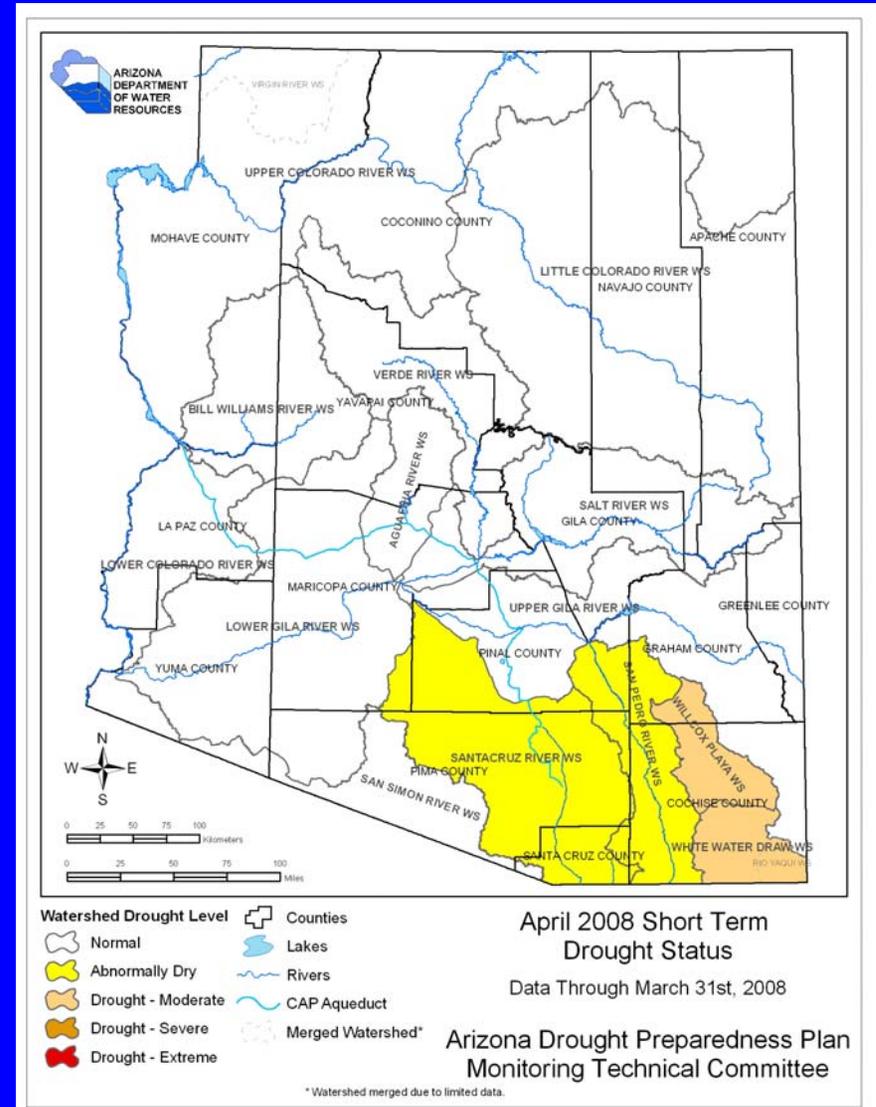
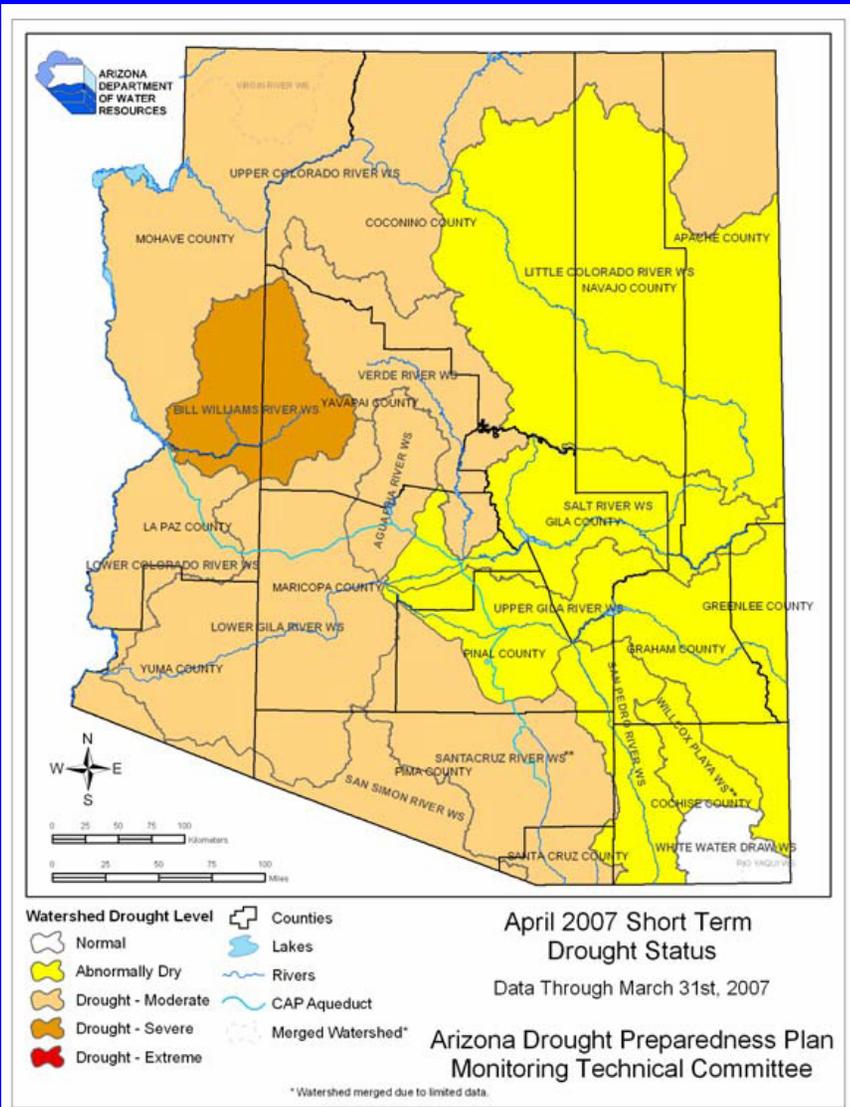


More Importantly: Arizona...

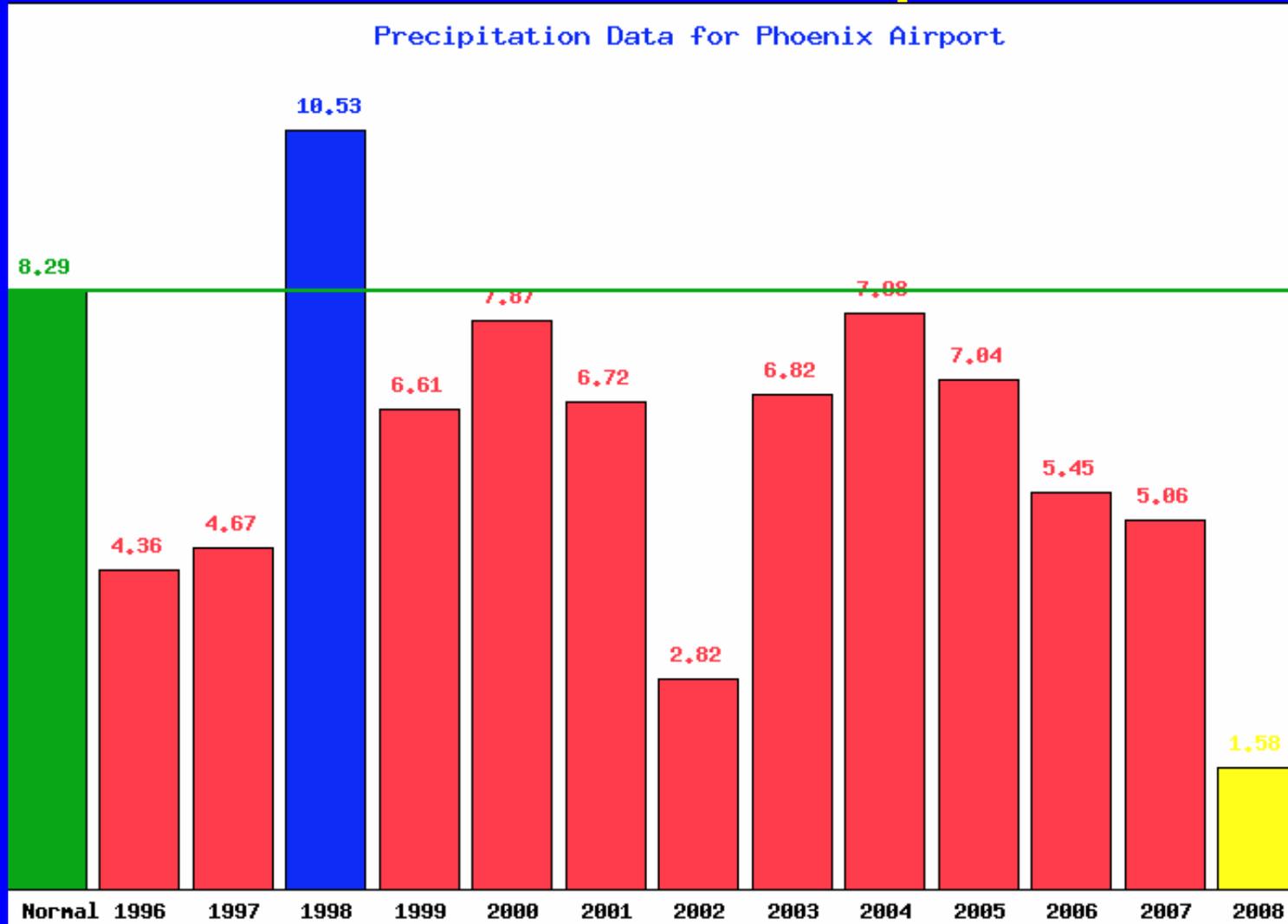
Short Term Status Comparison

April 2007

April 2008

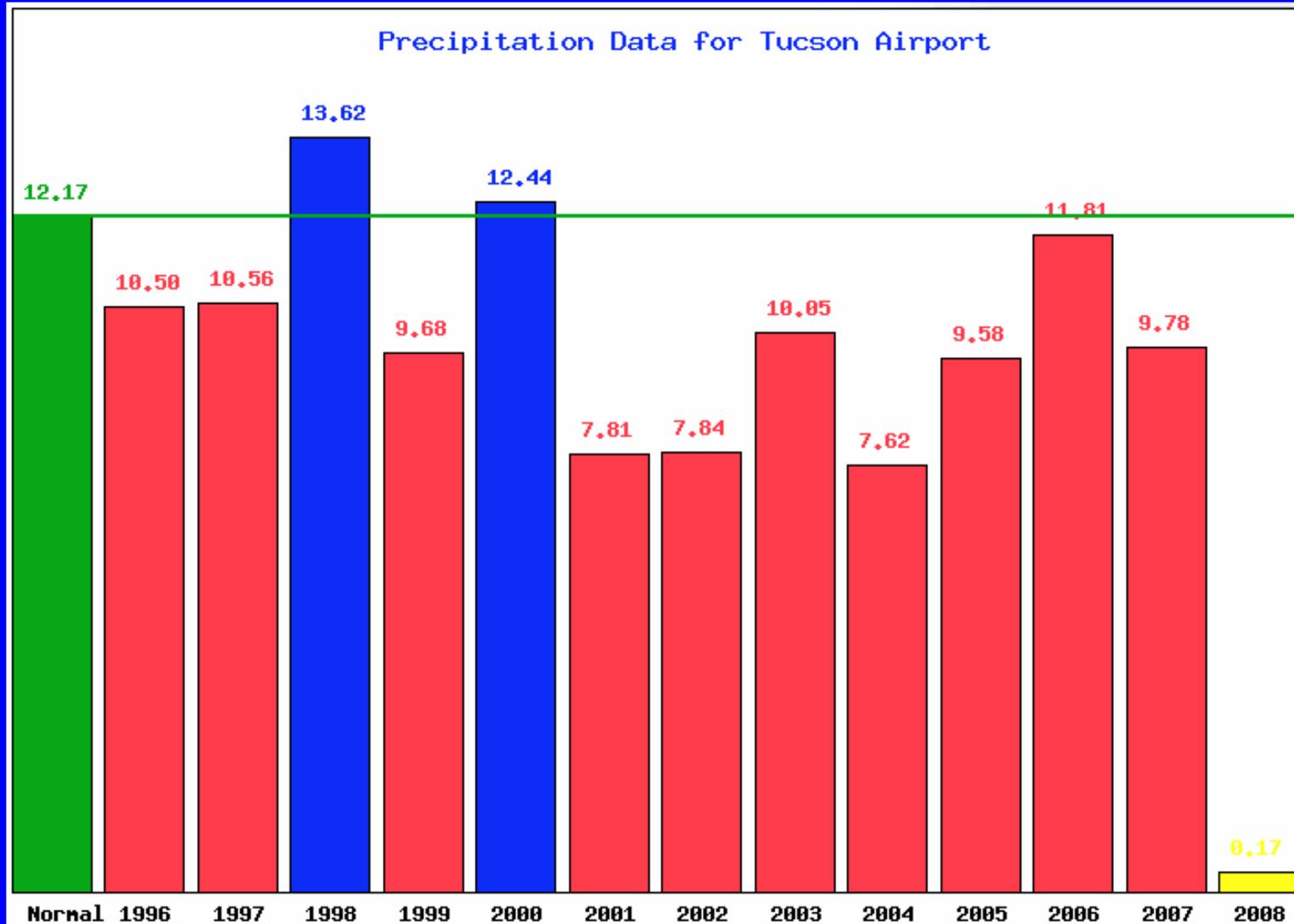


Phoenix Precipitation



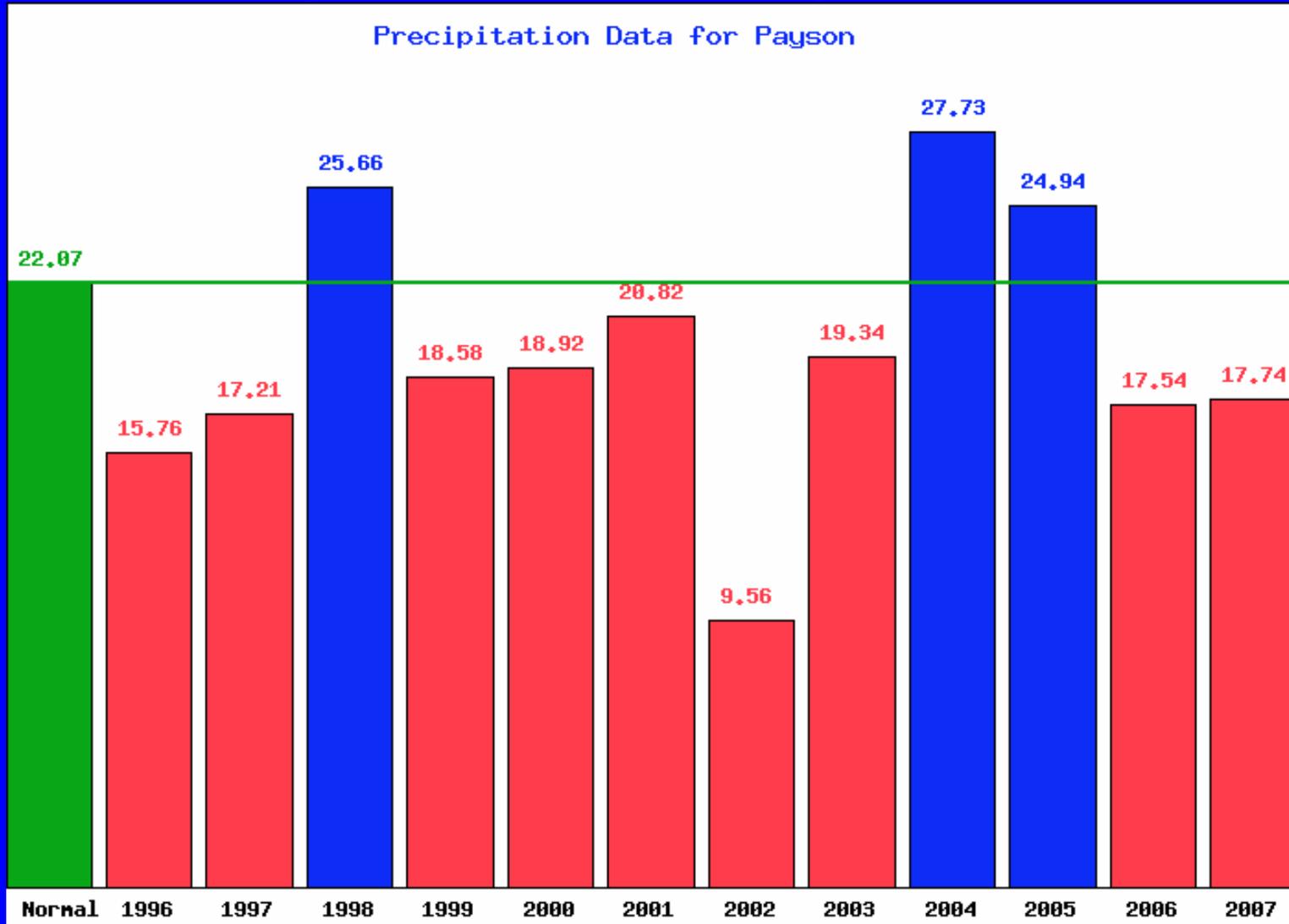
1996 -- 2008

Tucson Precipitation



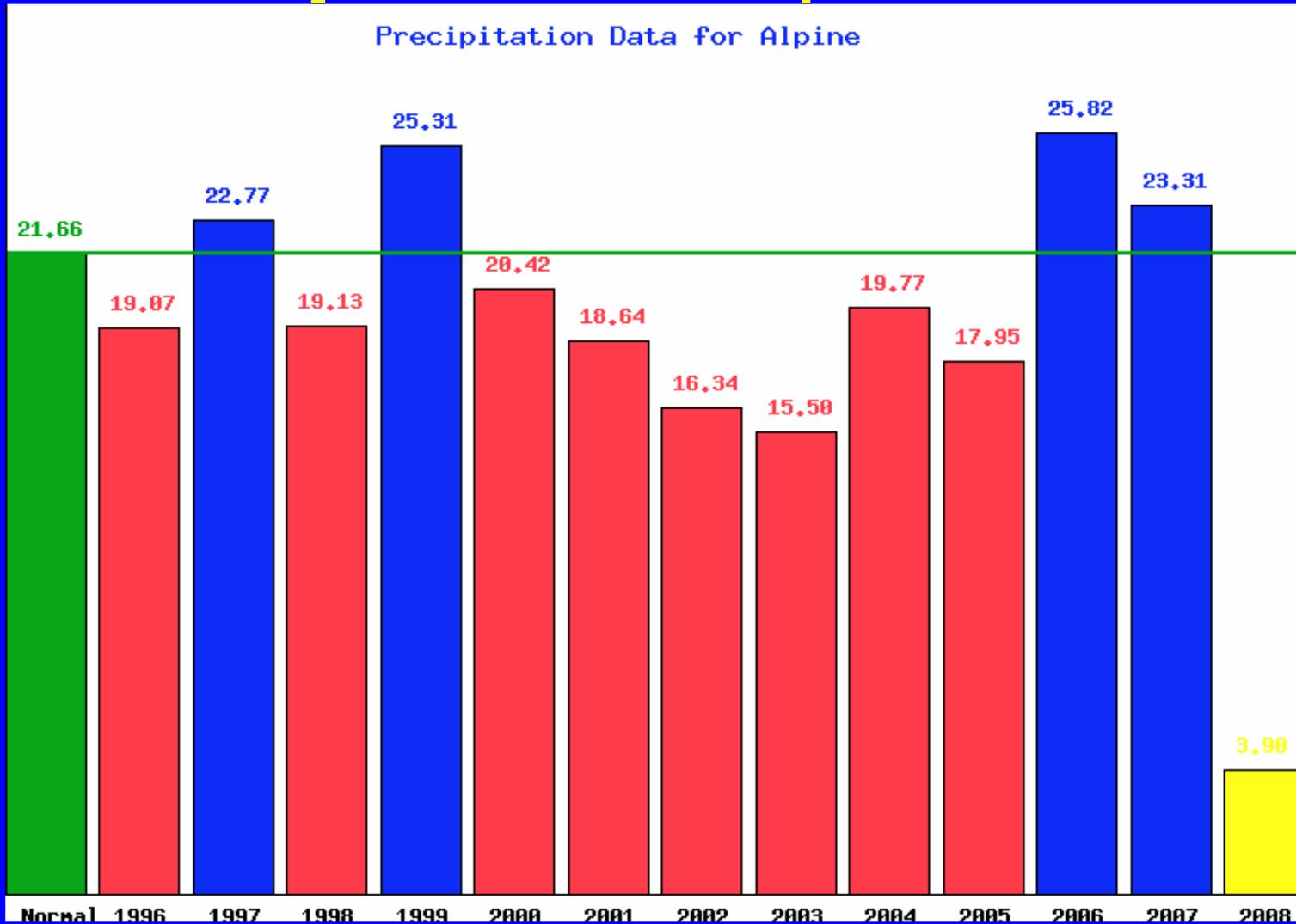
1996 -- 2008

Payson Precipitation



1996 -- 2007

Alpine Precipitation

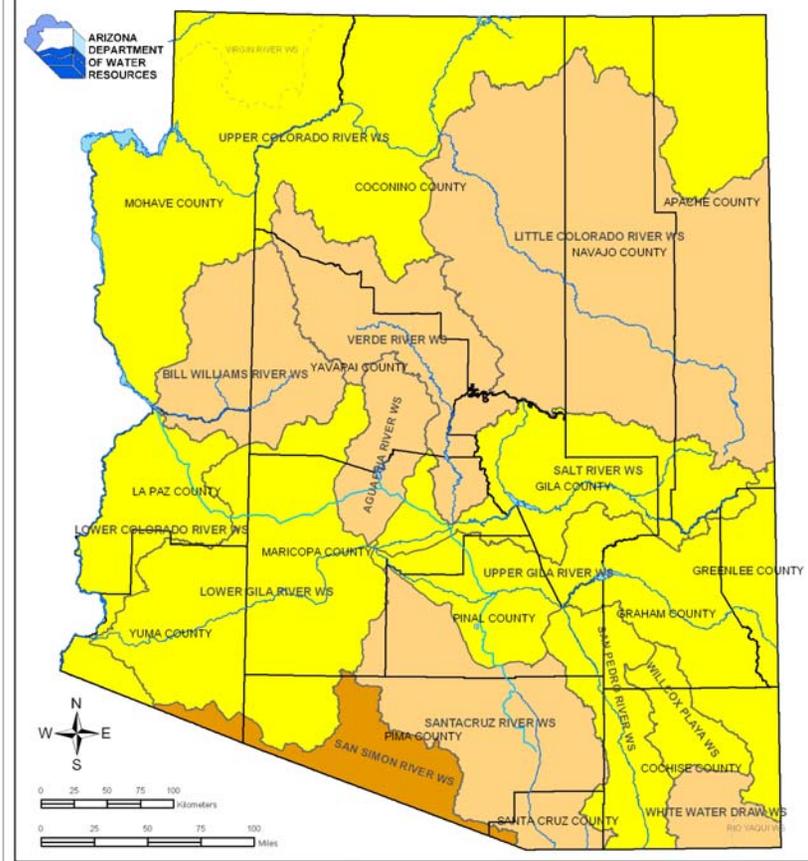
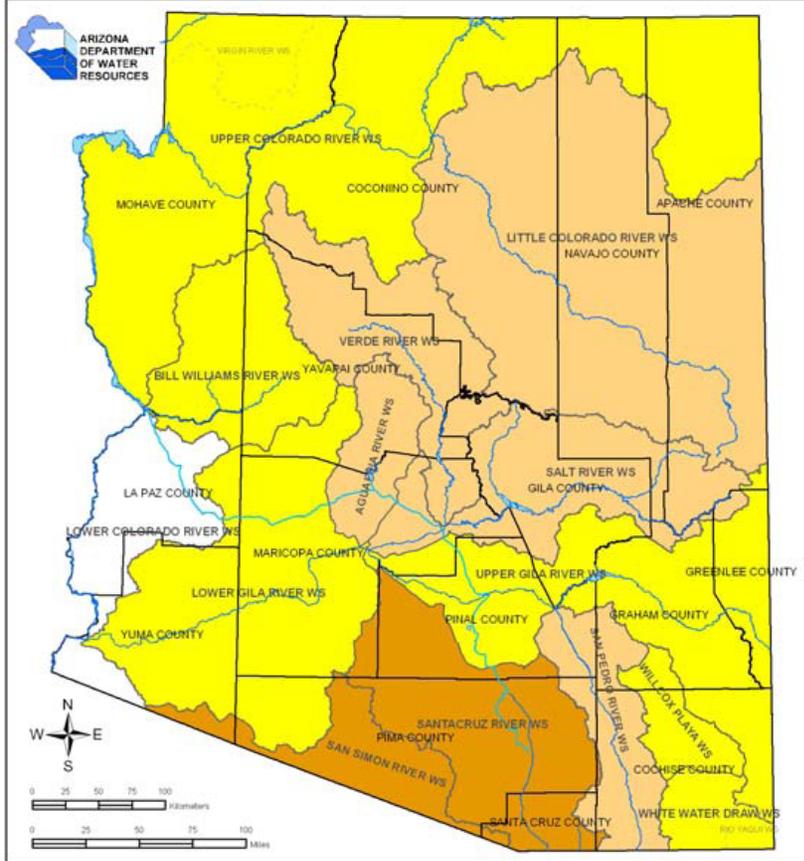


1996 -- 2008

Long Term Status Maps

April 2007

April 2008



- | | |
|--------------------------------|-------------------|
| Watershed Drought Level | Counties |
| Normal | Counties |
| Abnormally Dry | Lakes |
| Drought - Moderate | Rivers |
| Drought - Severe | CAP Aqueduct |
| Drought - Extreme | Merged Watershed* |

April 2007 Long Term Drought Status
Data Through March 31st, 2007

Arizona Drought Preparedness Plan
Monitoring Technical Committee

* Watershed merged due to limited data.

- | | |
|--------------------------------|-------------------|
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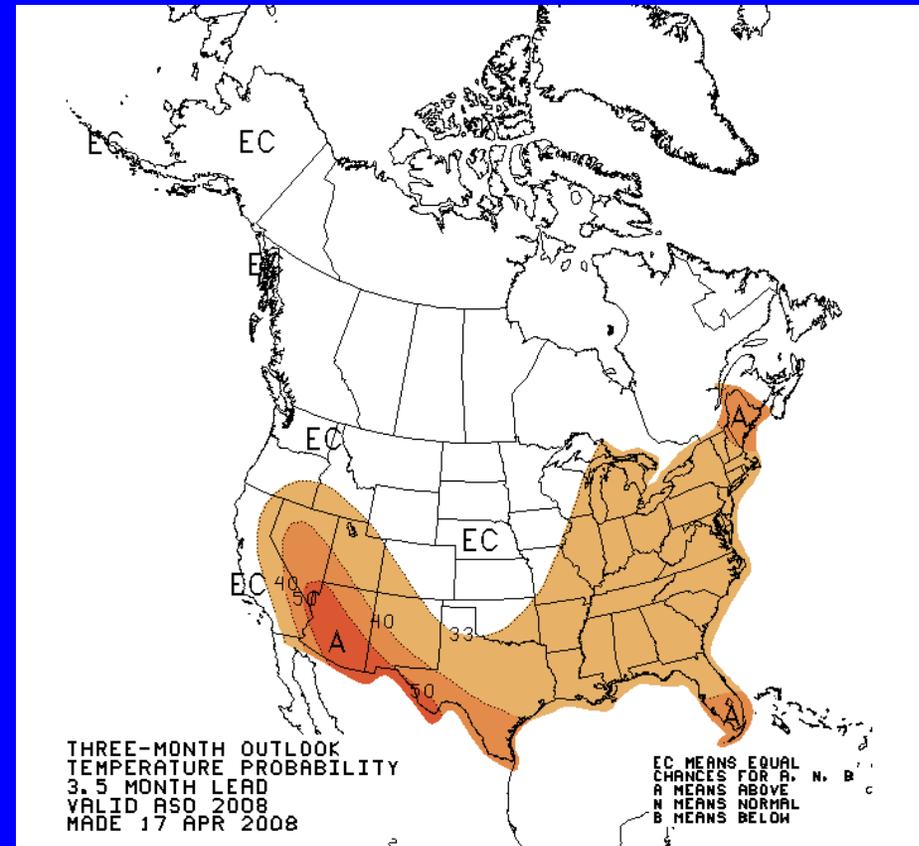
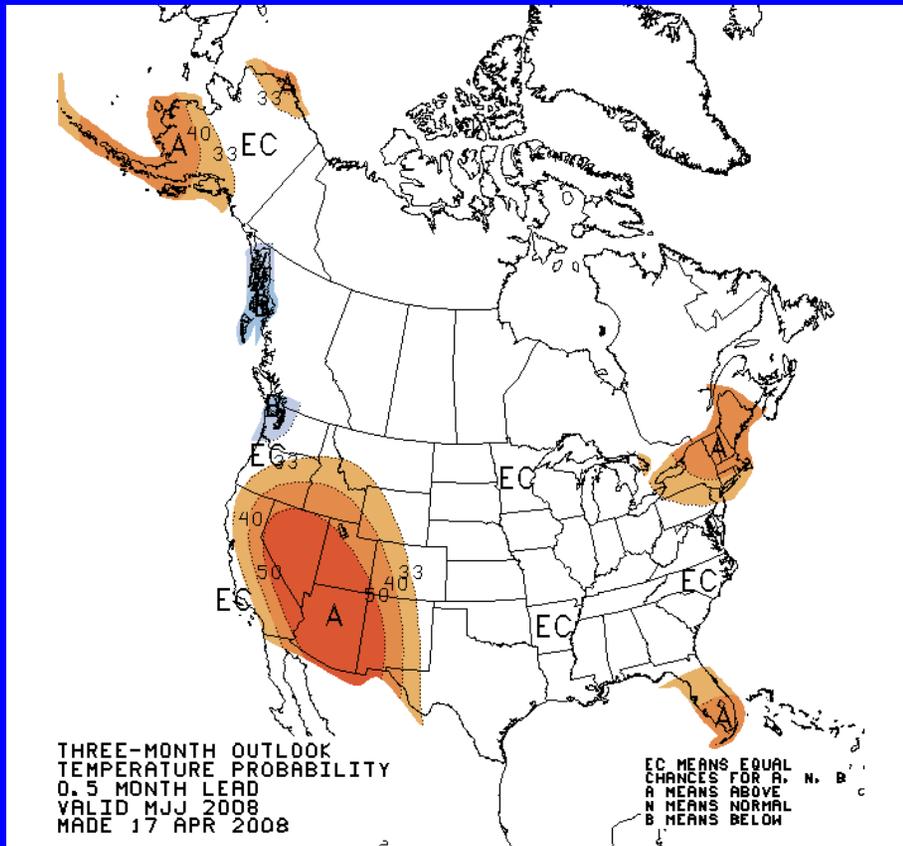
Long Range Outlooks

“The Climatic Crystal Ball” ???

Temperature Outlook

May through July 2008

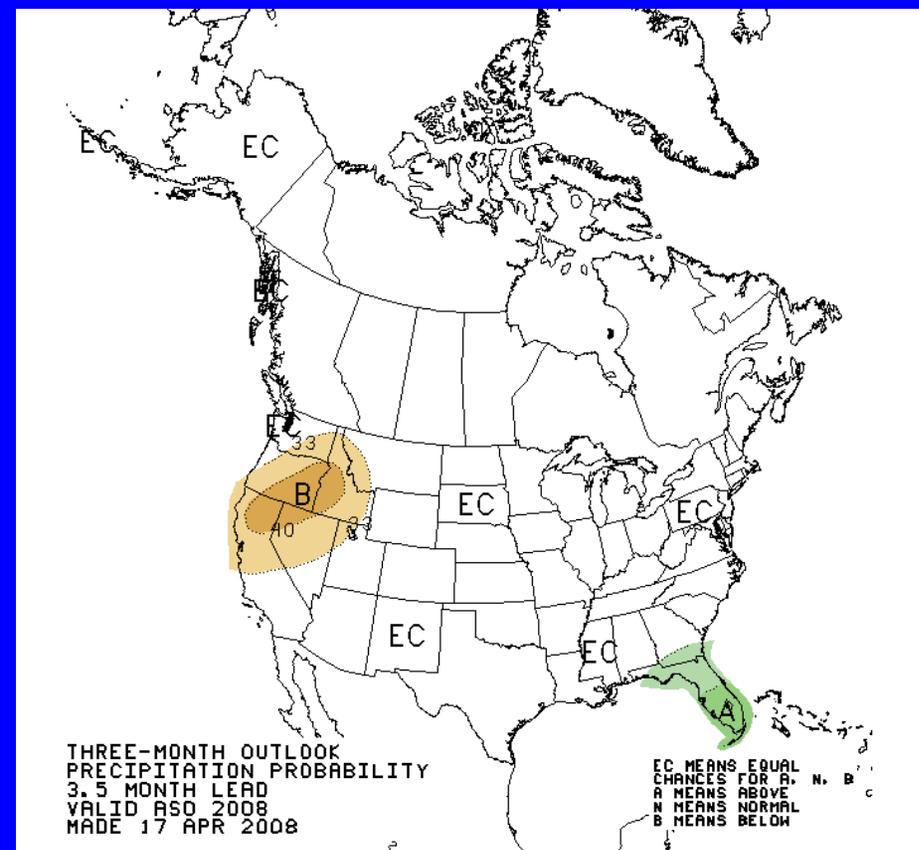
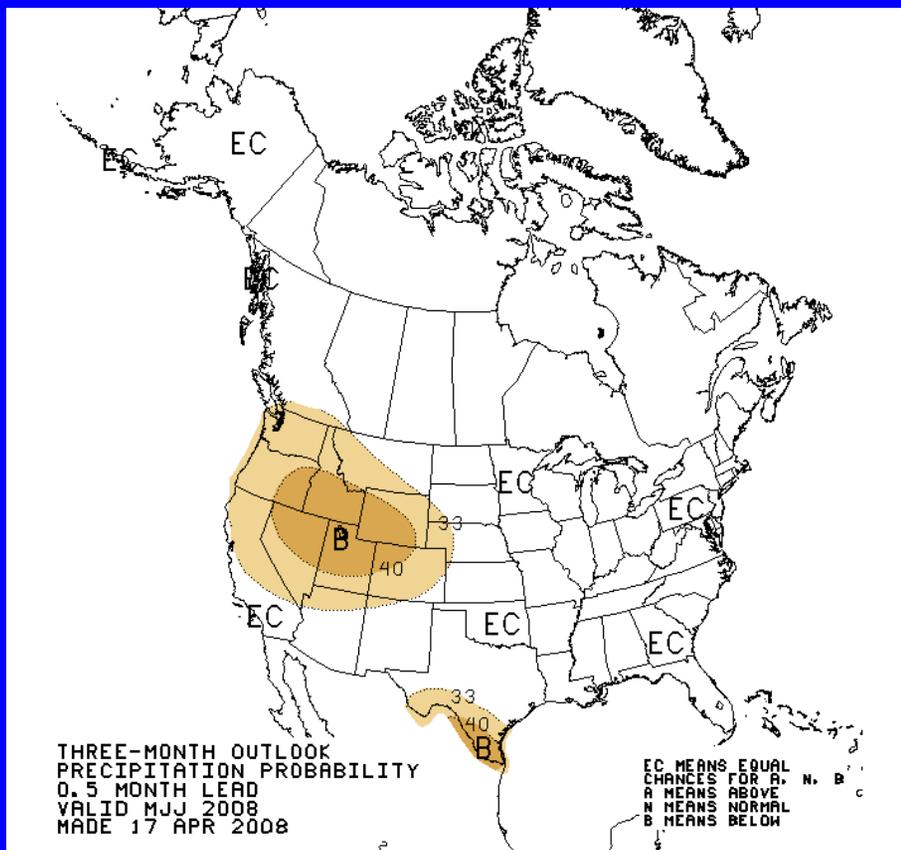
August through October 2008



Precipitation Outlook

May through July 2008

August through October 2008



Closing
Thoughts...

Climate Change...

NOT Just Something to Think
About!!

What Climate is & what climate change means

Climate is the pattern of weather, meaning averages, extremes, timing, geographic distribution of...

- Hot & Cold
- Cloudy & Clear
- Humid & Dry
- Drizzles & Downpours
- Snowfall, Snowpack, & Snowmelt
- Hurricanes, Blizzards, Tornadoes, & Typhoons

Climate change means altered patterns.

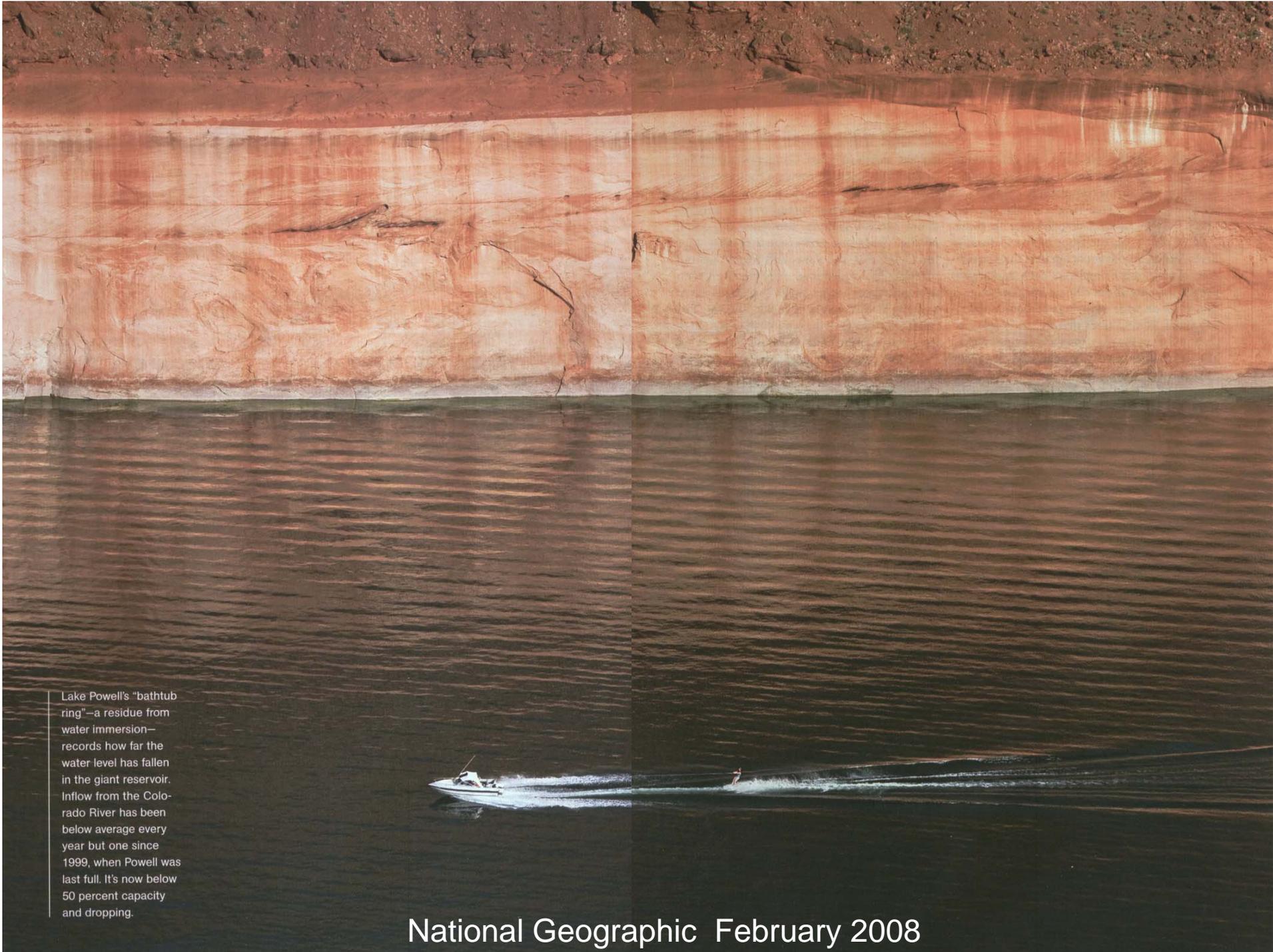
Global average temperature is just one index of the state of the global climate. Small changes in the index → **BIG** changes in the patterns.

Points to *Ponder*...

- “Global warming” is a misnomer; we should be calling it “global climatic disruption”
- The disruption & its impacts are now growing more rapidly than was expected just a few years ago.
- The world is already experiencing “dangerous anthro-pogenic interference in the climate system”.
- Our options are mitigation, adaptation, & suffering. If we do less mitigation & adaptation, we’ll do more suffering.



New York Times Sunday Magazine
October 21, 2007



Lake Powell's "bathtub ring"—a residue from water immersion—records how far the water level has fallen in the giant reservoir. Inflow from the Colorado River has been below average every year but one since 1999, when Powell was last full. It's now below 50 percent capacity and dropping.

Thank You !!