

<b>NWS Form E-5</b> U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE  <b>MONTHLY REPORT OF HYDROLOGIC CONDITIONS</b>	<b>HYDROLOGIC SERVICE AREA:</b> Pocatello, Idaho
	<b>REPORT FOR:</b>  <b>MONTH:</b> July <b>YEAR:</b> 2014
<b>TO:</b> Hydrologic Operations Division, W/OH2 National Weather Service National Oceanic and Atmospheric Administration Silver Spring, Maryland 20910	<b>SIGNATURE</b>  Corey Loveland Service Hydrologist
<b>DATE:</b> August 11, 2014	
When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts and hydrologic products issued (NWS Instruction 10-924).	

An X in this box indicates that no flooding has occurred for the month within this hydrologic service area.

**Overview:**

July was the month of fire and rain!! Precipitation across the Hydrologic Service Area (HSA) over the last three months (90 days) has been fairly dry with last month being marginally dry across southeastern Idaho with the exception of eastern Bonneville, Jerome, Madison and Bear Lake counties being very wet (150 to 200% above normal). Generally, across the HSA it has been 25 to 90% of normal in July. AHPS current water year-to-date precipitation ranks most of Bannock, Power, eastern Bonneville and Bear Lake counties receiving near to above normal amounts with the remainder of the area capturing 25 to 90% of normal. Eastern Idaho is mostly one to four inches in deficit in the last 90 days over the area for rainfall. A number of small wildfires started (mostly by lightning), but did not burn long as periodic thunderstorms have blocked advancement.

July brought an average of around a half to an inch of precipitation within the mid to higher elevations in the HSA, according to AHPS data with some areas gaining more than two inches. The temperature departure from normal for July shows that mostly across the HSA, temperatures were mostly one to six degrees F above normal.

Last month brought varied forms of precipitation: Overnight on the 8<sup>th</sup> a snow storm hit Pine Creek Pass SNOTEL area with 2.2" of snow water equivalent, on the 9<sup>th</sup> Grassy Lake received 2" and Granite Creek had 0.9" of swe on 10<sup>th</sup>. On the 11<sup>th</sup> heavy rains and a flash flood warning (verified) was issued in Bannock and Power counties with about an inch falling rapidly in the Highland area of Pocatello. The 12<sup>th</sup> brought heavy rains and then again on the 14<sup>th</sup> strong rains (with hail) in the Pocatello/Chubbuck area and wide spread over eastern Idaho as well.

The main event for July was on the 15<sup>th</sup> with heavy rain causing a flash flood in Rexburg on the BYU Idaho campus and downtown Rexburg. This was an extreme and rare event. One-day record amount was set at 1.95" recorded by a local spotter, breaking the old record of 1.43" in June 2004. The Rexburg Airport ASOS recorded 1.15". This event was recognized by the national media as many photos/videos were taken.

No flash flood warnings were issued, but there were 10 urban and small stream advisories sent out in July.

Recent rainfall provided short-term drought relief by keeping grasses and other vegetation greener longer, especially for those areas that recently ran out of irrigation water, and helped put a damper on the wildfires. But,

did little for long-term water supplies because so much of eastern Idaho's annual streamflow comes from snowmelt.

As far as the short term 6-14 day Climate Prediction Center Outlook is concerned, the forecast is for well below normal temperatures!! For the one-month outlook, we stand to have near normal temperatures in eastern Idaho. For precipitation, the forecast is eastern Idaho is receiving normal precipitation as well. Looking at the long-term climate forecast in the next three months, it appears that we may have normal to up to 33 percent chance of above normal temperatures and normal to around 33 percent chance of receiving above normal precipitation in extreme southeastern Idaho.

Of the data available for the month, the station within the HSA reaching the highest 24-hour temperature (non-SNOTEL) were the Shoshone 1 WNW COOP, Rock Lake RAWS and Minidoka Dam COOP stations which all reached 105°F on the 14<sup>th</sup> & 15<sup>th</sup>. The station with the lowest recorded temperature was the Copper Basin RAWS station at 22°F on July 25<sup>th</sup>. The highest recorded 24-hr precipitation (non-SNOTEL) occurred in Rexburg recorded by a spotter where 1.95 inch fell on the 15<sup>th</sup>. The highest recorded precipitation total (non-SNOTEL) occurred at the Rexburg 0.7 W CoCoRaHS station where 1.77 total inches was recorded (but much more fell in that area and is not recorded). The Emigrant Summit SNOTEL station received 2.2 inches of precipitation total for the month.

Reservoirs last month decreased capacity overall by around 16% in the upper Snake River basin system (a decrease of about 675 KAF occurred over the month and is currently sitting at 54% of capacity overall). Compared to last year at this time, it was about 33% of capacity. Water storage varies across the area; according to NRCS reservoir data, the most notable decreases last month were Island Park and American Falls both dropping 31% and Little Wood reservoir lost 25% of its capacity. Magic reservoir is only at 7% of average now. Both the Big Lost and Little Wood irrigation season has ended due to running out of sufficient water supply.

Current streamflow conditions in eastern Idaho are mostly near normal with a few below normal for the majority of the unregulated streams (see graphic below).

Drought conditions across eastern Idaho remained the same since last month. No new counties have declared drought emergencies this past month according to the Idaho Department of Water Resources. The U.S. Seasonal Drought Outlook forecasts drought to remain across the central mountains and most of the Snake River plain where northeast Idaho and southeast Idaho are still excluded from the outlook. With persistent dry conditions, wildfire season has continued as additional wildfires have ignited, but have not spread due to thunderstorm activity.

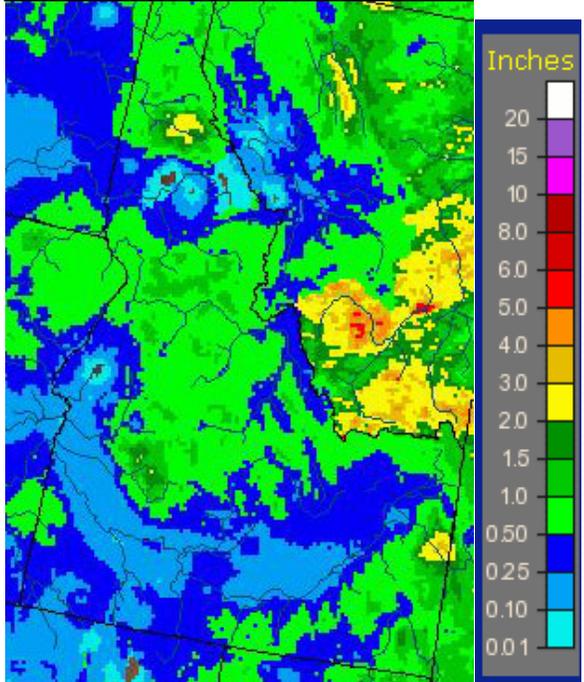
According to the Idaho NRCS Snow Survey August 1<sup>st</sup> Idaho Surface Water Supply Index (SWSI); combining streamflow volume forecasts and reservoir storage (where appropriate), rates the greatest valued basin for water supply within the HSA as being the Henrys Fork basin. The basin was given a SWSI rating of 1.3 (near normal). This rating reflects overall water availability in the basins and are mostly used for irrigational planning purposes. The three lowest ranked basins within the HSA are the Little Wood, Little Lost and Big Wood basins which were rated at -3.8, -3.3 and -2.8 respectively, which are all much below to below normal. The Little Wood basin is ranked as the second driest streamflow forecast, just 2007 was drier.

For more information on the Idaho Surface Water Supply Index (SWSI) August 1<sup>st</sup> Outlook please visit:

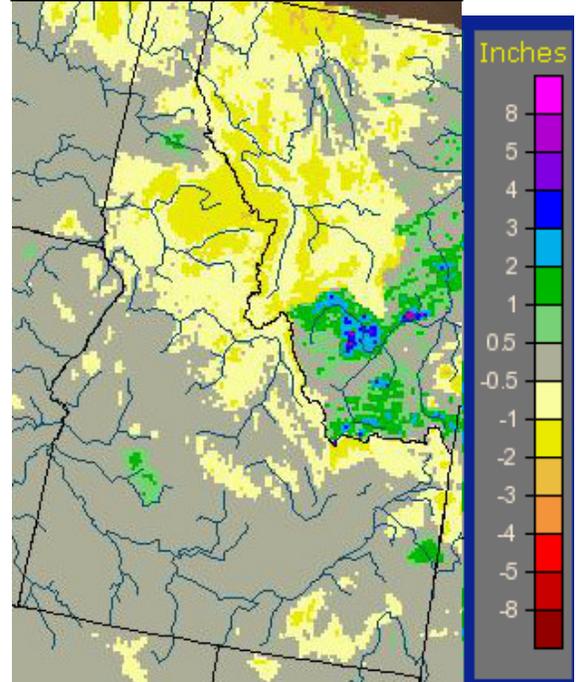
<ftp://ftp-fc.sc.egov.usda.gov/ID/snow/webftp/swsi/tables/Aug/SWSI08.pdf>

**Precipitation:**

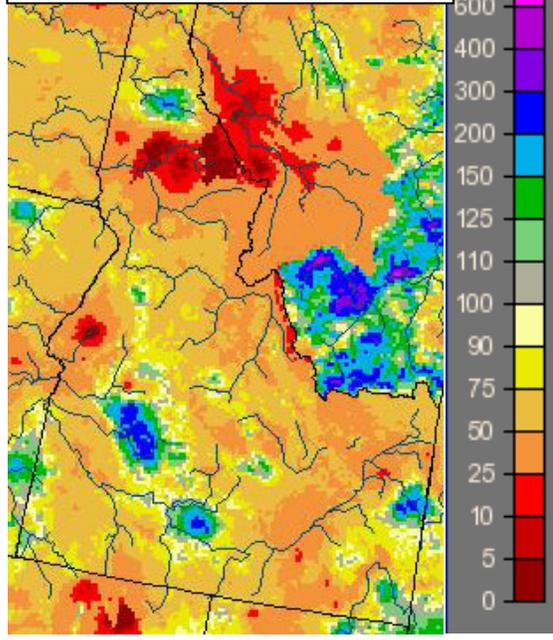
July 2014, Observed  
Precipitation



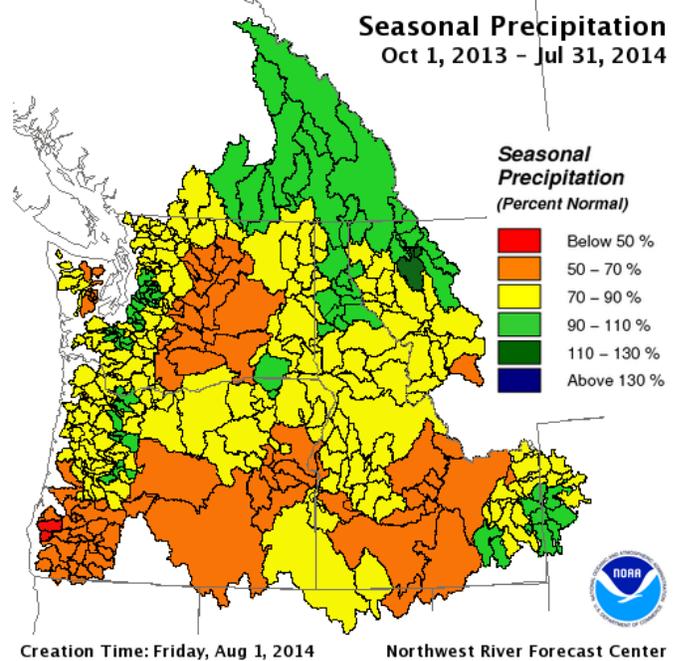
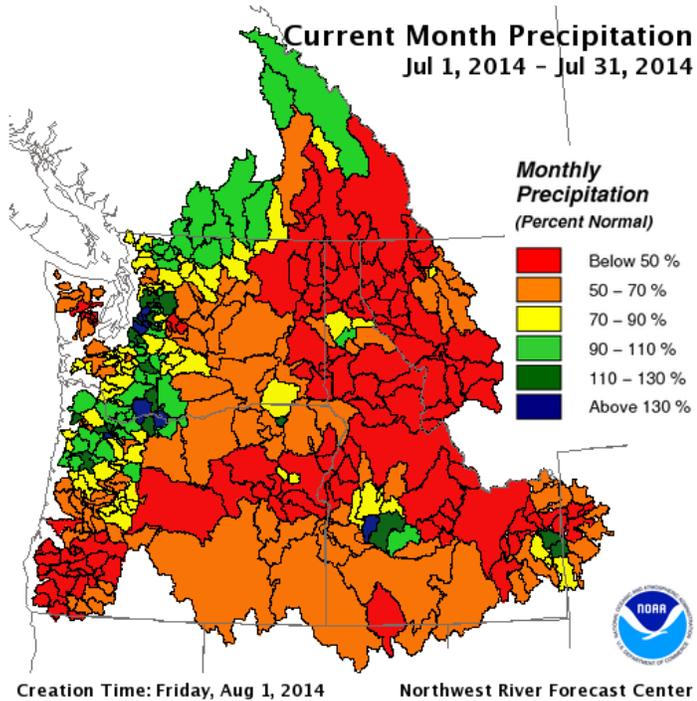
July 2014, Departure from  
Normal Precipitation



July 2014, Percent of Normal  
Precipitation



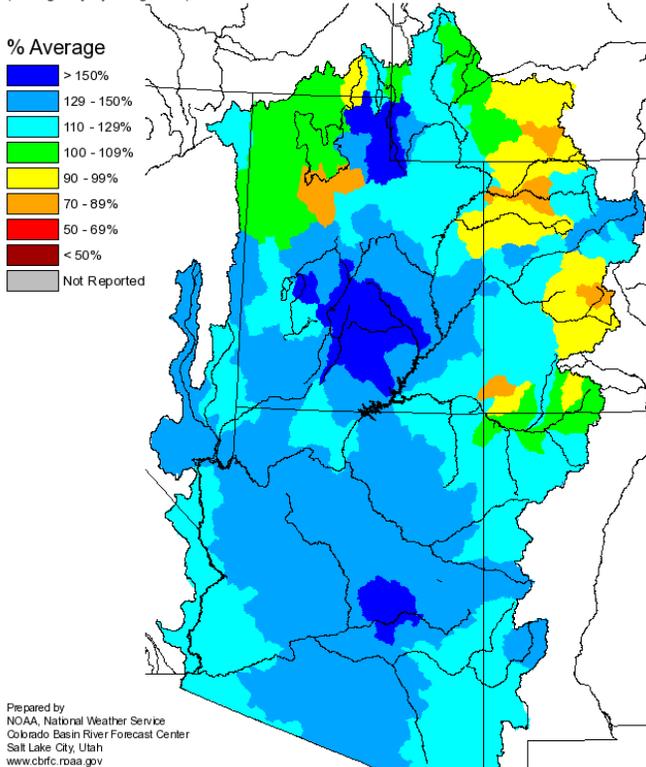
[water.weather.gov/precip/index.php](http://water.weather.gov/precip/index.php)



[nwrfc.noaa.gov/WAT\\_RES\\_wy\\_summary/20140801/CurMonMAP\\_2014Jul31\\_2014080122.png](http://nwrfc.noaa.gov/WAT_RES_wy_summary/20140801/CurMonMAP_2014Jul31_2014080122.png)

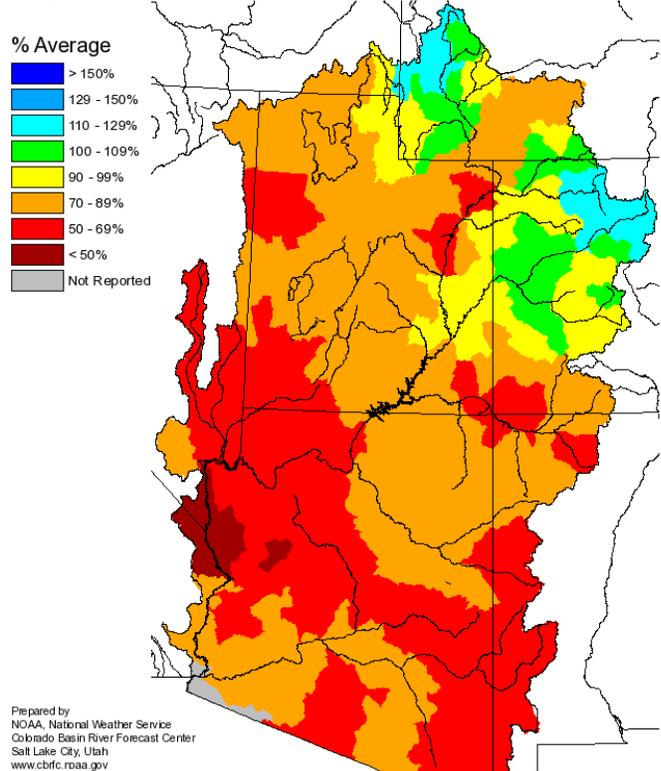
[nwrfc.noaa.gov/WAT\\_RES\\_wy\\_summary/20140801/SeasonalMAP\\_2014Jul31\\_2014080122.png](http://nwrfc.noaa.gov/WAT_RES_wy_summary/20140801/SeasonalMAP_2014Jul31_2014080122.png)

### Monthly Precipitation for July 2014 (Averaged by Hydrologic Unit)



[cbrfc.noaa.gov/product/mapsum/mapsum.cgi??cbrfc?M?2014?07](http://cbrfc.noaa.gov/product/mapsum/mapsum.cgi??cbrfc?M?2014?07)

### Seasonal Precipitation, October 2013 - July 2014 (Averaged by Hydrologic Unit)

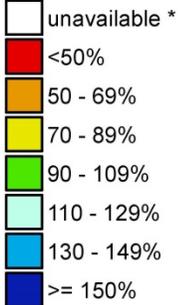


[cbrfc.noaa.gov/product/mapsum/mapsum.cgi??cbrfc?S?2014?07](http://cbrfc.noaa.gov/product/mapsum/mapsum.cgi??cbrfc?S?2014?07)

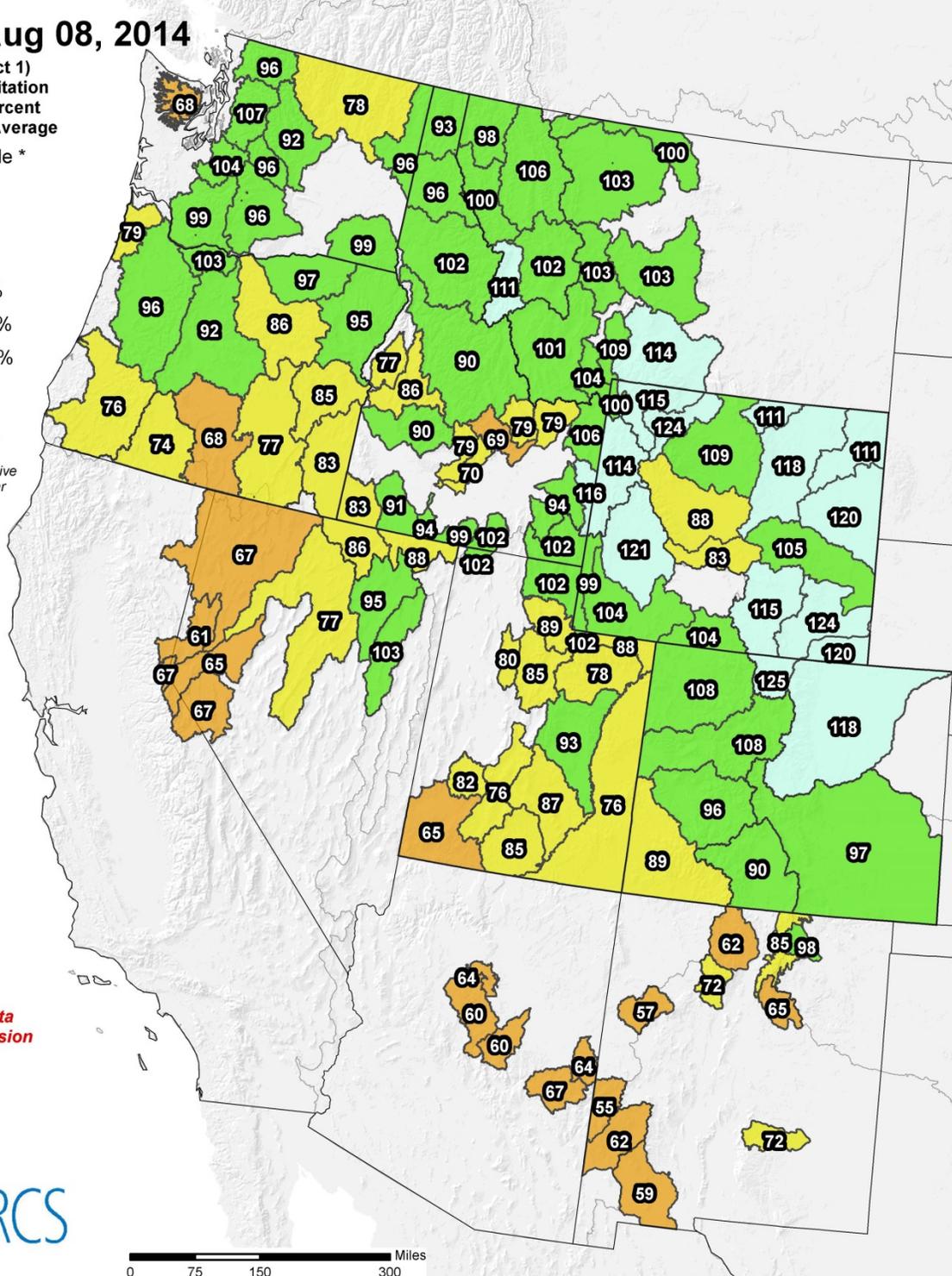
# Westwide SNOTEL Water Year (Oct 1) to Date Precipitation % of Normal

Aug 08, 2014

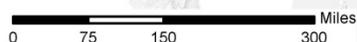
Water Year (Oct 1) to Date Precipitation Basin-wide Percent of 1981-2010 Average



\* Data unavailable at time of posting or measurement is not representative at this time of year



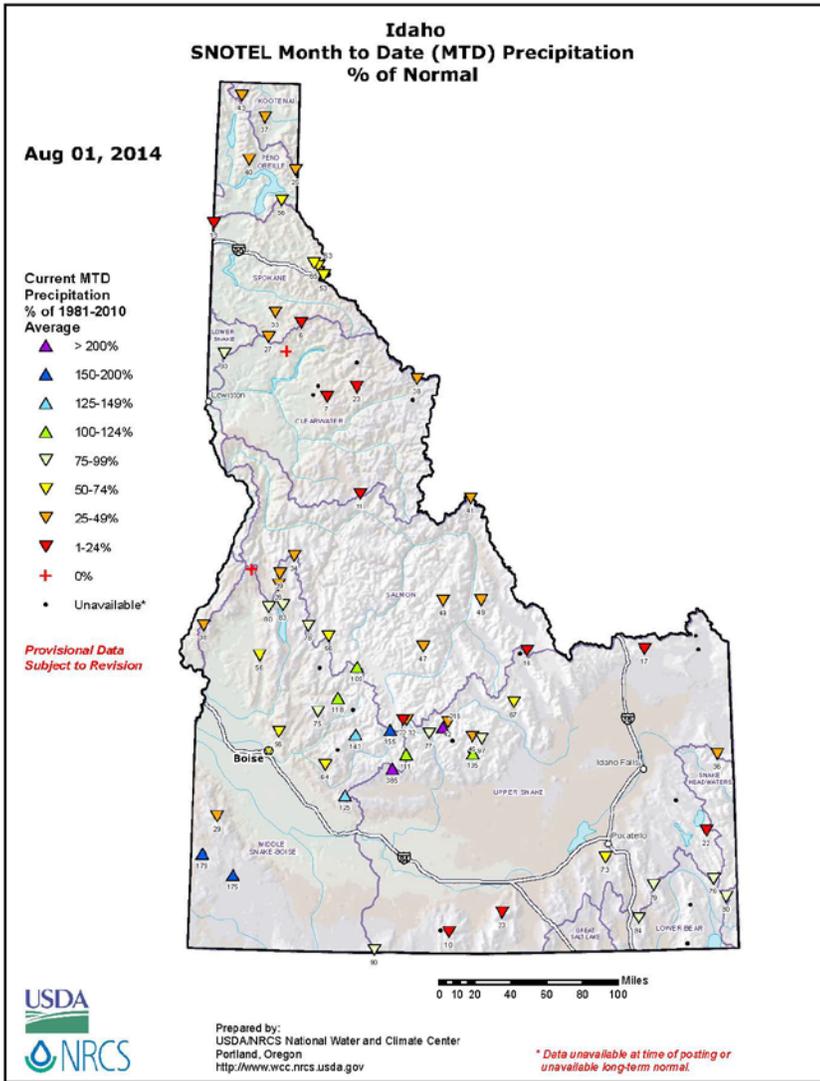
Provisional data subject to revision



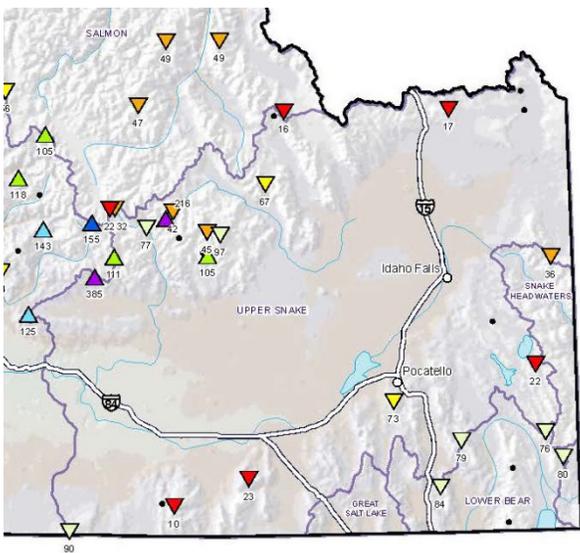
The water year to date precipitation percent of normal represents the accumulated precipitation found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by:  
 USDA/NRCS National Water and Climate Center  
 Portland, Oregon  
<http://www.wcc.nrcs.usda.gov>

[wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/west\\_wytdprecptnormal\\_update.pdf](http://wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/west_wytdprecptnormal_update.pdf)



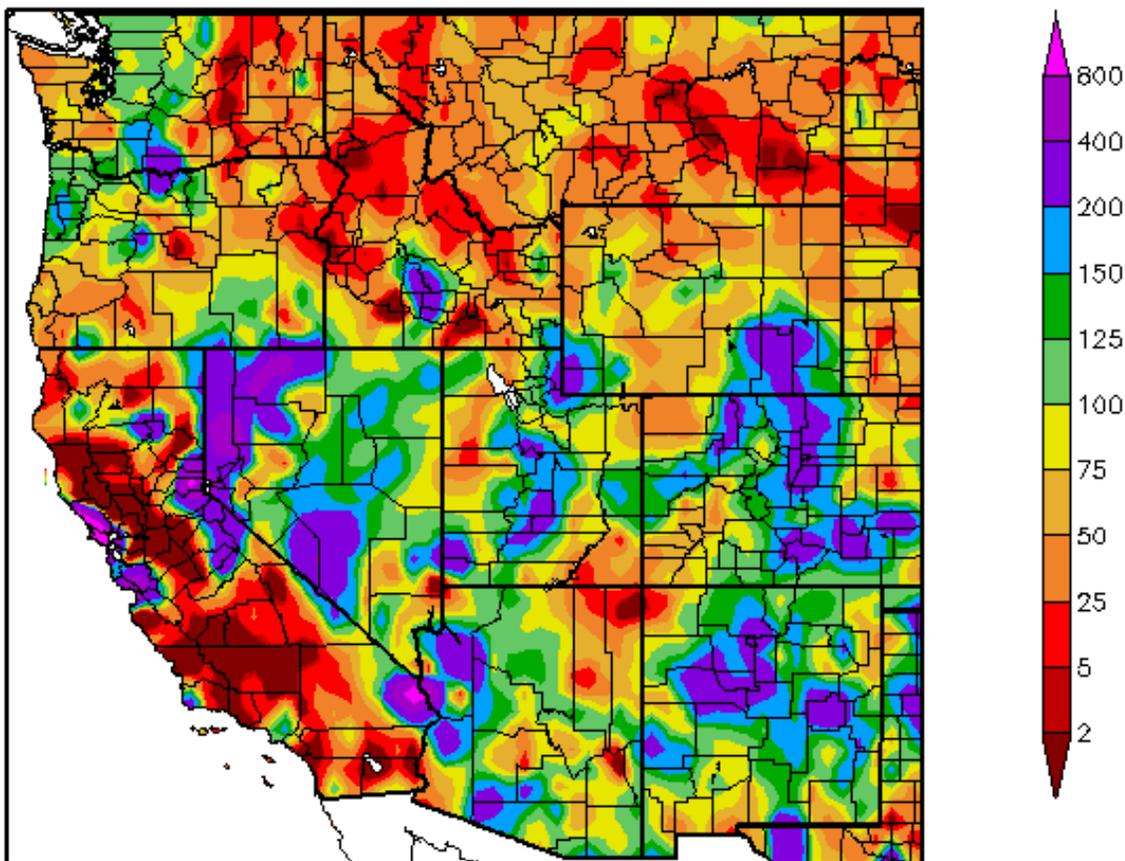
[ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/1stmonth/id/prec/id\\_mtdprecptnormal\\_Aug.pdf](ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/1stmonth/id/prec/id_mtdprecptnormal_Aug.pdf)



**SNOTEL MTD % of Normal  
Precipitation for end of July 2014**  
(image is cropped from above image)

July was relatively dry in eastern Idaho, especially along the Continental Divide, upper and mid Snake River plain. South central, Madison and Bear Lake counties were the wettest in the area where well above normal precipitation fell. Last month much of the west received varied amounts of rainfall with the driest in California, northern Idaho and eastern Washington and eastern Montana.

## Percent of Normal Precipitation (%) 7/1/2014 - 7/31/2014



Generated 8/5/2014 at HPRCC using provisional data.

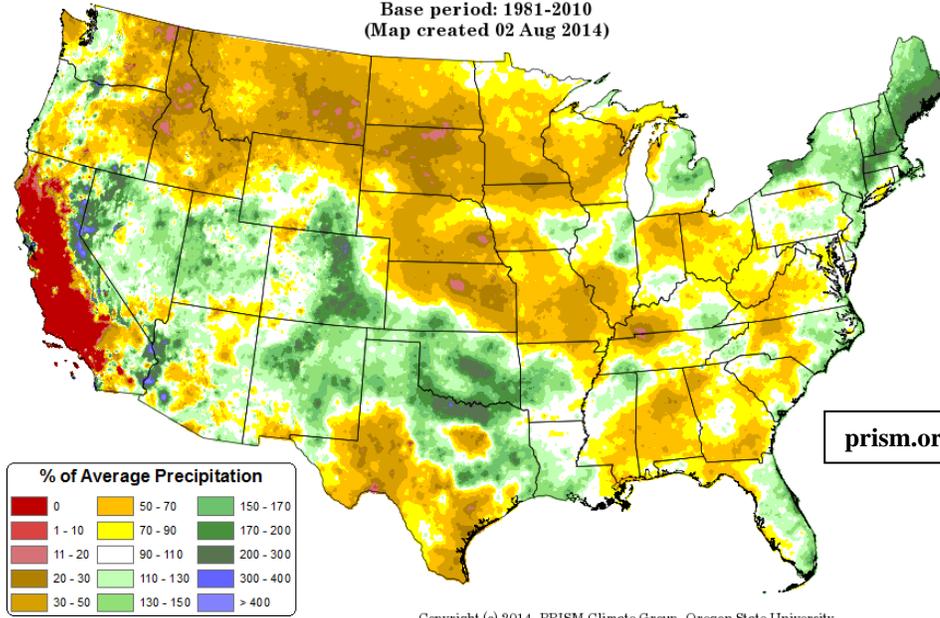
Regional Climate Centers

[hprcc.unl.edu/maps/current/index.php?action=update\\_type&map\\_type=](http://hprcc.unl.edu/maps/current/index.php?action=update_type&map_type=)

**July CONUS Total Precipitation Anomaly:**

**Total Precipitation Anomaly: July 2014**

Period ending 31 Jul 2014  
Base period: 1981-2010  
(Map created 02 Aug 2014)



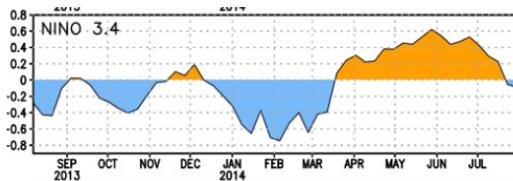
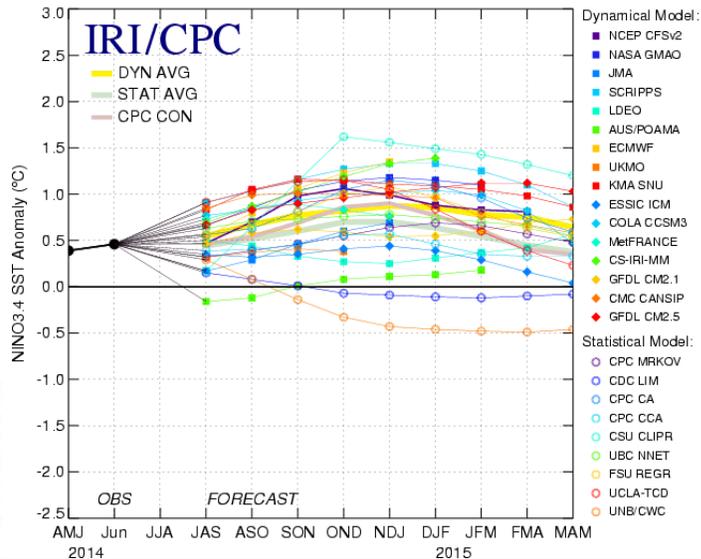
[prism.oregonstate.edu/comparisons](http://prism.oregonstate.edu/comparisons)

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**ENSO Update:**

**Latest Observed SST Departure: Niño 3.4 ~ -0.1 Deg C**

Mid-Jul 2014 Plume of Model ENSO Predictions



[cpc.ncep.noaa.gov](http://cpc.ncep.noaa.gov), [iri.columbia.edu/climate/ENSO](http://iri.columbia.edu/climate/ENSO) and [cpc.ncep.noaa.gov/products/analysis\\_monitoring/enso\\_advisory/ensodisc.pdf](http://cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.pdf)

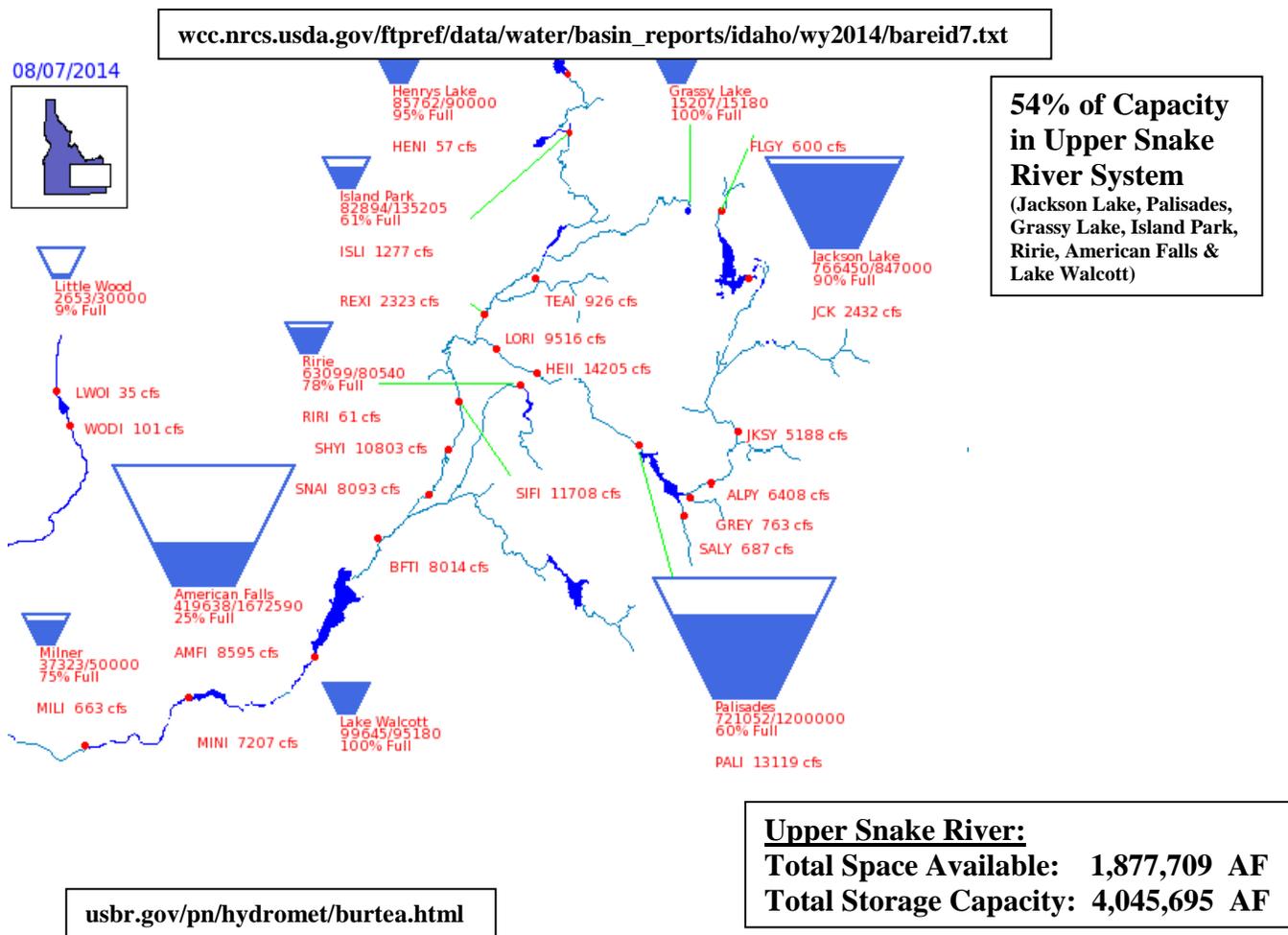
**CPC Synopsis:** ENSO-Neutral conditions continue, forecast is a 70% chance of El Niño developing during summer in Northern Hemisphere and close to 80% during fall and winter.

**Note:** The ENSO-Neutral climate pattern is forecast to continue in the Northern Hemisphere and transition to El Niño by fall/winter. Positive equatorial sea surface temperatures (SSTs) decreased in the eastern half of the equatorial Pacific Ocean. Tropical rainfall is slightly enhanced over the western equatorial Pacific. MJO remains weak.

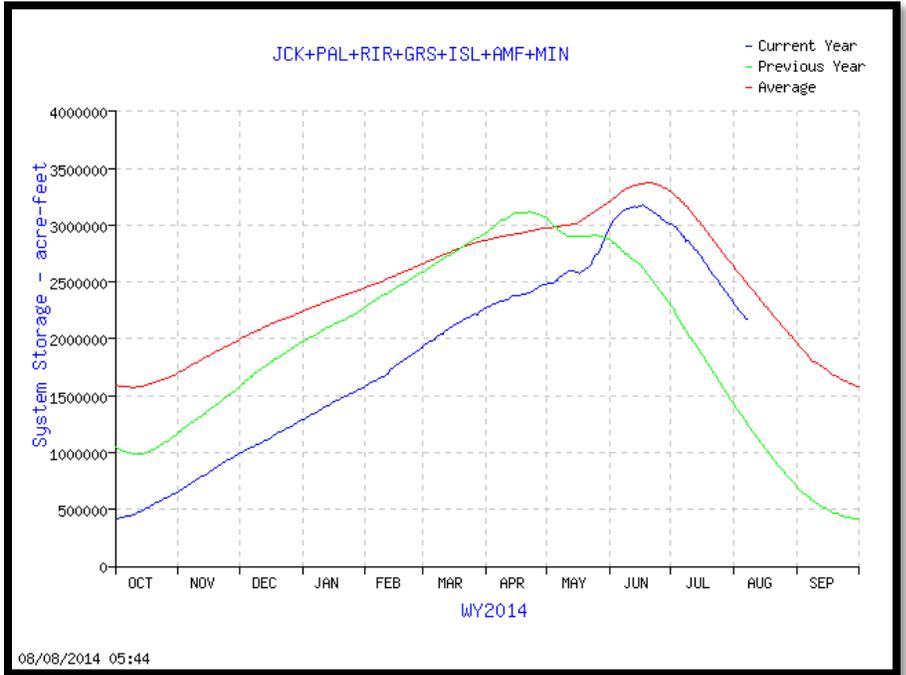
**Reservoirs:**

Reservoir	% Capacity June 30 <sup>1</sup>	% Capacity July 31 <sup>2</sup>	Percent Change	% of Average <sup>2</sup>	% of Last Year <sup>2</sup>
Henrys Lake	100	96	-4	107	111
Island Park	98	67	-31	98	138
Jackson Lake	99	93	-6	123	151
Palisades	77	71	-6	98	212
Ririe	85	79	-6	96	106
Blackfoot	55	47	-8	86	92
American Falls	58	27	-31	50	113
Bear Lake	52	40	-12	70	72
Magic	20	4	-16	7	131
Little Wood	38	13	-25	25	47
Mackay	35	20	-15	41	57
Oakley	24	17	-7	54	82
Lake Walcott	99 <sup>3</sup>	100 <sup>4</sup>	1	n/a	n/a
Milner	77 <sup>3</sup>	75 <sup>4</sup>	-2	n/a	n/a

Source: (1) NRCS June 30, 2014; (2) NRCS July 31, 2014.  
 (3) US Bureau of Reclamation (BOR) July 9, 2014 (4) BOR August 7, 2014



**Graph of Upper Snake River  
Current Total System Reservoir  
Storage**



[usbr.gov/pn-bin/graphwy2.pl?snasys\\_af](http://usbr.gov/pn-bin/graphwy2.pl?snasys_af)

**Bear River Basin Current Reservoir Conditions:**

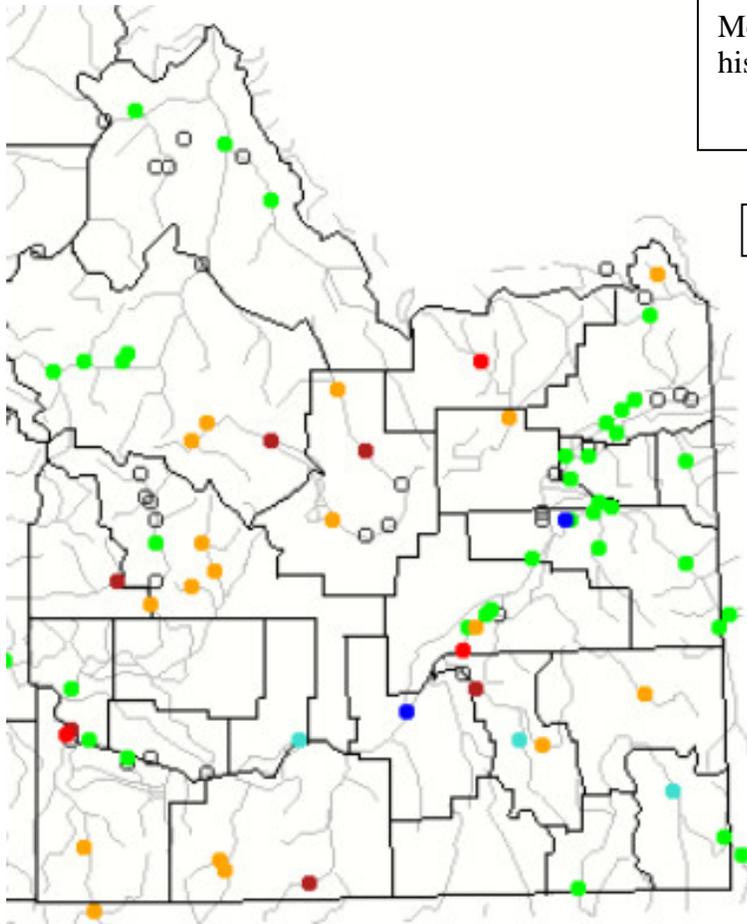
**Dam Level Condition**

- No Data
- Normal
- Near Spill
- Spill
- Pass Flow
- Critical
- Forecast Spill

NWS ID	Location	Level Condition	Current Level	Observed Date	Forecast Peak (5 days)	Peak Date	Gate Level	Gate	Pass Flow Level	Crit Level
1 BLK11	Bear River - Bear Lake, Nr Lifton	Normal	5912.7	8/7 06:00	5912.7	8/7 18:00				5925

[cbrfc.noaa.gov/gmap/list/list.php?search=&point=all&plot=&sort=damcritids&type=damcrit&basin=5&subbasin=0&espqpf=0&espdist=empirical](http://cbrfc.noaa.gov/gmap/list/list.php?search=&point=all&plot=&sort=damcritids&type=damcrit&basin=5&subbasin=0&espqpf=0&espdist=empirical)

**Streamflow:**



Monthly average streamflow compared to historical average streamflow for July 2014.  


[waterwatch.usgs.gov/?m=mv01d&r=id&w=map](http://waterwatch.usgs.gov/?m=mv01d&r=id&w=map)

Explanation - Percentile classes							
							
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

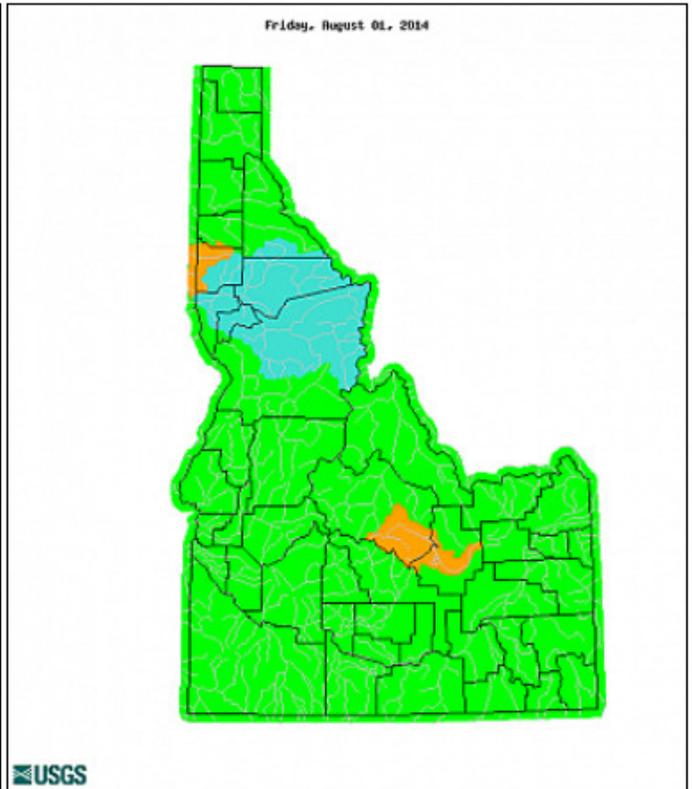
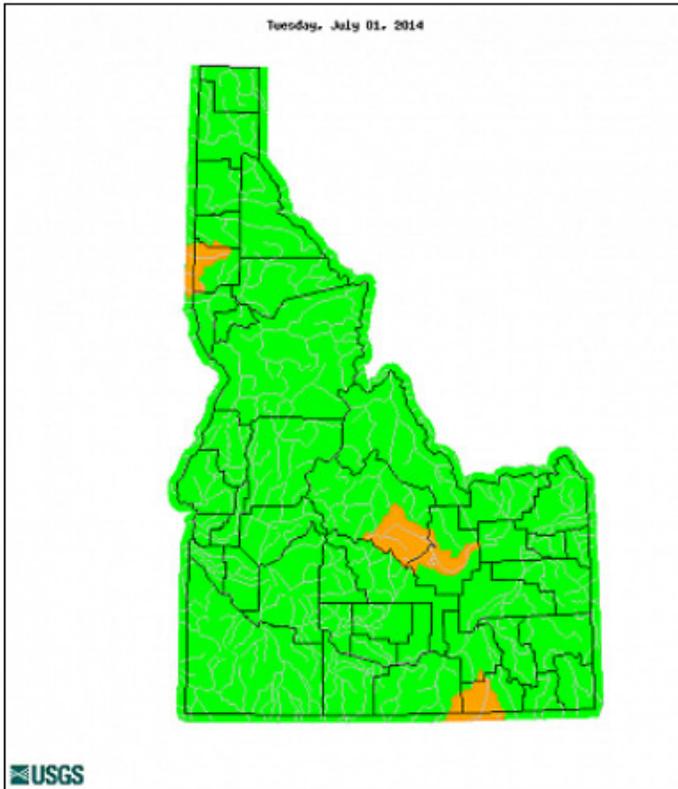
# Historic Streamflow Comparison, June 2014 and July 2014:

## Comparison of Monthly Streamflow Maps

<b>Geographic Area:</b> <input type="text" value="Idaho"/>	<b>Water Resource Region:</b> <input type="text"/>	<b>Map Type:</b> <input type="text" value="HUC"/> <input type="button" value="GO"/>
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Date (YYYYMM):

Date (YYYYMM):



Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

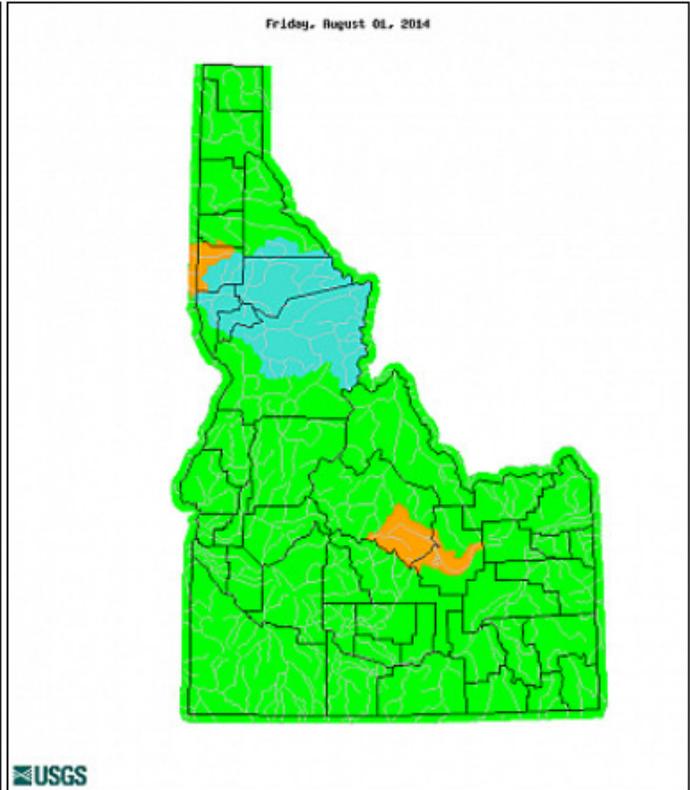
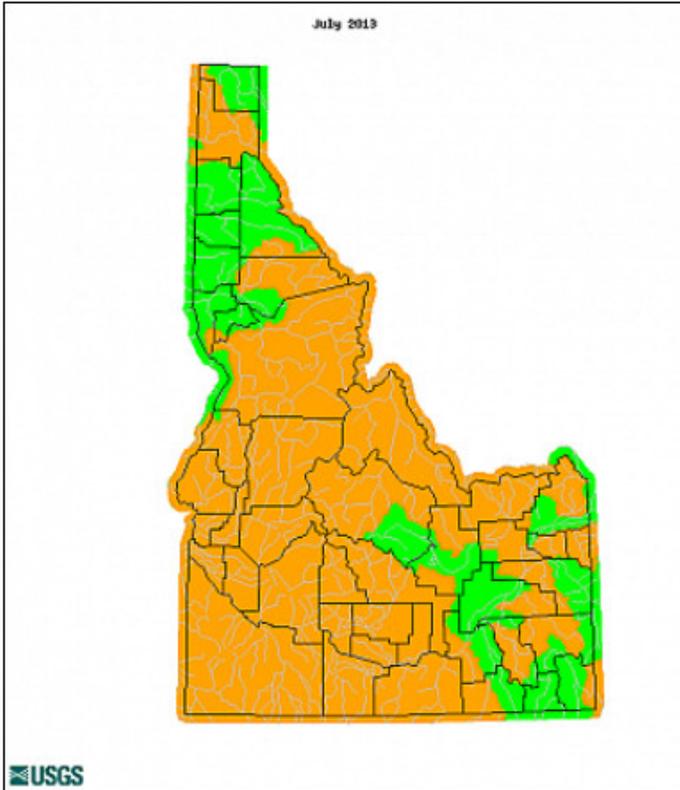
# Historic Streamflow Comparison, July 2013 and July 2014:

## Comparison of Monthly Streamflow Maps

Geographic Area: 
 Water Resource Region: 
 Map Type:

Date (YYYYMM):

Date (YYYYMM):

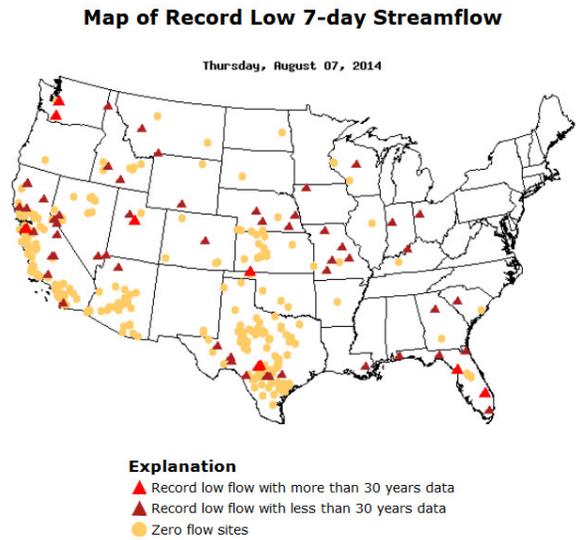
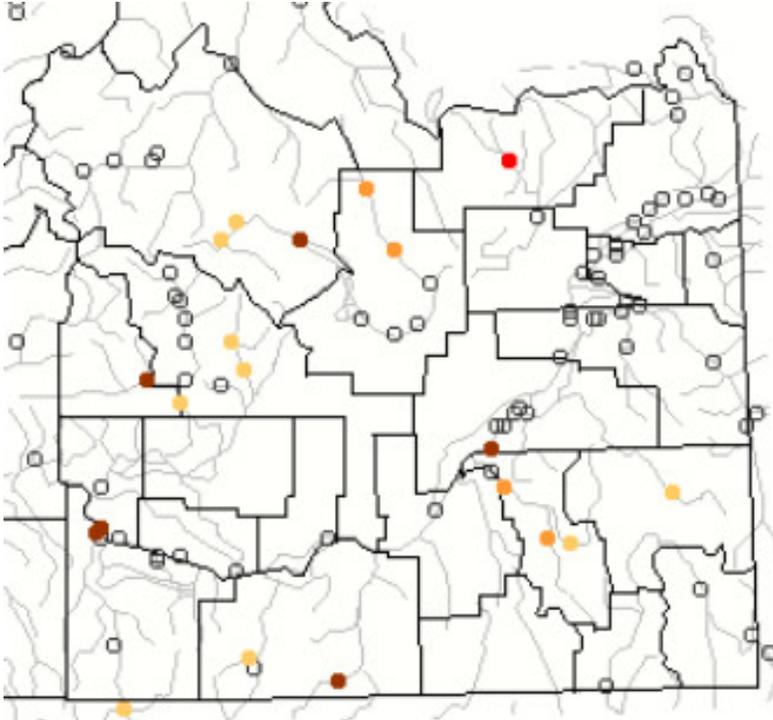


Explanation - Percentile classes						
	<10	10-24	25-75	76-90	>90	
Low	Much below normal	Below normal	Normal	Above normal	Much above normal	High

[waterwatch.usgs.gov/index.php](http://waterwatch.usgs.gov/index.php)

**Below Normal 28-Day average streamflow as of August 7, 2014 (see graphic below):**

Medicine Lodge Creek nr Small, 22.11 cfs, 2<sup>nd</sup> percentile, (new low),  
 Big Lost River blo Mackay Reservoir, 205 cfs, 4<sup>th</sup> percentile,  
 Spring Creek nr Fort Hall, 229 cfs, 3<sup>rd</sup> percentile,  
 Raft River nr Malta, 1.5 cfs, 2<sup>nd</sup> percentile



Choose a data retrieval option and select a location on the map  
 List of all stations  Single station  Nearest stations

Explanation - Percentile classes				
●	●	●	●	○
New low	<=5	6-9	10-24	Not ranked
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

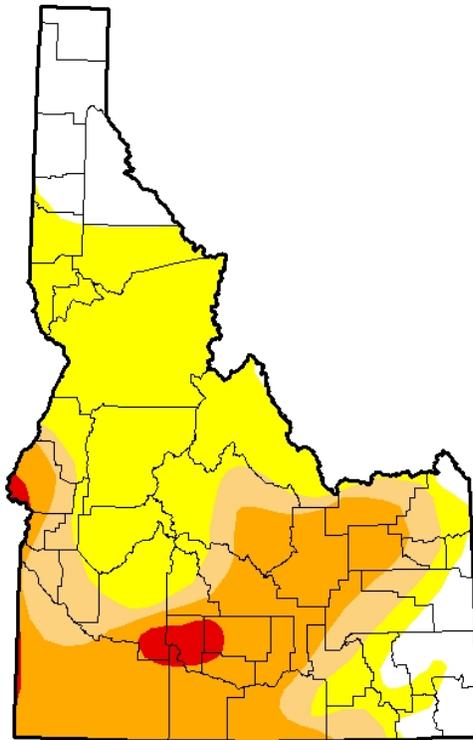
[waterwatch.usgs.gov/index.php?id=wwdrought\\_us](http://waterwatch.usgs.gov/index.php?id=wwdrought_us)

[waterwatch.usgs.gov/index.php?m=pa28d\\_dry&r=id&w=map](http://waterwatch.usgs.gov/index.php?m=pa28d_dry&r=id&w=map)

**Drought Information:**

**U.S. Drought Monitor  
Idaho**

**August 5, 2014**  
(Released Thursday, Aug. 7, 2014)  
Valid 8 a.m. EDT



*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	15.80	84.20	43.76	28.95	2.09	0.00
<b>Last Week</b> 7/29/2014	15.80	84.20	41.47	28.84	2.00	0.00
<b>3 Months Ago</b> 5/6/2014	48.16	51.84	38.47	27.16	1.74	0.00
<b>Start of Calendar Year</b> 12/31/2013	21.66	78.34	70.07	45.43	7.70	0.00
<b>Start of Water Year</b> 10/1/2013	12.06	87.94	76.96	43.33	5.09	0.00
<b>One Year Ago</b> 8/6/2013	2.36	97.64	94.01	51.52	7.28	0.00

Intensity:

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

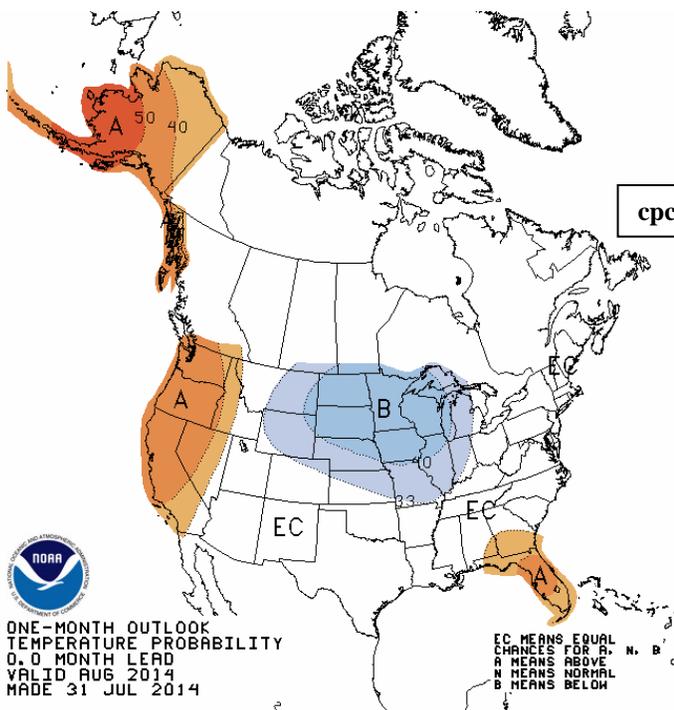
*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.*

**Author:**

Brad Rippey  
U.S. Department of Agriculture



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

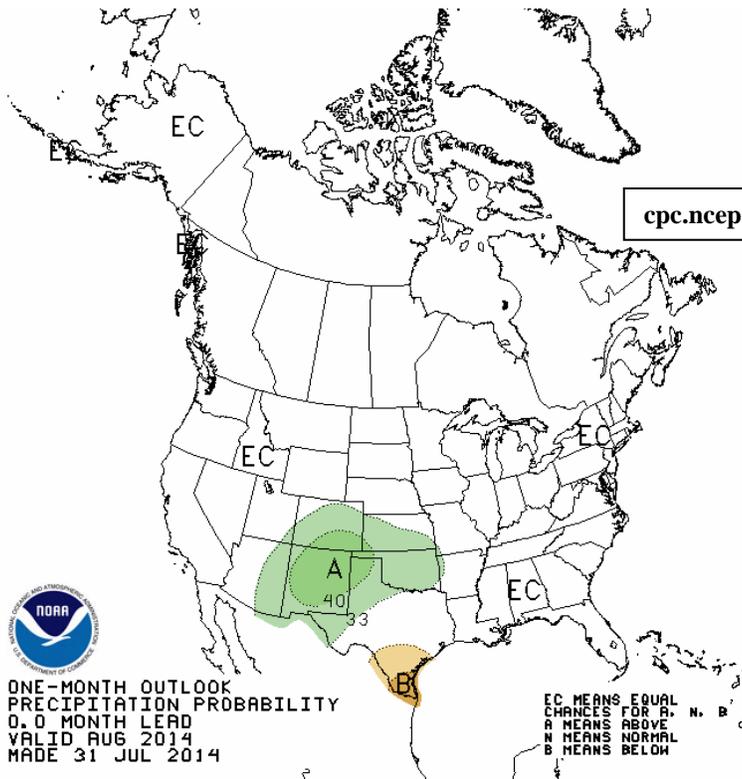


[cpc.ncep.noaa.gov/products/predictions/30day/off15\\_temp.gif](http://cpc.ncep.noaa.gov/products/predictions/30day/off15_temp.gif)



ONE-MONTH OUTLOOK  
TEMPERATURE PROBABILITY  
0.0 MONTH LEAD  
VALID AUG 2014  
MADE 31 JUL 2014

EC MEANS EQUAL  
CHANCES FOR A, N, B  
A MEANS ABOVE  
N MEANS NORMAL  
B MEANS BELOW



[cpc.ncep.noaa.gov/products/predictions/30day/off15\\_prpc.gif](http://cpc.ncep.noaa.gov/products/predictions/30day/off15_prpc.gif)

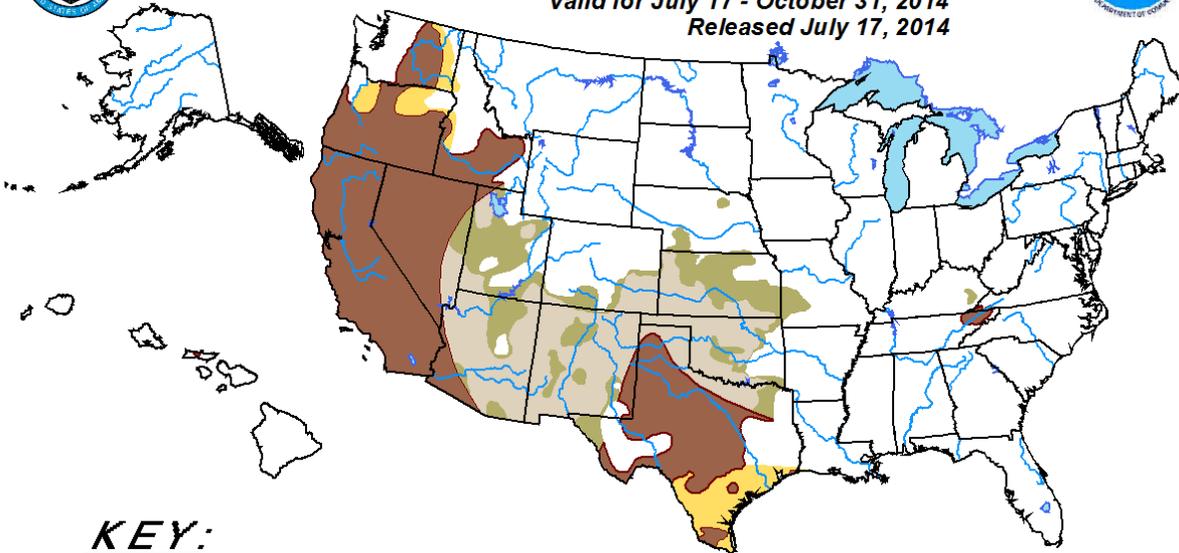


ONE-MONTH OUTLOOK  
PRECIPITATION PROBABILITY  
0, 0 MONTH LEAD  
VALID AUG 2014  
MADE 31 JUL 2014

## U.S. Seasonal Drought Outlook

### Drought Tendency During the Valid Period

Valid for July 17 - October 31, 2014  
Released July 17, 2014



### KEY:

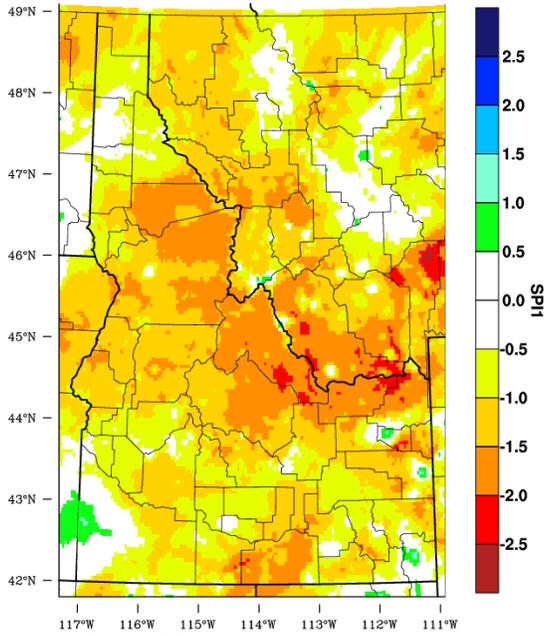
- Drought persists or intensifies
- Drought remains but improves
- Drought removal likely
- Drought development likely

Author: Adam Allgood, Climate Prediction Center, NOAA  
[http://www.cpc.ncep.noaa.gov/products/expert\\_assessment/season\\_drought.html](http://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.html)

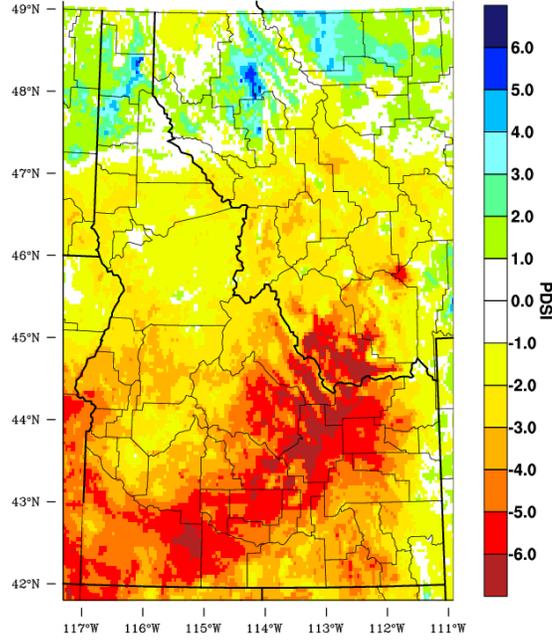
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- 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 tan area areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period although drought will remain. The Green areas imply drought removal by the end of the period (D0 or none)

[cpc.ncep.noaa.gov/products/expert\\_assessment/season\\_drought.png](http://cpc.ncep.noaa.gov/products/expert_assessment/season_drought.png)

**Idaho - 1 month SPI**  
July 2014



**Idaho - PDSI**  
July 2014



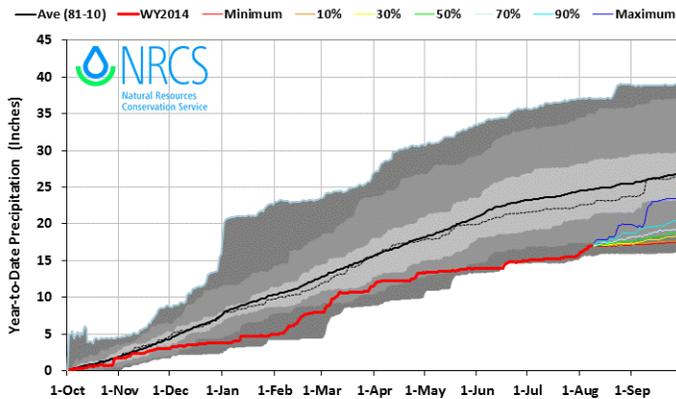
WestWide Drought Tracker - WRCC/UI Data Source - PRISM (Prelim), created 5 AUG 2014 WestWide Drought Tracker - WRCC/UI Data Source - PRISM (Prelim), created 5 AUG 2014

[wrcc.dri.edu/monitor/WWDT/index.php?region=id](http://wrcc.dri.edu/monitor/WWDT/index.php?region=id)

**Lack of Observed and Projected Precipitation in the Big Lost and Little Wood basins (Cont.):**

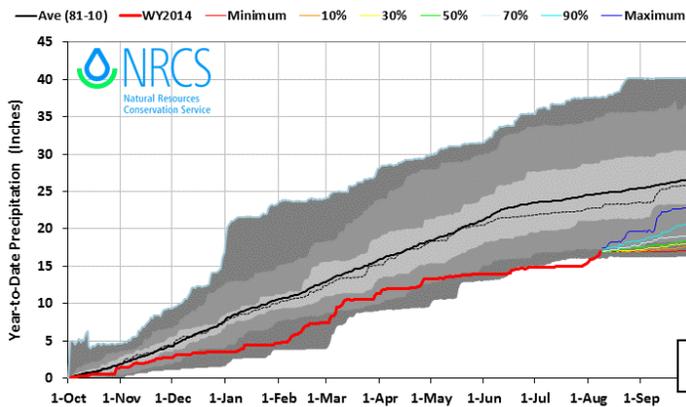
**Big Lost Basin 2014 Precipitation with Non-Exceedence Projections (5 sites)**

*Based on Provisional SNOTEL data as of Aug 08, 2014*



**Little Wood Basin 2014 Precipitation with Non-Exceedence Projections (5 sites)**

*Based on Provisional SNOTEL data as of Aug 08, 2014*



[nrcs.usda.gov/wps/portal/nrcs/detail/id/snow/?cid=stelprdb1241667](http://nrcs.usda.gov/wps/portal/nrcs/detail/id/snow/?cid=stelprdb1241667)

Record low water year to date precipitation levels:

**SNOTEL Water Year (Oct 1) to Date Precipitation Records**

Aug 08, 2014

**Water Year  
(Oct 1) to Date  
Precipitation  
Records**

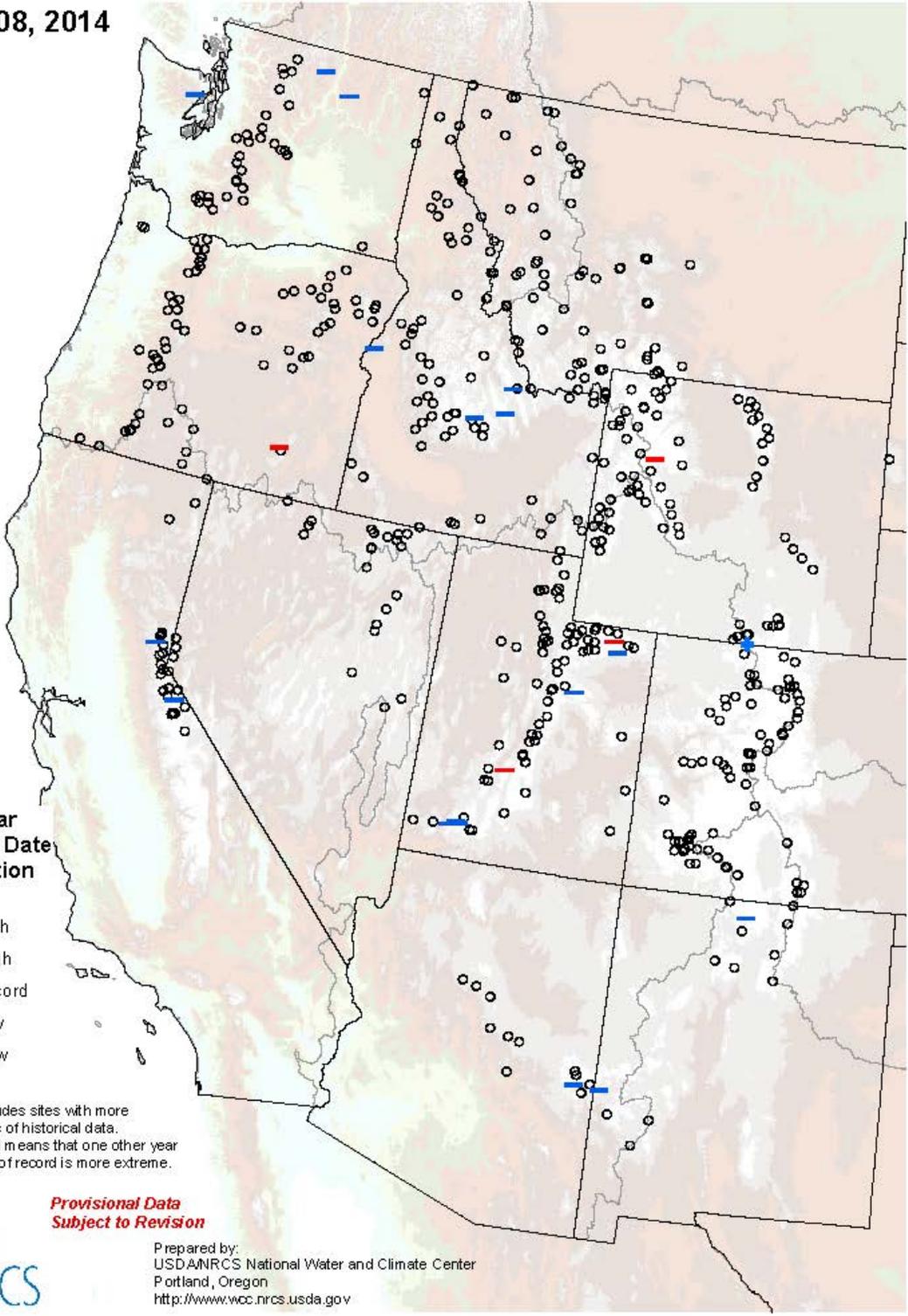
- + New High
- + Near High
- Non-Record
- New Low
- Near Low

Analysis includes sites with more than 20 years of historical data.  
"Near" record means that one other year of the period of record is more extreme.



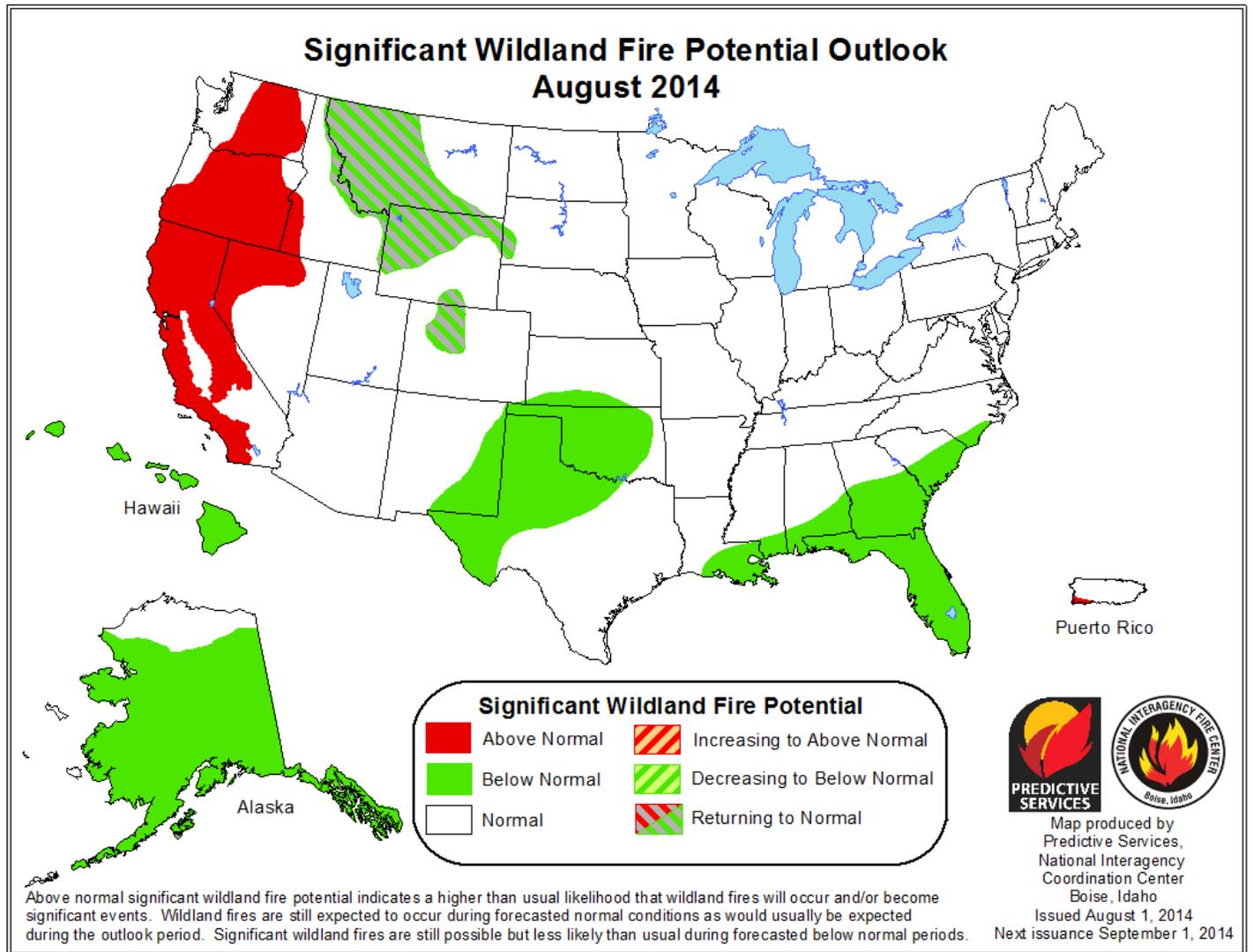
*Provisional Data  
Subject to Revision*

Prepared by:  
USDA/NRCS National Water and Climate Center  
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[wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/WestwideWYTDPrecipRecord.pdf](http://wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/WestwideWYTDPrecipRecord.pdf)

**Wildland Fire Outlook and Current Conditions:**



[predictiveservices.nifc.gov/outlooks/month1\\_outlook.png](http://predictiveservices.nifc.gov/outlooks/month1_outlook.png)

**Current (Active) Fires in HSA as of 8/8/14:**

None

**Sources:** [www.nifc.gov/nicc/sitreprt.pdf](http://www.nifc.gov/nicc/sitreprt.pdf) and [www.inciweb.nwccg.gov](http://www.inciweb.nwccg.gov)

**July 15<sup>th</sup> Rexburg Flash Flooding Photos:**



cc:  
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