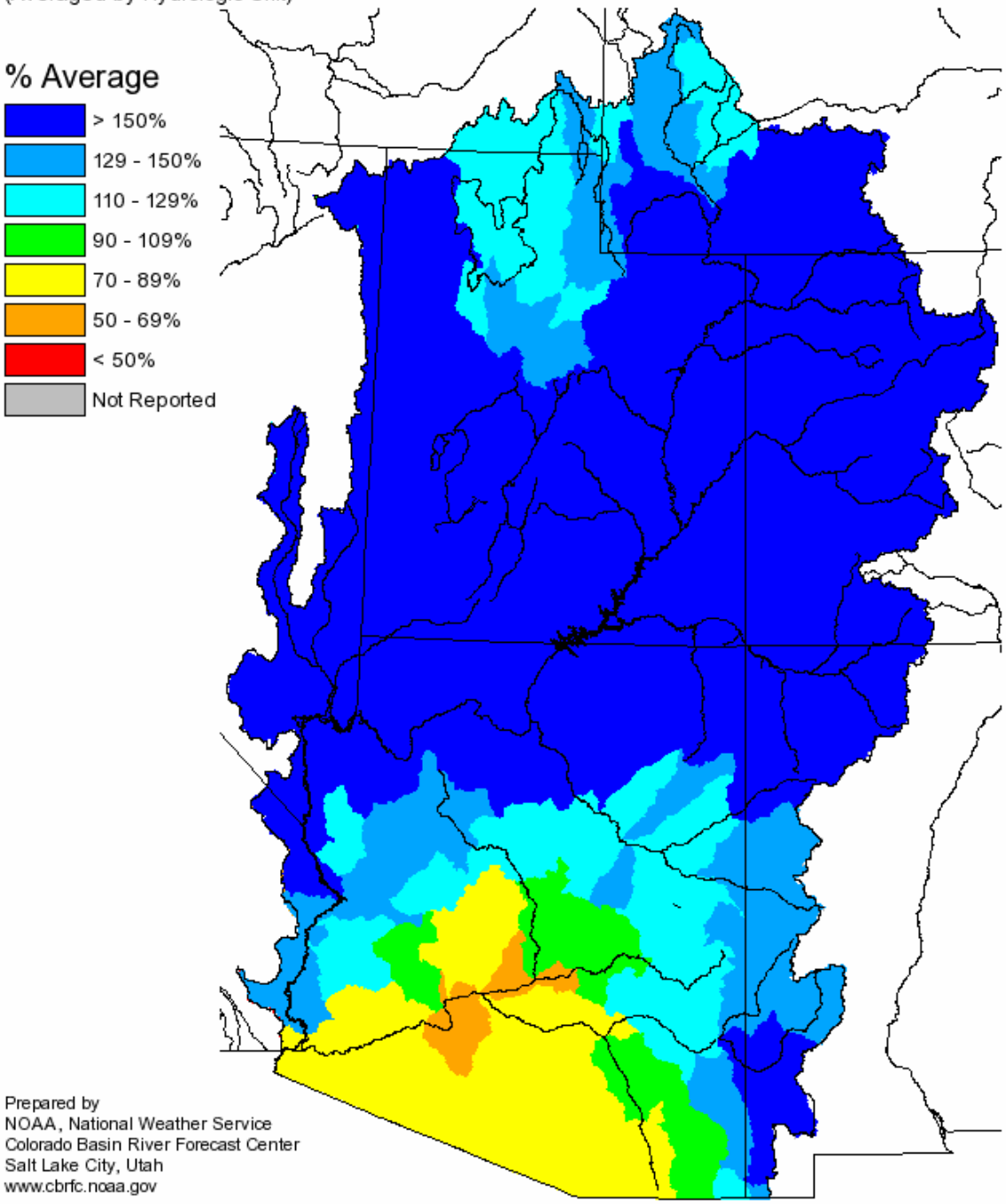

CBRFC/NRCS
Presentation to the CRFS meeting
November 28, 2007


Water Year 2007 Precipitation
CBRFC
COLORADO BASIN RIVER FORECAST CENTER
NOAA

Monthly Precipitation for October 2006

(Averaged by Hydrologic Unit)



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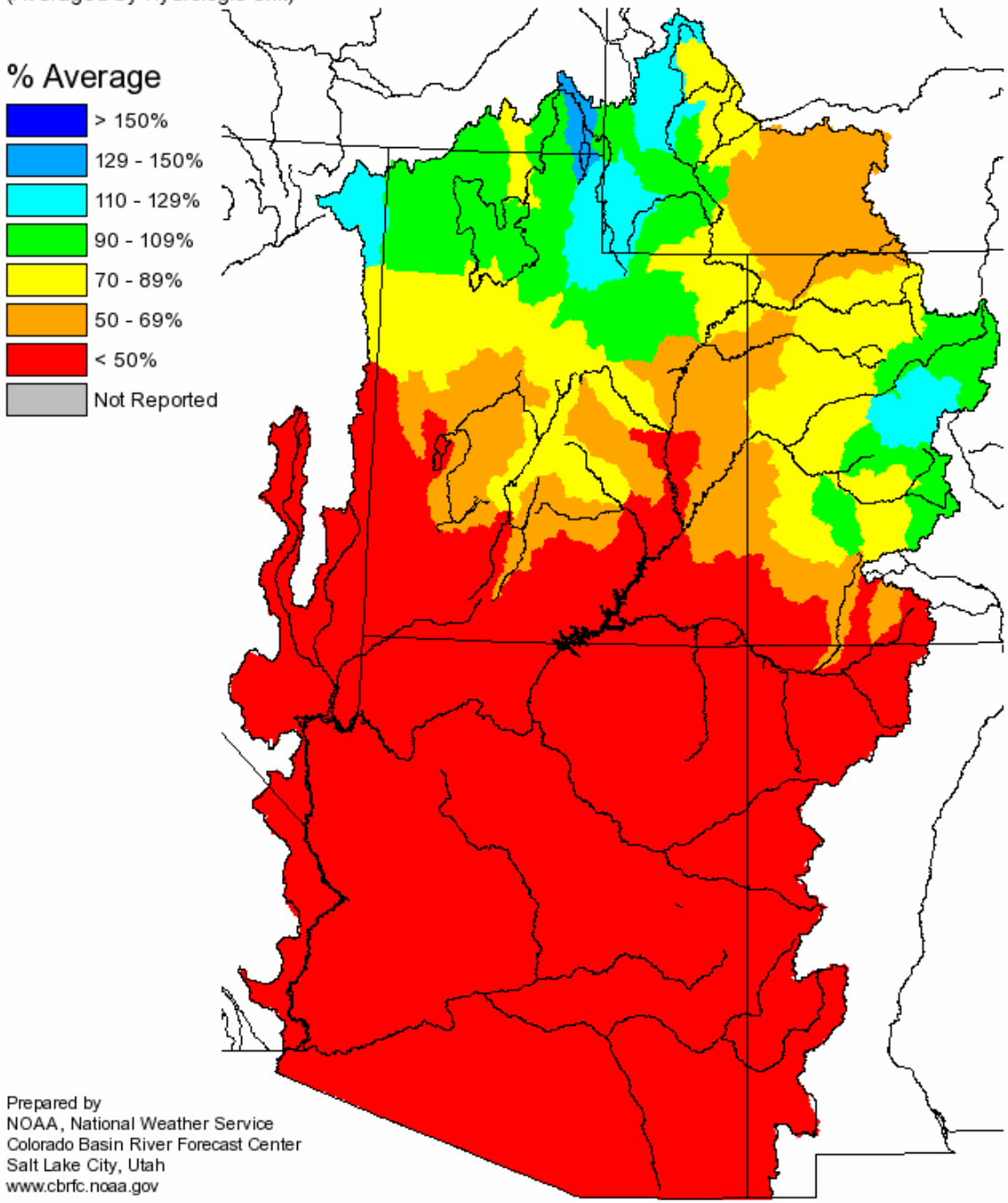
Colorado Basin River Forecast Center
Salt Lake City, Utah
www.cbrfc.noaa.gov

Monthly Precipitation for November 2006

(Averaged by Hydrologic Unit)



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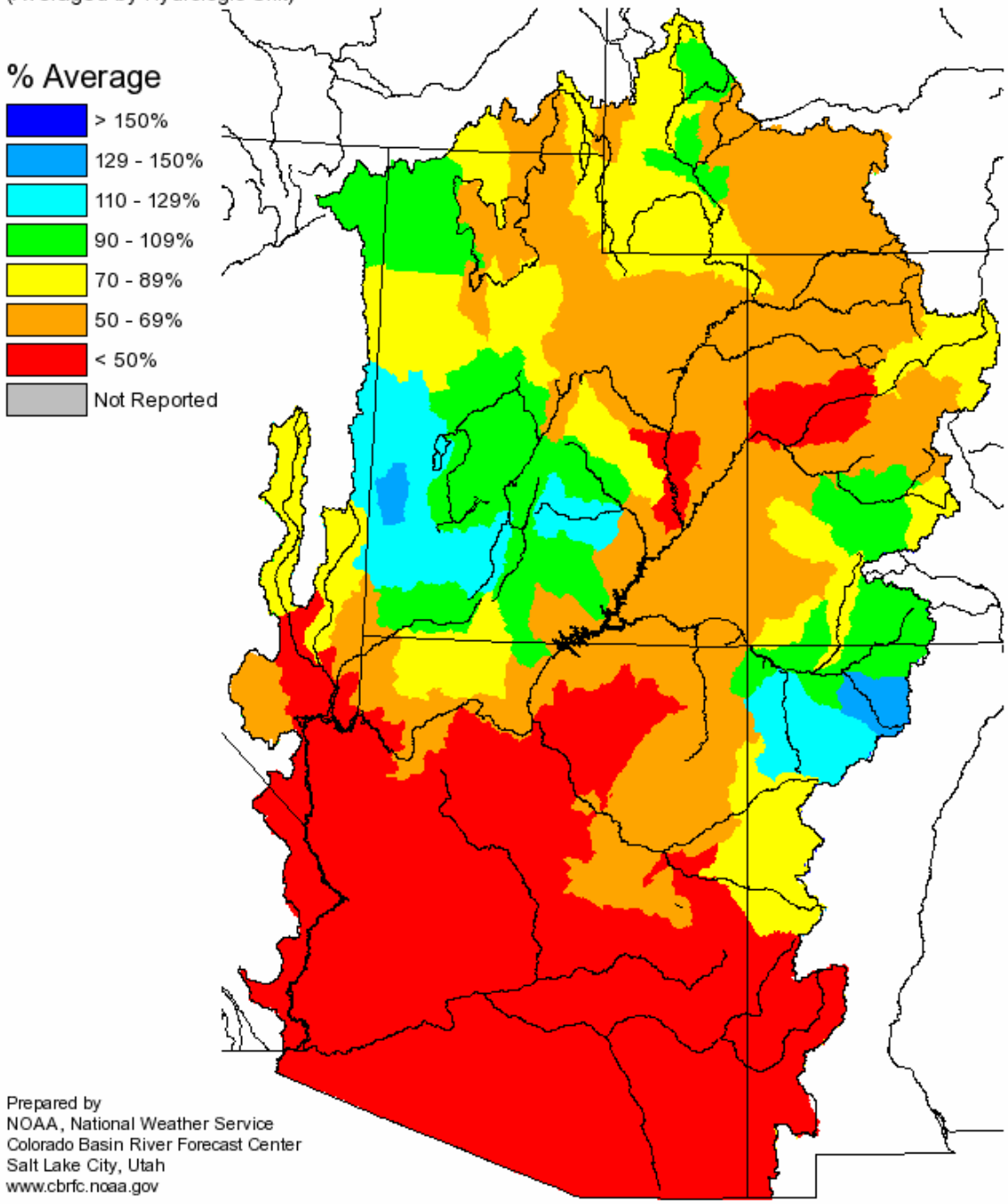
Monthly Precipitation for December 2006

(Averaged by Hydrologic Unit)



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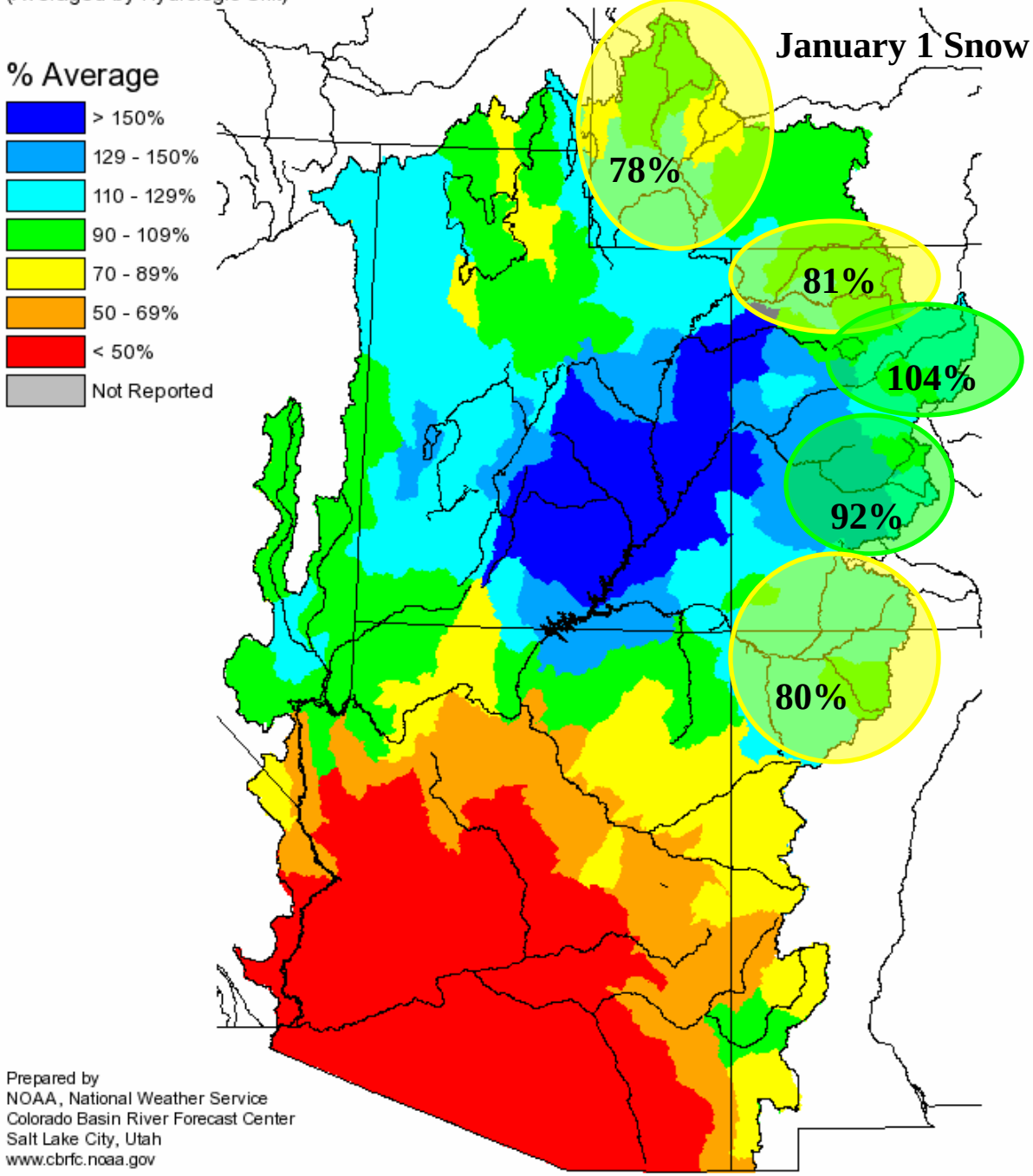
Seasonal Precipitation, October 2006 - December 2006

(Averaged by Hydrologic Unit)



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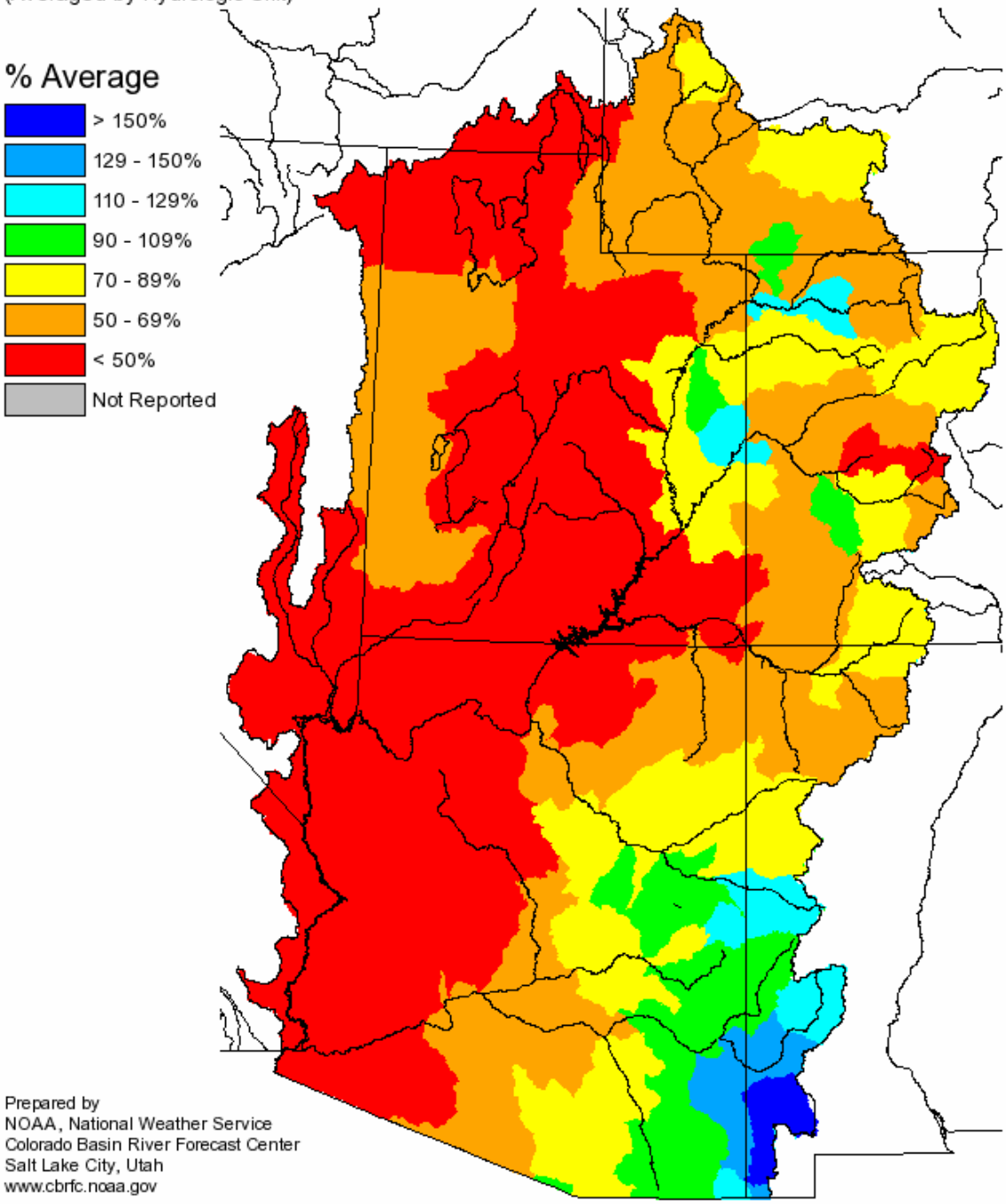
Monthly Precipitation for January 2007

(Averaged by Hydrologic Unit)



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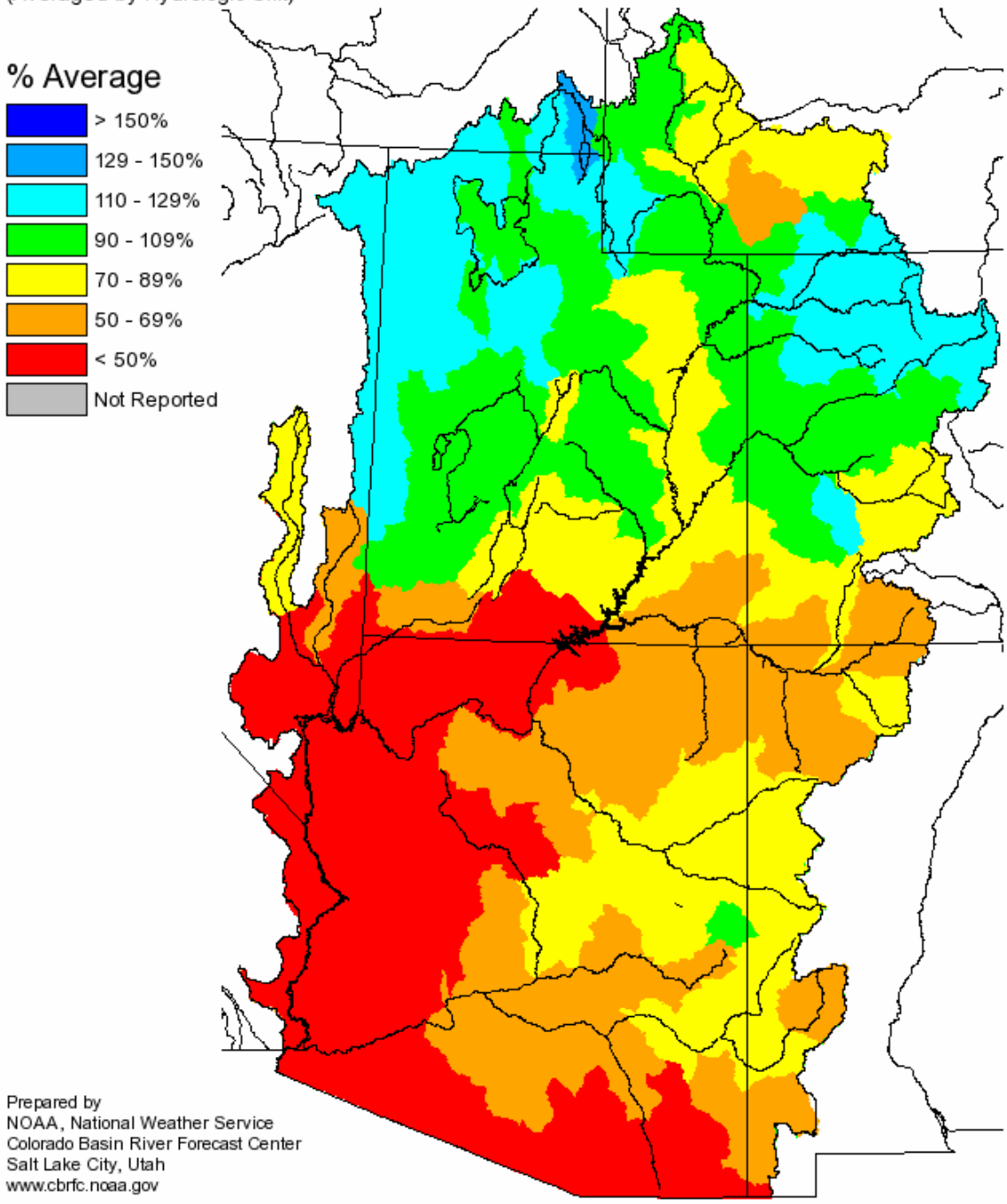
Monthly Precipitation for February 2007

(Averaged by Hydrologic Unit)



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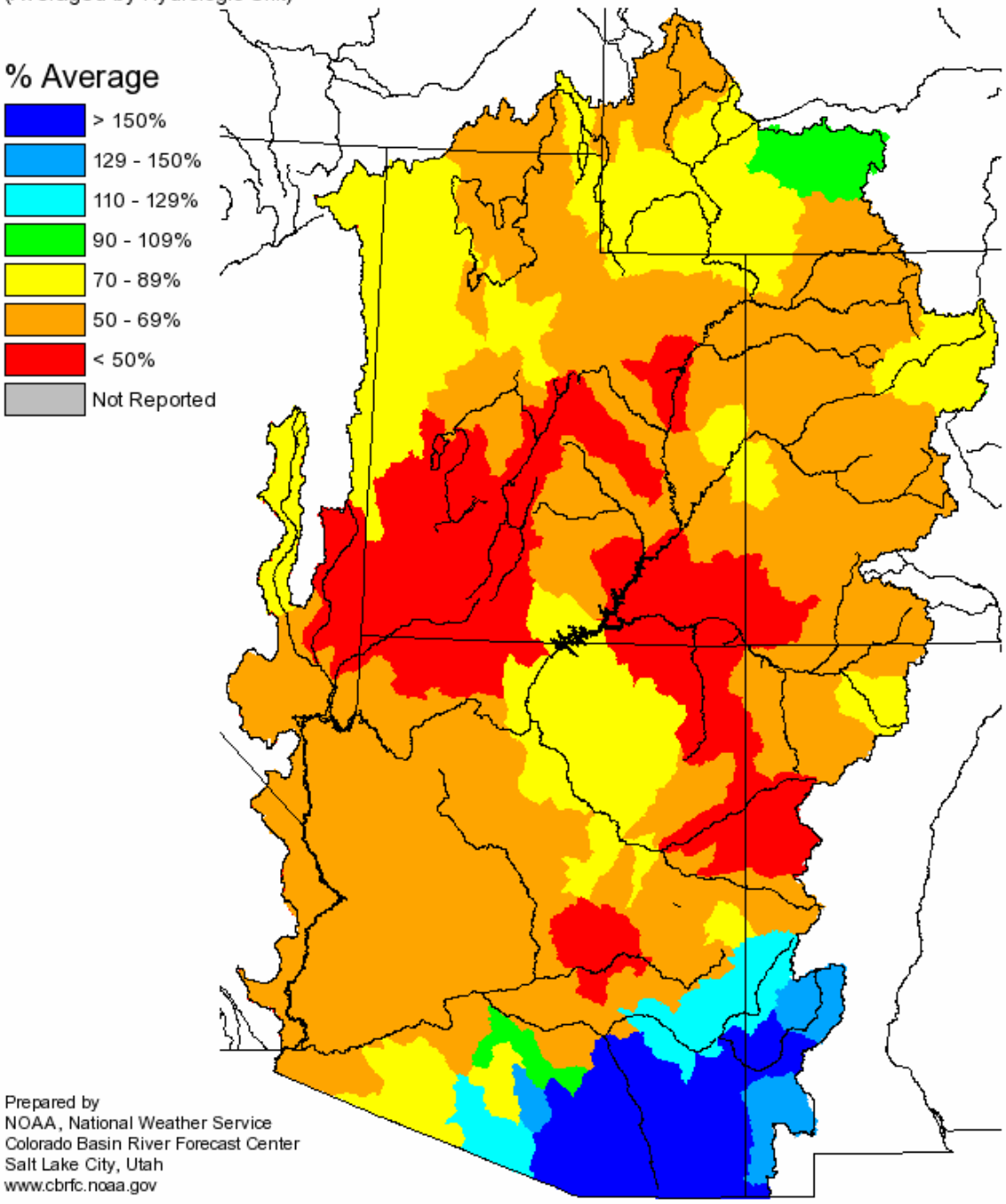
Monthly Precipitation for March 2007

(Averaged by Hydrologic Unit)



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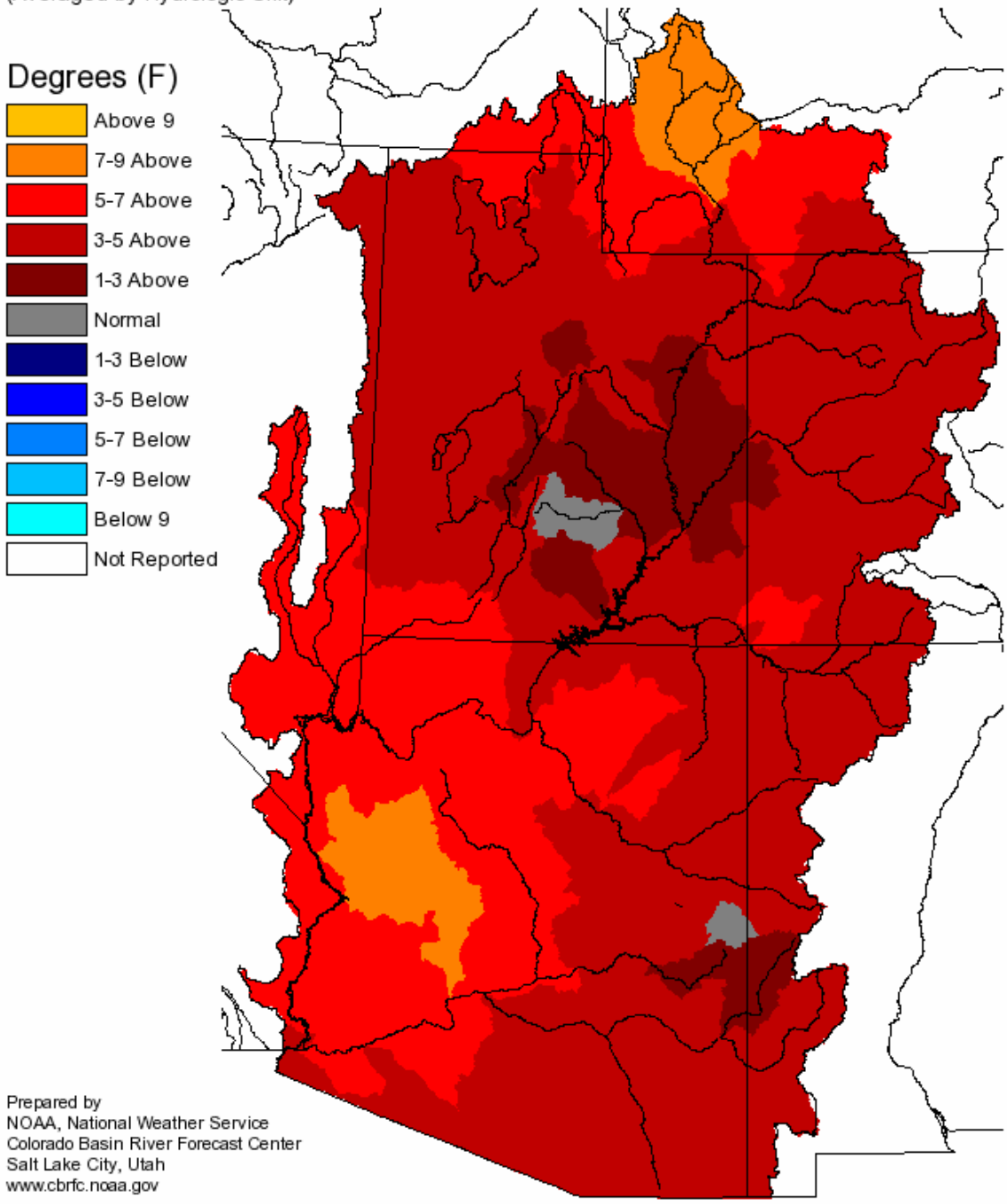
Monthly Max Temp Deviation for March 2007

(Averaged by Hydrologic Unit)



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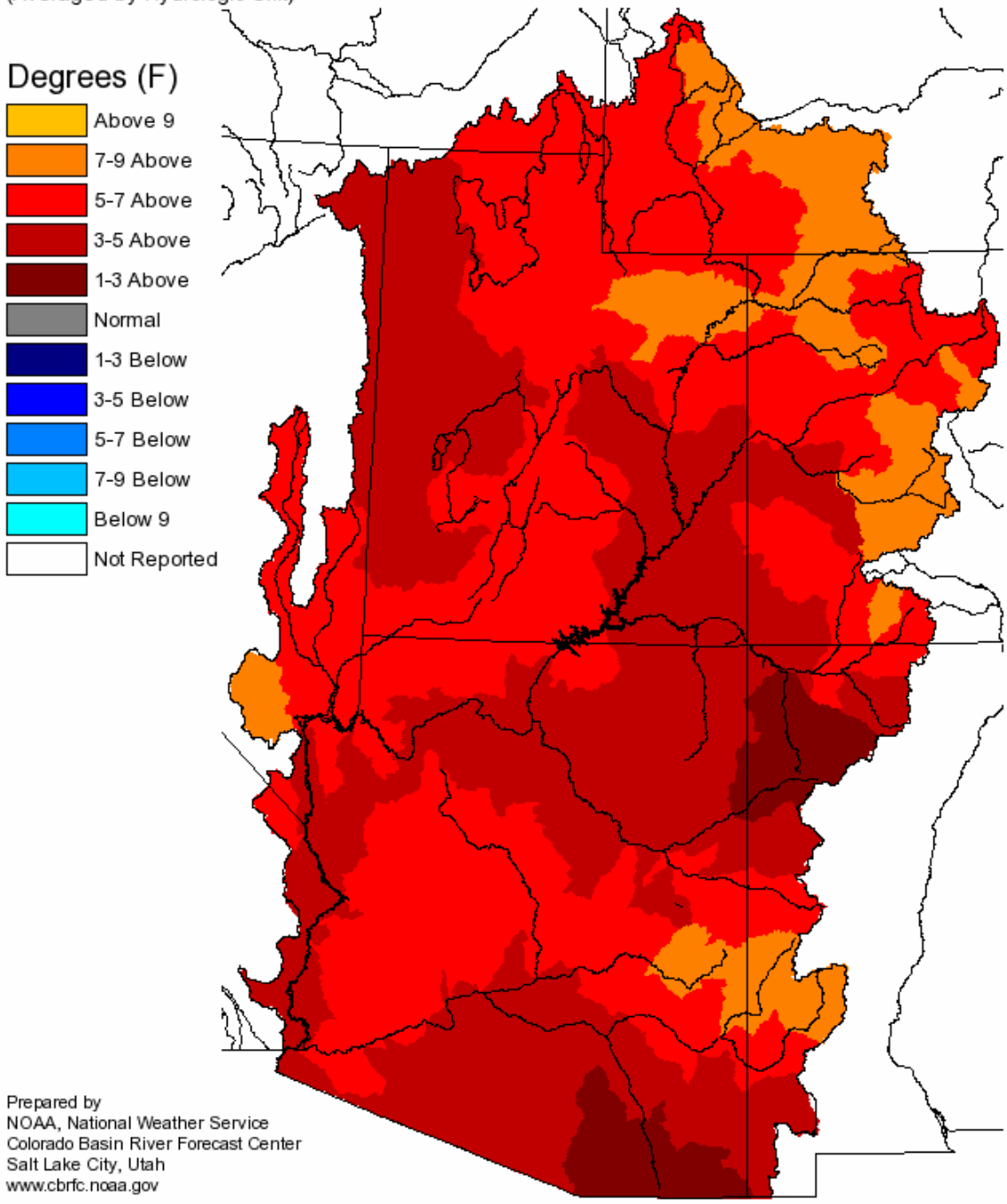
Monthly Min Temp Deviation for March 2007

(Averaged by Hydrologic Unit)



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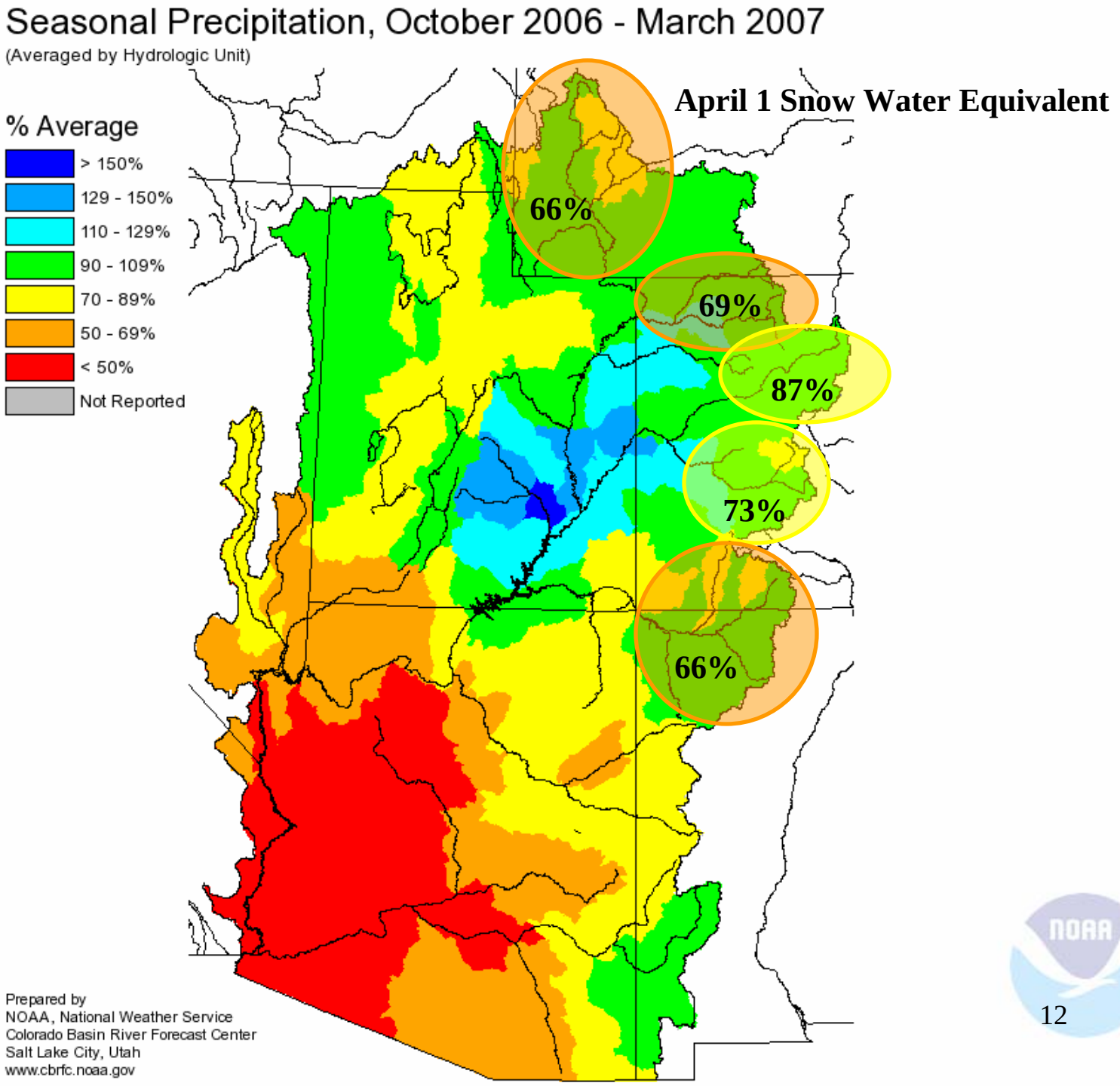
Seasonal Precipitation, October 2006 - March 2007
(Averaged by Hydrologic Unit)
% Average
> 150%
129 - 150%
110 - 129%
90 - 109%
70 - 89%
50 - 69%
< 50%
Not Reported
April 1 Snow Water Equivalent
66%
69%
87%
73%
66%
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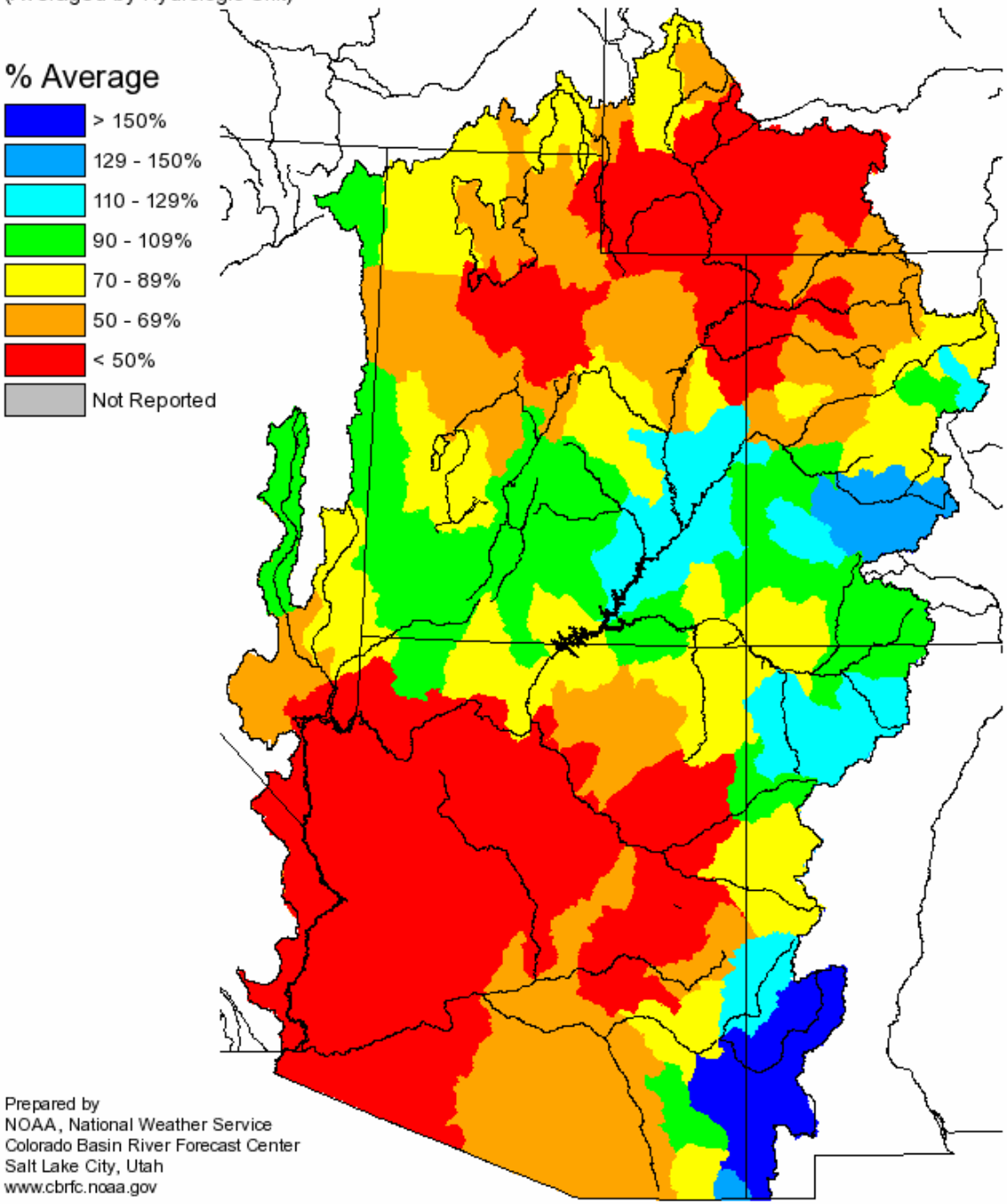
Monthly Precipitation for April 2007

(Averaged by Hydrologic Unit)



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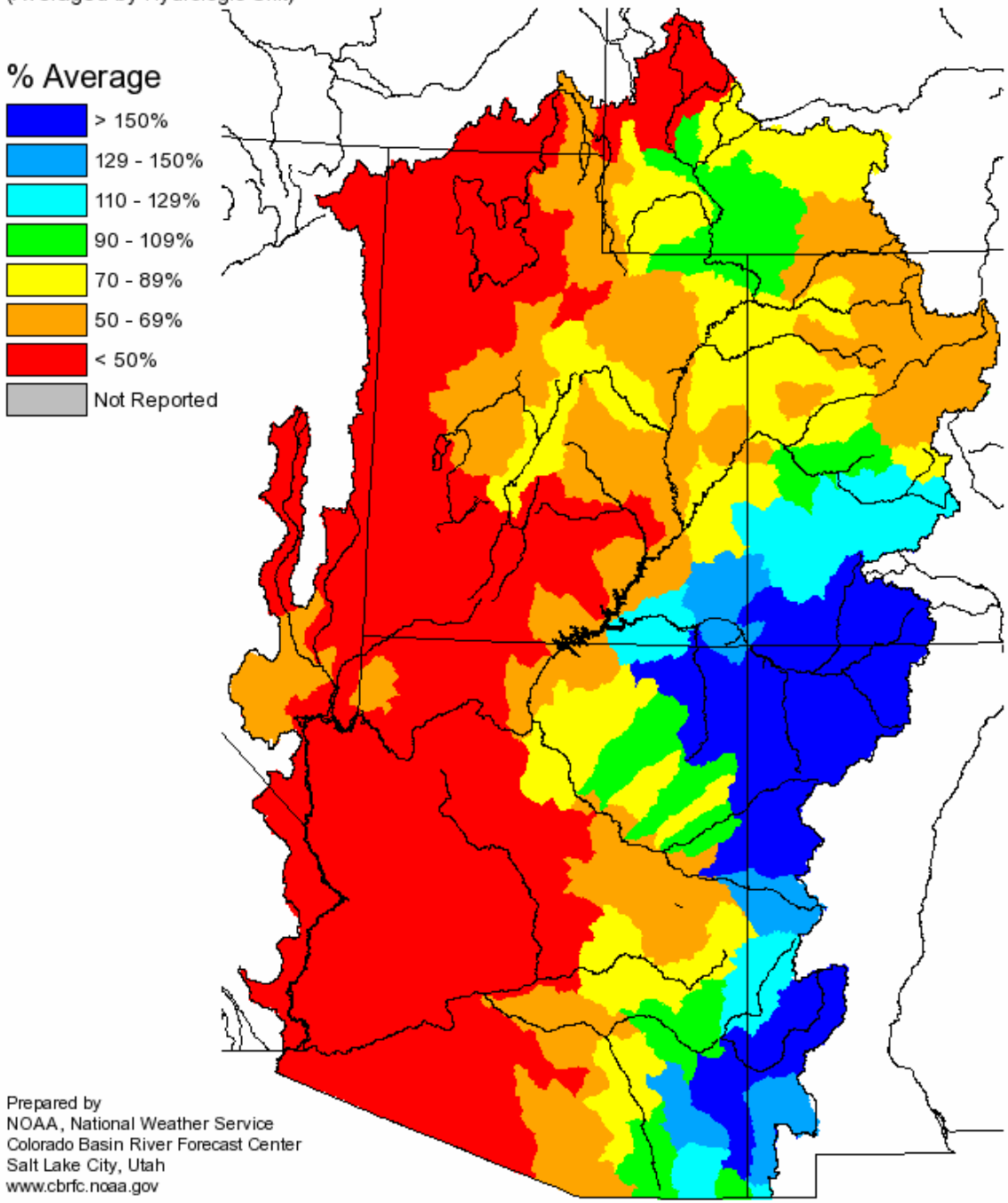
Monthly Precipitation for May 2007

(Averaged by Hydrologic Unit)



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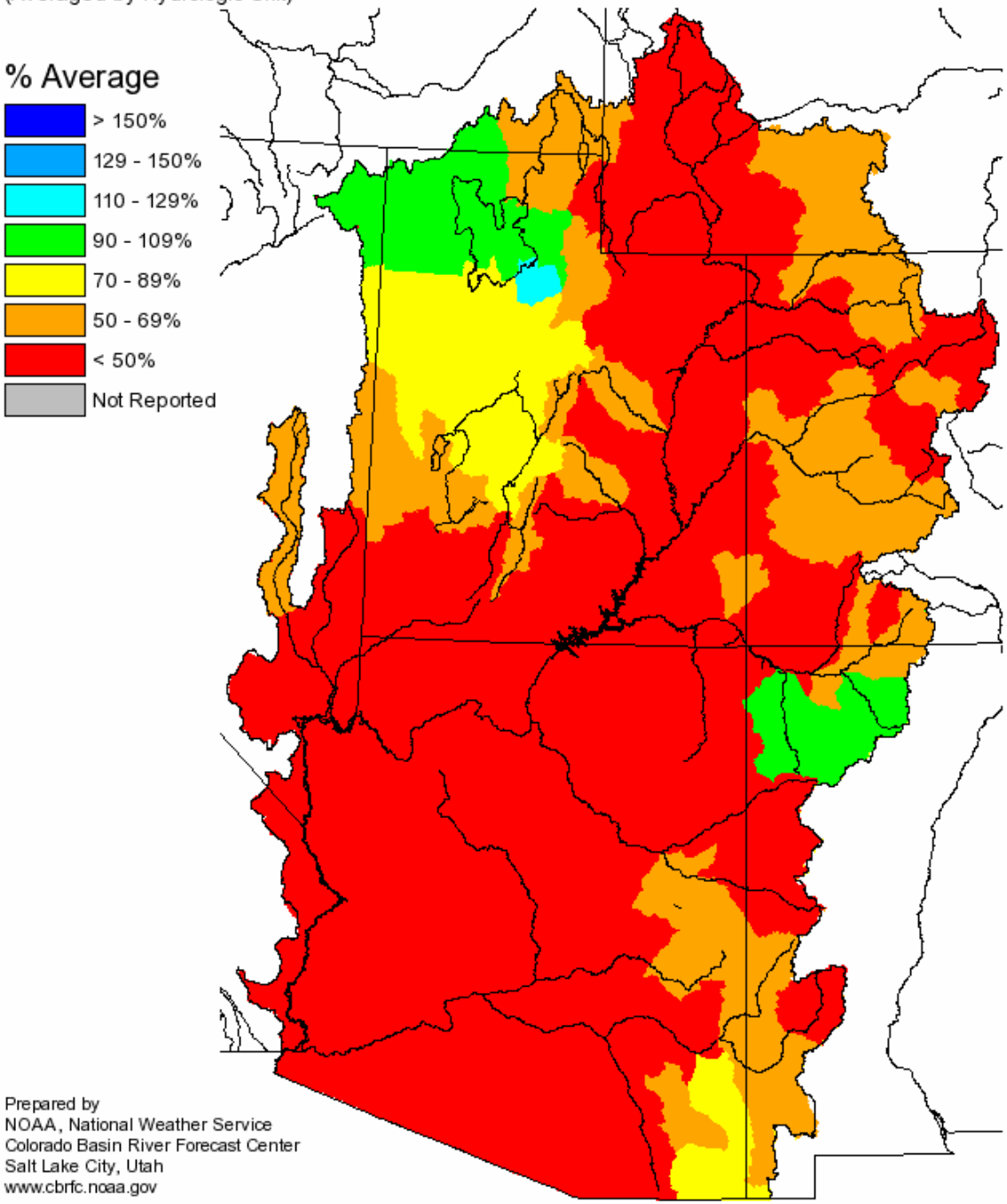
Monthly Precipitation for June 2007

(Averaged by Hydrologic Unit)



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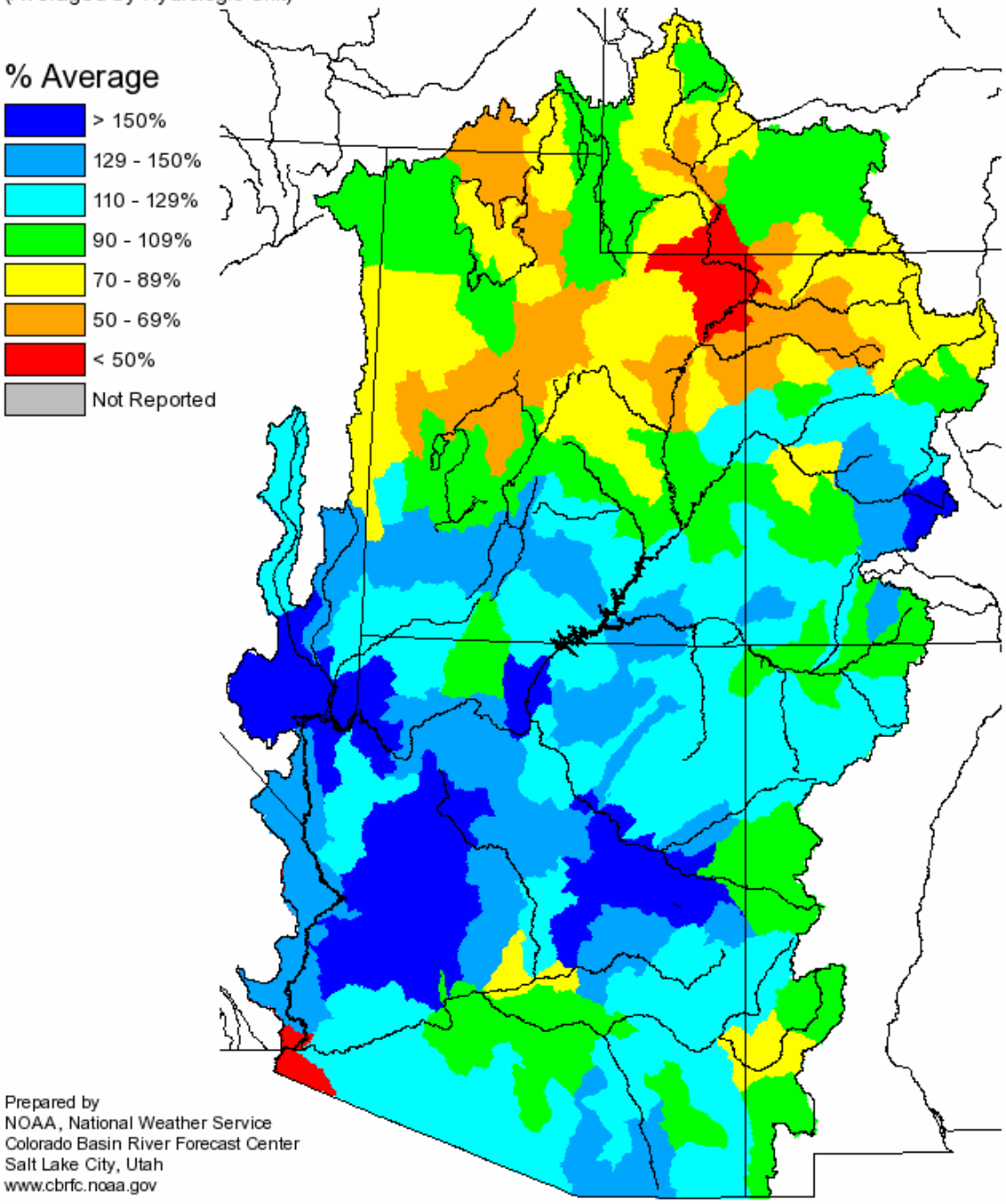
Monthly Precipitation for July 2007

(Averaged by Hydrologic Unit)



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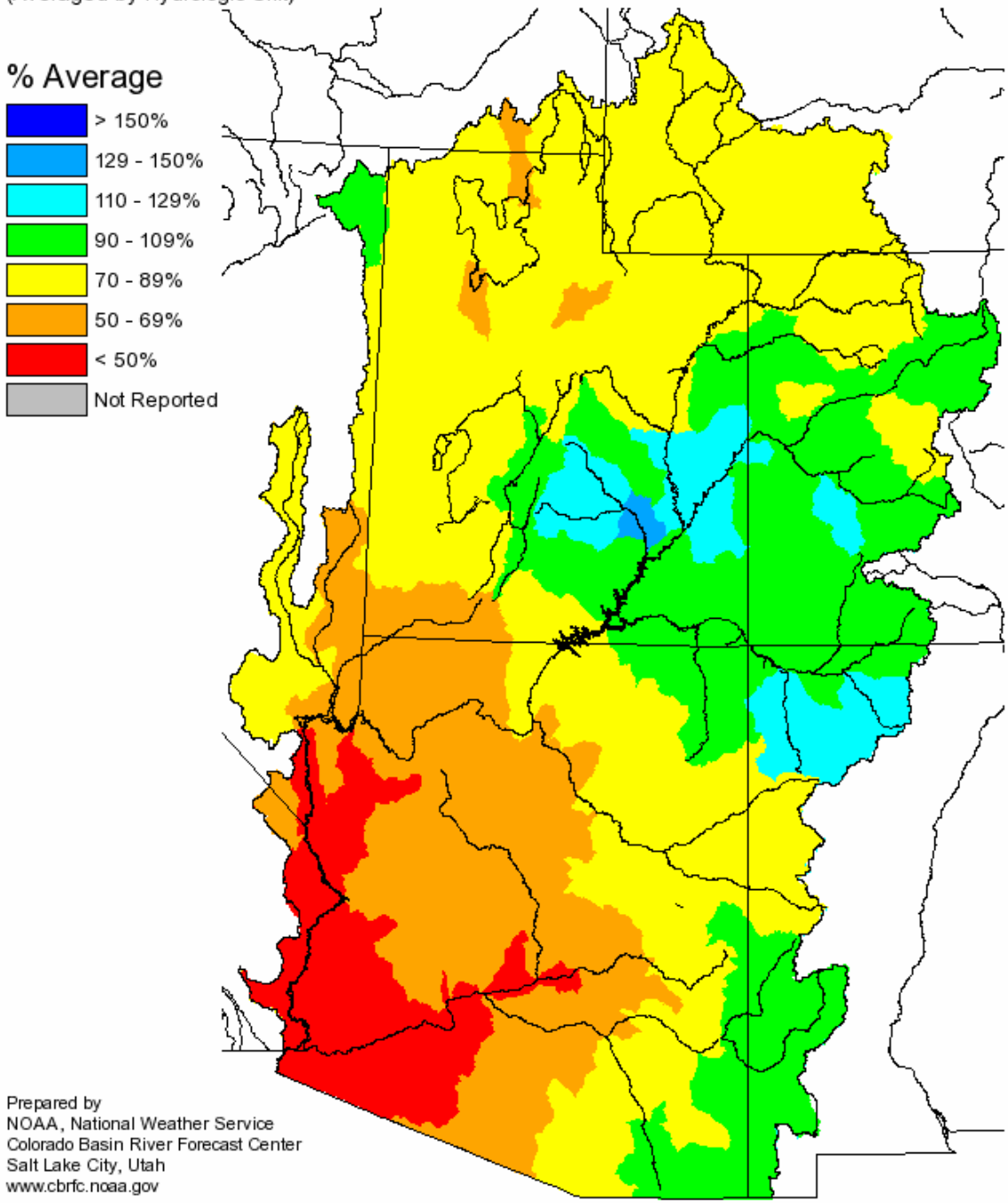
Seasonal Precipitation, October 2006 - July 2007

(Averaged by Hydrologic Unit)



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Monthly Precipitation for August 2007

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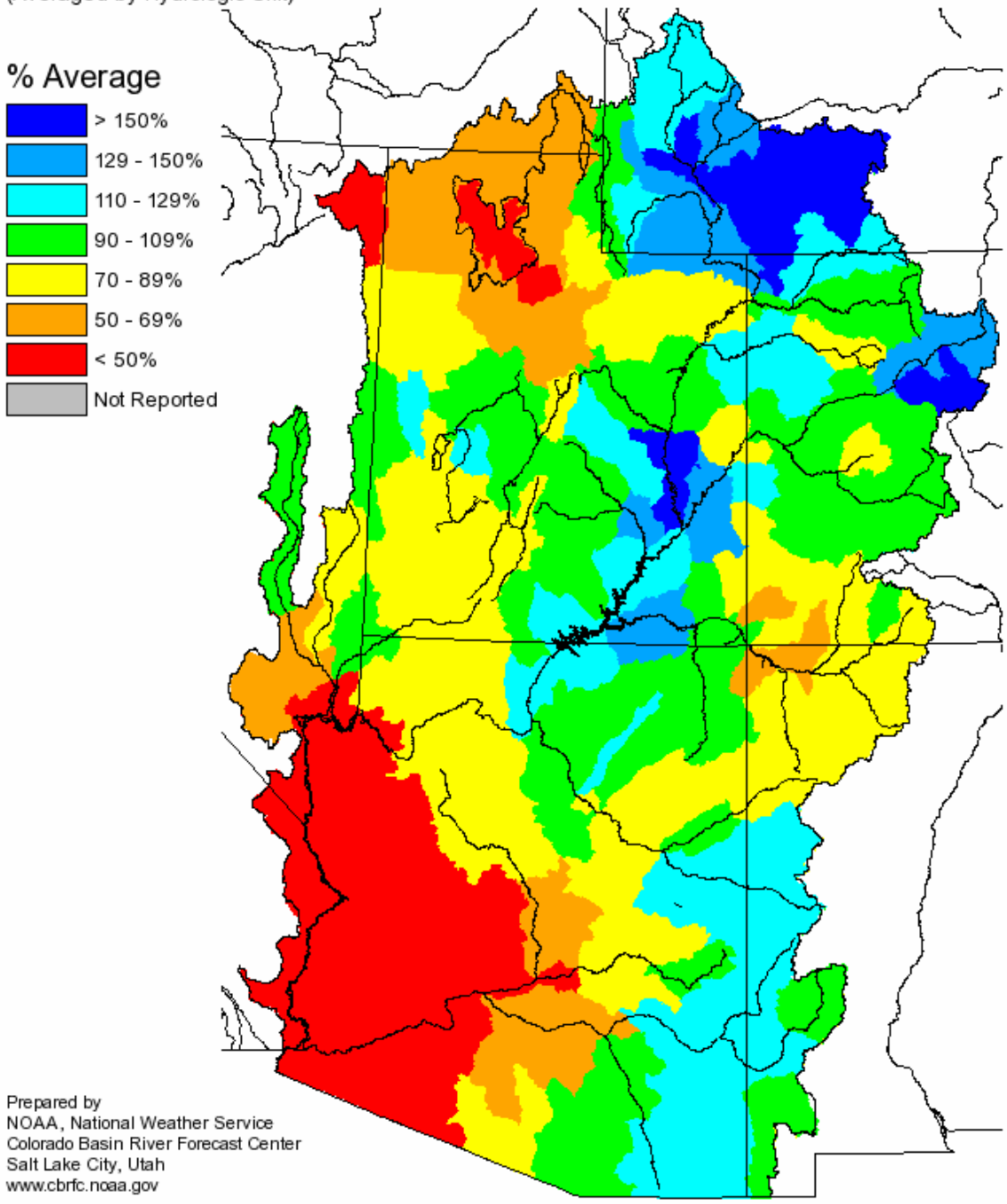

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Monthly Precipitation for September 2007

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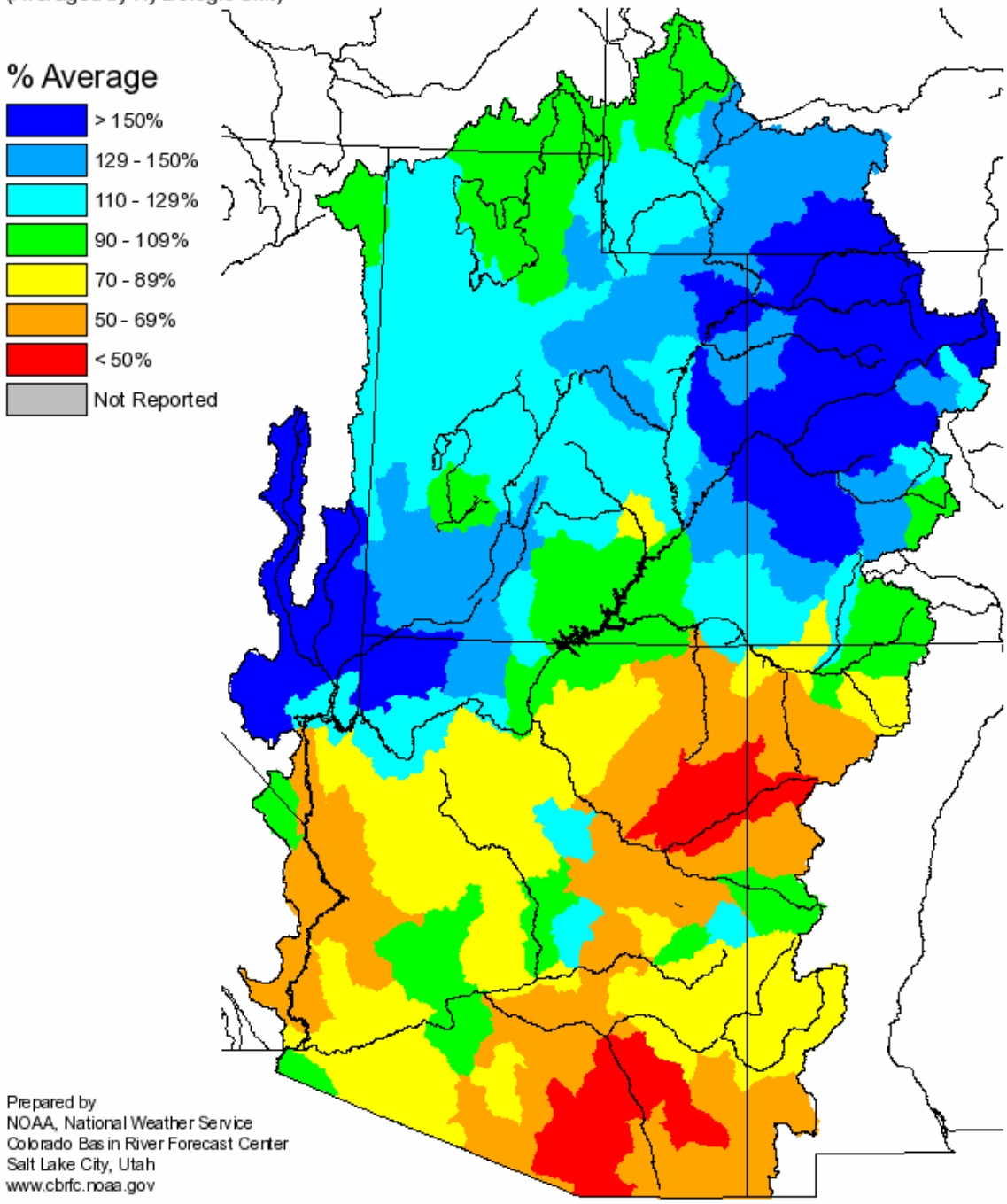

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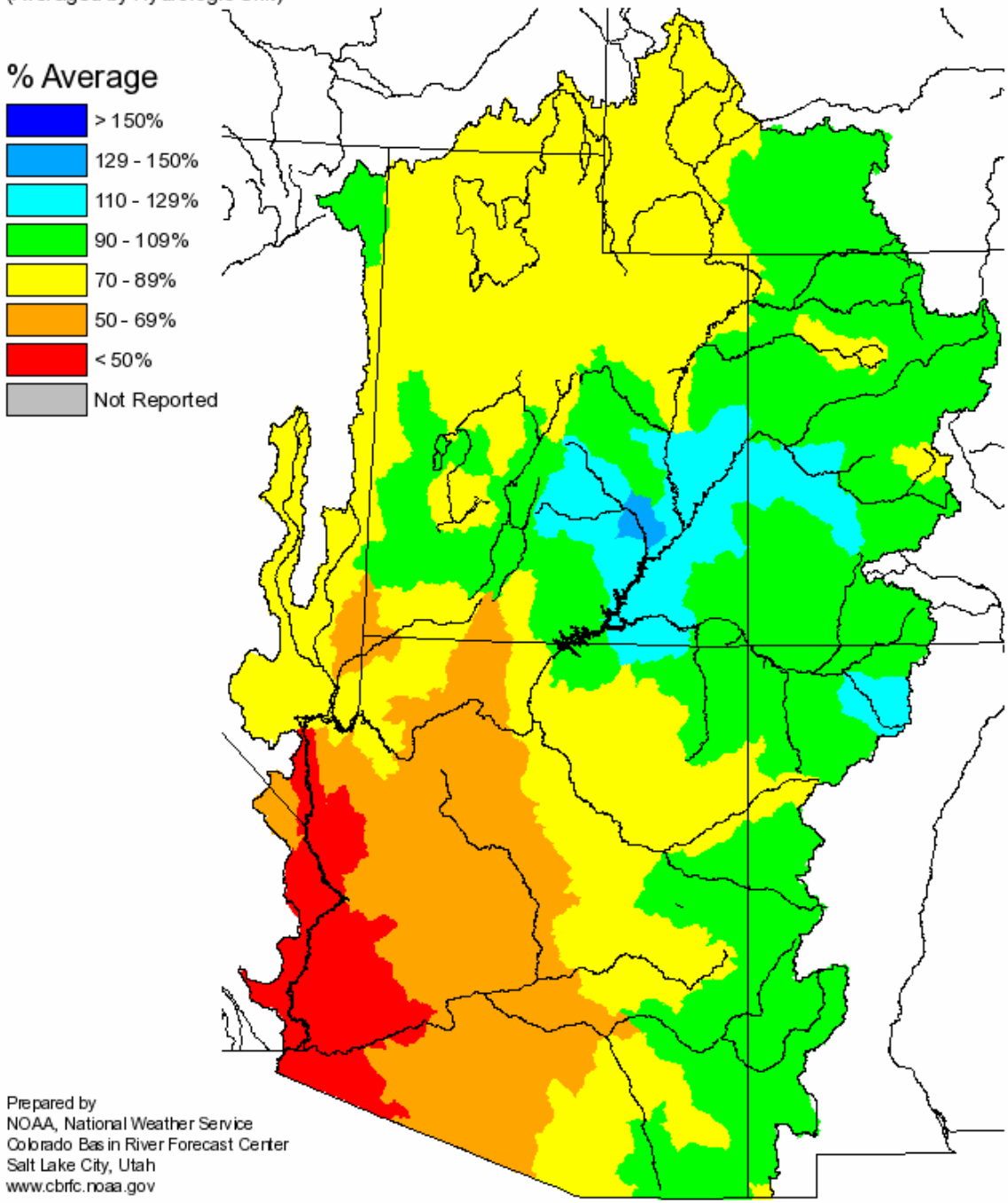
Seasonal Precipitation, October 2006 - September 2007

(Averaged by Hydrologic Unit)



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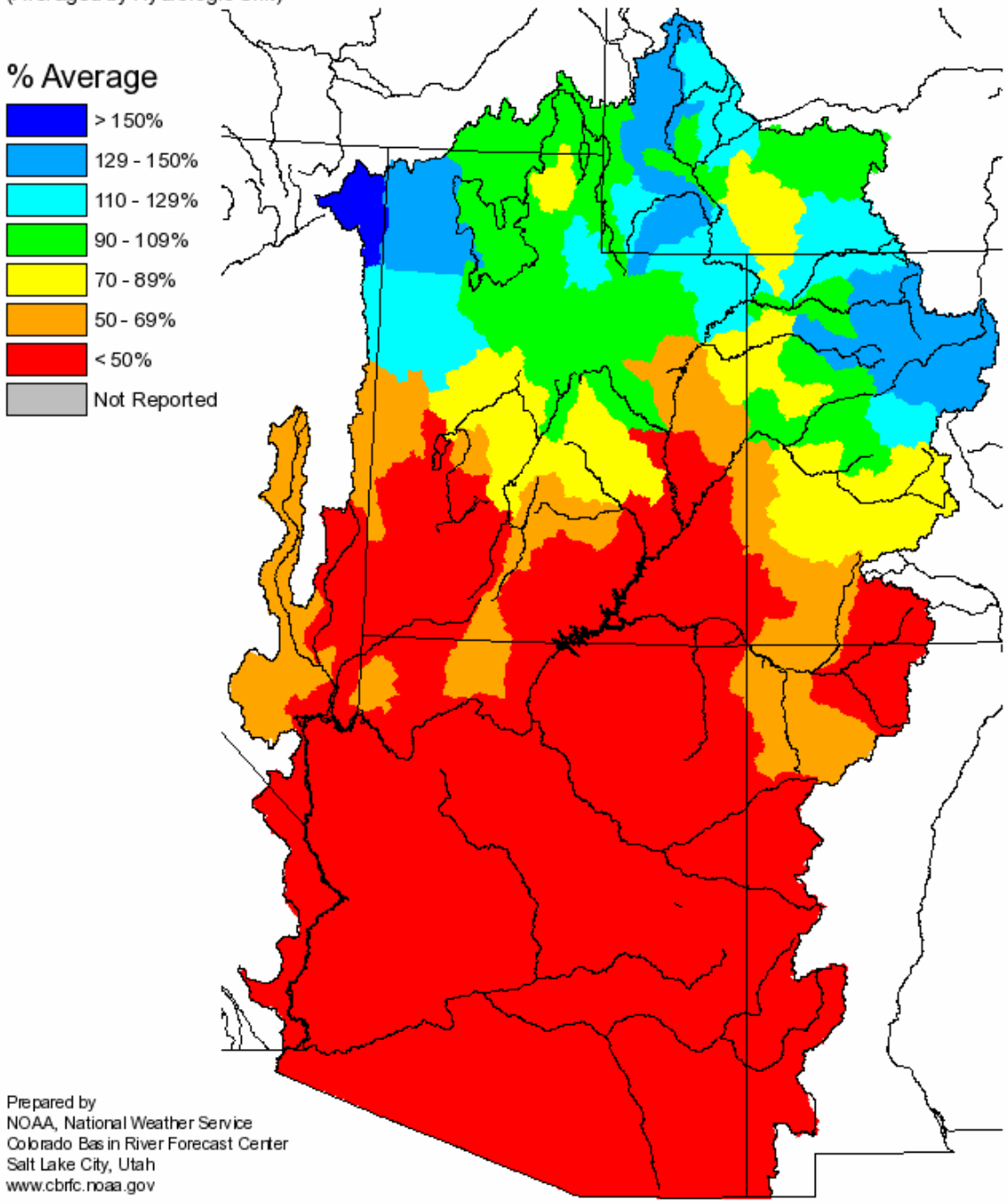
Monthly Precipitation for October 2007

(Averaged by Hydrologic Unit)



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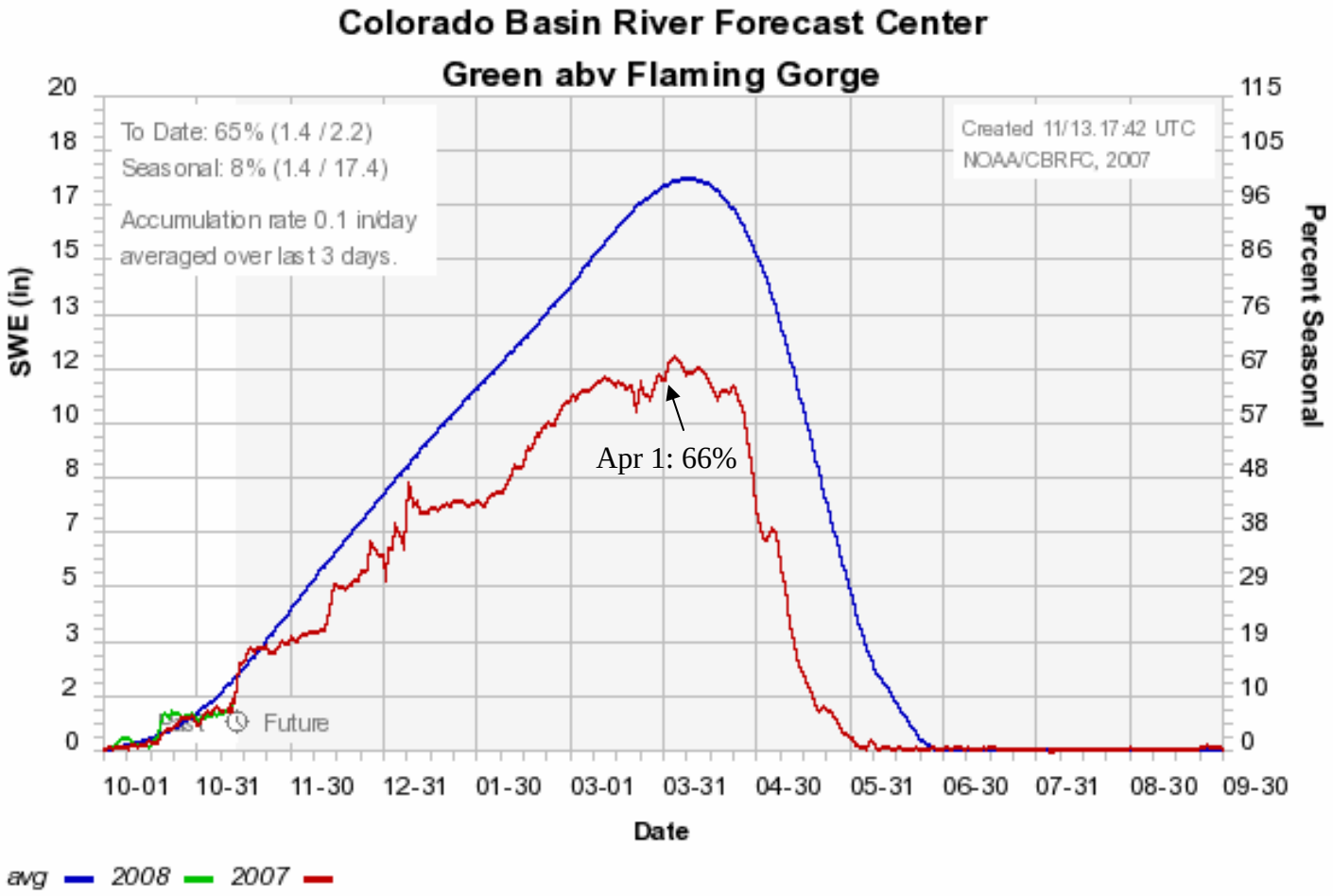
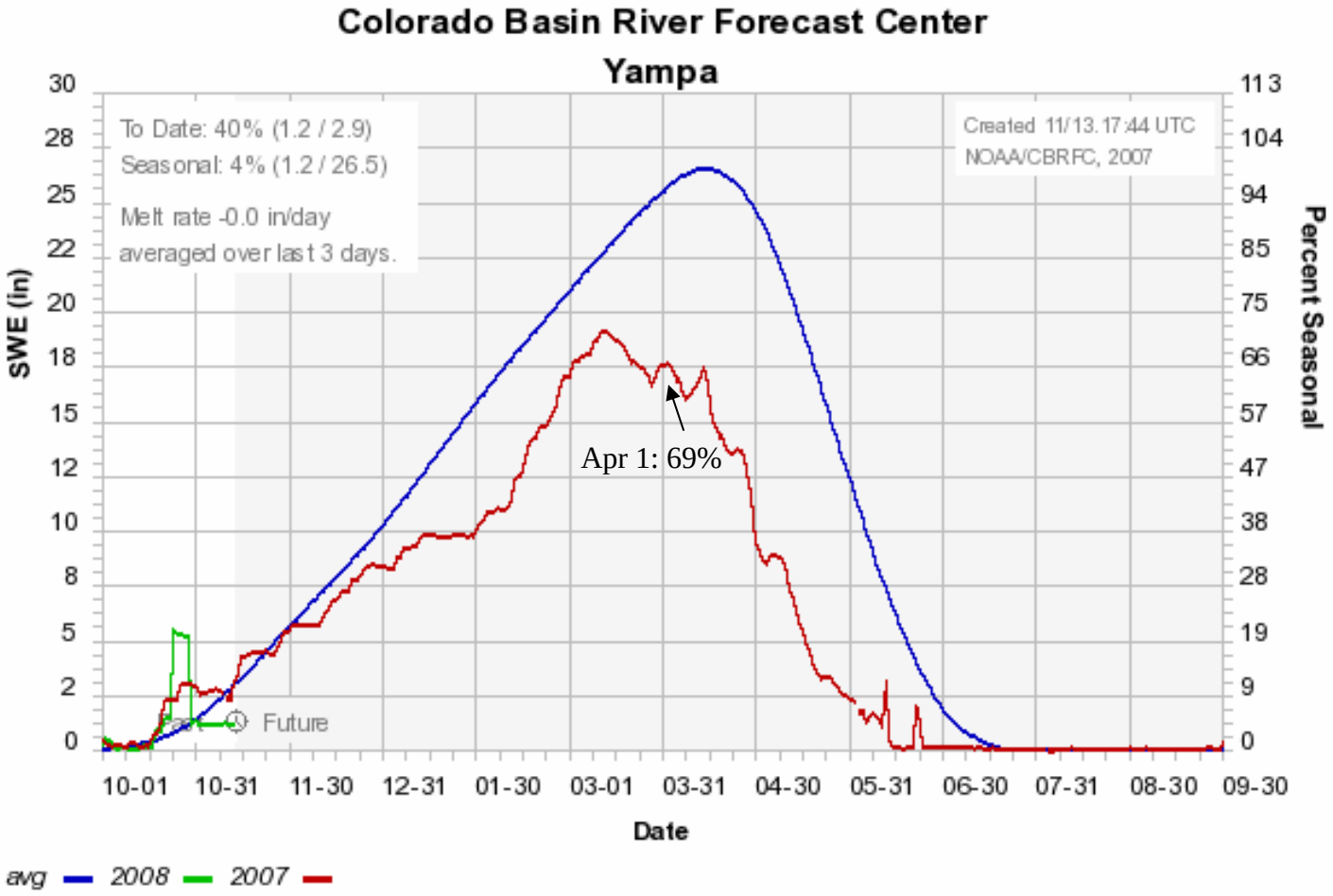
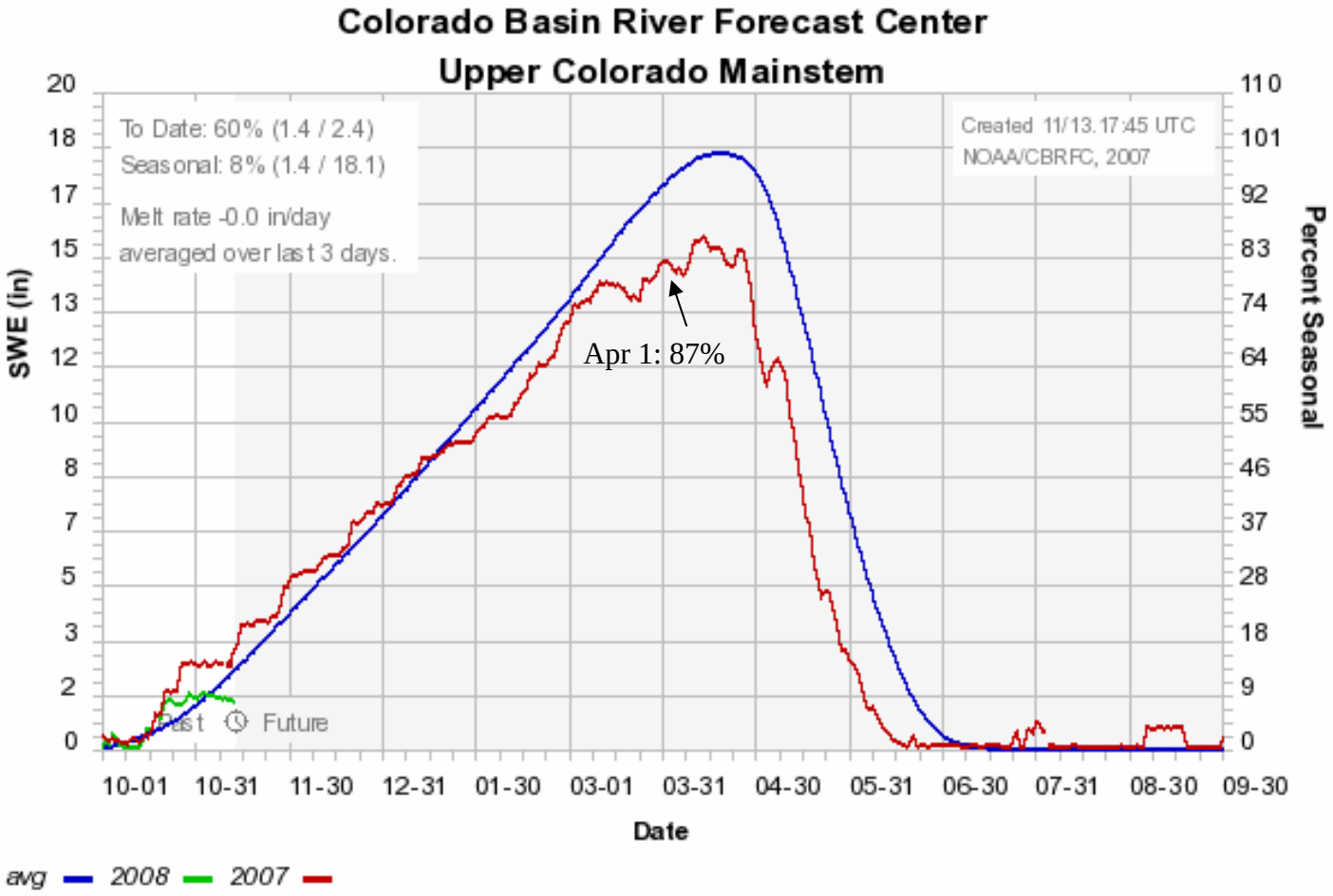
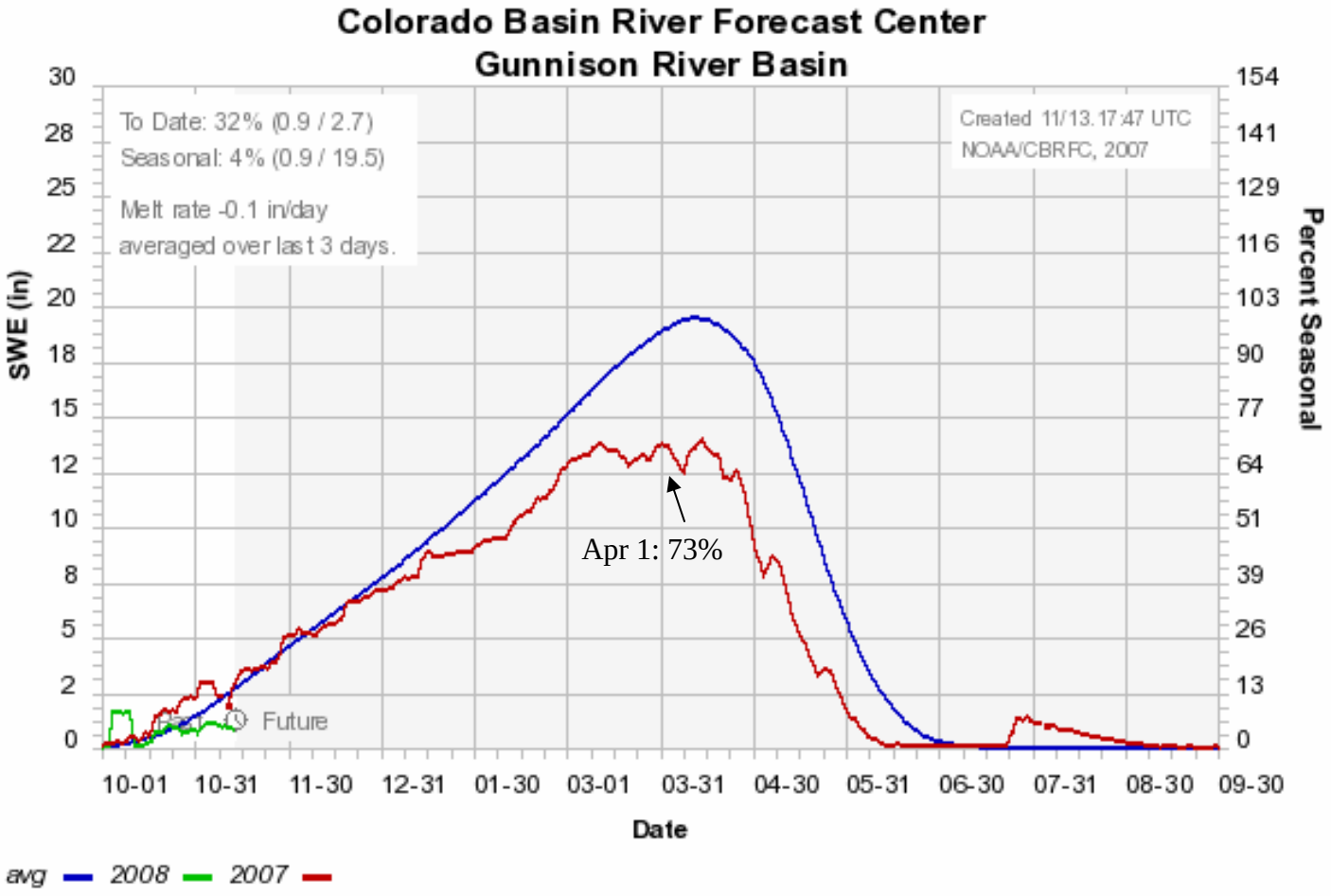
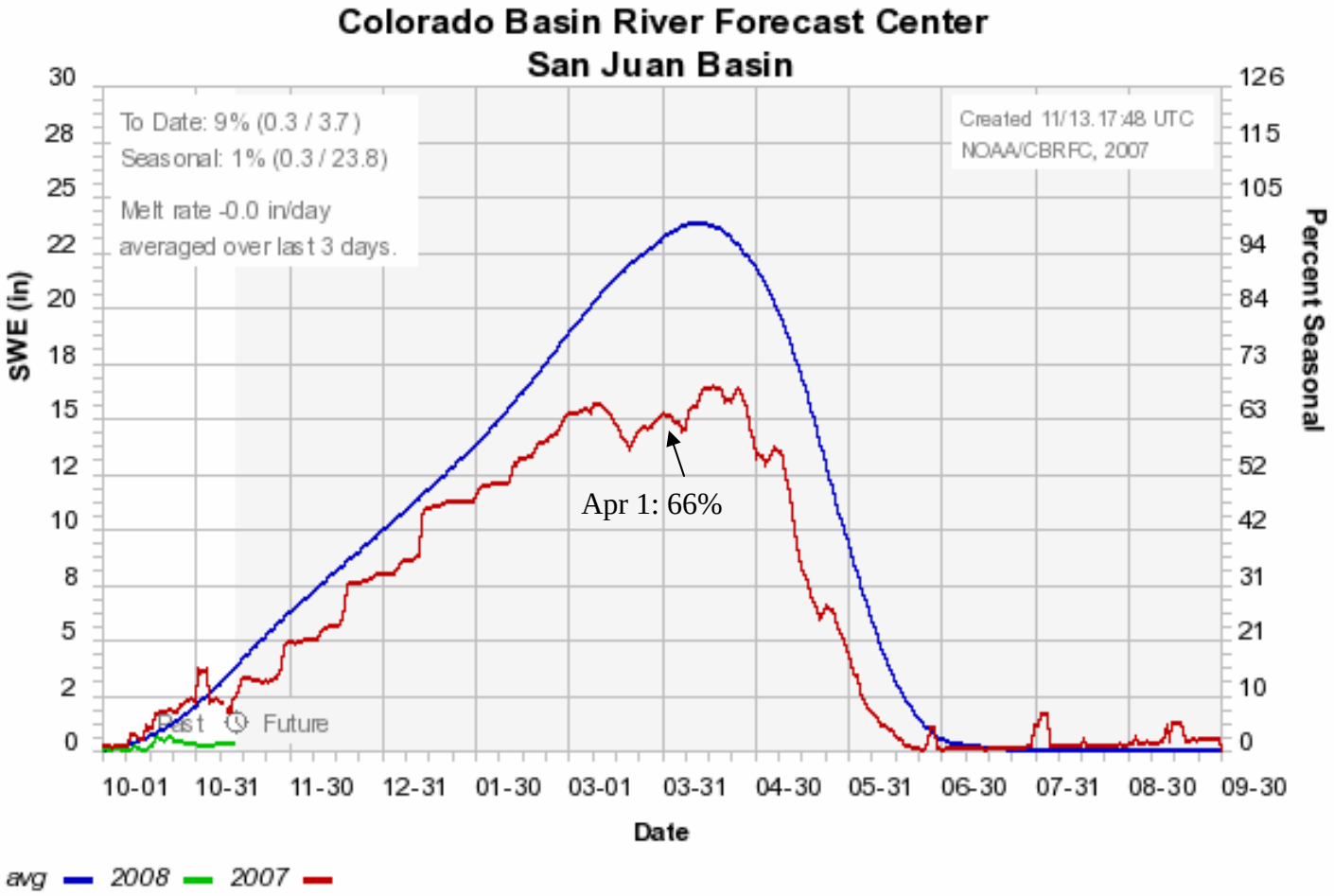
Water Year 2007
SNOWPACK


Colorado Basin River Forecast Center
Green abv Flaming Gorge
To Date: 65% (1.4 / 2.2)
Seasonal: 8% (1.4 / 17.4)
Accumulation rate 0.1 in/day
averaged over last 3 days.
Created 11/13 17:42 UTC
NOAA/CBRFC, 2007
Apr 1: 66%
Future
SWE (in)
Percent Seasonal
Date
10-01
10-31
11-30
12-31
01-30
03-01
03-31
04-30
05-31
06-30
07-31
08-30
09-30
avg
2008
2007


Colorado Basin River Forecast Center
Yampa
To Date: 40% (1.2 / 2.9)
Seasonal: 4% (1.2 / 26.5)
Melt rate -0.0 in/day
averaged over last 3 days.
Created 11/13 17:44 UTC
NOAA/CBRFC, 2007
Apr 1: 69%
Past
Future
SWE (in)
Percent Seasonal
30
28
25
22
20
18
15
12
10
8
5
2
0
113
104
94
85
75
66
57
47
38
28
19
9
0
10-01
10-31
11-30
12-31
01-30
03-01
03-31
04-30
05-31
06-30
07-31
08-30
09-30
Date
avg
2008
2007


Colorado Basin River Forecast Center
Upper Colorado Mainstem
To Date: 60% (1.4 / 2.4)
Seasonal: 8% (1.4 / 18.1)
Melt rate -0.0 in/day
averaged over last 3 days.
Created 11/13.17:45 UTC
NOAA/CBRFC, 2007
Apr 1: 87%
Past
Future
SWE (in)
Percent Seasonal
Date
10-01
10-31
11-30
12-31
01-30
03-01
03-31
04-30
05-31
06-30
07-31
08-30
09-30
avg
2008
2007


Colorado Basin River Forecast Center
Gunnison River Basin
To Date: 32% (0.9 / 2.7)
Seasonal: 4% (0.9 / 19.5)
Melt rate -0.1 in/day
averaged over last 3 days.
Created 11/13.17:47 UTC
NOAA/CBRFC, 2007
Apr 1: 73%
Future
SWE (in)
Percent Seasonal
Date
10-01
10-31
11-30
12-31
01-30
03-01
03-31
04-30
05-31
06-30
07-31
08-30
09-30
avg
2008
2007


Colorado Basin River Forecast Center
San Juan Basin
To Date: 9% (0.3 / 3.7)
Seasonal: 1% (0.3 / 23.8)
Melt rate -0.0 in/day
averaged over last 3 days.
Created 11/13 17:48 UTC
NOAA/CBRFC, 2007
Apr 1: 66%
Past
Future
SWE (in)
Percent Seasonal
Date
10-01
10-31
11-30
12-31
01-30
03-01
03-31
04-30
05-31
06-30
07-31
08-30
09-30
avg
2008
2007

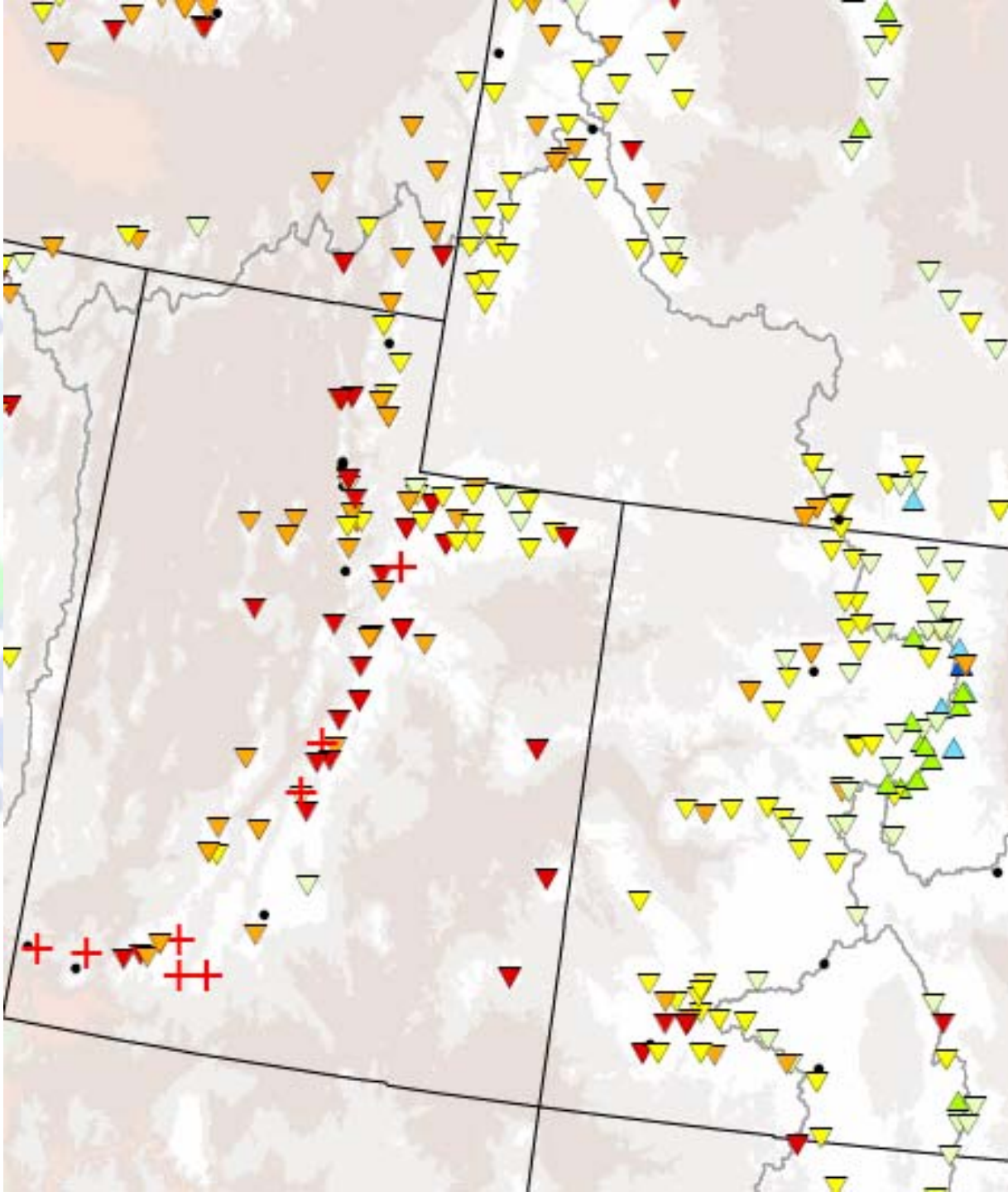
United States Department of Agriculture

NRCS Natural Resources Conservation Service

Apr 01, 2007

Current Snow Water Equiv. % of Normal

- ▲ > 160%
- ▲ 140-160%
- ▲ 120-139%
- ▲ 100-119%
- ▽ 80-99%
- ▽ 60-79%
- ▽ 40-59%
- ▽ 1-39%
- \+ 0%



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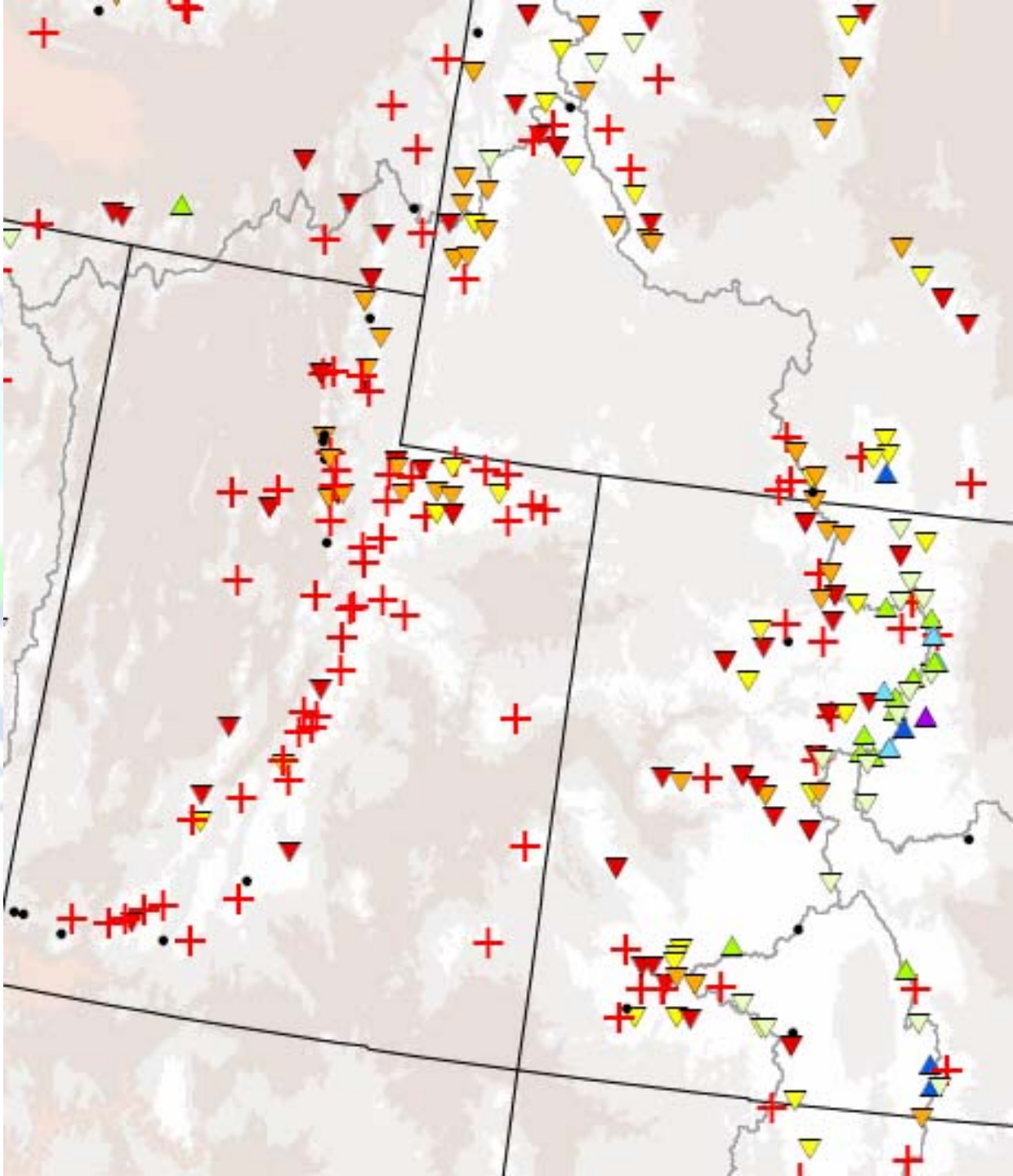
NRCS Natural Resources Conservation Service

May 01, 2007

Current Snow Water Equiv. % of Normal

- > 160%
- 140-160%
- 120-139%
- 100-119%
- 80-99%
- 60-79%
- 40-59%
- 1-39%
- 0%



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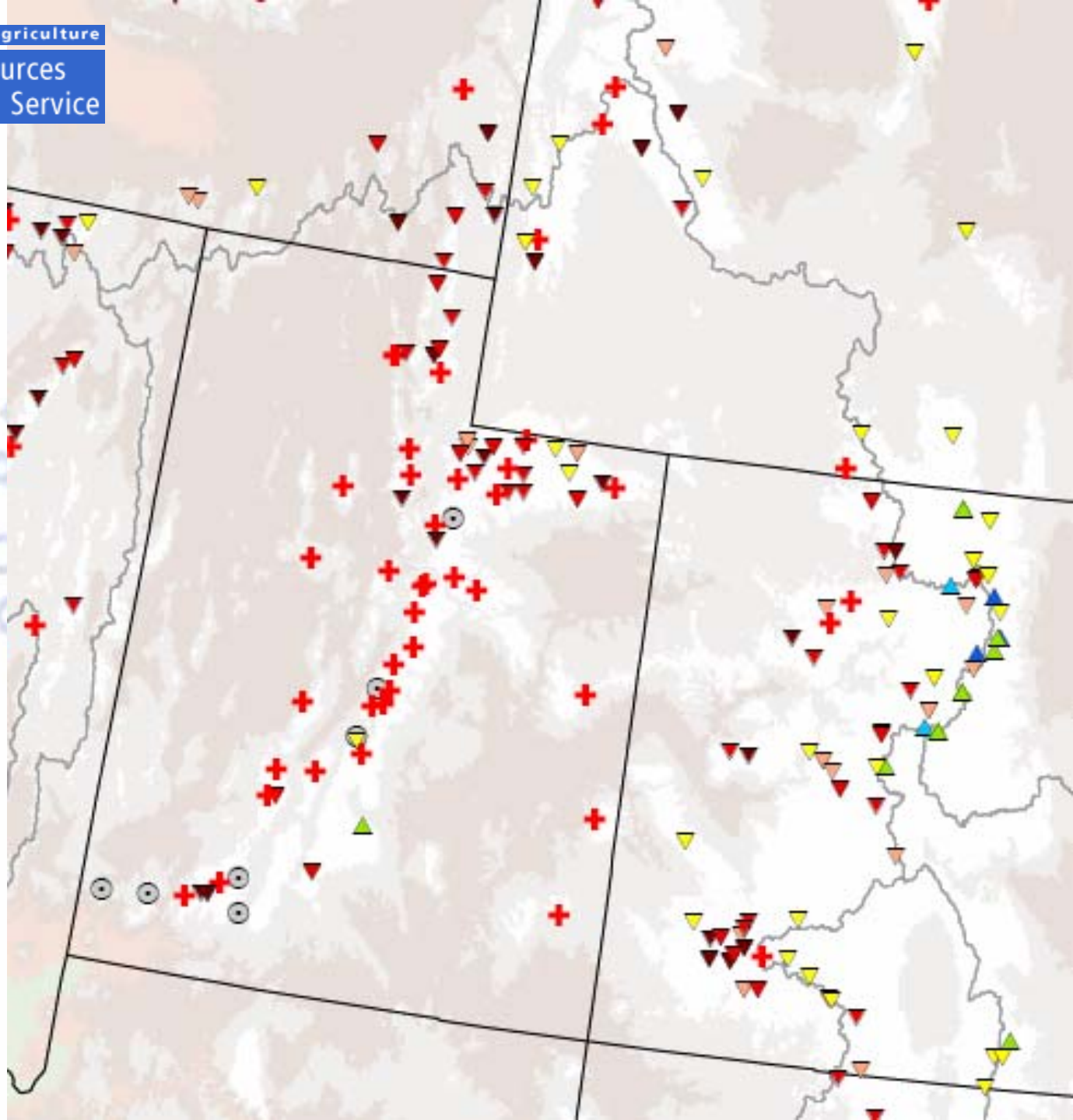
NRCS Natural Resources Conservation Service

Apr 01, 2007



Current Snow Water Equiv Ranking

Percentile

- driest 5%
- 6% - 10%
- 11% - 20%
- 21% - 30%
- 31% - 50%
- 51% - 70%
- 71% - 80%
- 81% - 90%
- 91% - 95%
- wettest 5%
- snow free

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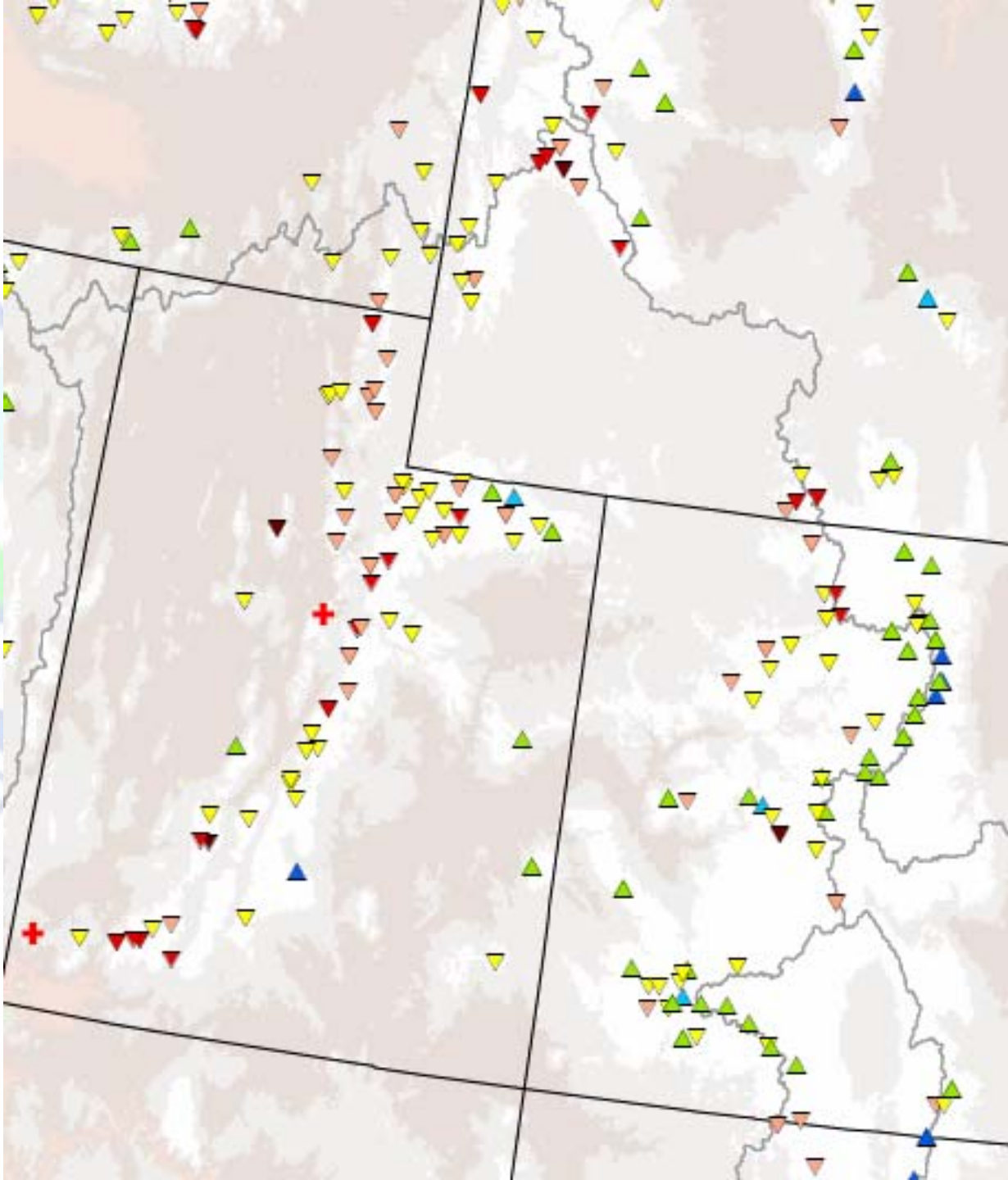
NRCS Natural Resources Conservation Service

Apr 01, 2007

Water Yr to Dt Accum. Precip Ranking

Percentile

- driest 5%
- 6% - 10%
- 11% - 20%
- 21% - 30%
- 31% - 50%
- 51% - 70%
- 71% - 80%
- 81% - 90%
- 91% - 95%
- wettest 5%



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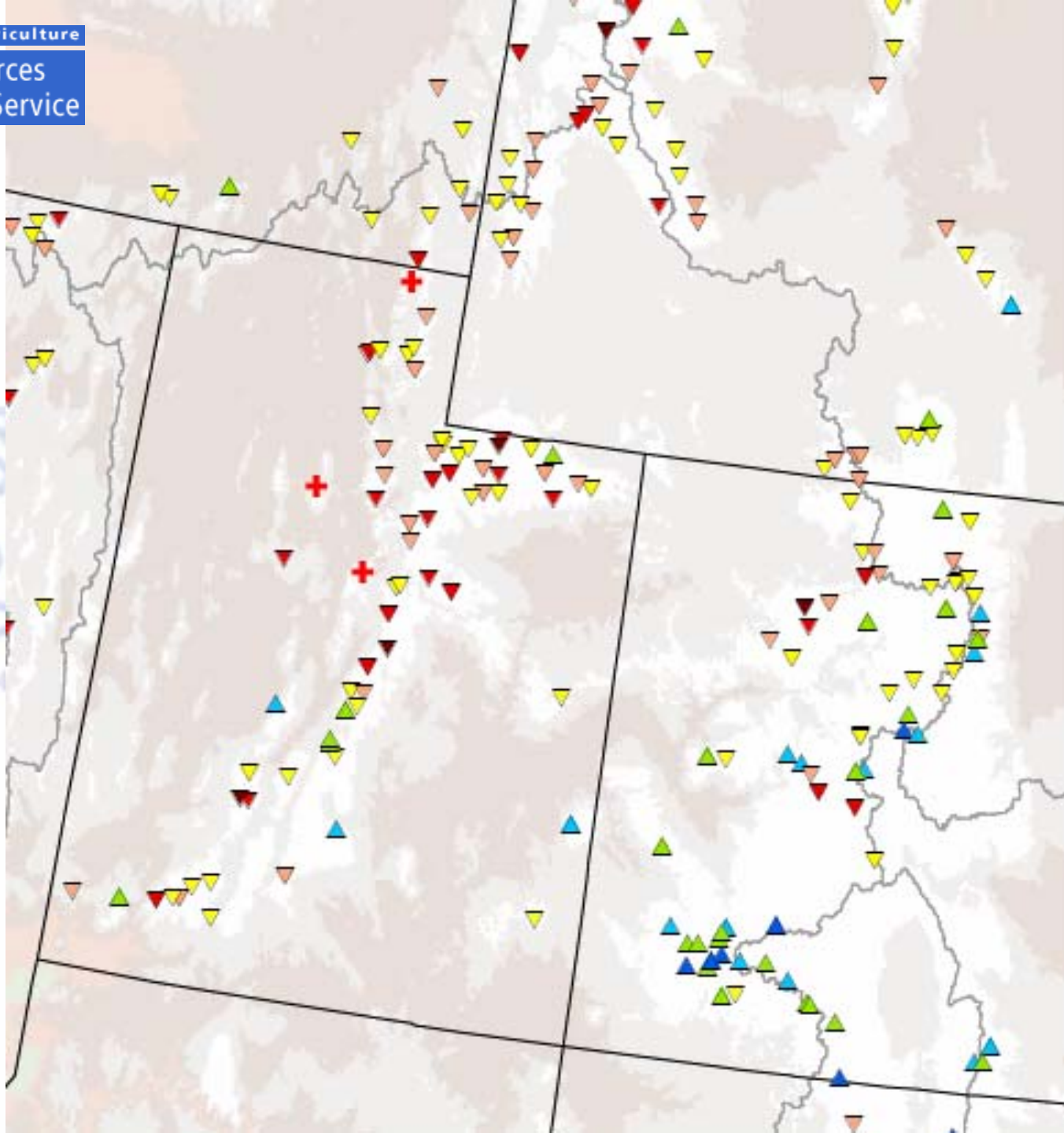
NRCS Natural Resources Conservation Service

Sep 30, 2007

Water Yr to Dt Accum. Precip Ranking

Percentile

- driest 5%
- 6% - 10%
- 11% - 20%
- 21% - 30%
- 31% - 50%
- 51% - 70%
- 71% - 80%
- 81% - 90%
- 91% - 95%
- wettest 5%



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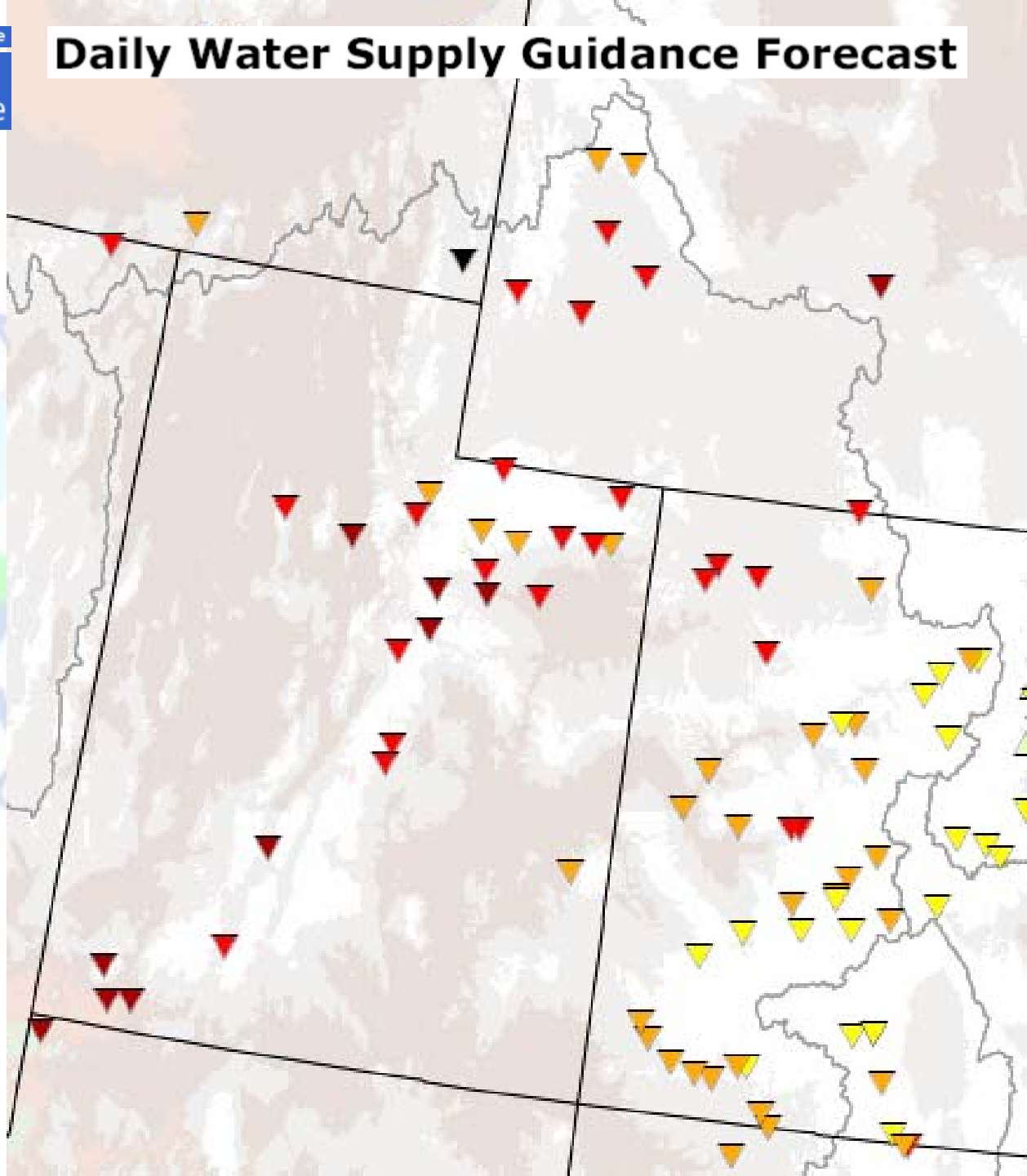
Daily Water Supply Guidance Forecast

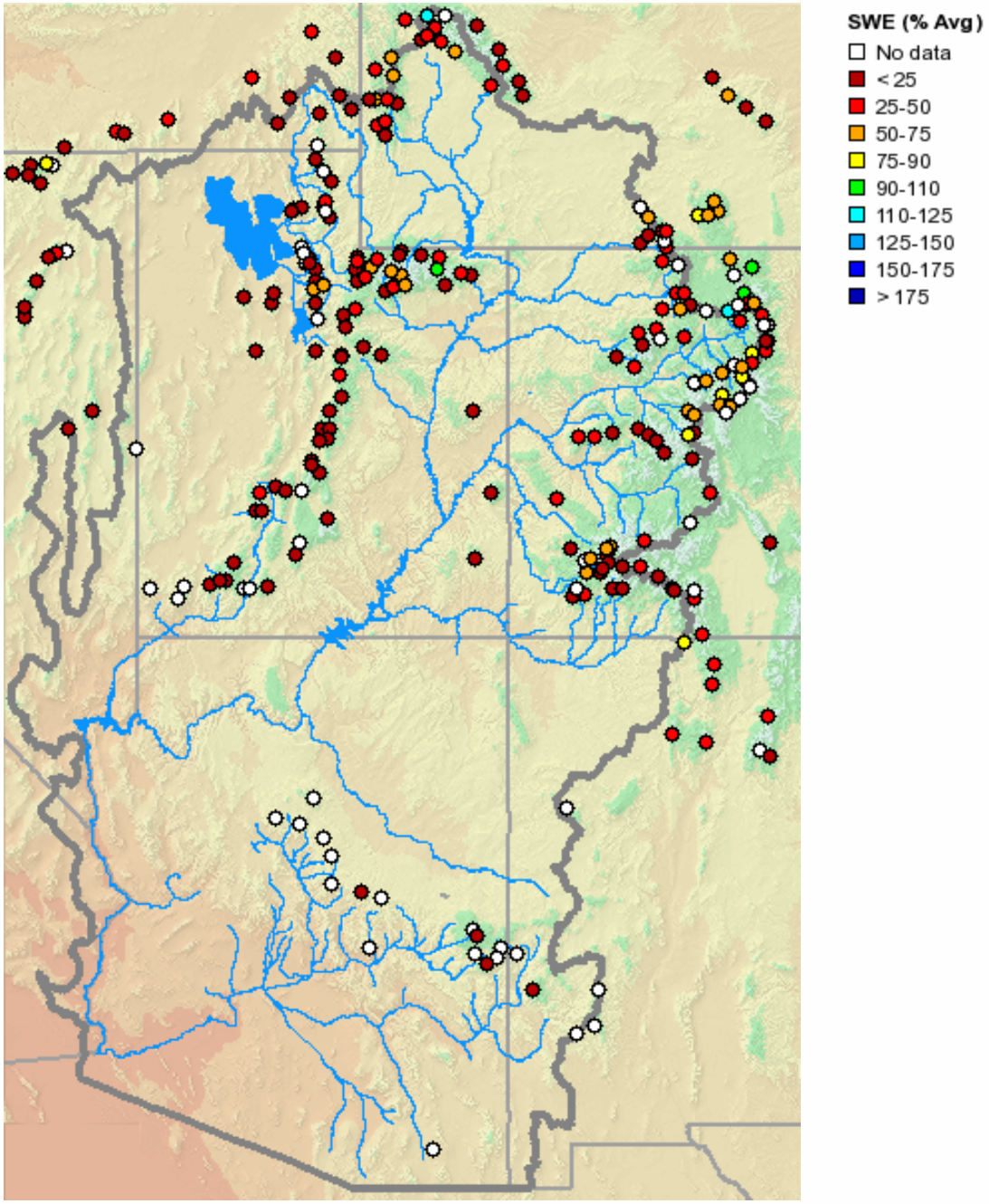
Sep 30, 2007

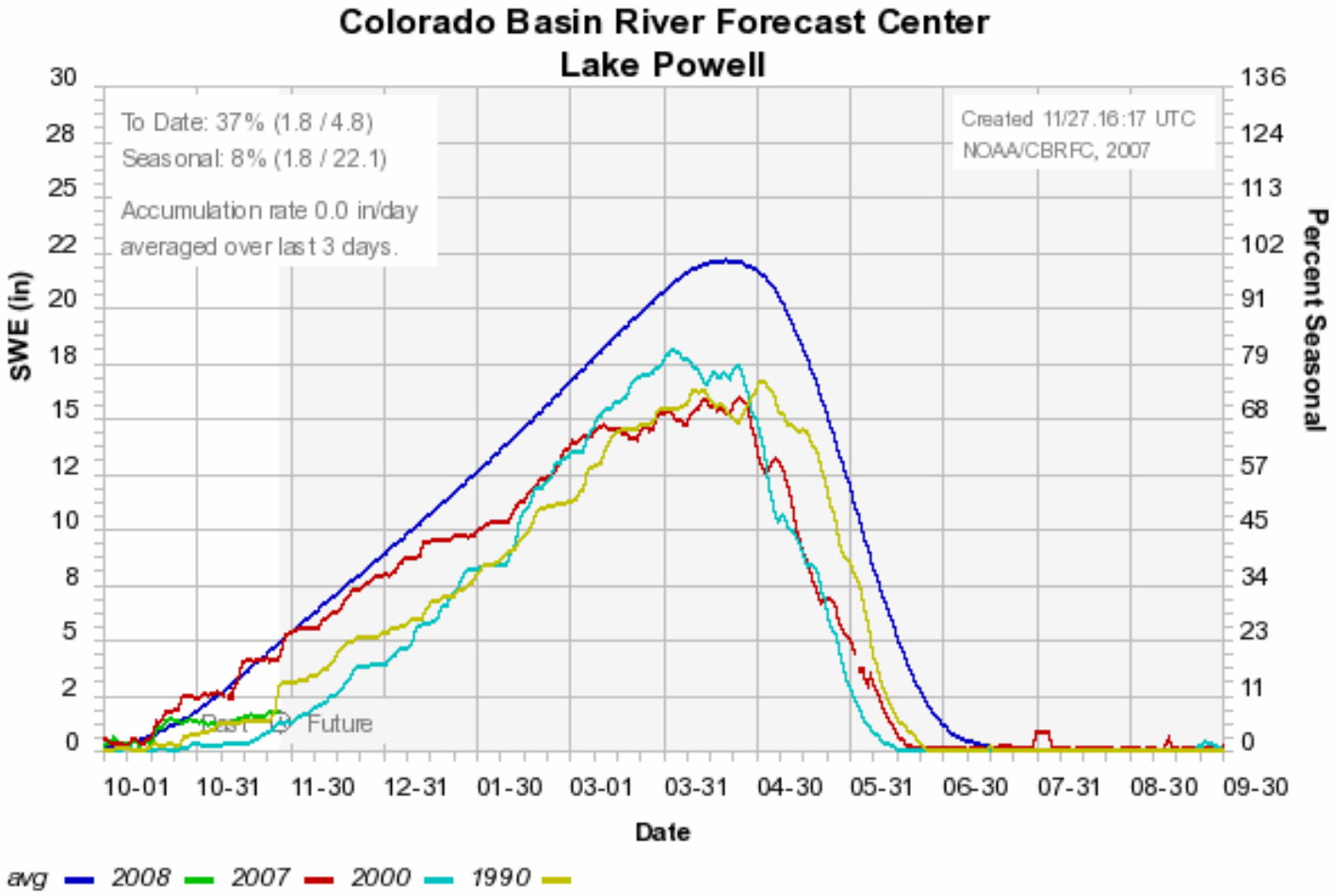
Today's Guidance Forecast (percent 71-00 normal)

- ▲ >200%
- ▲ 159-200%
- ▲ 140-159%
- ▲ 120-139%
- △ 100-119%
- ▼ 80-100%
- ▼ 60-79%
- ▼ 40-59%
- ▼ 20-39%
- ▼ <20%



Snow Conditions
November 28, 2007

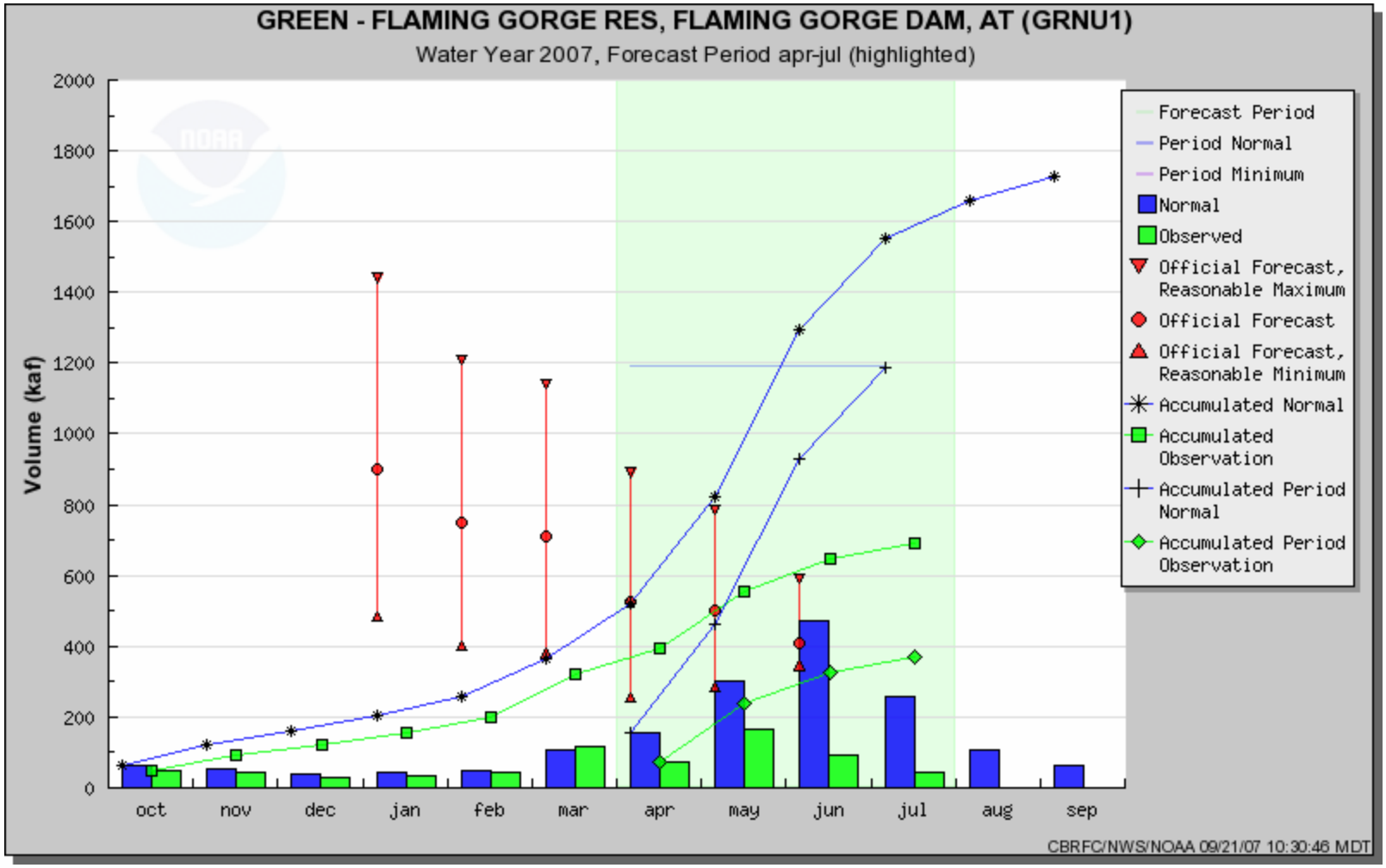




2007 – weak El Nino – 4053 kaf / 51%
2000 – mod La Nina – 4367 kaf / 55%
1990 – neutral – 3229 kaf / 41%

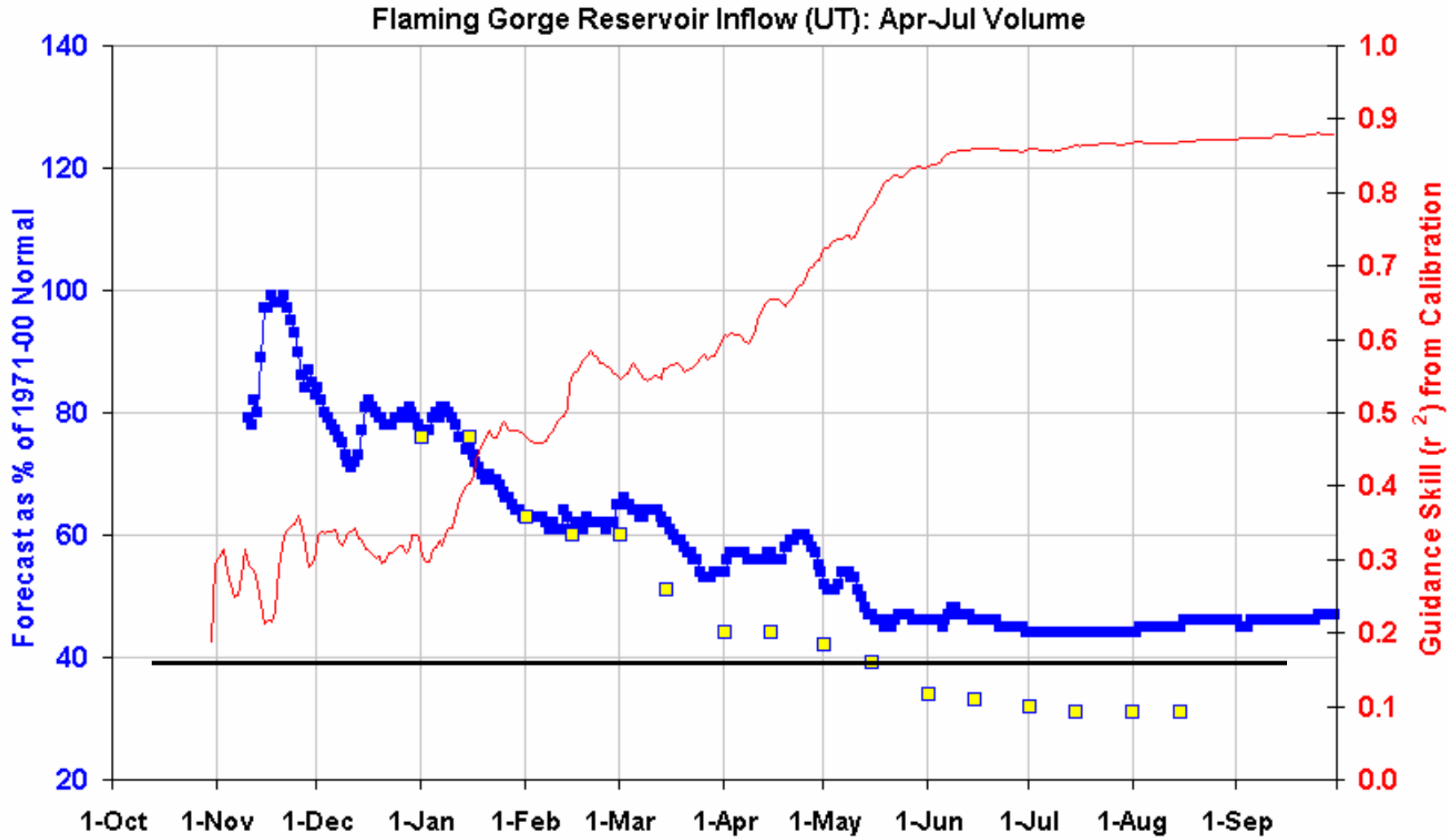

Water Year 2007 Forecasts
Vallecito


Flaming Gorge



Apr-Jul 2007 370/31%

Daily Water Supply Guidance Forecast



This is an automated product based solely on SNOTEL data, provisional data are subject to change.
This product is a statistically based guidance forecast combining indices of snowpack and precipitation.
Skill is defined as the correlation (squared) between the guidance and observed during calibration.
This product does not consider climate information such as El Nino or short range weather forecasts, or a variety of other factors considered in the official forecasts. This product is not meant to replace or supercede the official forecasts produced in coordination with the National Weather Service.

Science Contact: Tom.Pagano@por.usda.gov 503 414 3010 www.wcc.nrcs.usda.gov/wsf/daily_forecasts.html

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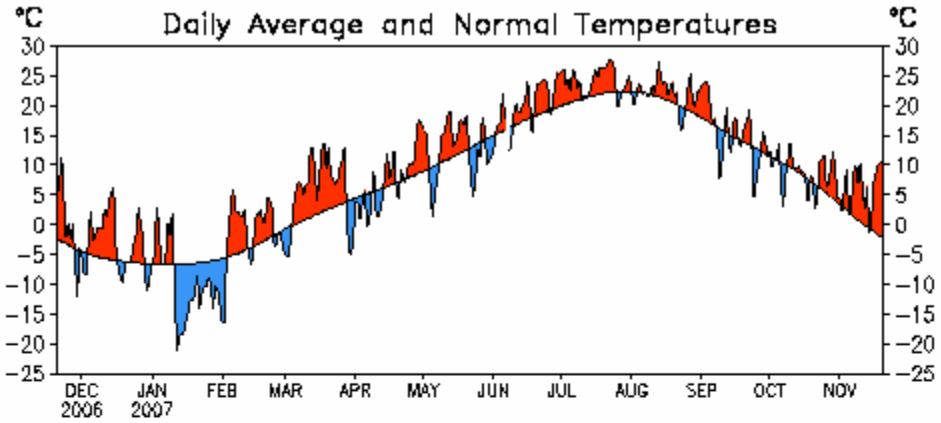
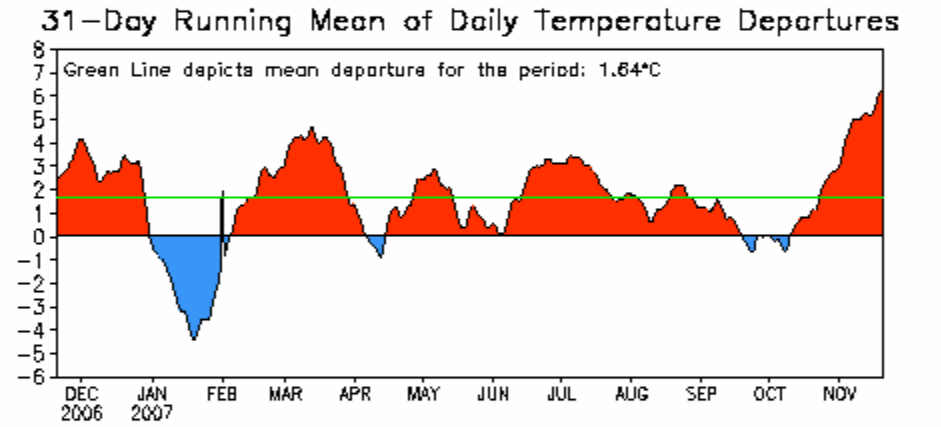
NRCS Natural Resources Conservation Service

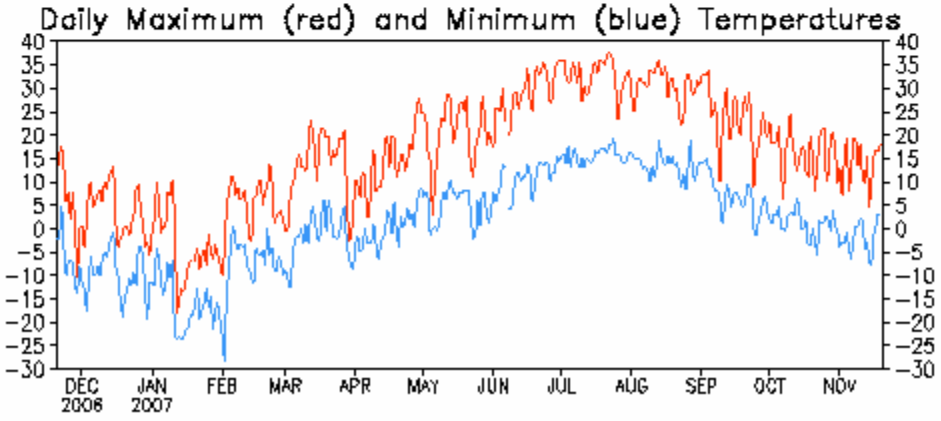
Tom’s note….

One thing that's fairly remarkable I think is just how much of a disaster the Green River was this year. There is totally no objective guidance that is even close to just how dry it was. It was well outside the 90th percentile of the daily forecasts. Thinking back the only thing that was unusual was that they had record setting high temperatures week after week after week during the spring.

LANDER, WYOMING



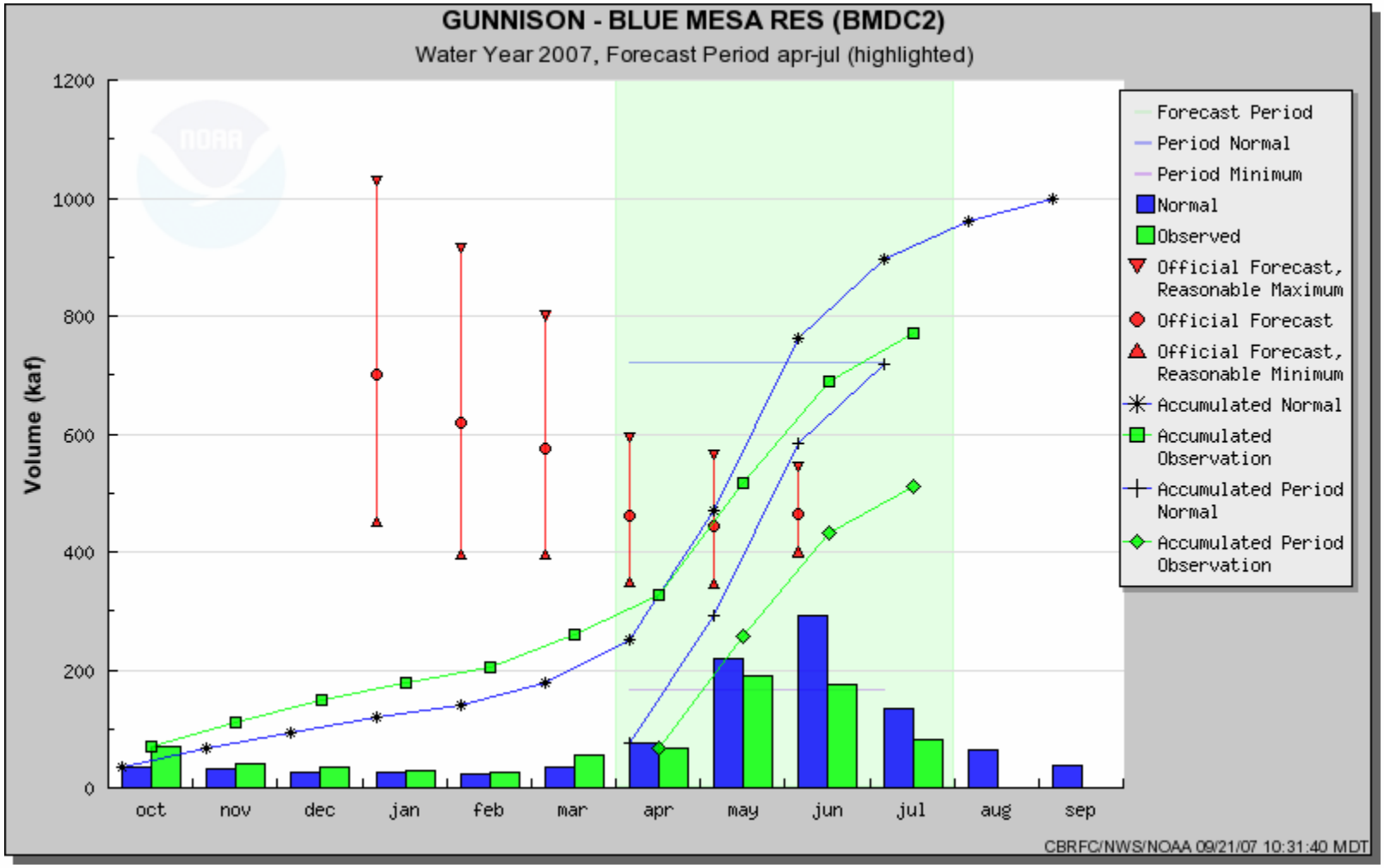




Data updated through 19 NOV 2007

CLIMATE PREDICTION CENTER/NCEP

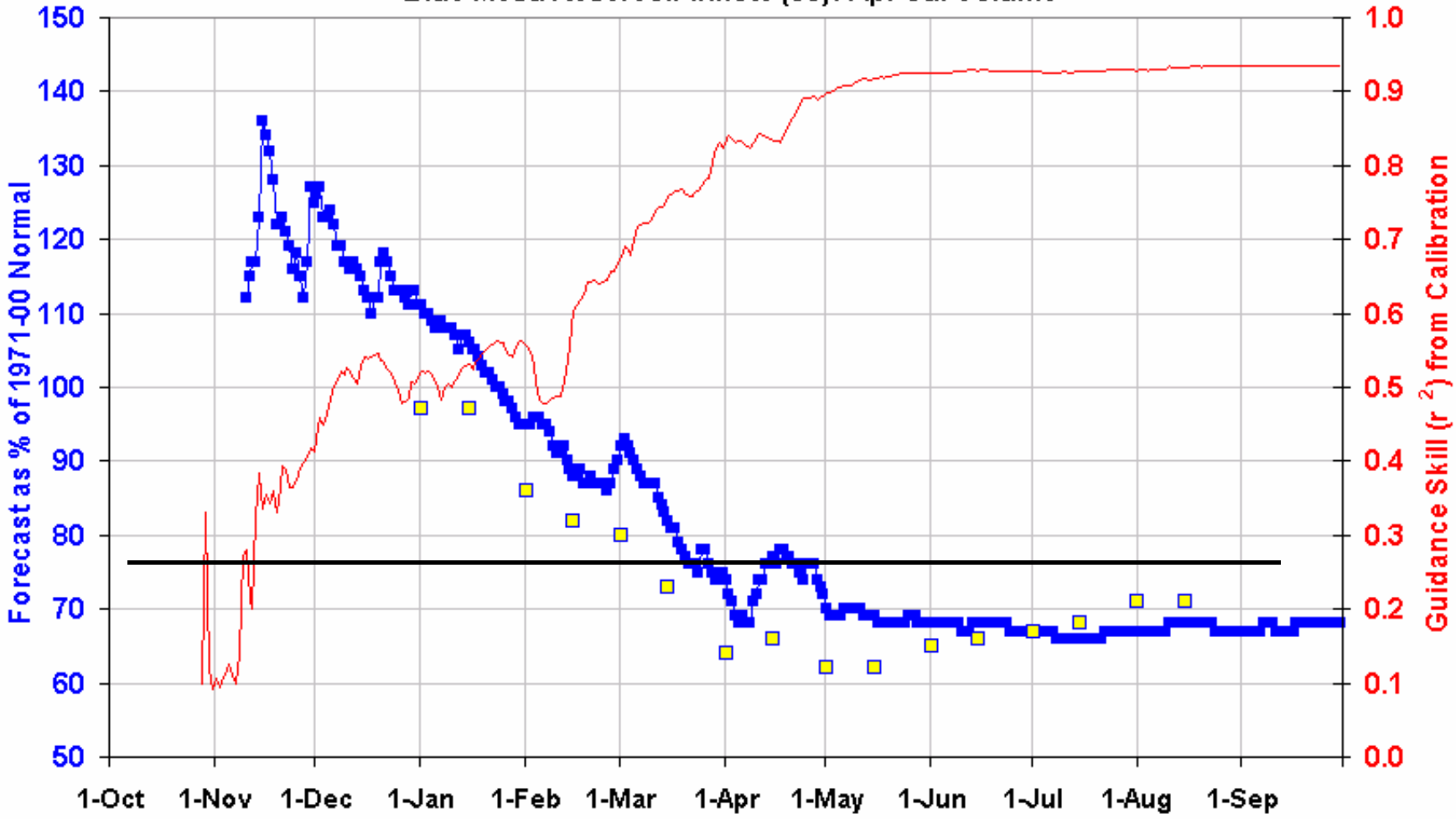

Blue Mesa



Apr-Jul 2007 511/71%

Daily Water Supply Guidance Forecast

Blue Mesa Reservoir Inflow (co): Apr-Jul Volume



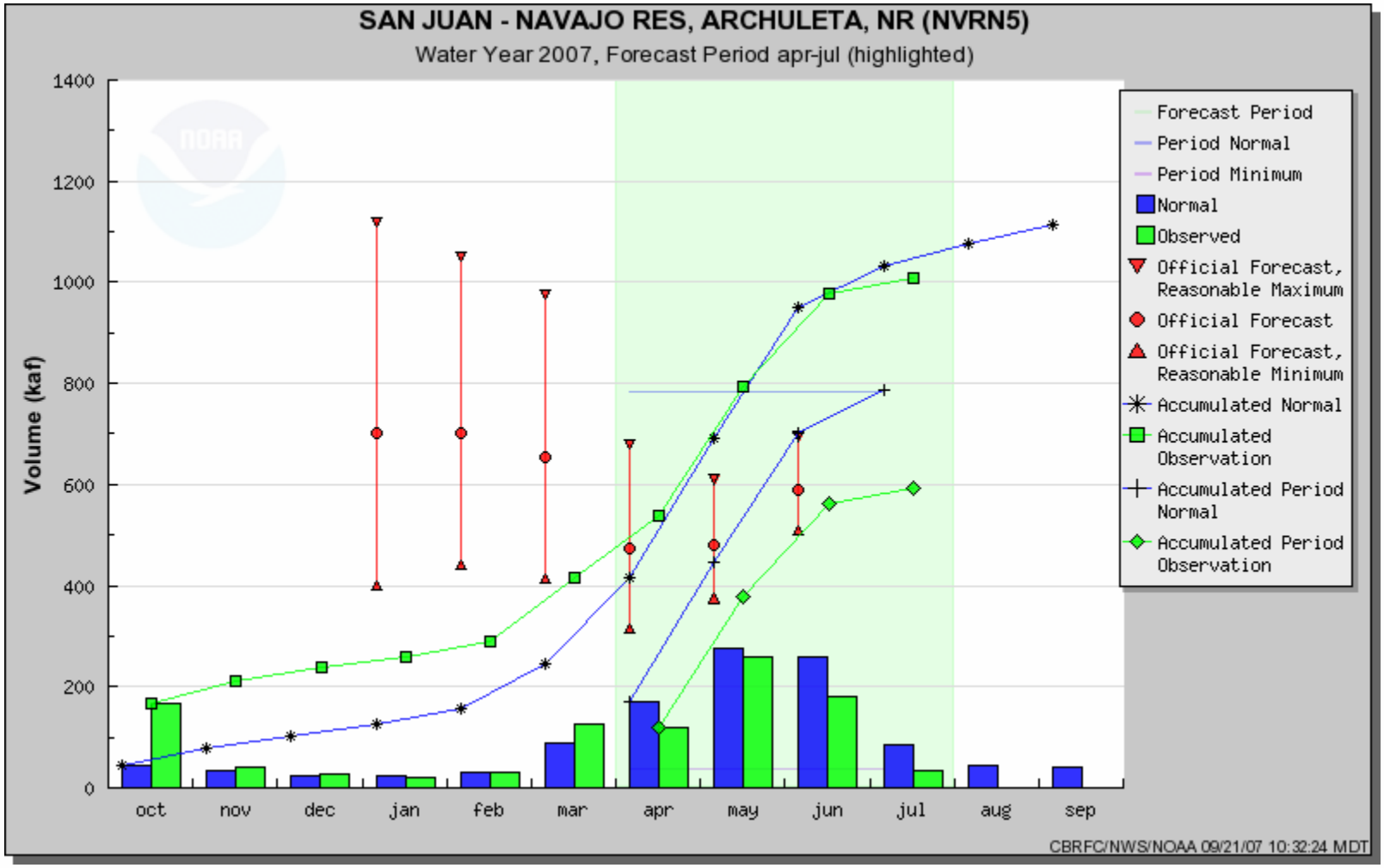
Guidance fcst % norm
Official fcst % norm
Guidance Skill (r2)

NRCS

This is an automated product based solely on SNOTEL data, provisional data are subject to change.
This product is a statistically based guidance forecast combining indices of snowpack and precipitation.
Skill is defined as the correlation (squared) between the guidance and observed during calibration.
This product does not consider climate information such as El Nino or short range weather forecasts, or a variety of other factors considered in the official forecasts. This product is not meant to replace or supercede the official forecasts produced in coordination with the National Weather Service.

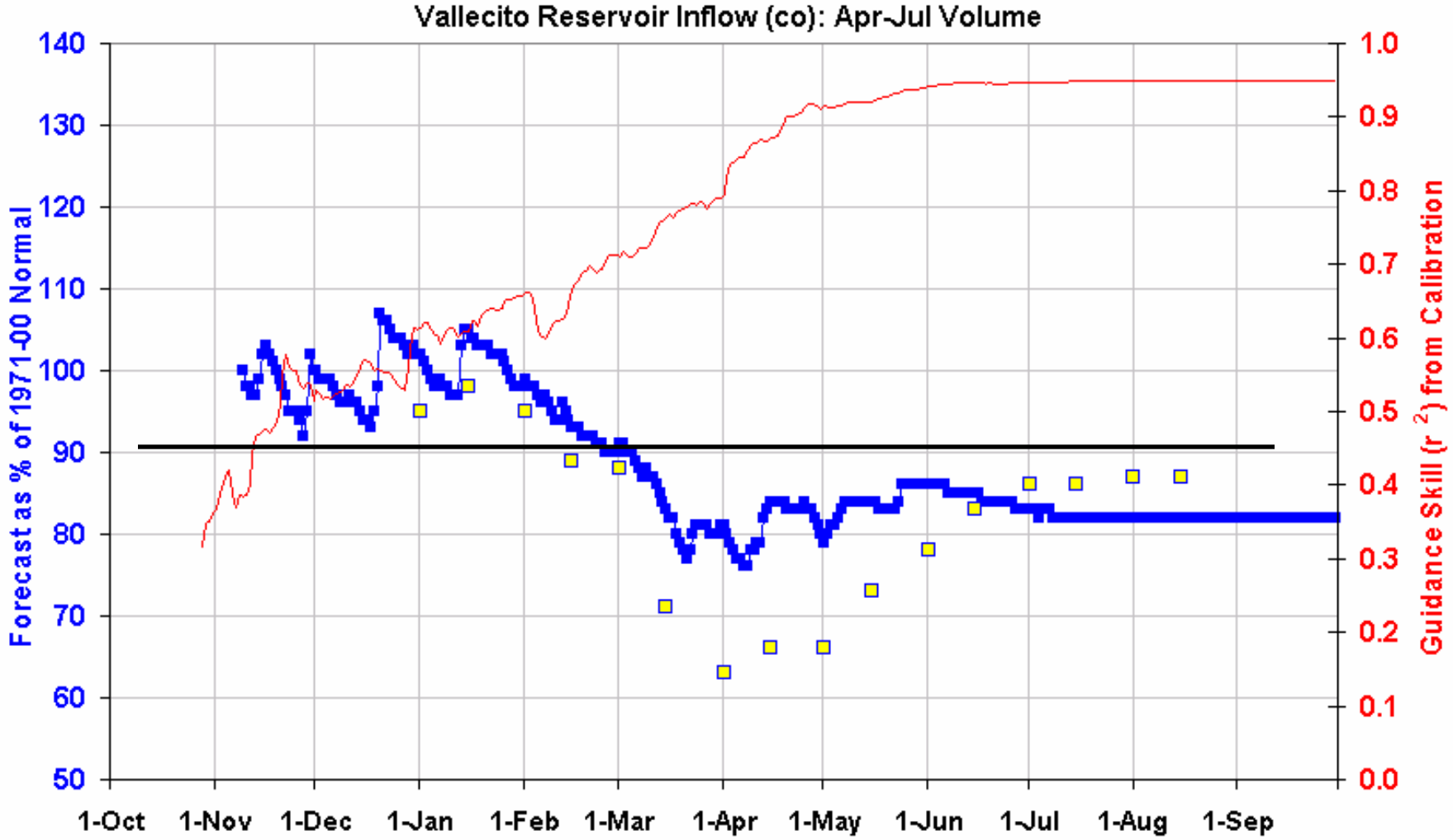
Science Contact: Tom.Pagano@por.usda.gov 503 414 3010 www.wcc.nrcs.usda.gov/wsf/daily_forecasts.html


Navajo



Apr-Jul 2007 594/74%

Daily Water Supply Guidance Forecast



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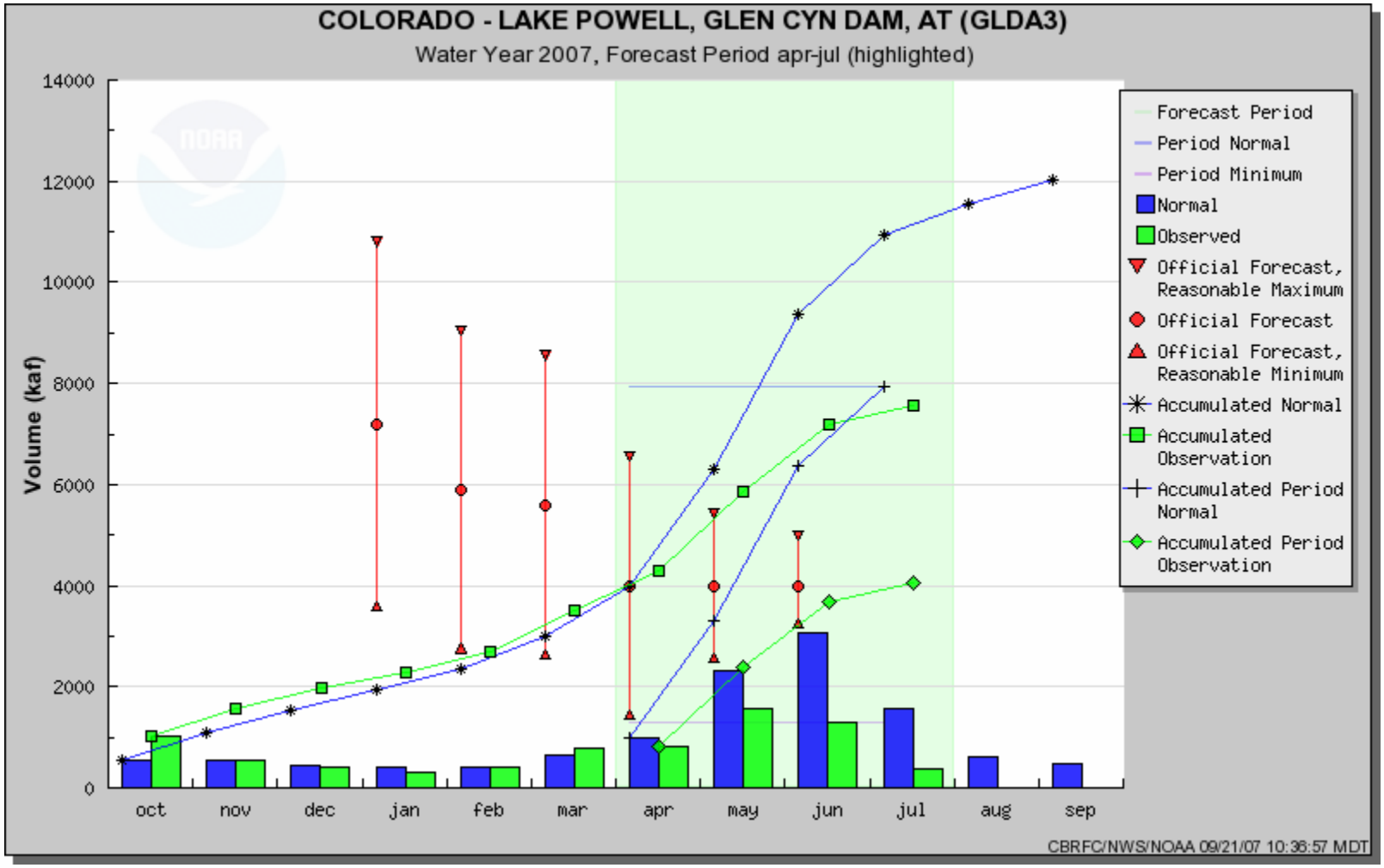
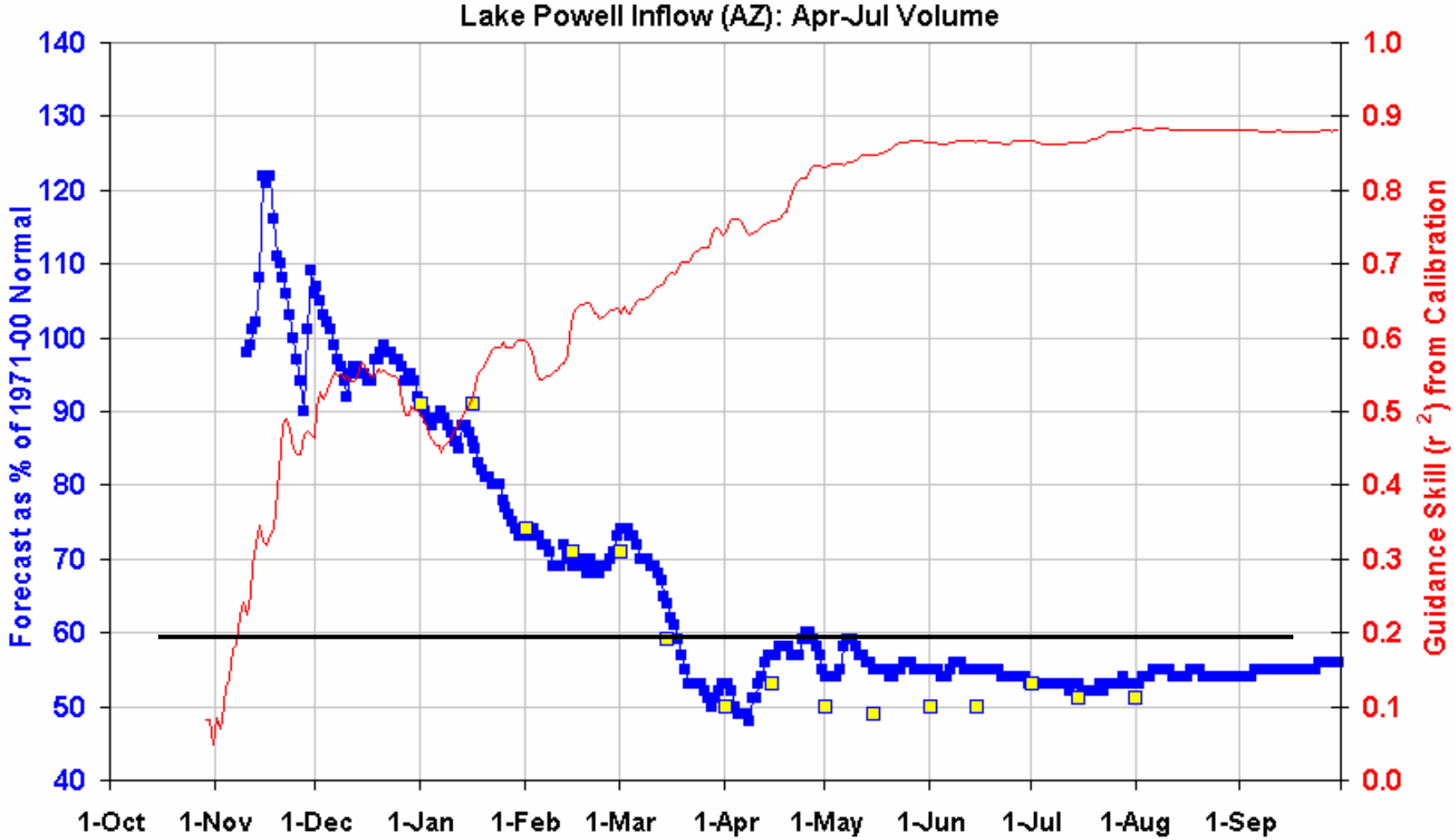
Glen Canyon/Lake Powell



Apr-Jul 2007 4053/51%

Daily Water Supply Guidance Forecast



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CPC FORECASTS

CPC Summary

- Moderate La Niña conditions are present across the tropical Pacific.

- Equatorial SSTs remain below average from west of the Date Line to the South American coast.

-Recent equatorial Pacific SST trends and model forecasts indicate La Niña will continue through at least early 2008.

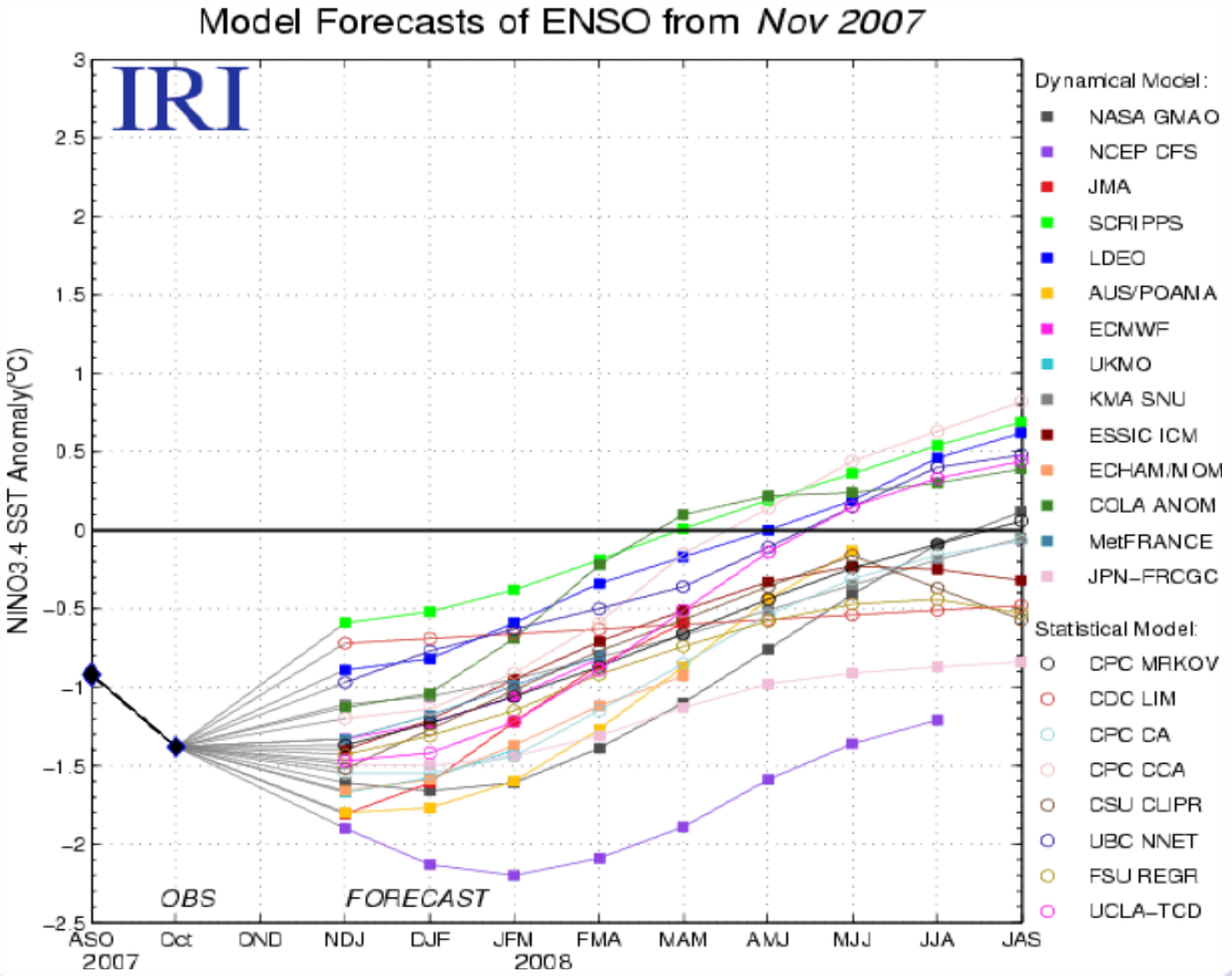
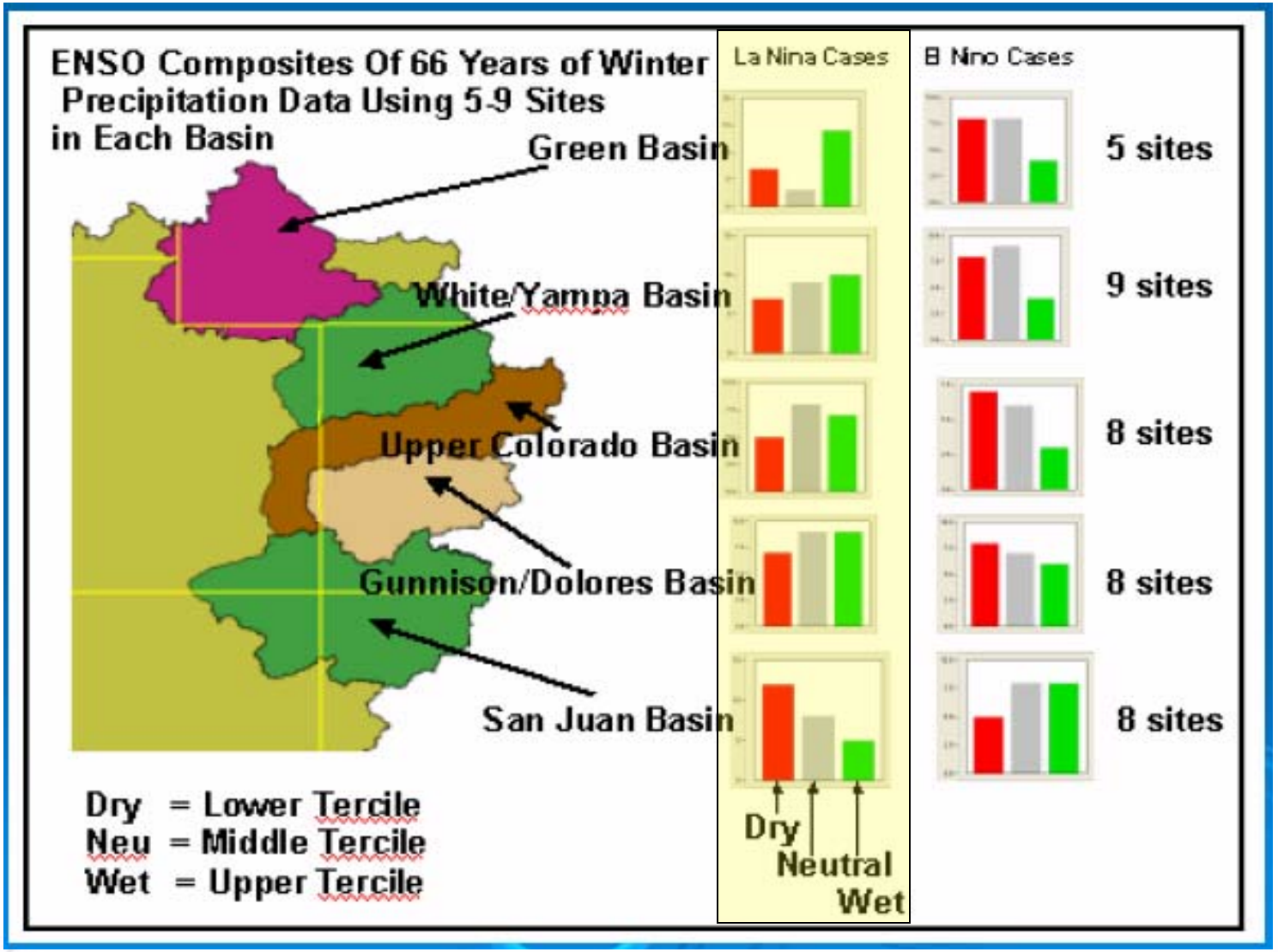
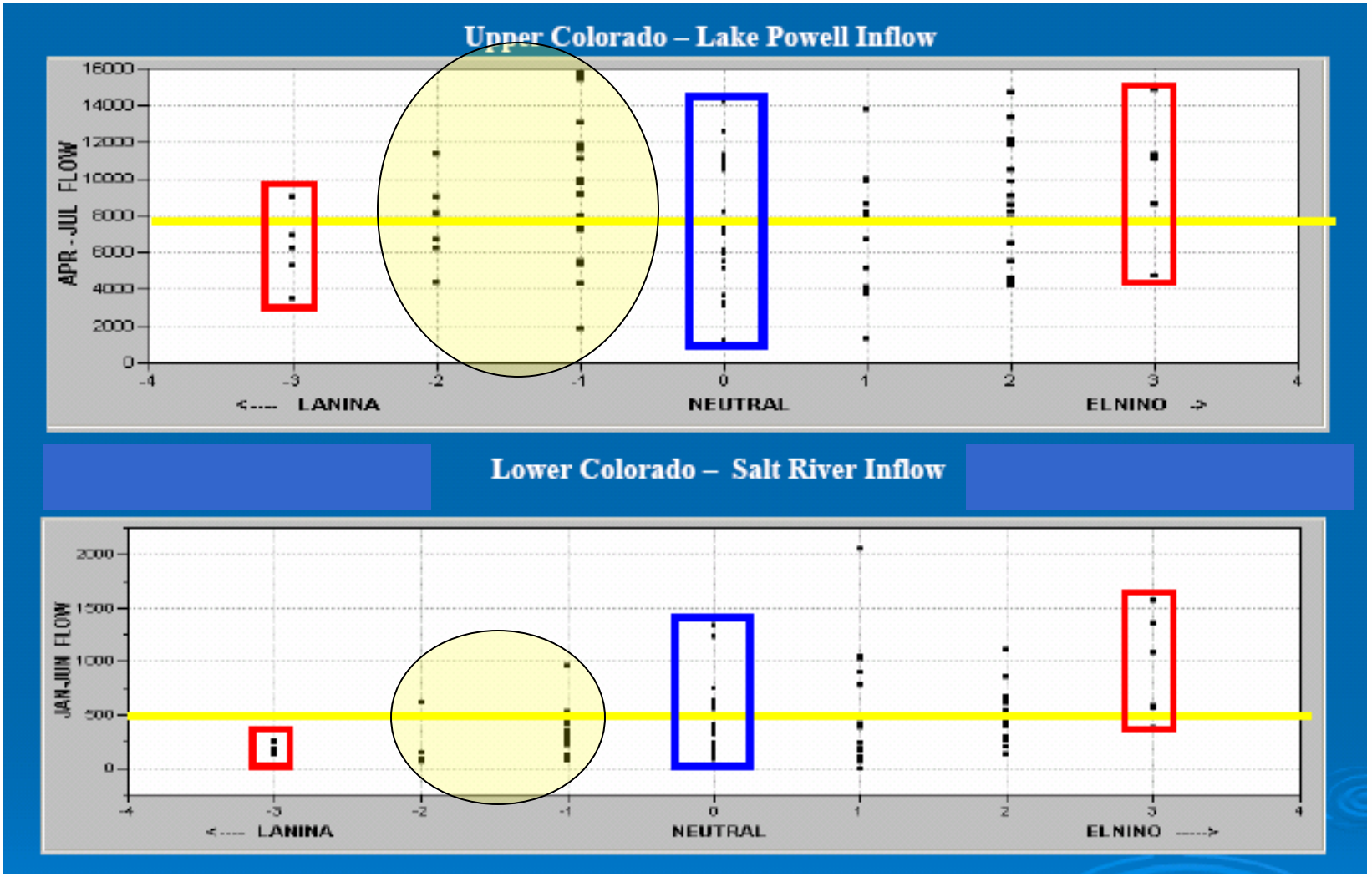


Figure provided by the International Research Institute (IRI) for Climate and Society (updated 17 November 2007).

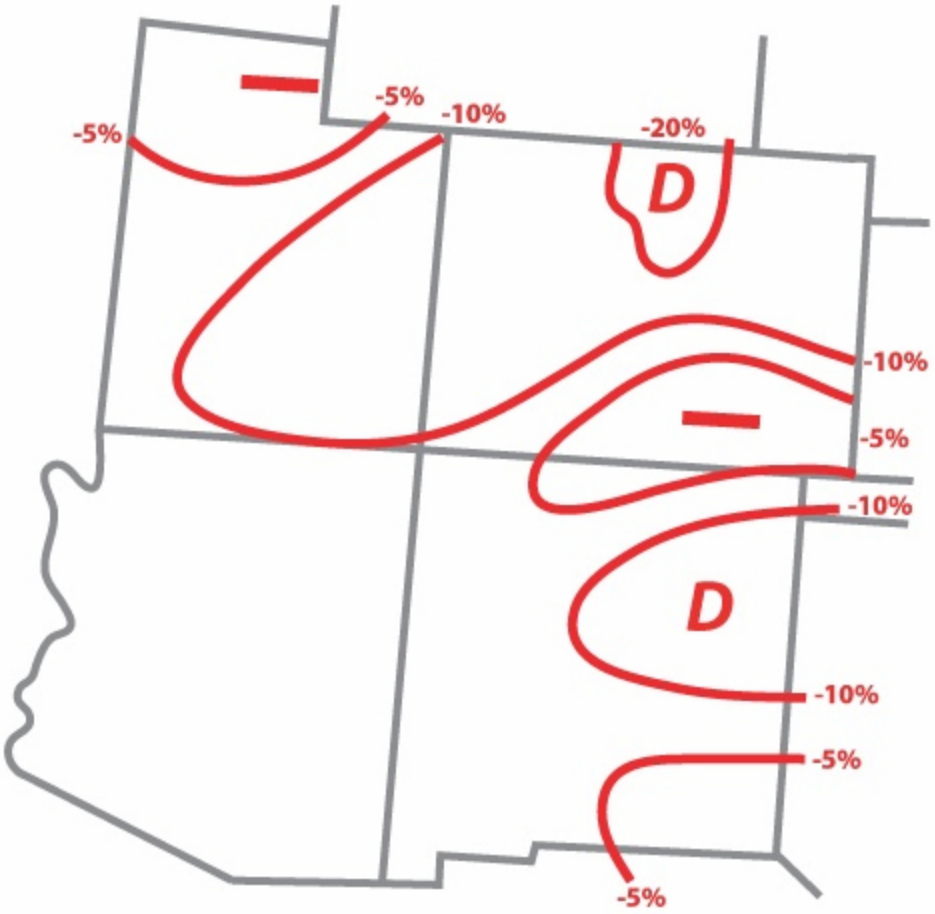

ENSO Composites Of 66 Years of Winter Precipitation Data Using 5-9 Sites in Each Basin
Green Basin
White/Yampa Basin
Upper Colorado Basin
Gunnison/Dolores Basin
San Juan Basin
La Nina Cases
El Nino Cases
5 sites
9 sites
8 sites
8 sites
8 sites
Dry
Neutral
Wet
Dry = Lower Tercile
Neu = Middle Tercile
Wet = Upper Tercile



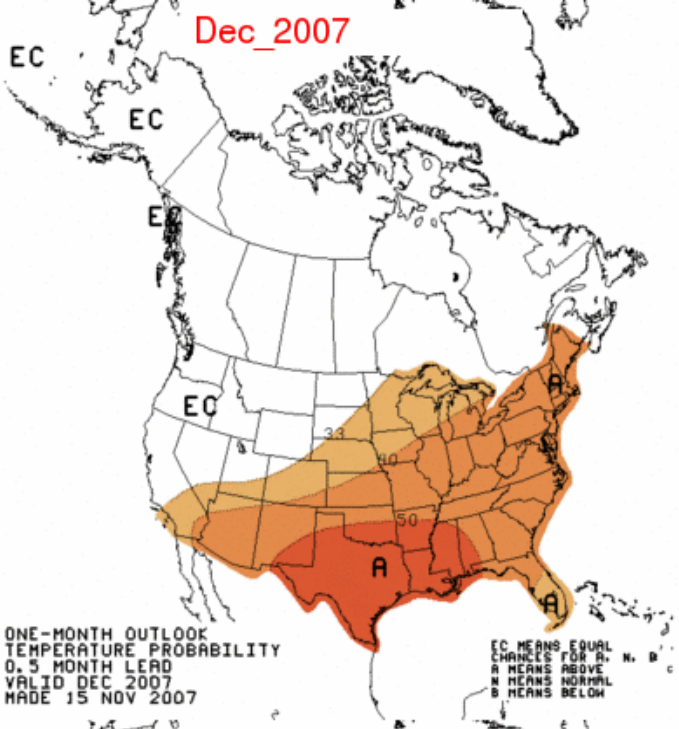
Oct/Nov/Dec Sea Surface Temperature Analysis 150 W to Date Line

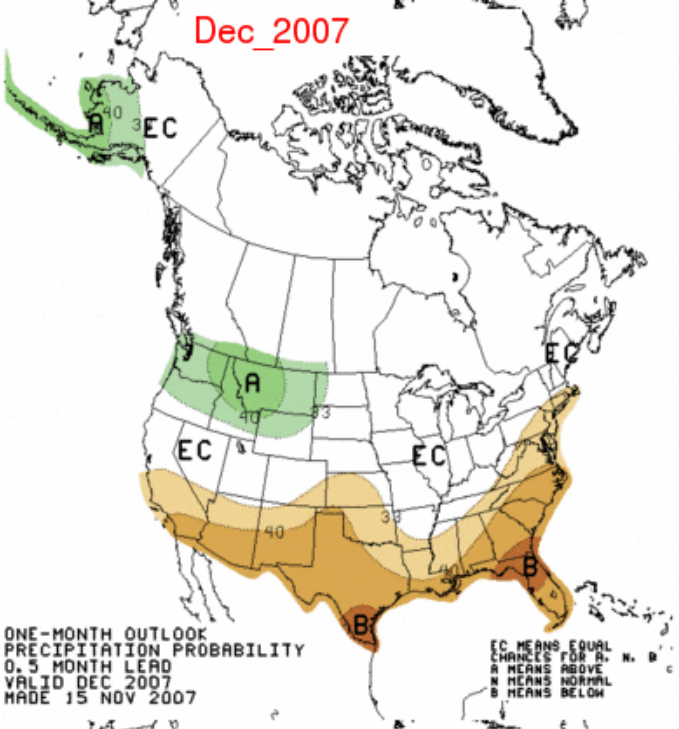
Strong	Warm (+3)/Cool (-3) Period
Moderate	Warm (+2)/Cool (-2) Period
Weak	Warm (+1)/Cool (-1) Period
Neutral	(0)

EXPERIMENTAL PSD PRECIPITATION FORECAST GUIDANCE
JAN - MAR 2008 (issued November 8, 2008)



http://www.cdc.noaa.gov/people/klaus.wolter/SWcasts/index.html


Dec_2007
EC
EC
EC
EC
A
A
A
33
40
50
ONE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
0.5 MONTH LEAD
VALID DEC 2007
MADE 15 NOV 2007
EC MEANS EQUAL CHANCES FOR A, N, B
A MEANS ABOVE
N MEANS NORMAL
B MEANS BELOW


Dec_2007
EC
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A
B
B
40
33
ONE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
0.5 MONTH LEAD
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EC MEANS EQUAL CHANCES FOR A, N, B
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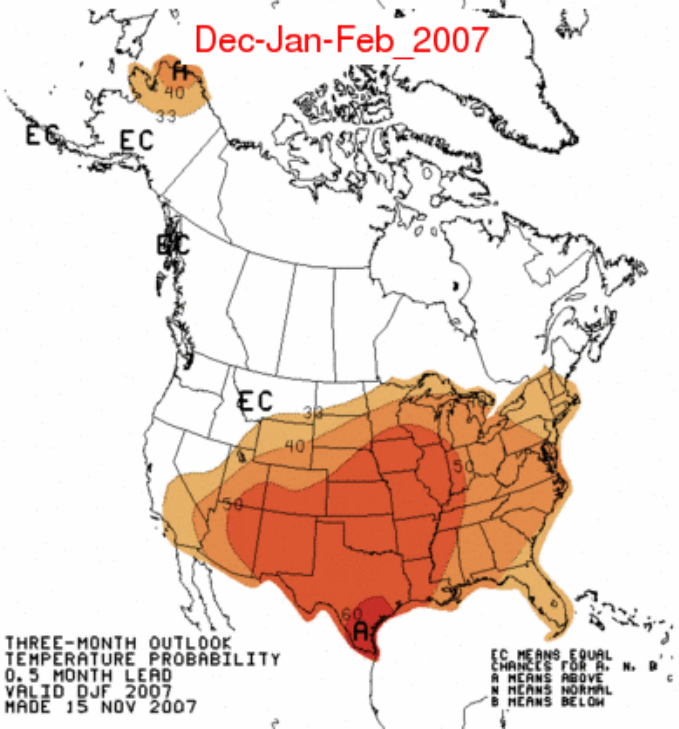
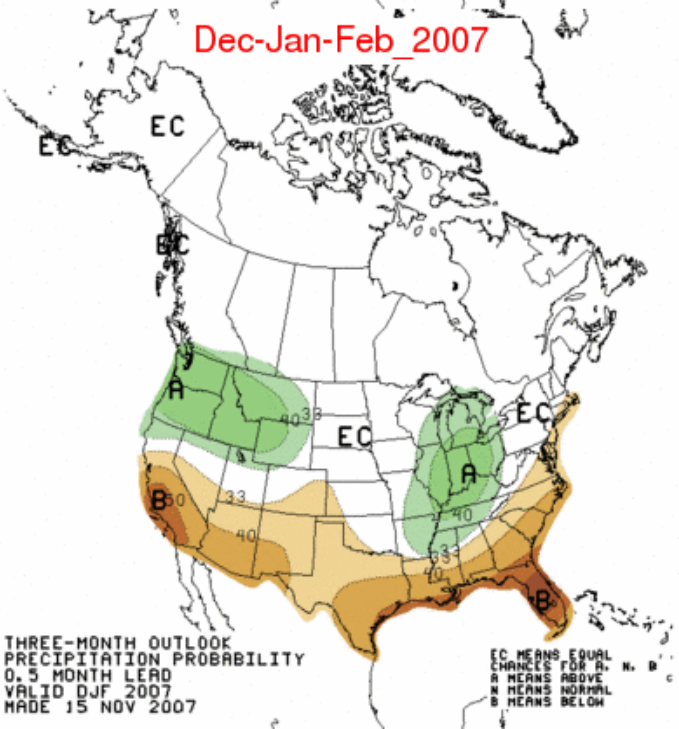

Dec-Jan-Feb_2007
EC
EC
EC
A
A
33
40
50
60
THREE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
0.5 MONTH LEAD
VALID DJF 2007
MADE 15 NOV 2007
EC MEANS EQUAL CHANCES FOR A, N, B
A MEANS ABOVE
N MEANS NORMAL
B MEANS BELOW


Dec-Jan-Feb_2007
EC
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A
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THREE-MONTH OUTLOOK
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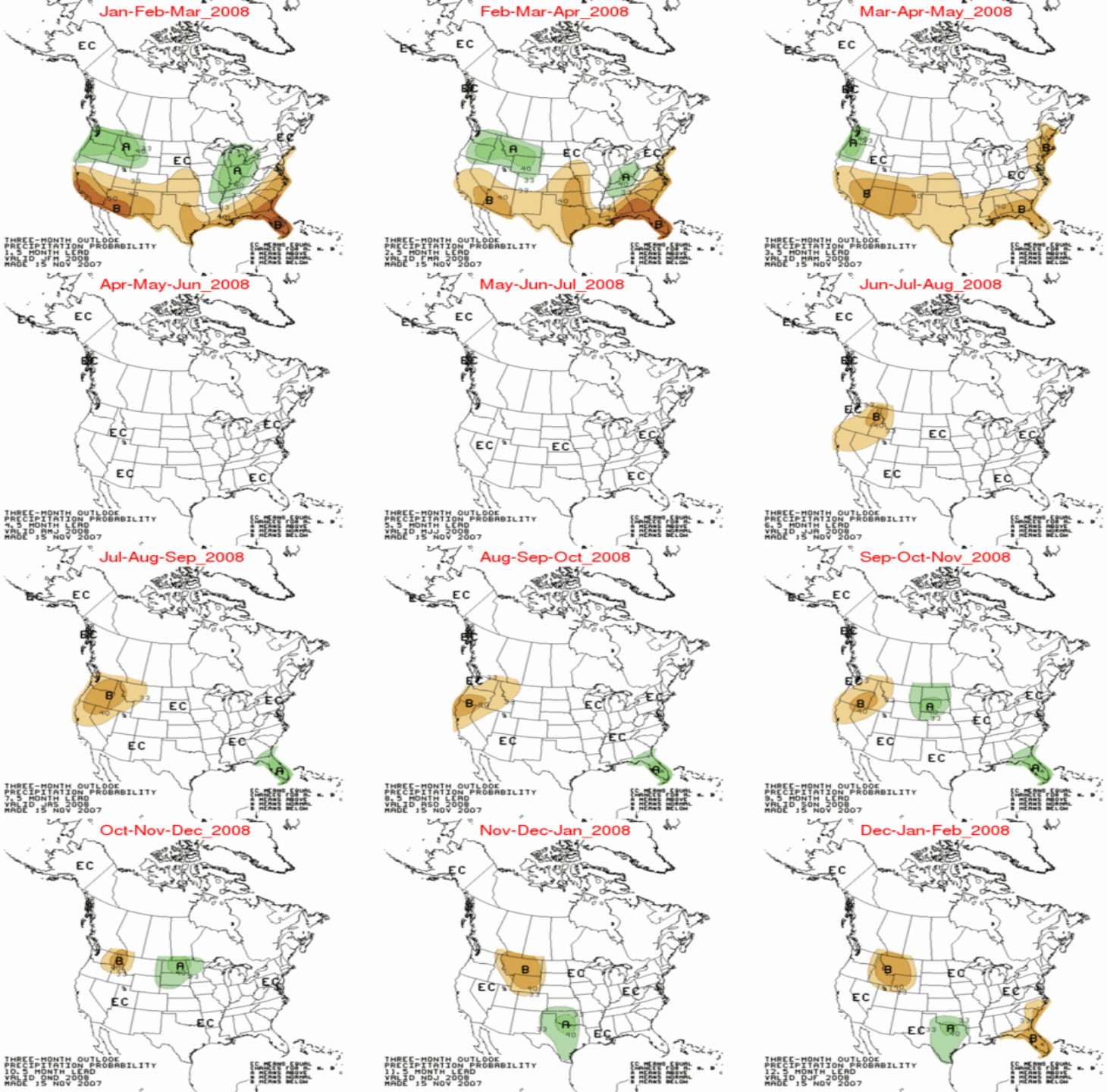
Jan-Feb-Mar_2008
Feb-Mar-Apr_2008
Mar-Apr-May_2008
Apr-May-Jun_2008
May-Jun-Jul_2008
Jun-Jul-Aug_2008
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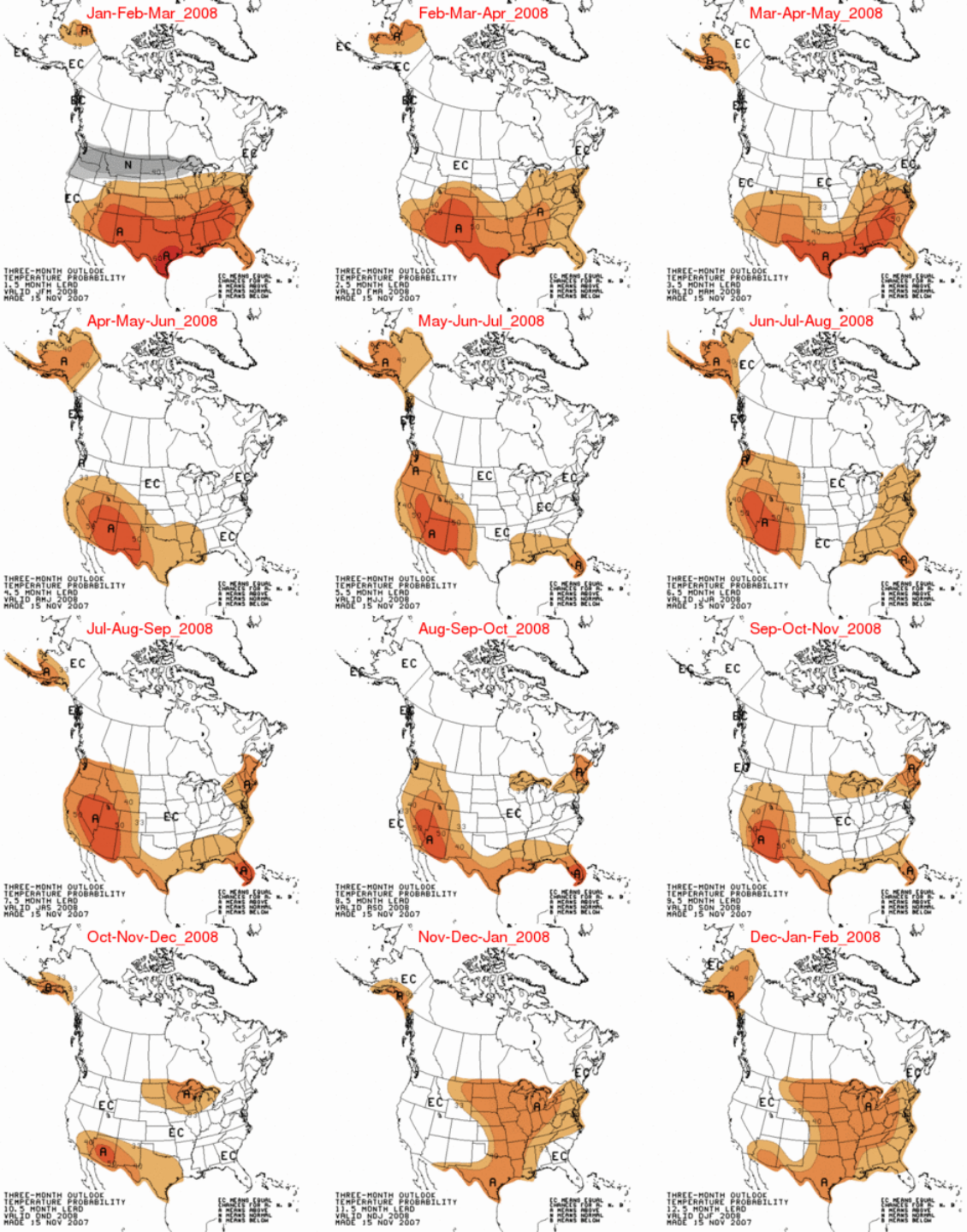
Aug-Sep-Oct_2008
Sep-Oct-Nov_2008
Oct-Nov-Dec_2008
Nov-Dec-Jan_2008
Dec-Jan-Feb_2008


Jan-Feb-Mar_2008
Feb-Mar-Apr_2008
Mar-Apr-May_2008
Apr-May-Jun_2008
May-Jun-Jul_2008
Jun-Jul-Aug_2008
Jul-Aug-Sep_2008
Aug-Sep-Oct_2008
Sep-Oct-Nov_2008
Oct-Nov-Dec_2008
Nov-Dec-Jan_2008
Dec-Jan-Feb_2008

What's going to happen this year? I'm "EC" on this question, but I spent time with our climatologist and this is his outlook…

High pressure is setting up over Siberia, creating the possibility of the coldest temperatures in this region since 1989-1990. Should this cold spill over the North Pole into North America, the jet stream would move further south than normal. This means that the Colorado Basin south of the Colorado – Wyoming border could be wetter than normal, at least through the first half of winter. His thought is that February and March will see a reversal, with drier weather returning to the lower portion of the Colorado Basin, but the Green River portion might see above normal precipitation in March and April. Overall, winter temperatures could be 3 to 6 degrees colder than normal through March, before warming up in April.

Bottom line…probably more water into Lake Powell than 2007, but probably not over 60%. **(Jan Curtis , Meteorologist, App. Climate, NRCS)**

United States Department of Agriculture
NRCS Natural Resources Conservation Service

ESP 2008 April-July Outlook
Lake Powell Inflow

- Bias adjusted ESP output only
  - No SWS input
  - No forecaster input
  - No coordination

4800 KAF / 60%