NWS Form E-5 U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE **MONTHLY REPORT OF HYDROLOGIC CONDITIONS**	**HYDROLOGIC SERVICE AREA:** Pocatello, Idaho **REPORT FOR:** **MONTH:** September **YEAR:** 2013
TO: Hydrologic Operations Division, W/OH2 National Weather Service National Oceanic and Atmospheric Administration Silver Spring, Maryland 20910	**SIGNATURE** Corey Loveland Service Hydrologist **DATE:** October 15, 2013
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:

Note: Due to the partial shutdown of the federal government that began Oct 1 some information and graphics were not available and therefore not included in this report.

September brought in much needed moisture to the area along with the cooler fall temperatures. The moisture came as rainfall in the valleys (and lower mountain elevations) and snow in the very high elevations. The first snow of the season occurred about mid-month with about three separate systems near the end of the month dropping snow, the greatest 24-hr accumulation was about 7 inches at the Galena Summit SNOTEL at 8,782 ft. on September 26.

Overland flooding and debris flows did occur as a result of a heavy isolated slow moving entraining thunderstorm that affected the Bannock Creek valley on the Fort Hall reservation and the Mink Creek basin. Both areas had experienced fires in the past few years (Charlotte Fire near Mink Creek) which exacerbated the debris flows as vegetation and soils are still recovering. Unfortunately, no rain gages or COOP observers are/were available to know how much rain actually fell. The closest precipitation gage was the Wildhorse Divide SNOTEL site which recorded a 24-hr total of 1.2 inches on September 8th. In both occurrences, soils (at least the uppermost part) were saturated and overland (sheet) flooding occurred carrying burnt trees, large rocks and soil downhill. This event did cause a number of basements to flood and mud/debris to enter into houses and outbuildings in the Mink Creek area, but no significant property damage seemed to occur in the Bannock Creek area.

September brought an average of around two to five inches of precipitation within the Hydrologic Service Area (HSA) excluding the Snake River plain and parts of Oneida, Franklin and Bear Lake counties. As indicated in the below AHPS departure from and percent of normal graphic, September brought in much needed moisture and was a great way to begin the winter snow accumulation season. Most notable was the central mountains and the headwaters of the Portneuf River. The driest areas last month, in reference to normal, were Clark and Jefferson counties and also the Bear River basin and Oneida county. The temperature departure from normal for September was most notable in the upper Snake River plain where it was three to six degrees F above normal. The El Niño neutral pattern is forecast to continue through this winter and into the spring.

As far as the three-month Climate Prediction Center Outlook is concerned, we stand to have about a 33% chance of having higher than normal temperatures and an equal chance to 33% chance of receiving normal amount of precipitation in eastern Idaho.

Of the data available for the month, the HSA station reaching the highest 24-hour temperature was Minidoka Dam COOP on the 3rd which reached a hot 97°F. The station with the lowest recorded temperature (non-SNOTEL) was the Copper Basin RAWS station at 17°F on September 20th. The highest recorded precipitation occurred at the Idaho Falls 16 SE COOP station where 1.95 inches fell on the 3rd.

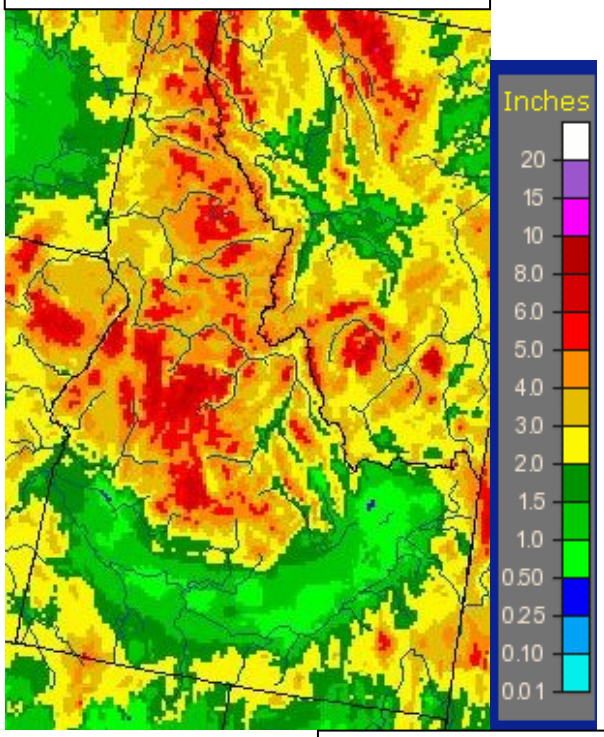
Reservoirs last month decreased capacity overall by around 3% in the upper Snake River basin system (a decrease of about 107 KAF occurred over the month and is currently sitting at 11% of capacity overall). Compared to last year at this time, it was about 25% of capacity. Water storage at the end of this growing season is of great concern, even critical status. Reservoirs have nearly been emptied and will have little to no carryover for next year's irrigation demands. Most notable decreases were Lake Walcott dropping 54%, Jackson Lake 14%, and Ririe falling 11% of capacity according to the US Bureau of Reclamation. NRCS reservoir data was not available this month due to the government shutdown. Reclamation is beginning to store water in the reservoirs this month, particularly in American Falls.

Current streamflow conditions in eastern Idaho are currently near normal for the majority of the unregulated streams (see map below).

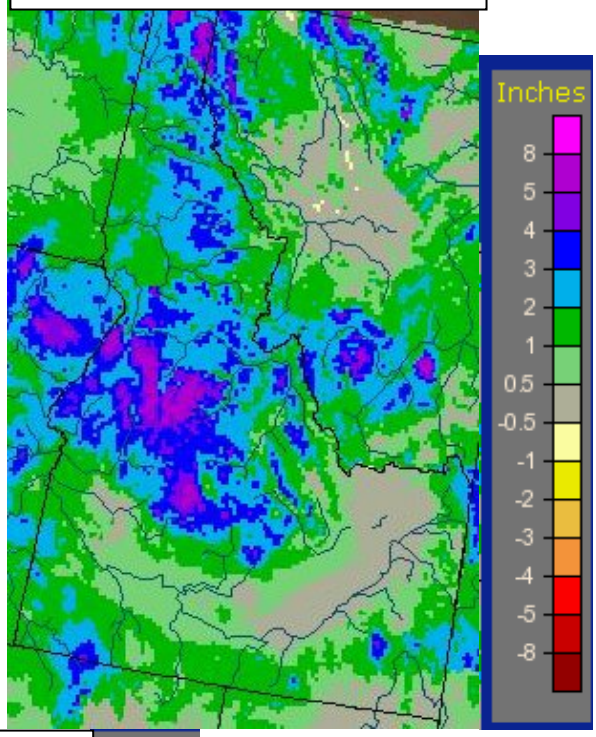
Even though we received much needed precipitation last month, drought conditions continue within the HSA. The state has improved by about 19% in the no drought status (panhandle) as well as 19% in the abnormally dry conditions (D0) status since last month. The moderate drought (D1) intensity has decreased by about 24% and the state has decreased by 21% in the severe (D2) category since last month and Cassia county has worsened further into the D2 category. Around 5% of the state (extreme SW Idaho) remains in the extreme drought (D3) category. The U.S. Seasonal Drought Outlook forecasts a persistence or intensification of drought conditions throughout all of southern Idaho. Looking at the long-term climate forecast, it appears the trend of warmer and slightly drier than normal conditions may subside with some slight chance of better than normal precipitation (at least in the central mountains) may occur. Since last month's report, no additional State drought emergencies have been declared (a total of 16 counties have current drought declarations within the HSA).

Precipitation:

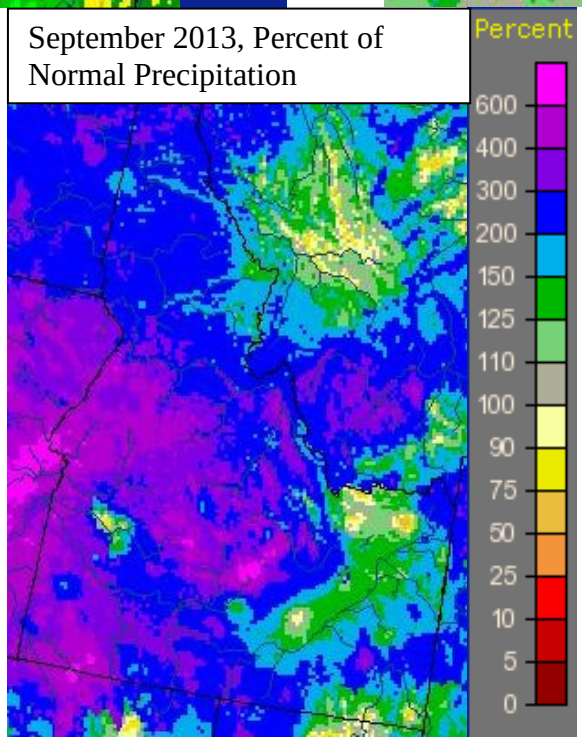
September 2013, Observed Precipitation



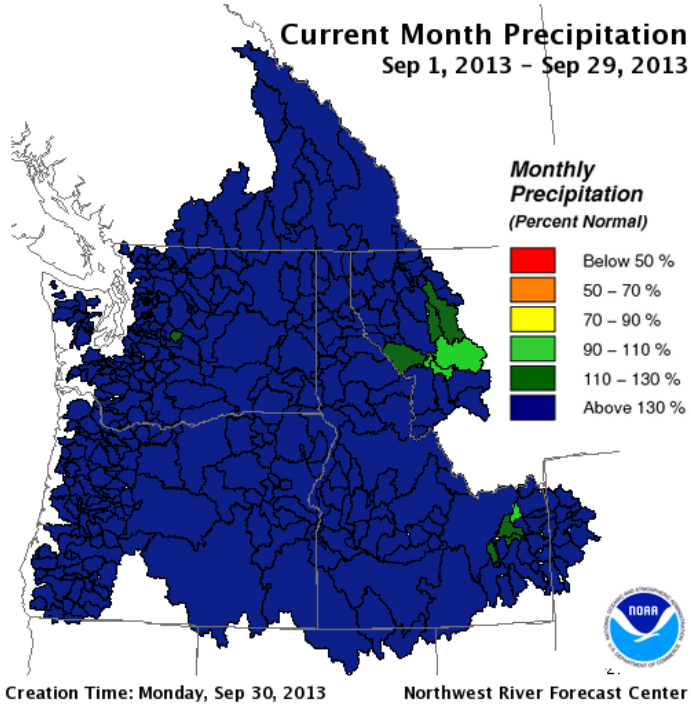
September 2013, Departure from Normal Precipitation



September 2013, Percent of Normal Precipitation



www.water.weather.gov/precip/index.php



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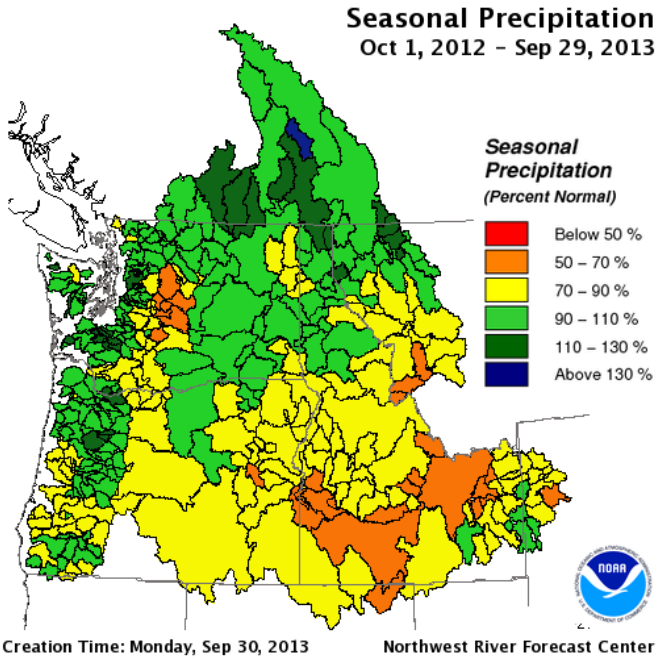

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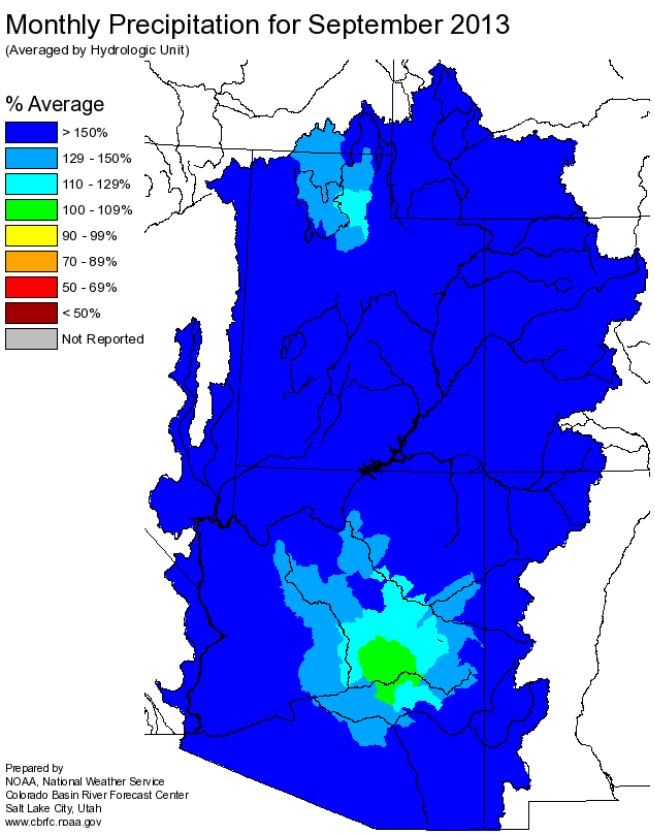

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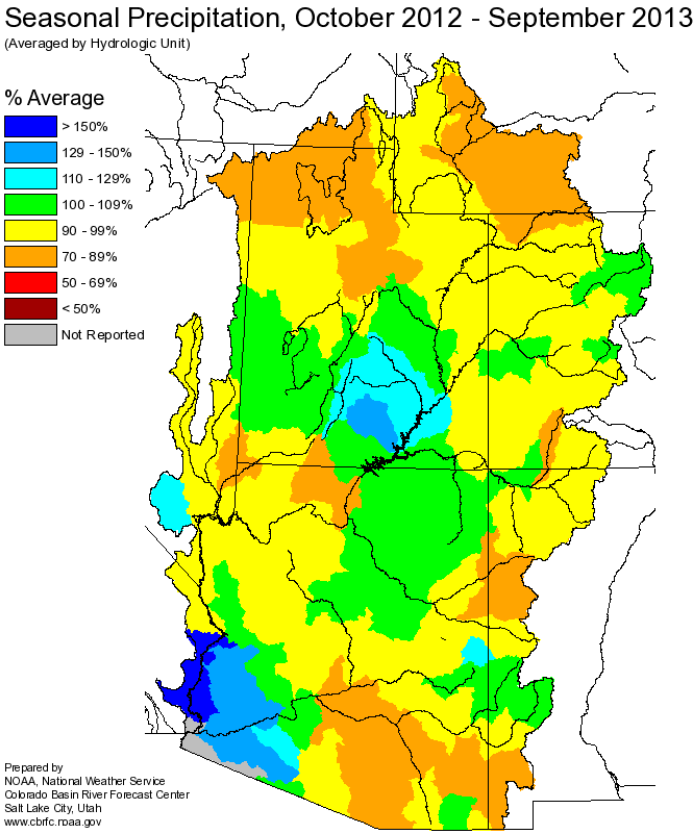

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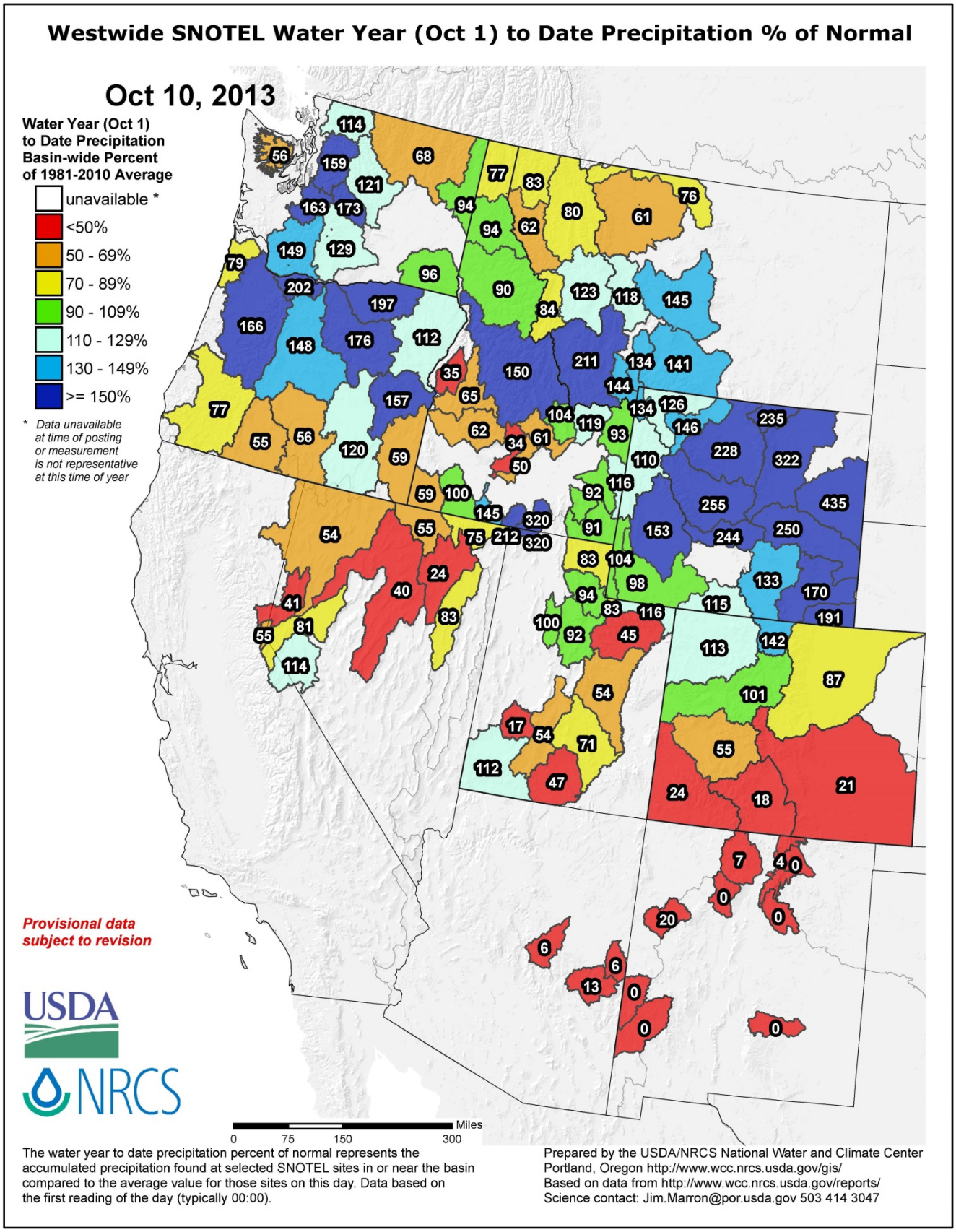

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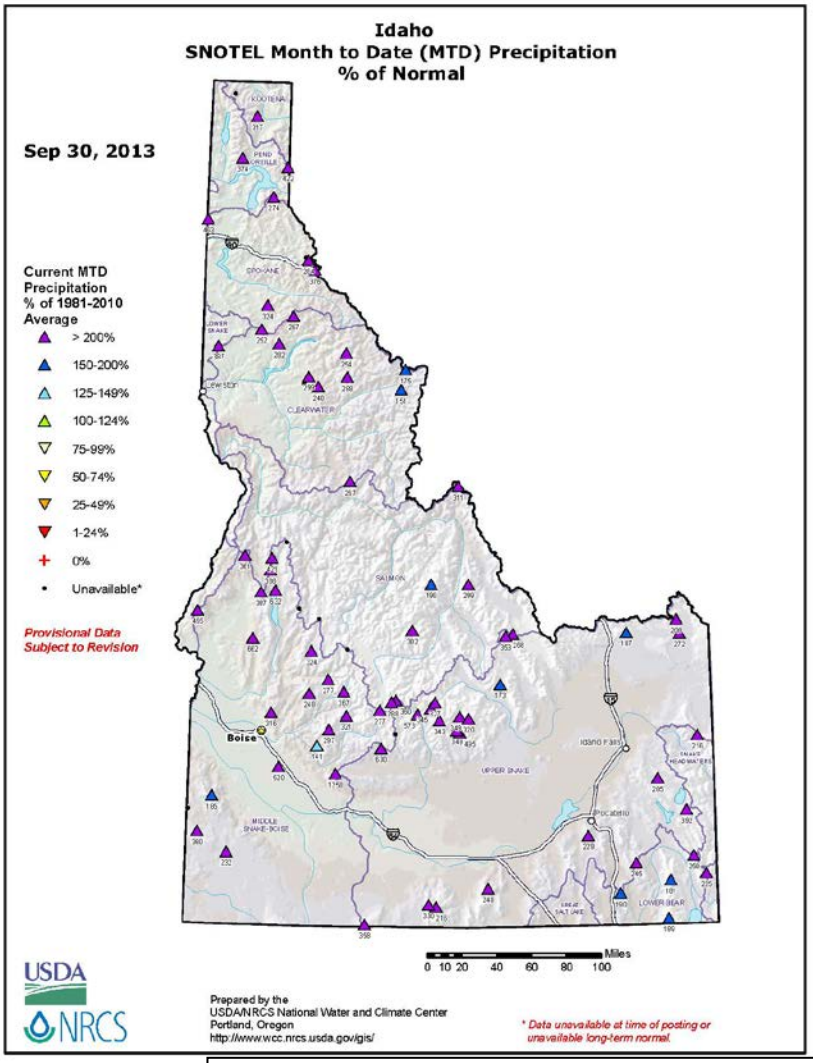

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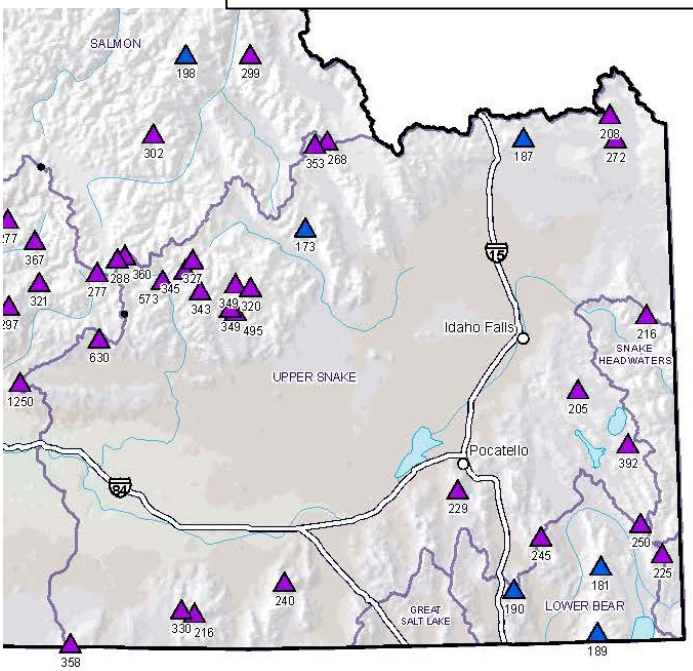
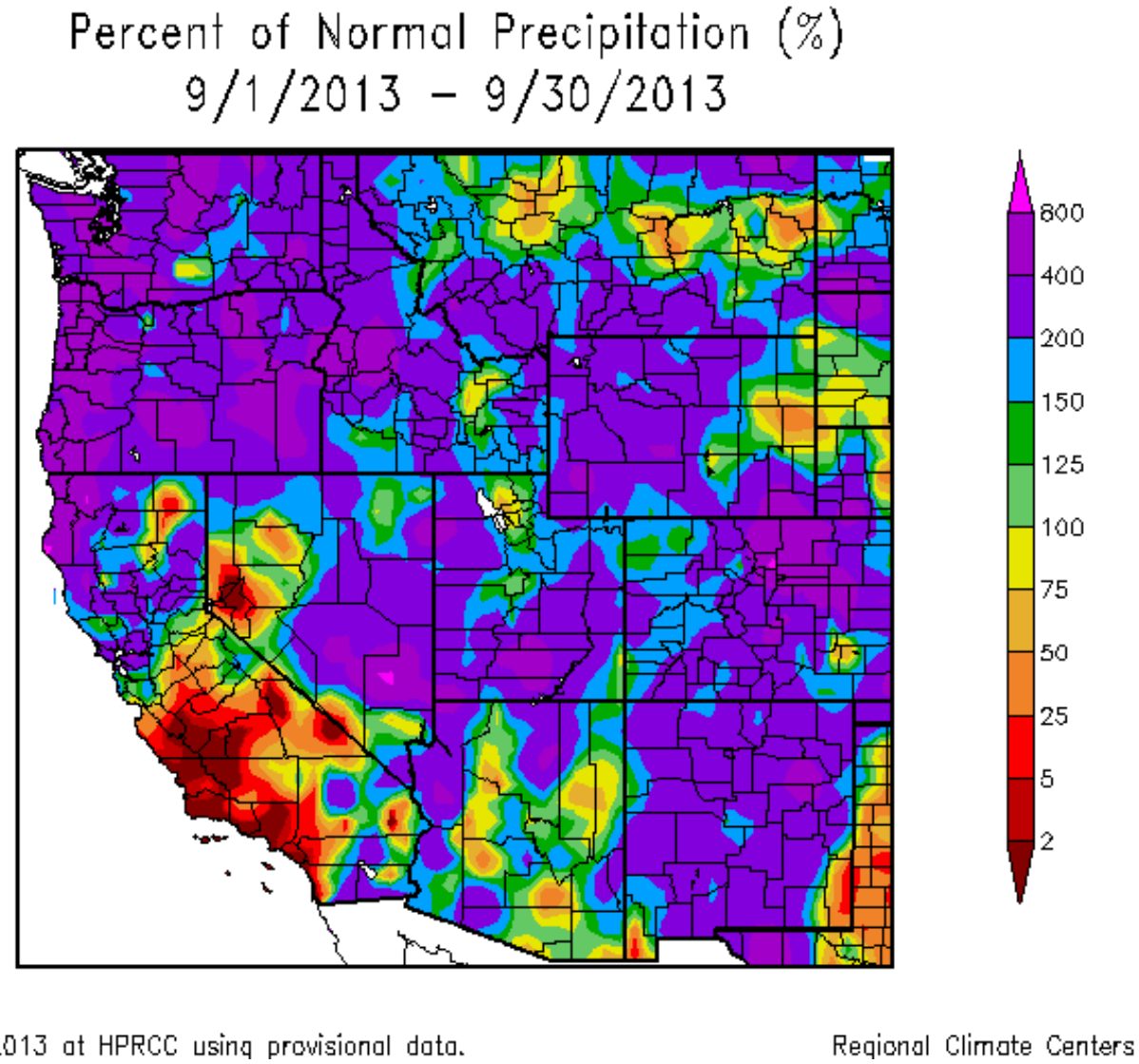


SNOTEL MTD % of Normal Precipitation for end of September 2013
(image is cropped from above image)

Note: The ENSO Neutral climate pattern is forecast to continue through this winter and into spring of 2014 (see below graphic on page 8). The MJO is currently weak with a forecast of becoming more active in the western region in the next few weeks.

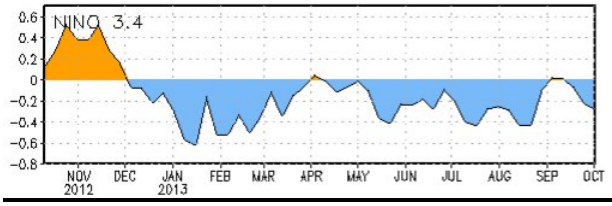
As shown below, September brought much needed precipitation over the greater part of the western U.S. The majority of eastern Idaho was above normal. The greater part of Butte and parts of Jefferson and Clark counties were the exception to receiving the precipitation. Most notable "wet" areas are the upper Henrys Fork, Big Wood and the Blackfoot River drainages. Note the dry conditions in Southern CA and western NV last month.



www.hprcc.unl.edu/maps/current/index.php?action=update_type&map_type=

ENSO Update:

Latest Observed SST Departure: Niño 3.4 ~ -0.3 Deg C



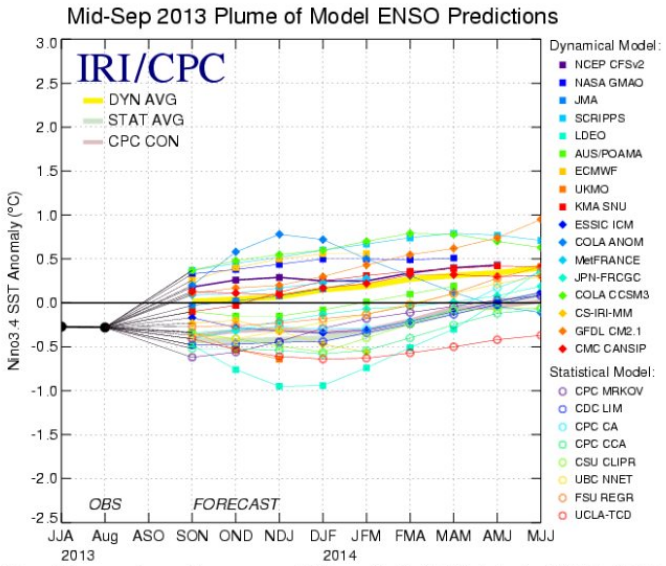


Figure 6. Forecasts of sea surface temperature (SST) anomalies for the Niño 3.4 region (5°N-5°S, 120°W-170°W). Figure updated 18 September 2013.

cpc.ncep.noaa.gov, iri.columbia.edu/climate/ENSO and www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.pdf

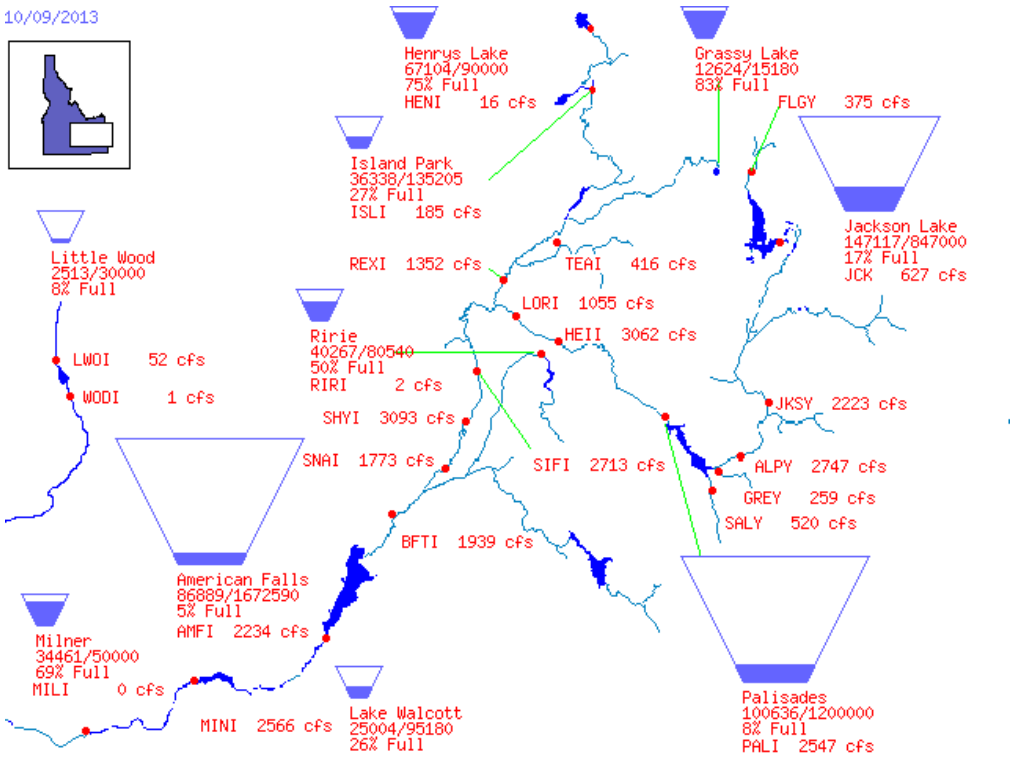
CPC Synopsis: ENSO-Neutral conditions favored for Spring 2014

Reservoirs:

Reservoir	% Capacity August 31[1]	% Capacity Sept. 30[2]	Percent Change	% of Average[2]	% of Last Year[2]
Henry's Lake	75	n/a	n/a	n/a	n/a
Island Park	34	n/a	n/a	n/a	n/a
Jackson Lake	38	n/a	n/a	n/a	n/a
Palisades	20	n/a	n/a	n/a	n/a
Ririe	68	n/a	n/a	n/a	n/a
Blackfoot	42	n/a	n/a	n/a	n/a
American Falls	6	n/a	n/a	n/a	n/a
Bear Lake	49	n/a	n/a	n/a	n/a
Magic	5	n/a	n/a	n/a	n/a
Little Wood	3	n/a	n/a	n/a	n/a
Mackay	14	n/a	n/a	n/a	n/a
Oakley	13	n/a	n/a	n/a	n/a
Lake Walcott	80[3]	26[4]	-54	n/a	n/a
Milner	71[3]	69[4]	-2	n/a	n/a

Source: (1) NRCS August 31, 2013; (2) NRCS September 30, 2013 (data not available).
(3) US Bureau of Reclamation (BOR) September 10, 2013 (4) BOR October 9, 2013

www.wcc.nrcs.usda.gov/ftpref/data/water/basin_reports/idaho/wy2013/bareid9.txt

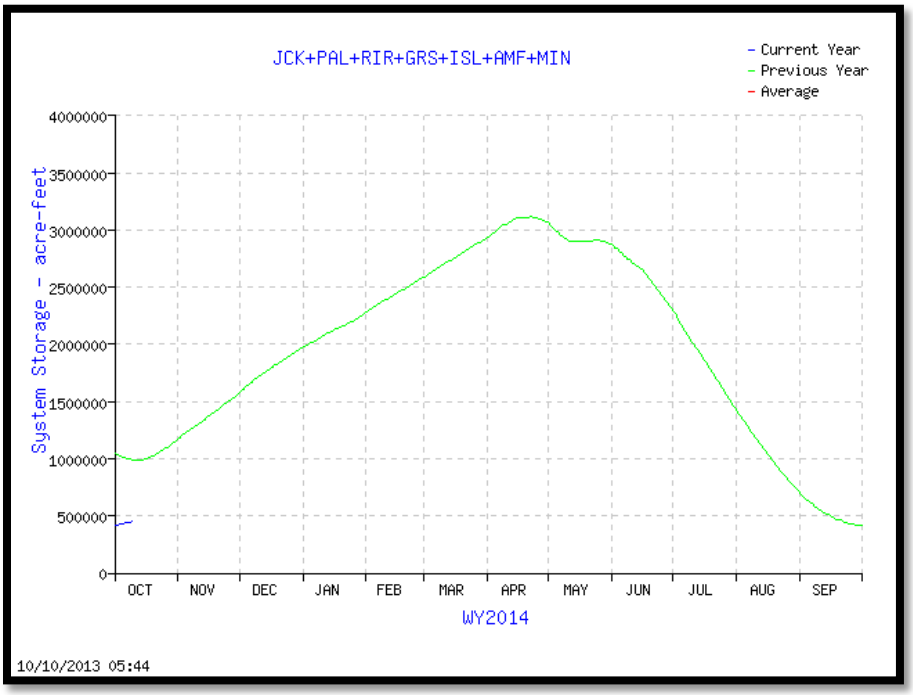


11% of Capacity in Upper Snake River System
(Jackson Lake, Palisades, Grassy Lake, Island Park, Ririe, American Falls & Lake Walcott)

www.usbr.gov/pn/hydromet/burtea.html

Upper Snake River:
Total Space Available: 3,596,817 AF
Total Storage Capacity: 4,045,695 AF

Graph of Upper Snake River Current Total System Reservoir Storage



www.usbr.gov/pn-bin/graphwy2.pl?snasys_af

Bear River Basin Current Reservoir Conditions:

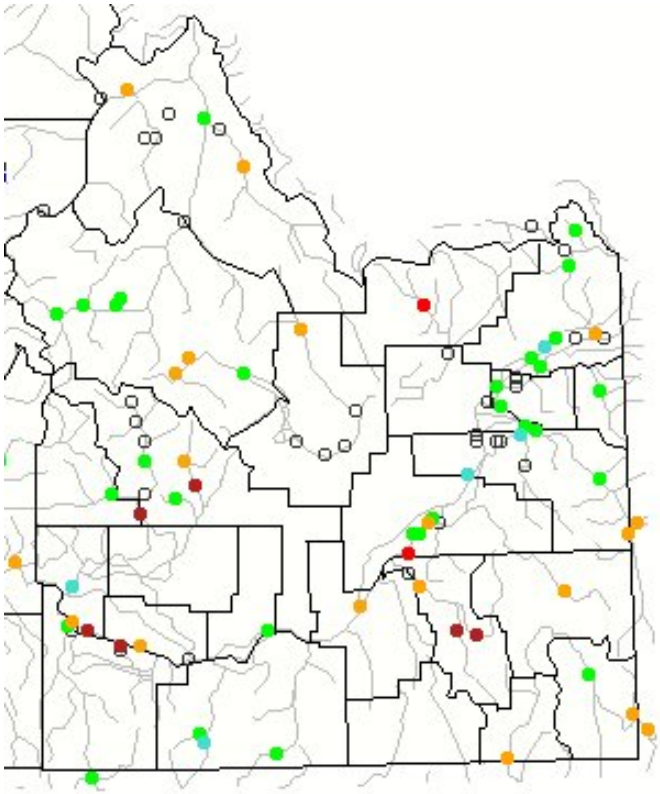
Dam Level Condition

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	BLKI1	Bear River - Bear Lake, Nr Lifton		5912.5	10/9 06:00	5912.5	10/14 11:00				

www.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 September 2013.

USGS

waterwatch.usgs.gov/?m=mv01d&r=id&w=map

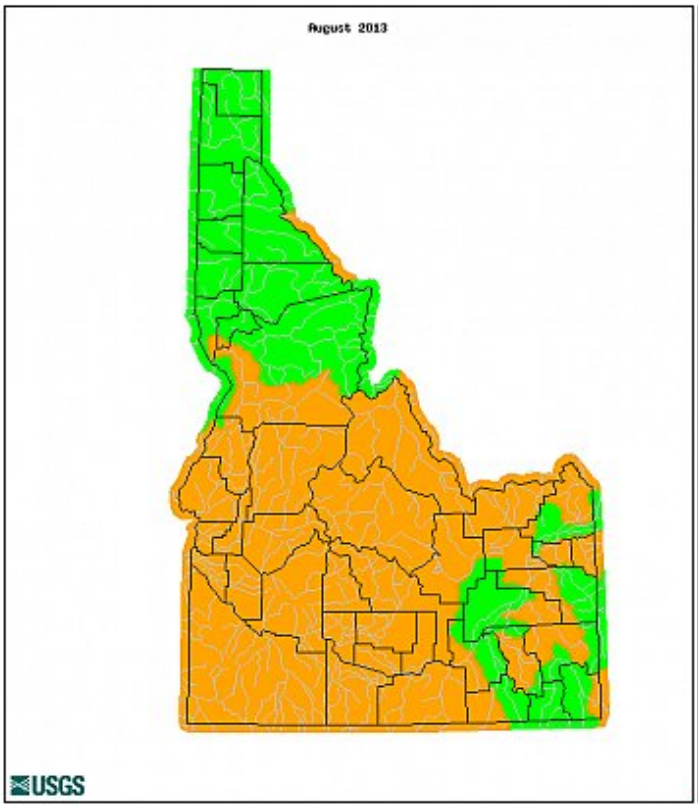
Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

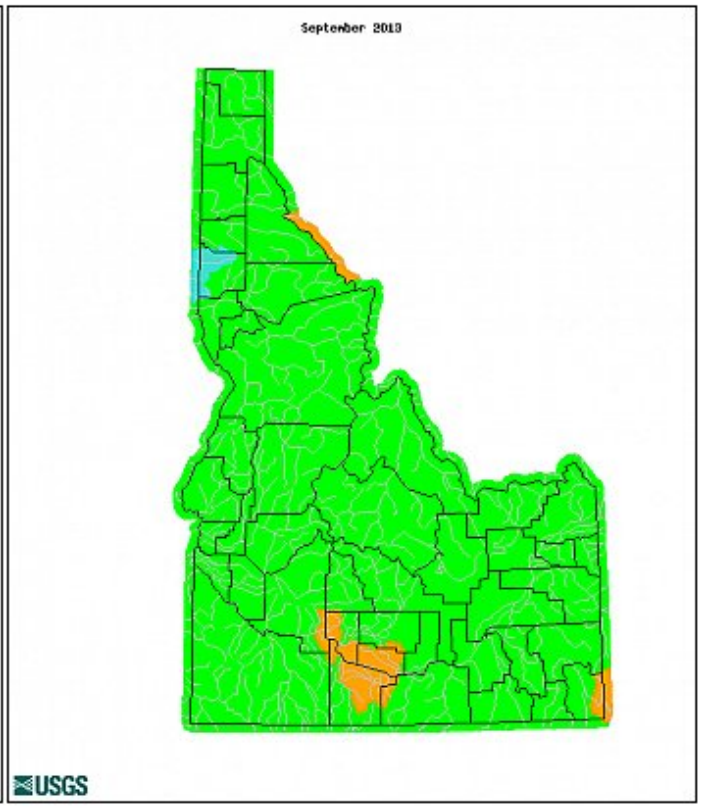
Historic Streamflow Comparison, August 2013 and September 2013:

Comparison of Monthly Streamflow Maps

Geographic Area: Idaho | Water Resource Region: | Map Type: HUC | GO

Date (YYYYMM): 201308 Date (YYYYMM): 201309





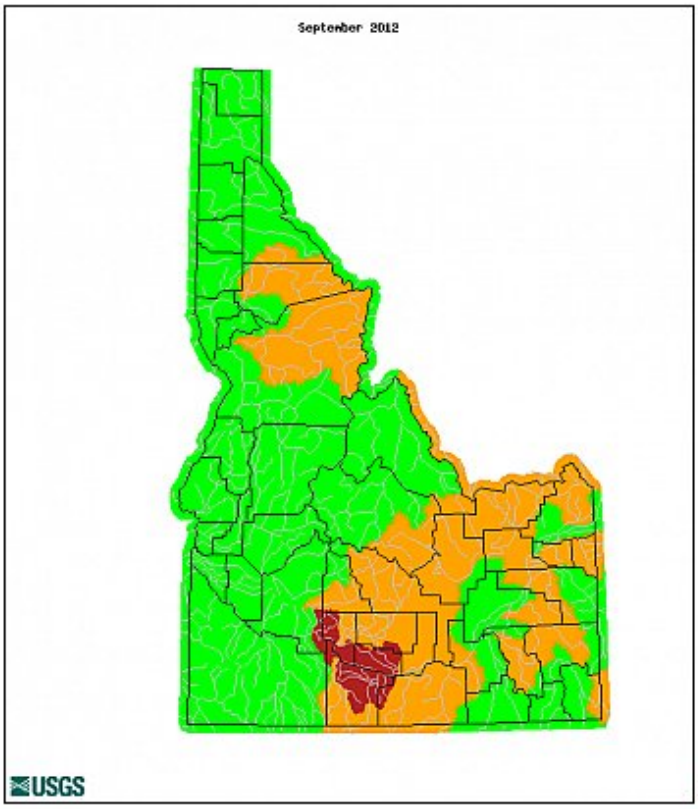
Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

Historic Streamflow Comparison, September 2012 and September 2013:

Comparison of Monthly Streamflow Maps

Geographic Area: Idaho | Water Resource Region: | Map Type: HUC | GO

Date (YYYYMM): 201209



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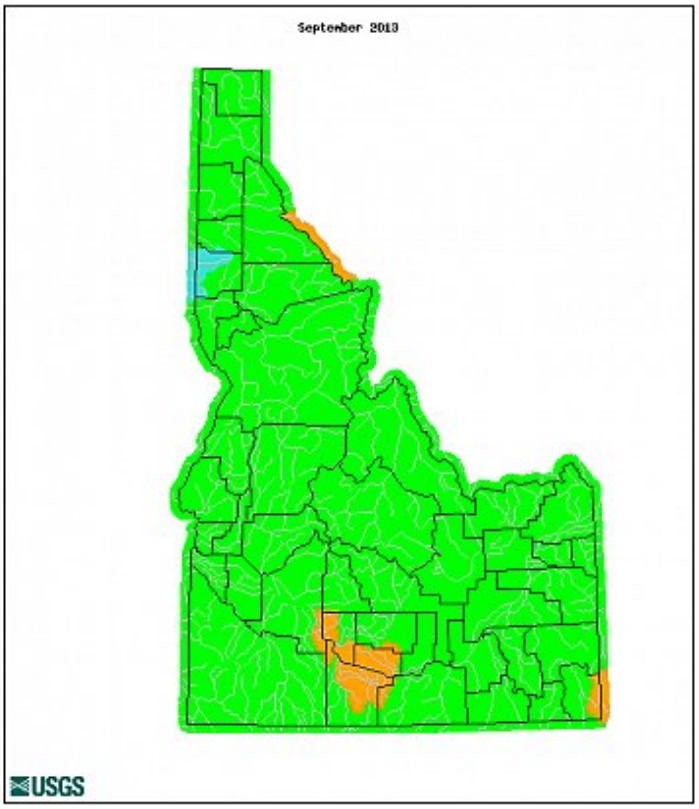
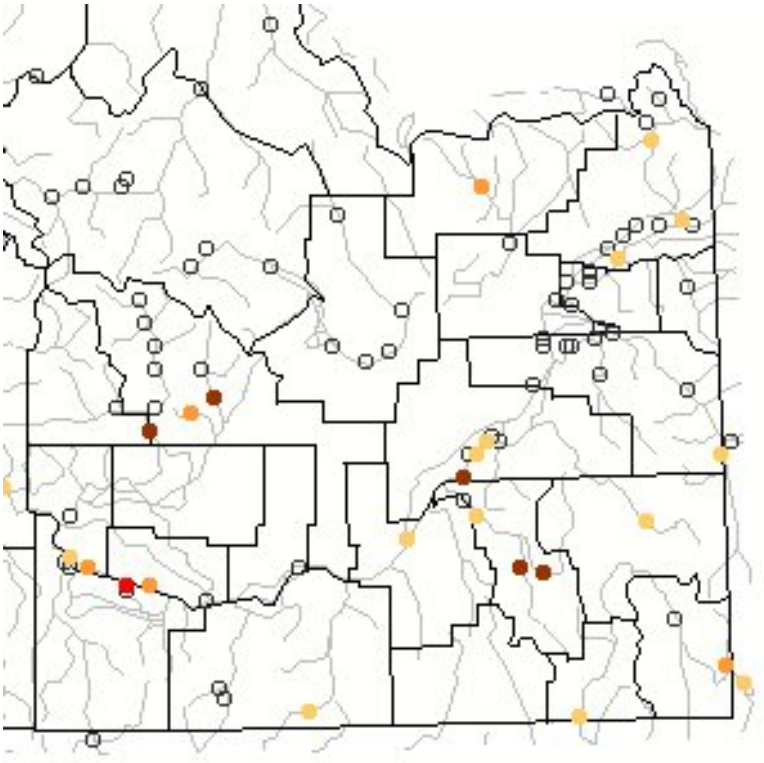


Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

waterwatch.usgs.gov/index.php

Below Normal 28-Day average streamflow as of September 11, 2013 (see graphic below):

Portneuf River at Topaz, 60 cfs, 4th percentile,
Marsh Crk nr McCammon, 35 cfs, 3rd percentile,
Spring Crk at Sheepskin Rd nr Fort Hall, 261 cfs, 4th percentile,
Little Wood River nr Carey, 7 cfs, 2nd percentile,
Big Wood River blo Magic Dam, 2 cfs, 2nd percentile



USGS

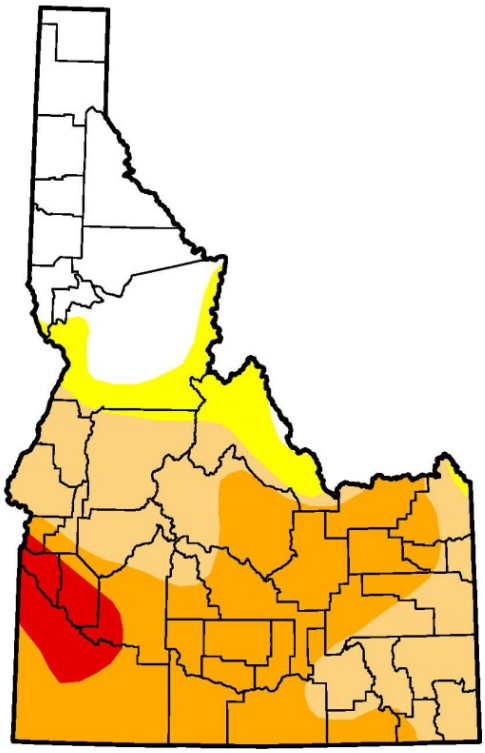
Choose a data retrieval option and select a location on the map
List of all stations Single station Nearest stations

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?m=pa28d_dry&r=id&w=map

Drought Information:

U.S. Drought Monitor
Idaho



October 8, 2013
(Released Thursday, Oct. 10, 2013)
Valid 7 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	21.60	78.40	70.17	41.87	5.09	0.00
Last Week 10/1/2013	12.06	87.94	76.96	43.33	5.09	0.00
3 Months Ago 7/9/2013	4.49	95.51	84.46	17.51	0.00	0.00
Start of Calendar Year 1/1/2013	45.29	54.71	47.63	0.52	0.00	0.00
Start of Water Year 10/1/2013	12.06	87.94	76.96	43.33	5.09	0.00
One Year Ago 10/9/2012	15.74	84.26	65.65	0.95	0.00	0.00

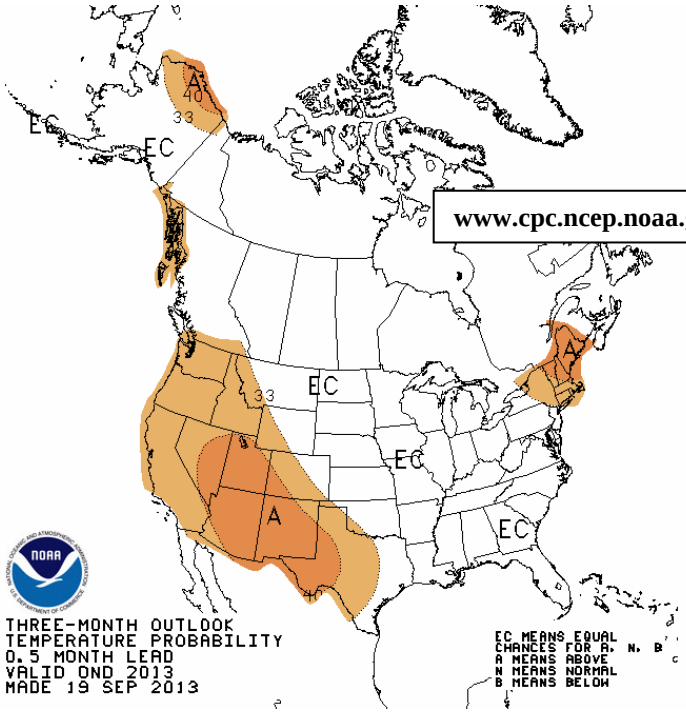
Intensity:

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

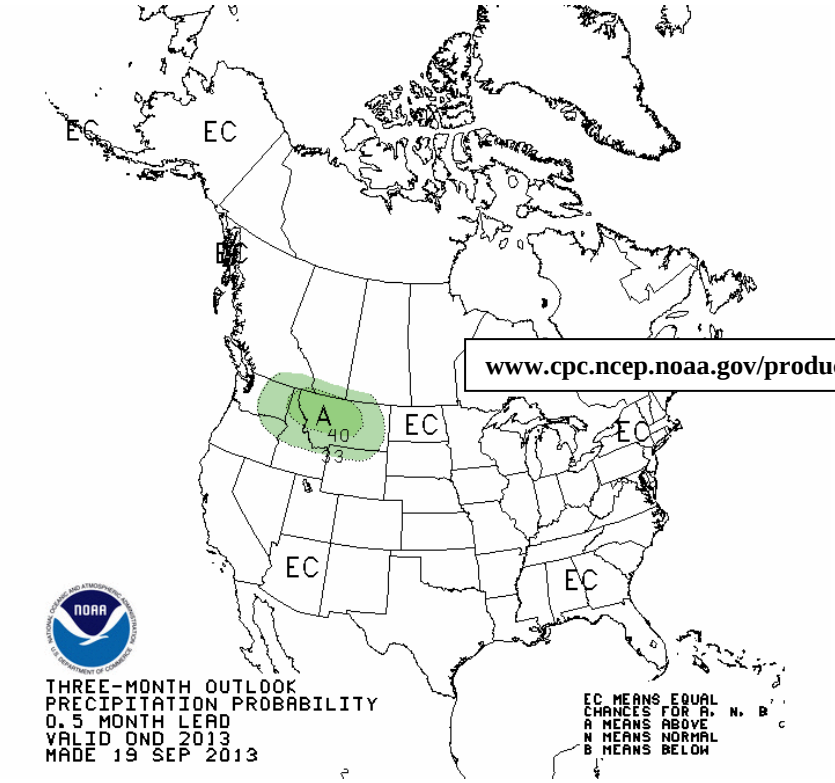
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Richard Tinker
CPC/NOAA/NWS/NCEP

http://droughtmonitor.unl.edu/



www.cpc.ncep.noaa.gov/products/predictions/long_range/lead01/off01_temp.gif



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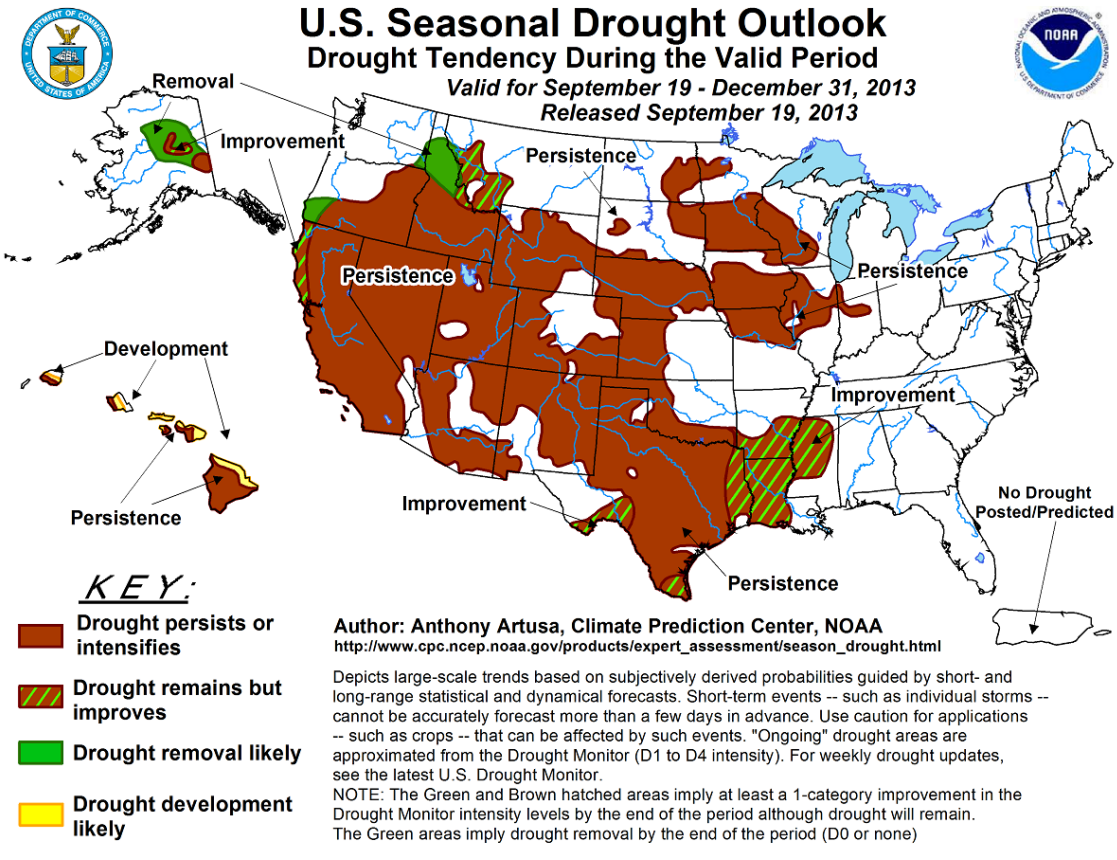

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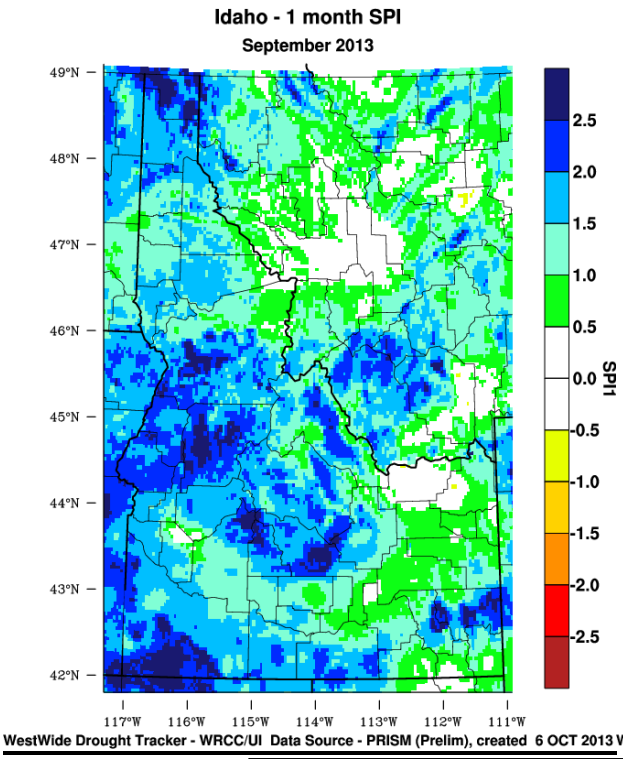

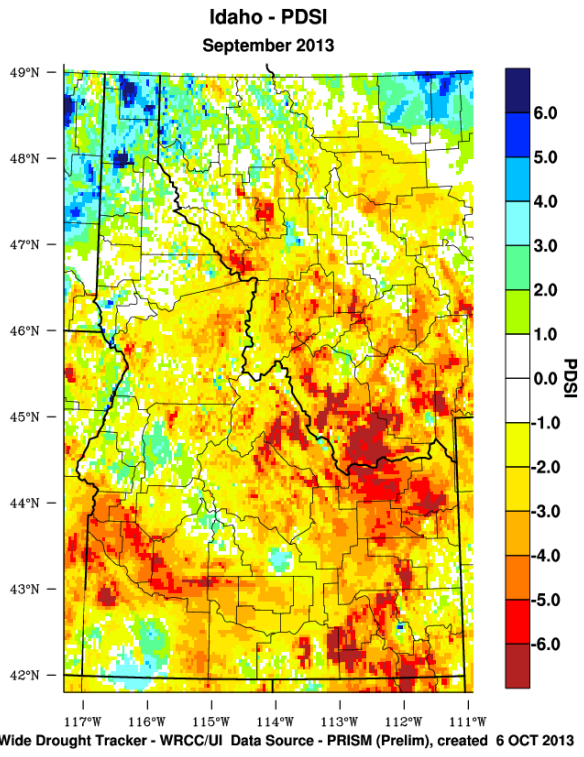

www.wrcc.dri.edu/monitor/WWDT/index.php?region=id

cc:

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