

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: August 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: September 12, 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:

The month of August showed some extreme weather, the prolonged dry conditions made the forests ripe for fires to start and continue to burn. Passing thunderstorms caused many wildfires as lightning to ground strikes ignited many fires. Soils and vegetation were very dry. One of these thunderstorms caused flooding in the Pocatello/Chubbuck area on August 23rd as the Pocatello City precipitation gage read 2.16 inches and a Chubbuck CoCoRaHS station recorded 2.08 inches for the storm event that lasted a few hours. This event caused streets and basements to flood and road closures throughout the city. The Portneuf River at Pocatello rose about 2 feet in 2 hours (2 feet under action stage) from the event. For the month, the Pocatello City gage collected 2.60 inches total for the month, which was also the highest amount within the HSA. Damages to roads and structures did occur from this event.

August brought an average of around three quarters of an inch total of rain within the Hydrologic Service Area (HSA) excluding the Snake River plain. August did not bring such a departure from normal for maximum temperatures as last month did. The AHPS departure from normal precipitation map below shows we are about a half an inch to an inch in deficit with the majority of eastern Idaho receiving 25-50% of normal precipitation with the exception of Lemhi, Bannock and Cassia counties which were above normal. The counties fairing the worst (near the 5 to 25% of normal range) were Fremont and Bear Lake counties. The El Niño neutral pattern is forecast to continue through this winter.

As far as the one-month Climate Prediction Center Outlook is concerned, we stand to have about a 50% chance of having higher than normal temperatures and an equal chance of normal precipitation in eastern Idaho; most likely driven by the El Niño neutral pattern.

Of the data available for the month, there were two stations reaching the highest 24-hour temperature; Rock Lake and Raft River on the 15th. Both stations reached a hot 103°F. The station with the lowest recorded temperature (non-SNOTEL) was the Stanley station at 26°F on August 31st.

Reservoirs last month decreased capacity overall by around 19% in the upper Snake River basin system (a decrease of about 770 KAF occurred over the month and is currently sitting at 14% of capacity overall). Compared to last year at this time, it was about 32% of capacity. Water storage at the end of the growing season is of great concern. Reservoirs are being emptied and will have little to no carryover for next year. Most notable

changes were the Little Wood and the Jackson Lake reservoirs decreasing 25% and 23% of capacity respectively. They are currently at 9 and 60 percent of average capacity, respectively, according to NRCS data. The Mackay reservoir and Island Park reservoirs dropped 21 and 15% capacity last month, respectively. The current forecast from the US Bureau of Reclamation shows drawing down the American Falls reservoir to around 6%, the Palisades reservoir to around 3%, Jackson Lake to 17%, Lake Walcott to 42% and Milner to 72% capacities by October 1. Indeed, very dismal conditions continue for water supply storage.

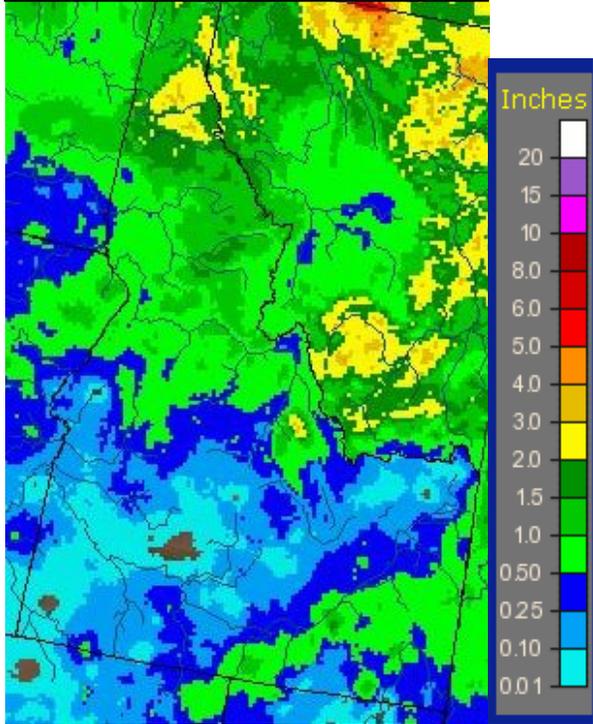
Current streamflow conditions in eastern Idaho are currently below normal for the majority of the unregulated streams (see map below).

Continuing the trend of seasonal below normal precipitation and above normal temperatures, drought conditions continued over the past month. The state has remained unchanged at 97% in at least the abnormally dry conditions status since last month. The moderate drought (D1) intensity has increased slightly by less than 1% and the state has increased by 11% in the severe (D2) category since last month. Around 11% of the state (extreme SW Idaho) remains in the extreme drought (D3) category. The U.S. Seasonal Drought Outlook continues to forecast a persistence or intensification of drought conditions throughout almost all of Idaho (with the exception of the extreme northeast tip of the state in the Henrys Fork headwaters and the panhandle, which is not included in the assessment. Looking at the long-term climate forecast, it appears the trend of warmer and slightly drier than normal conditions should persist at least for the next month or so. 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).

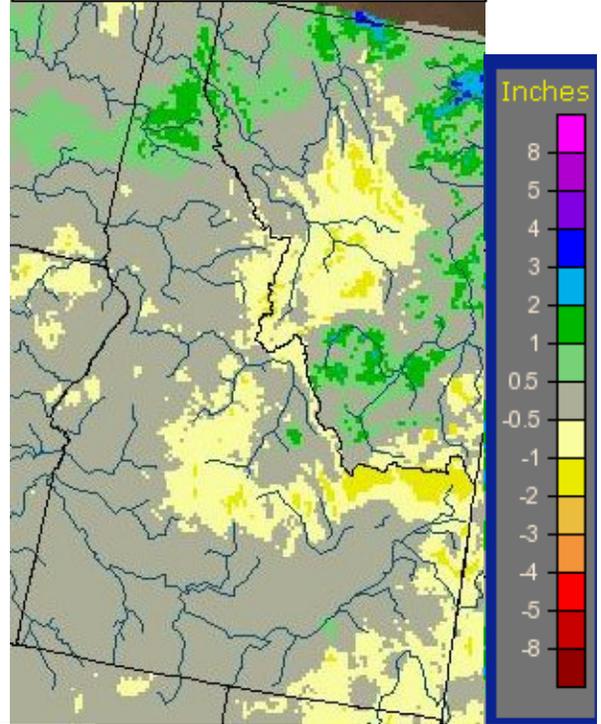
Again, this past month has resulted in many active wildfires resulting from the extremely dry vegetative conditions. All wildfires are currently contained within the HSA. This has been due to thunderstorm activity that has brought lower temperatures and wetter conditions. These storms have caused many debris slides to occur on the burn scars and laden streams with ash and other debris from the burned upslopes, especially on the Beaver Creek Fire near Hailey. See photos below.

Precipitation:

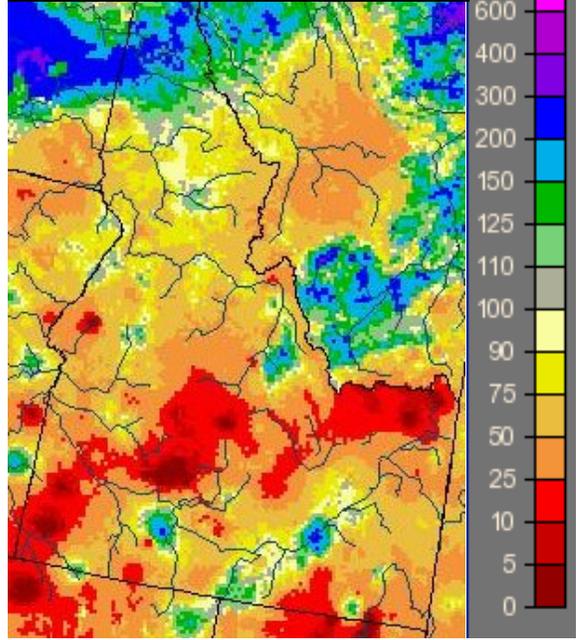
August 2013, Observed Precipitation



August 2013, Departure from Normal Precipitation

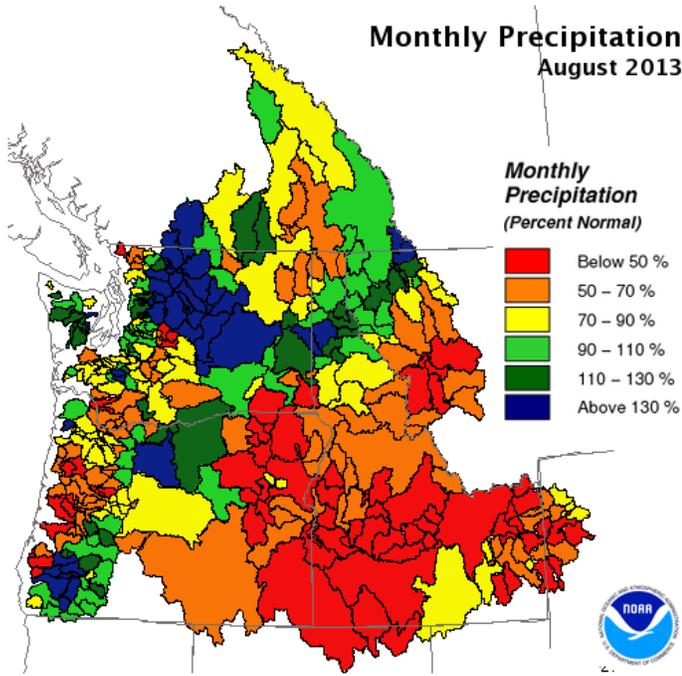


August 2013, Percent of Normal Precipitation



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

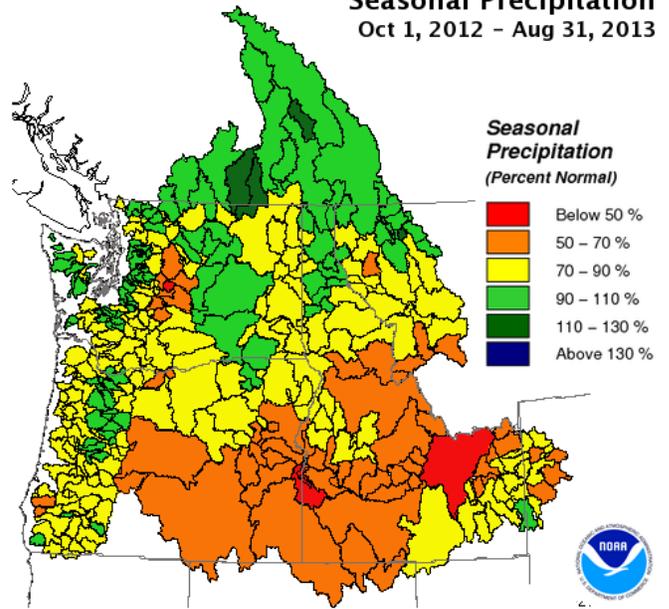
Monthly Precipitation August 2013



Creation Time: Wednesday, Sep 11, 2013 Northwest River Forecast Center

www.nwrfc.noaa.gov/WAT_RES_wy_summary/20130911/MonthMAP_2013Aug_2013091118.png

Seasonal Precipitation Oct 1, 2012 - Aug 31, 2013



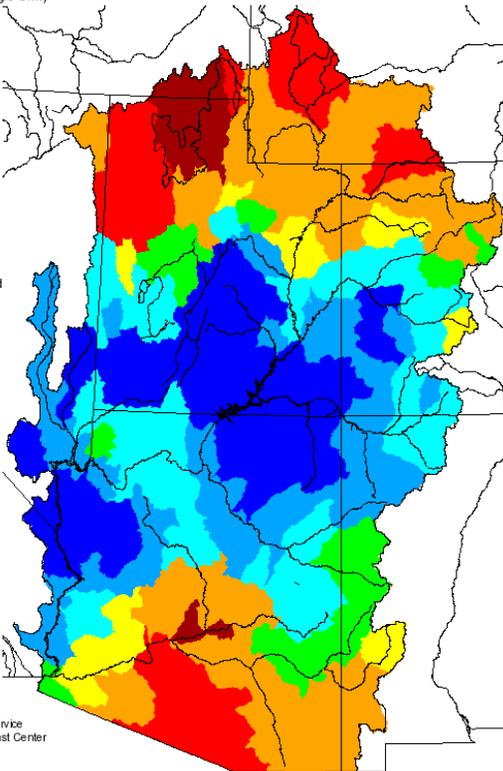
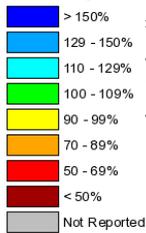
Creation Time: Sunday, Sep 1, 2013 Northwest River Forecast Center

www.nwrfc.noaa.gov/WAT_RES_wy_summary/20130911/SeasonalMAP_WY2013_OCT_AUG.2013091118.png

Monthly Precipitation for August 2013

(Averaged by Hydrologic Unit)

% Average



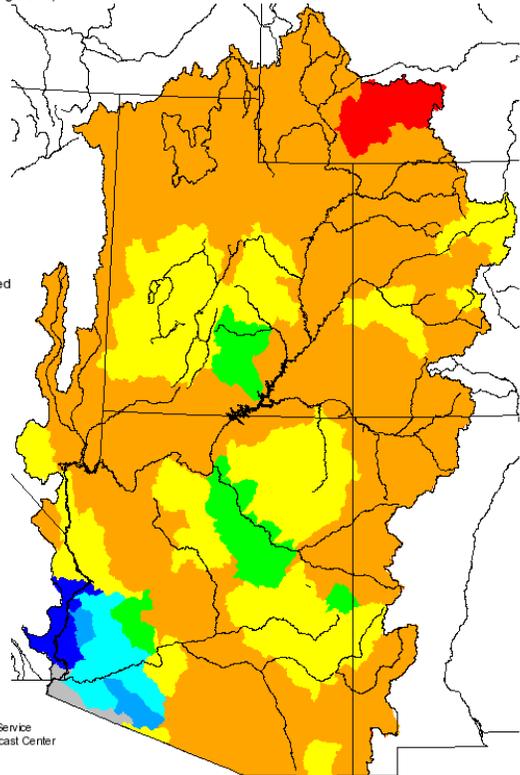
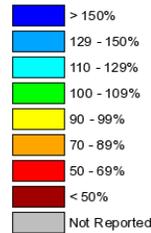
Prepared by
NOAA, National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah
www.cbrfc.noaa.gov

www.cbrfc.noaa.gov/product/mapsum/mapsum.cgi??cbrfc?M?2013?08

Seasonal Precipitation, October 2012 - August 2013

(Averaged by Hydrologic Unit)

% Average



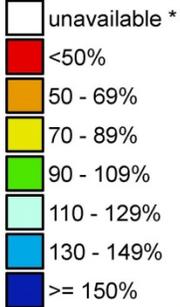
Prepared by
NOAA, National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah
www.cbrfc.noaa.gov

www.cbrfc.noaa.gov/product/mapsum/mapsum.cgi??cbrfc?S?2013?08

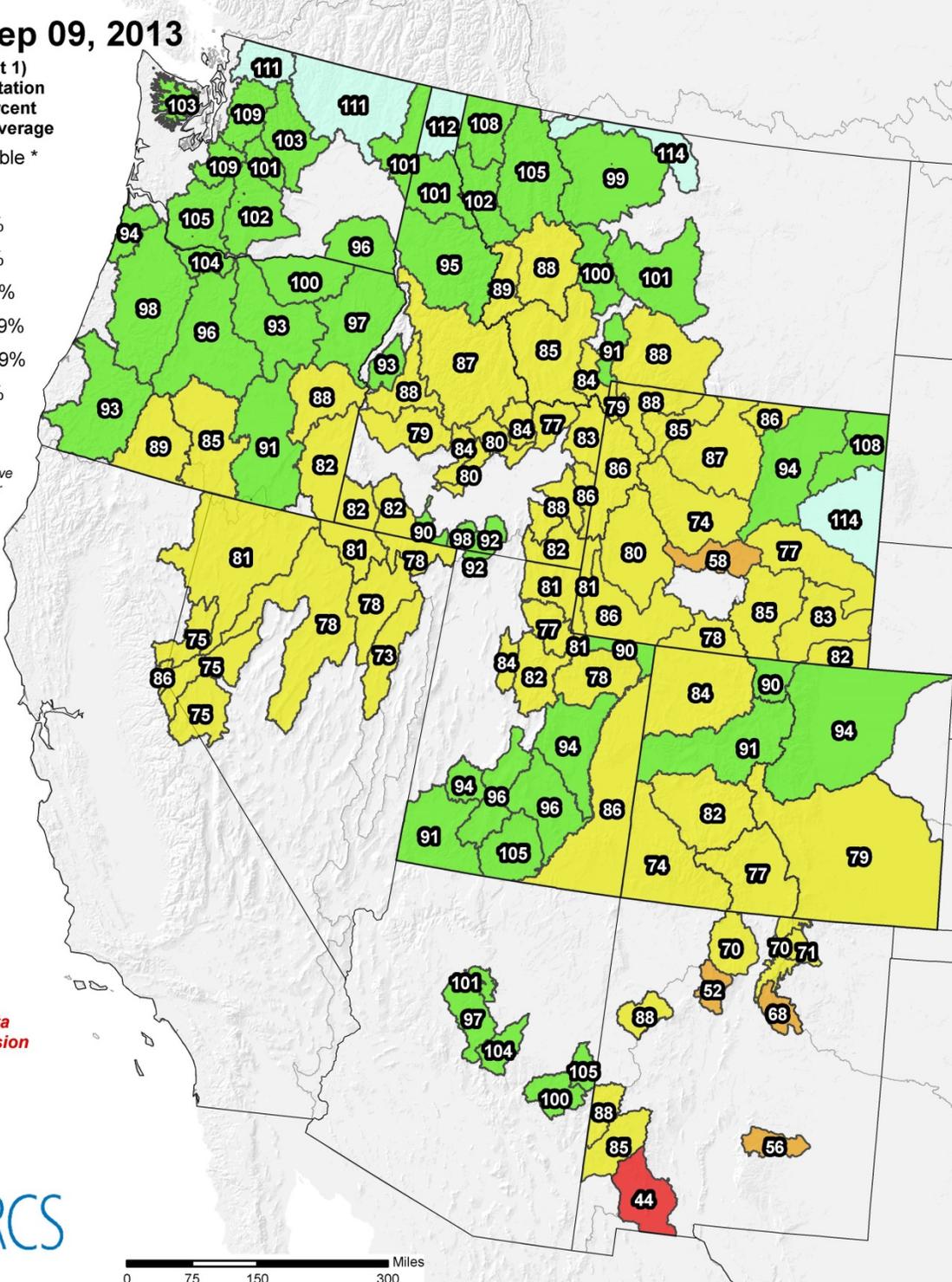
Westwide SNOTEL Water Year (Oct 1) to Date Precipitation % of Normal

Sep 09, 2013

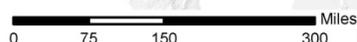
Water Year (Oct 1) to Date Precipitation Basin-wide Percent of 1981-2010 Average



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



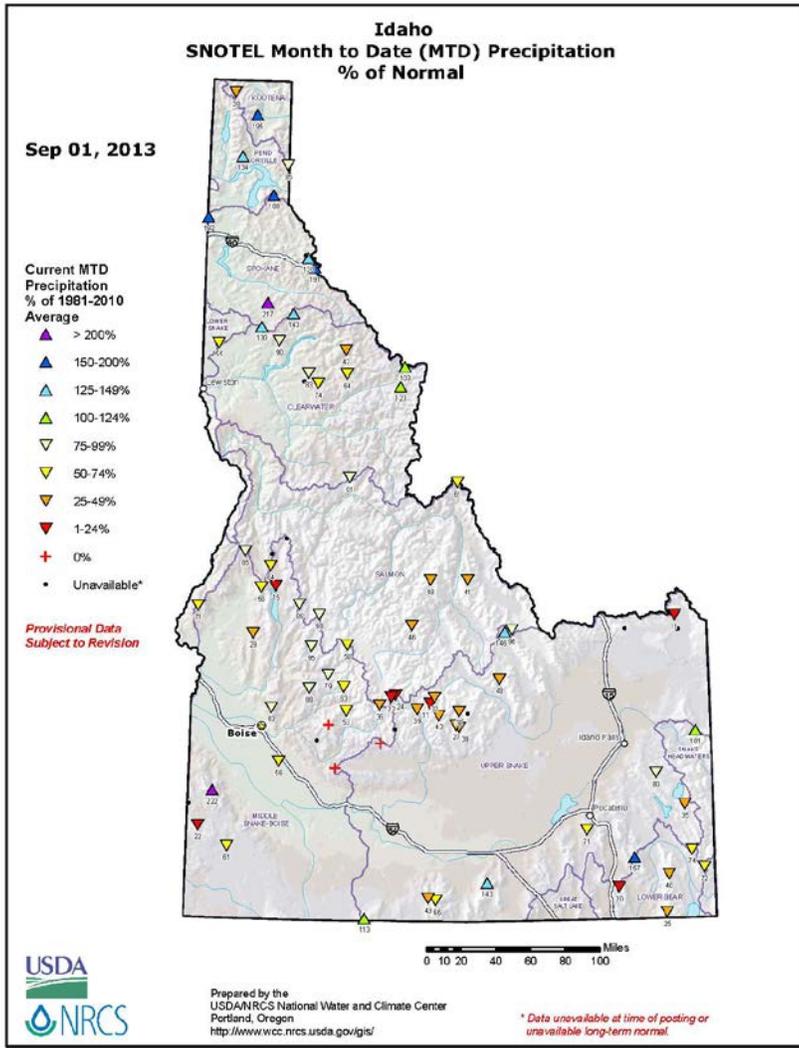
Provisional data subject to revision



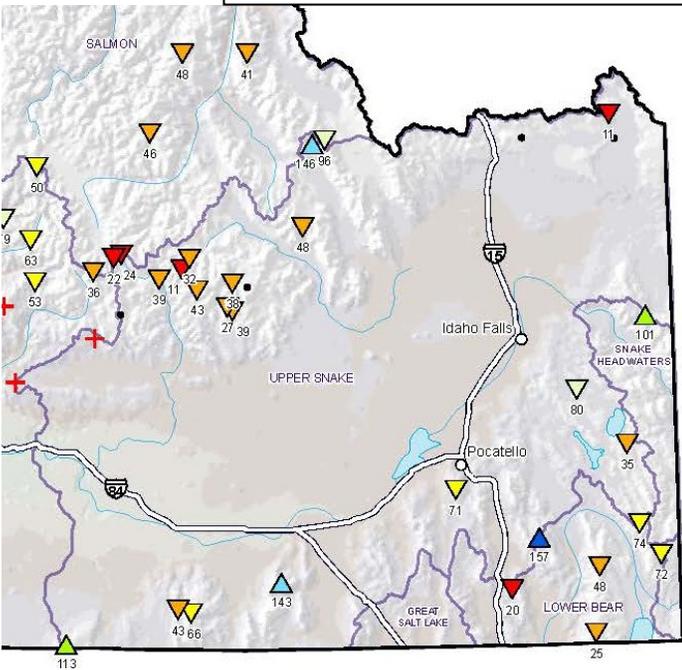
The water year to date precipitation percent of normal represents the accumulated precipitation found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by the USDA/NRCS National Water and Climate Center Portland, Oregon <http://www.wcc.nrcs.usda.gov/gis/>
 Based on data from <http://www.wcc.nrcs.usda.gov/reports/>
 Science contact: Jim.Marron@por.usda.gov 503 414 3047

www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/west_wytdprecpcnormal_update.pdf



ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/1stmonth/id/prec/id_mtdprecptnormal_Sep.pdf

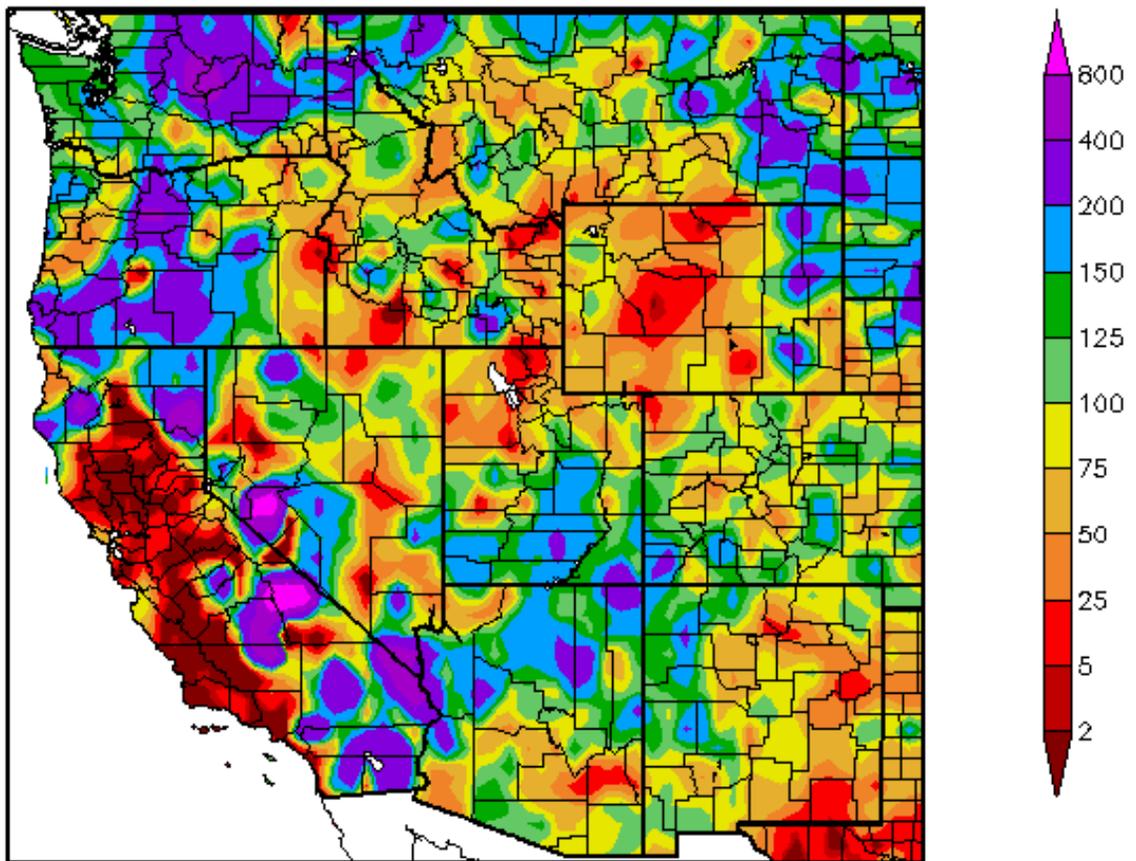


**SNOTEL MTD % of Normal
Precipitation for end of August 2013
(image is cropped from above image)**

Note: The ENSO Neutral climate pattern is forecast to continue through this winter (see below graphic on page 8). The MJO is currently weak with a forecast of little to no activity in the western region in the next few weeks.

Compared to last month, August, brought below normal precipitation for the greater part of eastern Idaho with the anomaly exception in the Pocatello and Raft River areas. Exceptionally dry areas were the headwaters of the Henrys Fork, Clark and Butte counties and the central mountains. Note the dry conditions of Owyhee county, central WY, CA and northern Utah last month.

Percent of Normal Precipitation (%) 8/1/2013 – 8/31/2013



Generated 9/11/2013 at HPRCC using provisional data.

Regional Climate Centers

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

ENSO Update:

Latest Observed SST Departure: Niño 3.4 ~ -0.2 Deg C

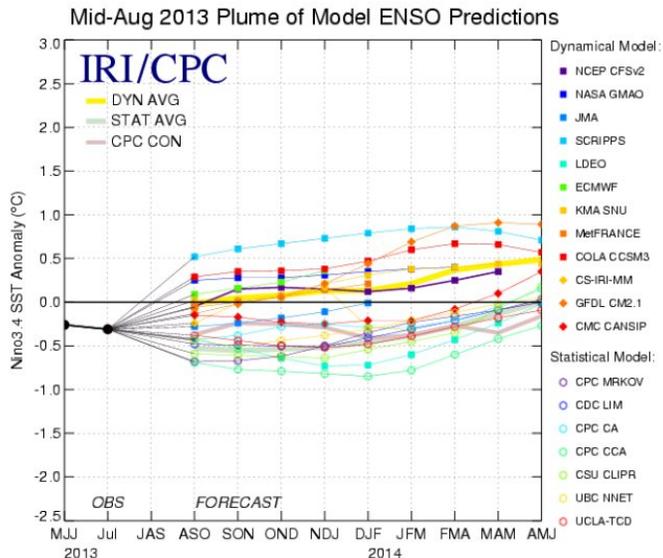
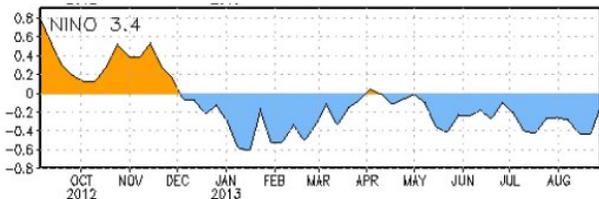


Figure 6. Forecasts of sea surface temperature (SST) anomalies for the Niño 3.4 region (5°N-5°S, 120°W-170°W). Figure courtesy of the International Research Institute (IRI) for Climate and Society. Figure updated 13 August 2013.

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

CPC Synopsis: ENSO-Neutral conditions favored through winter 2013-14

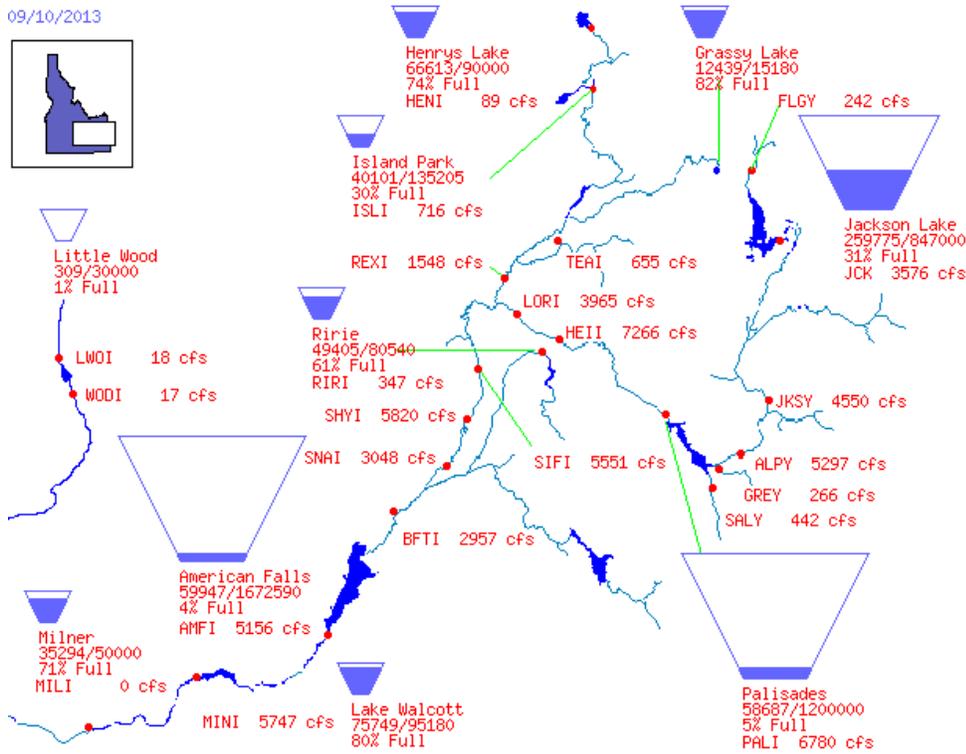
Reservoirs:

Reservoir	% Capacity July 31 ¹	% Capacity August 31 ²	Percent Change	% of Average ²	% of Last Year ²
Henry's Lake	86	75	-11	89	83
Island Park	49	34	-15	71	78
Jackson Lake	61	38	-23	60	48
Palisades	33	20	-13	34	53
Ririe	75	68	-7	94	85
Blackfoot	51	42	-9	88	67
American Falls	24	6	-18	17	40
Bear Lake	55	49	-6	93	75
Magic	6	5	-1	15	11
Little Wood	28	3	-25	9	12
Mackay	35	14	-21	57	28
Oakley	21	13	-8	51	52
Lake Walcott	93 ³	80 ⁴	-13	n/a	n/a
Milner	75 ³	71 ⁴	-4	n/a	n/a

Source: (1) NRCS July 31, 2013; (2) NRCS August 31, 2013.
 (3) US Bureau of Reclamation (BOR) August 4, 2013 (4) BOR September 10, 2013

www.wcc.nrcs.usda.gov/ftpref/data/water/basin_reports/idaho/wy2013/bareid8.txt

09/10/2013

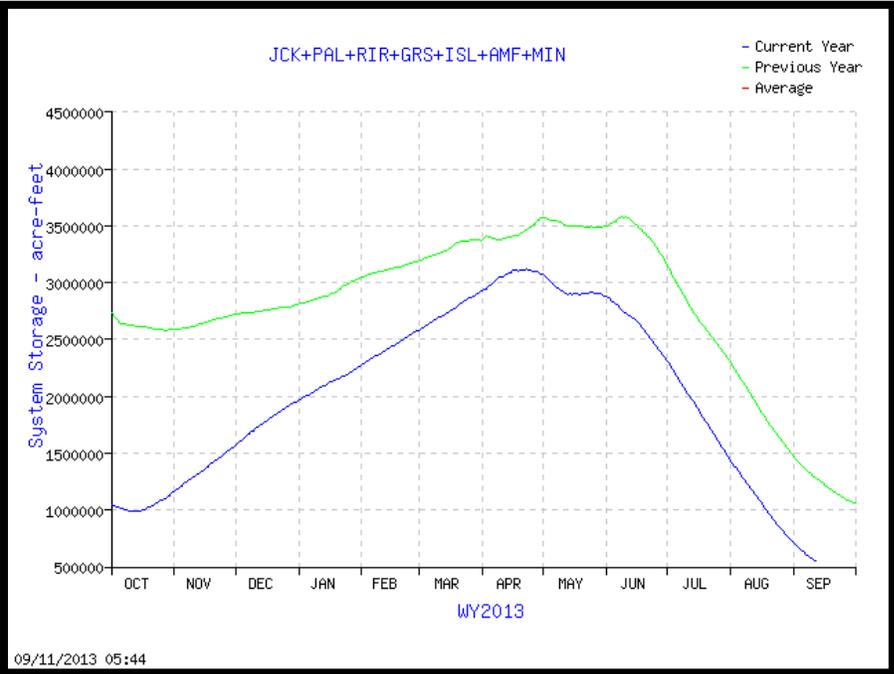


14% of Capacity in Upper Snake River System
 (Jackson Lake, Palisades, Grassy Lake, Island Park, Ririe, American Falls & Lake Walcott)

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

Upper Snake River:
 Total Space Available: 3,489,588 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:

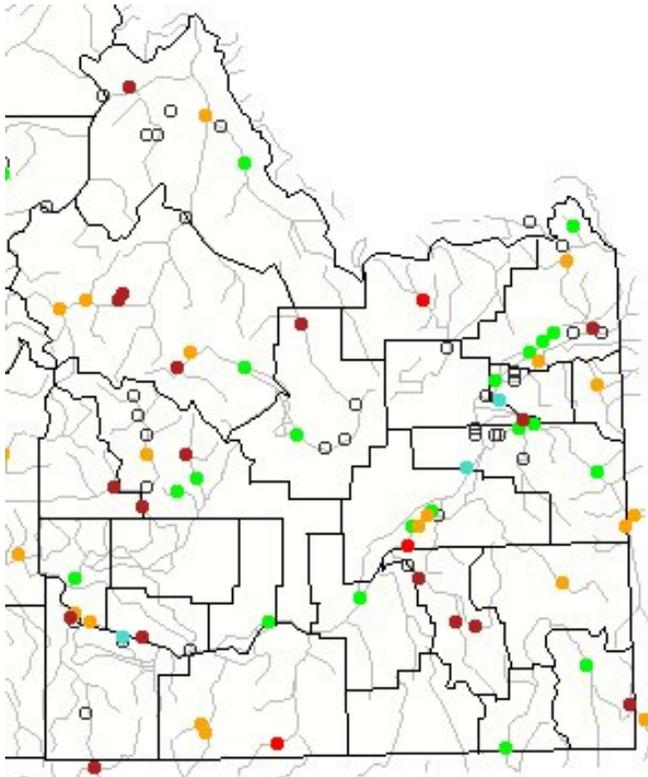
Dam Level Condition

● 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 BLK11	Bear River - Bear Lake, Nr Lifton	●	5913	9/11 06:00	5913	9/11 18:00				

www.cbrfc.noaa.gov/gmap/list/list.php?search=&point=all&plot=&sort=damcritids&type=damcrit&basin=5&subbasin=0&esppf=0&espdist=empirical

Streamflow:



Monthly average streamflow compared to historical average streamflow for August 2013.



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

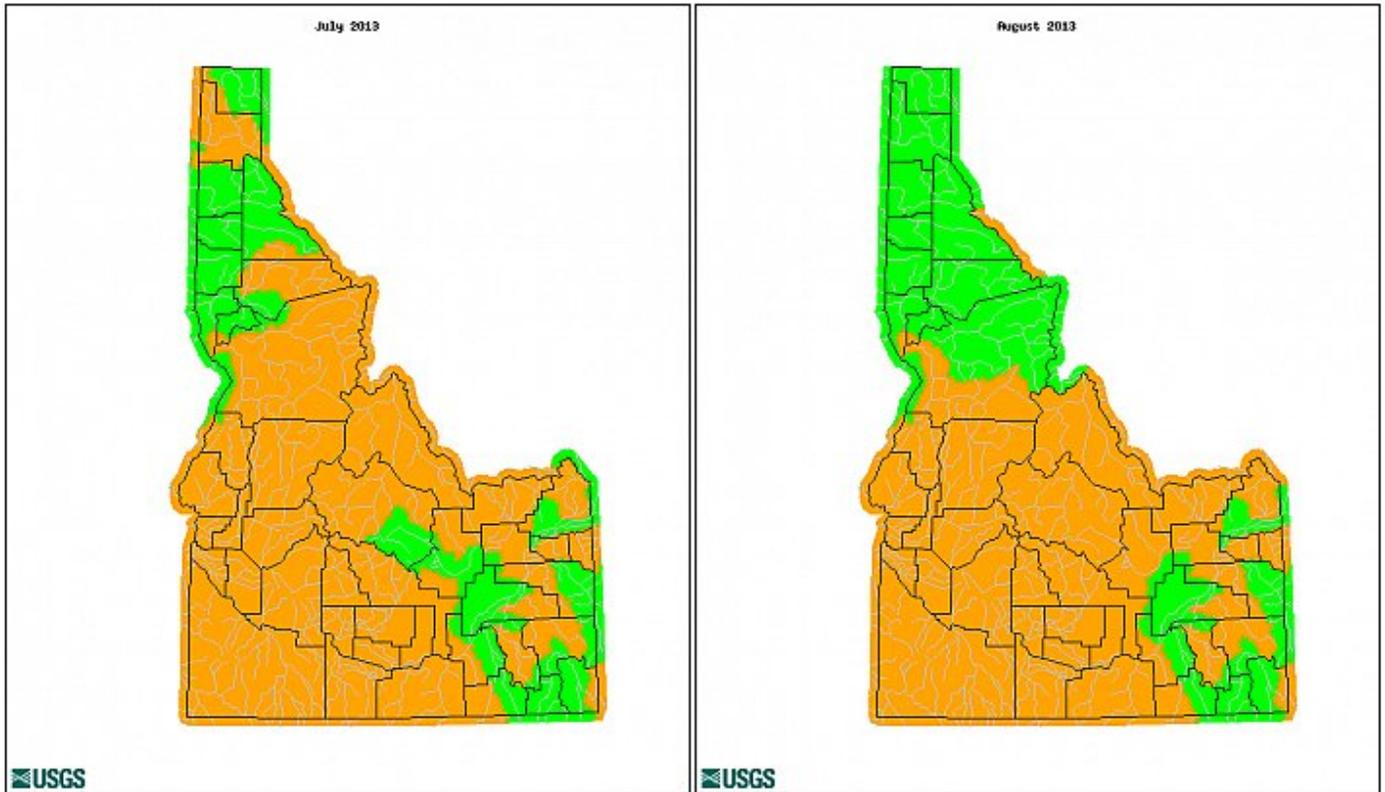
Historic Streamflow Comparison, July 2013 and August 2013:

Comparison of Monthly Streamflow Maps

Geographic Area:	<input style="width: 90%;" type="text" value="Idaho"/>	Water Resource Region:	<input style="width: 90%;" type="text"/>	Map Type:	<input style="width: 80%;" type="text" value="HUC"/> <input style="width: 10%; text-align: center;" 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	

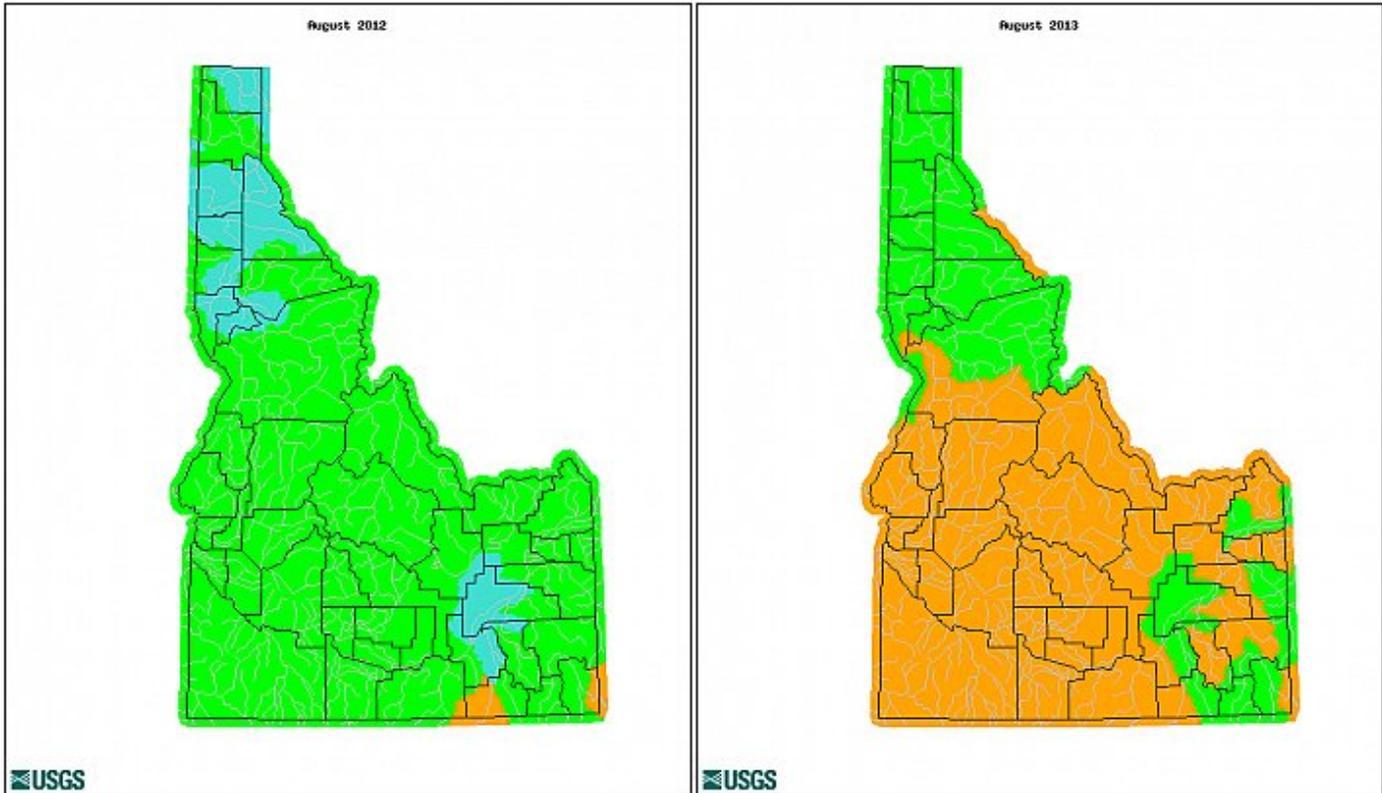
Historic Streamflow Comparison, August 2012 and August 2013:

Comparison of Monthly Streamflow Maps

Geographic Area:
Water Resource Region:
Map Type:

Date (YYYYMM):

Date (YYYYMM):

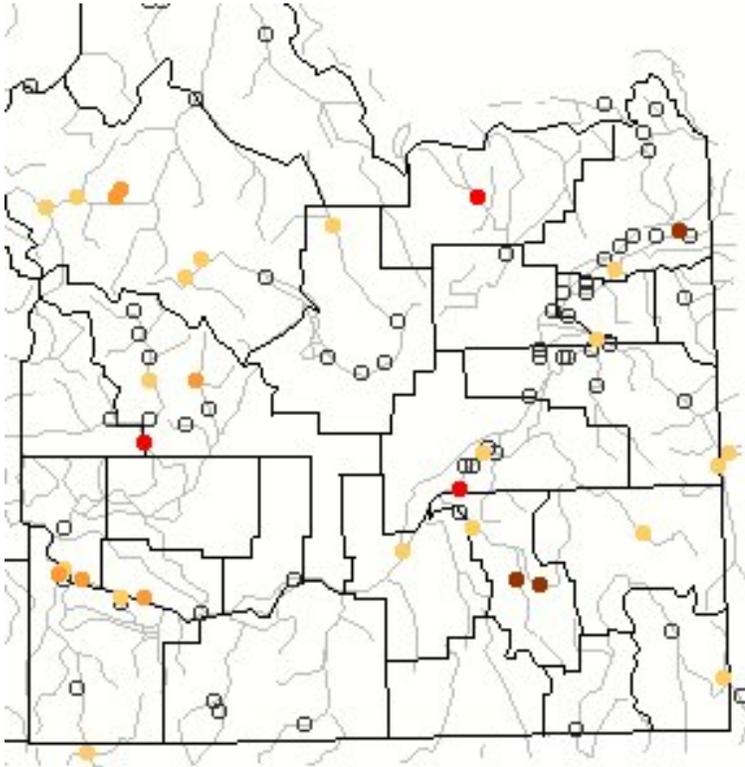


Explanation - Percentile classes						
	<10	10-24	25-75	76-90	>90	
Low	Much below normal	Below normal	Normal	Above normal	Much above normal	High

waterwatch.usgs.gov/index.php

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

Medicine Lodge Creek nr Small, (new low), 27 cfs, 2nd percentile,
 Spring Crk at Sheepskin Rd nr Fort Hall (new low), 240 cfs, 3rd percentile,
 Big Wood River blo Magic Dam, (new low) 1 cfs, 1st percentile
 Falls River nr Squirrel, 225 cfs, 4th percentile,
 Portneuf River at Topaz, 74 cfs, 1st percentile,
 Marsh Crk nr McCammon, 24 cfs, 3rd percentile,



waterwatch.usgs.gov/index.php?m=pa28d_dry&r=id&w=map



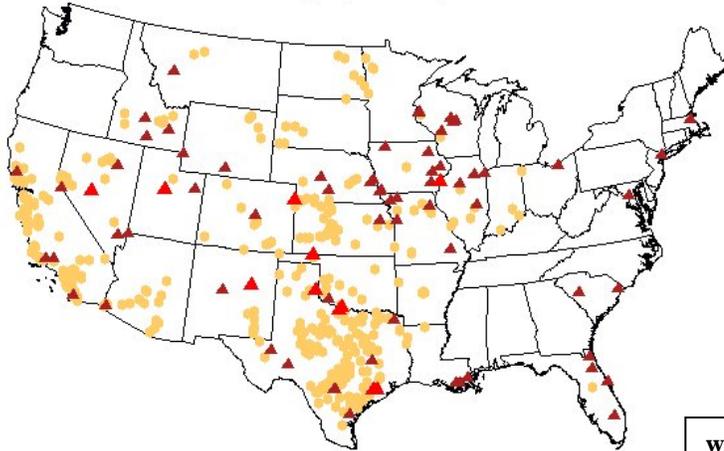
Choose a data retrieval option and select a location on the map

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	

Map of Record Low 7-day Streamflow

Tuesday, September 10, 2013



waterwatch.usgs.gov/index.php?id=wwdrought_us

Explanation

- ▲ Record low flow with more than 30 years data
- ▲ Record low flow with less than 30 years data
- Zero flow sites

Drought Information:

U.S. Drought Monitor

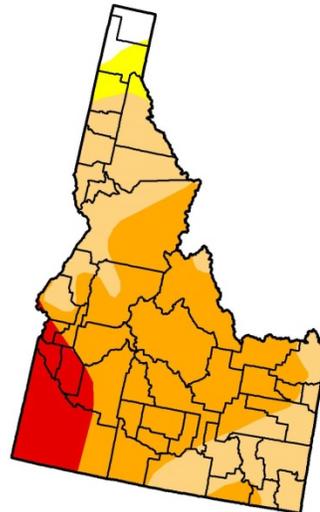
Idaho

September 10, 2013
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2.36	97.64	94.76	62.32	10.52	0.00
Last Week (09/03/2013 map)	2.36	97.64	94.76	62.32	10.52	0.00
3 Months Ago (06/11/2013 map)	4.35	95.65	80.46	10.57	0.00	0.00
Start of Calendar Year (01/01/2013 map)	45.29	54.71	47.63	0.52	0.00	0.00
Start of Water Year (09/25/2012 map)	15.61	84.39	66.47	1.27	0.00	0.00
One Year Ago (09/04/2012 map)	15.72	84.28	66.17	1.33	0.00	0.00

Intensity:

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

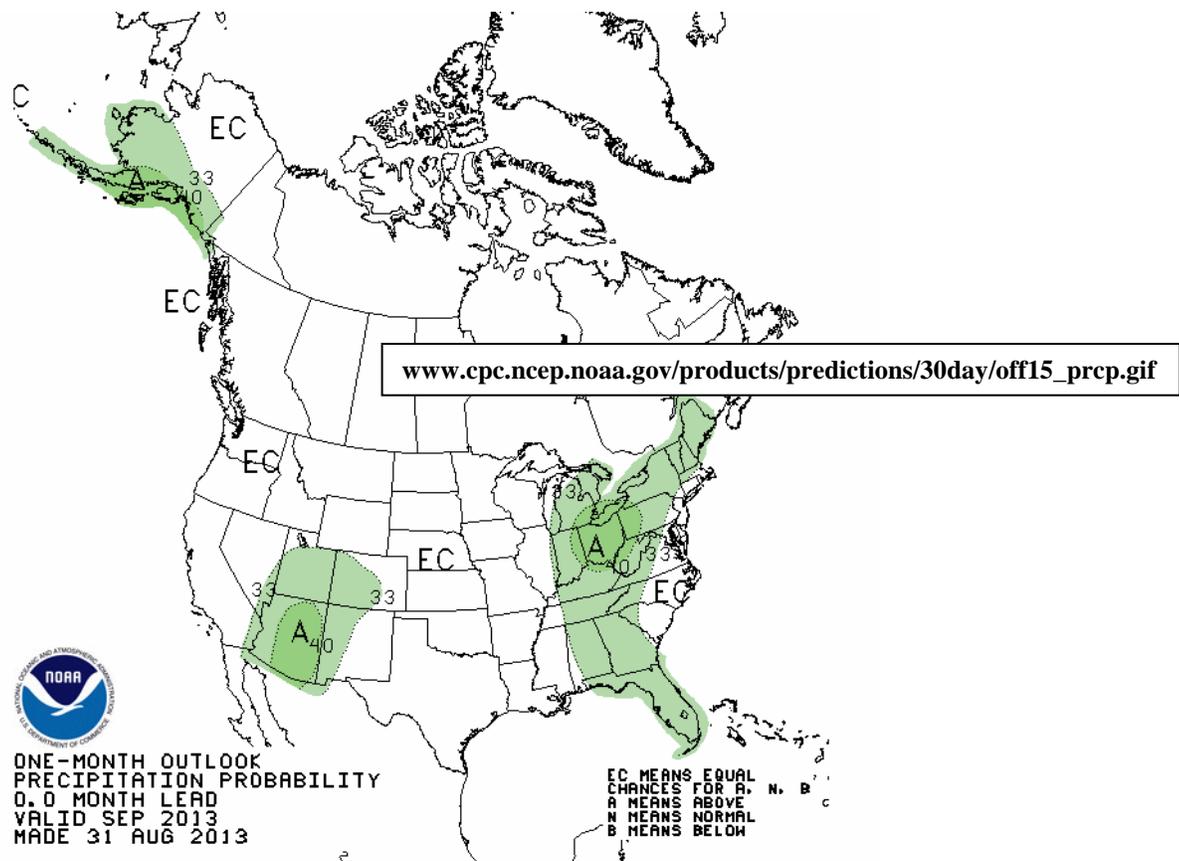
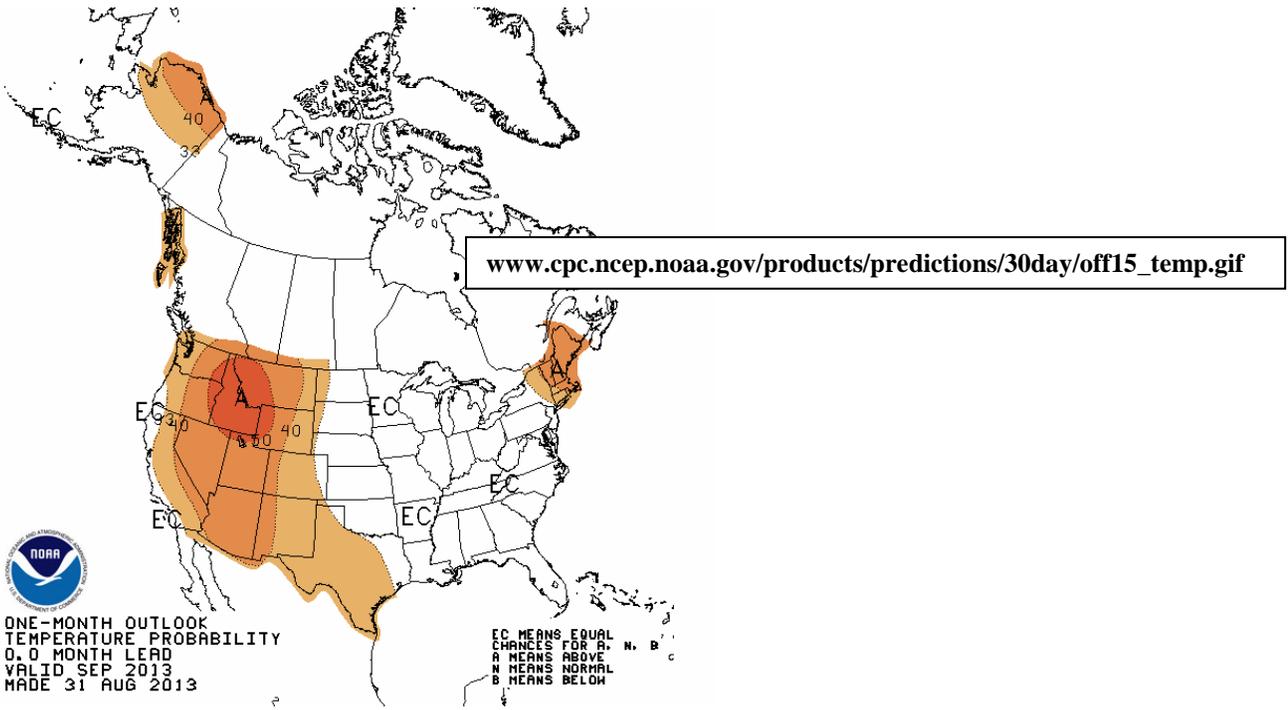


The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://droughtmonitor.unl.edu>



Released Thursday, September 12, 2013
Anthony Artusa, NOAA/NWS/NCEP/CPC

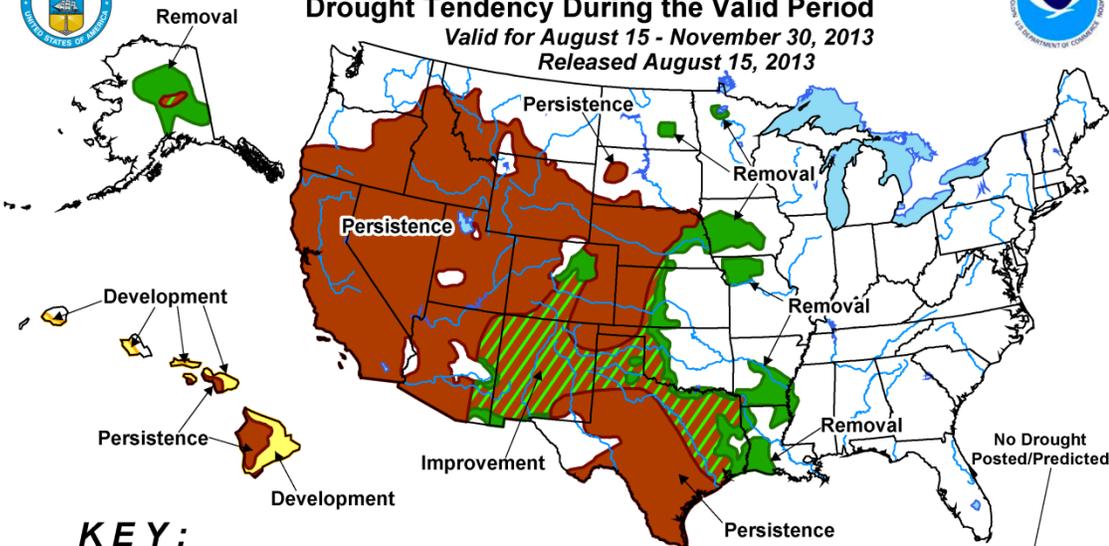




U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for August 15 - November 30, 2013
Released August 15, 2013



KEY:

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

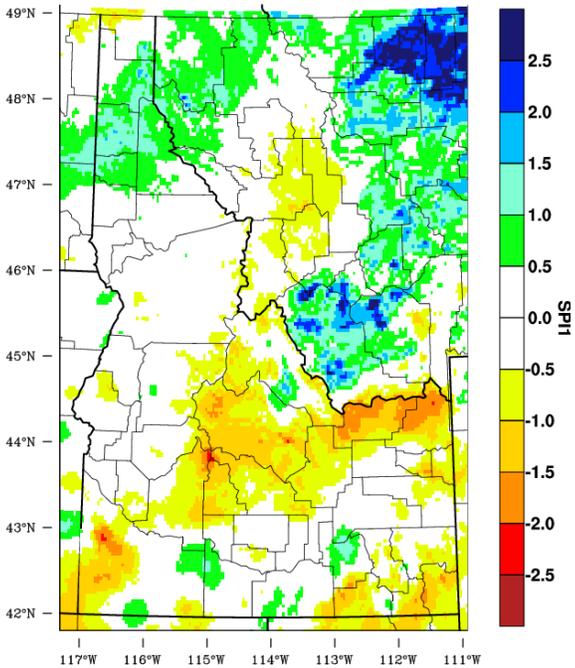
Author: Brad Pugh, Climate Prediction Center, NOAA
http://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.html

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.

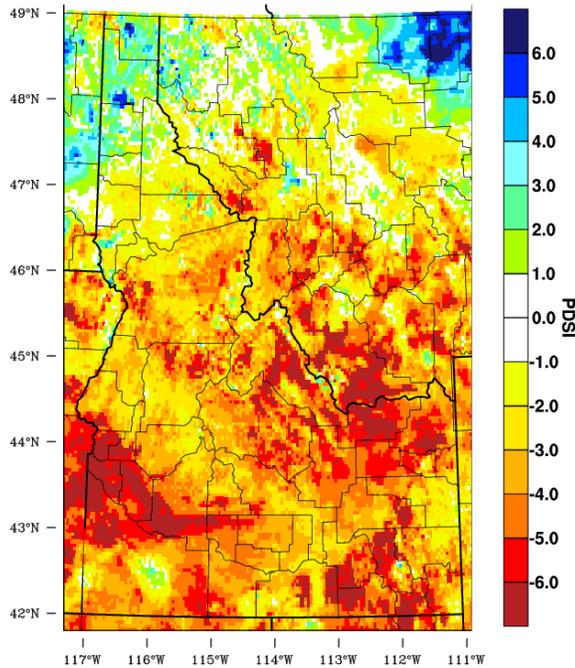
NOTE: The Green and Brown hatched areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period although drought will remain. The Green areas imply drought removal by the end of the period (D0 or none)

www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.png

Idaho - 1 month SPI
August 2013



Idaho - PDSI
August 2013



WestWide Drought Tracker - WRCC/UI Data Source - PRISM (Prelim), created 6 SEP 2013 WestWide Drought Tracker - WRCC/UI Data Source - PRISM (Prelim), created 6 SEP 2013

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

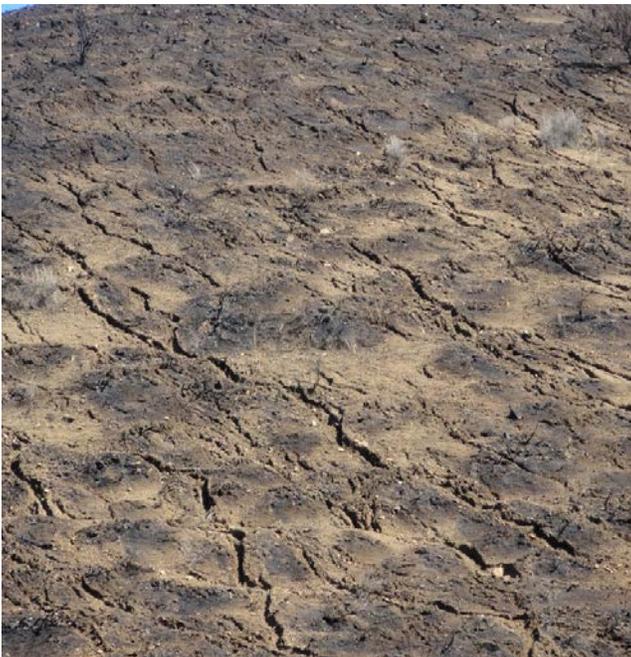
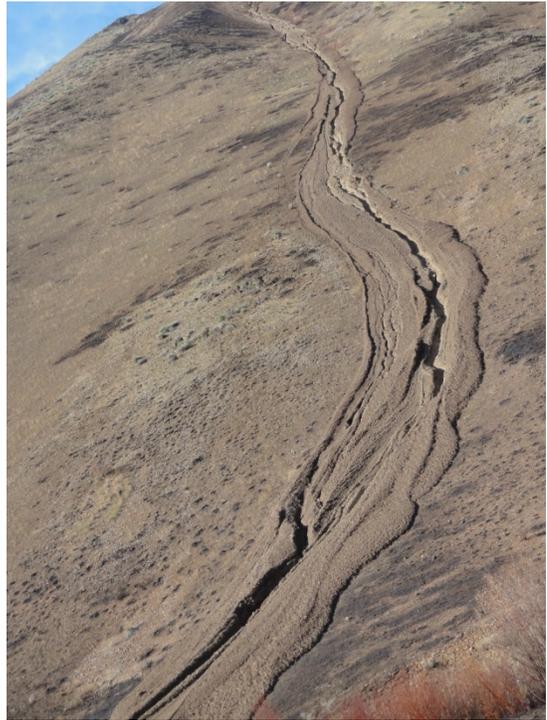
No Current (Active) Fires in HSA as of 9/12/13:

Sources: www.nifc.gov/nicc/sitreprt.pdf and www.inciweb.org

Flooding:

See above narrative discussion overview.

Beaver Creek Fire Debris Flows/Erosion Photos:



cc:
Mike Schaffner, Western Region HCSD
Harold Opitz, Hydrologist-in-Charge, Northwest River Forecast Center
Joe Intermill, Service Coordination Hydrologist, Northwest River Forecast Center
Michelle Stokes, Hydrologist-in-Charge, Colorado Basin River Forecast Center
Kevin Werner, Service Coordination Hydrologist, Colorado Basin River Forecast Center
John Lhotak, Development and Operations Hydrologist, Colorado Basin River Forecast Center
Hydrometeorological Information Center
Rick Dittmann, Meteorologist-in-Charge, Pocatello, Idaho
Troy Lindquist, Senior Service Hydrologist, Boise, Idaho
Brad Gillies, Hydrologist, Northwest River Forecast Center
Brent Bernard, Hydrologist, Colorado Basin River Forecast Center