

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: May YEAR: 2016
TO: Hydrologic Operations Division, W/OH2 National Weather Service National Oceanic and Atmospheric Administration Silver Spring, Maryland 20910	SIGNATURE Corey Loveland Service Hydrologist
DATE: June 10, 2016	
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:

May brought above normal precipitation to parts to the central mountains, particularly the Big Wood, Portneuf and Bear Lake basins. Across the rest of the Hydrologic Service Area (HSA) it was around 75 percent of normal. A nice portion of the Bear Lake area received well over 150 percent above normal. Generally, one to three inches of precipitation fell across our area during the past month with most of the precipitation falling along the Idaho-Wyoming border and the Bear Lake basin. Temperature departures from normal for May show that across the HSA, we ranged near normal. Mean average temperatures ranged from 39 to 59 degrees F across the HSA. All river basins are in the near normal range for water year to date precipitation thus far.

As far as the short-term 8 to 14 day Climate Prediction Center Outlook is concerned, the forecast is for mostly near normal temperatures across the HSA then changing to to 33 to 40 percent chance of above normal temperatures along the ID-WY border and then a 33 to 50 percent chance of below normal precipitation across southern Idaho. The one-month forecast graphics are found below. For the three-month outlook, the temperatures are forecast to be warmer than normal in eastern Idaho; ranging from 40 to 50 percent chance of above normal temperatures within the HSA. As for precipitation, the outlook is for mostly above normal precipitation across eastern Idaho with a 33 to 40 percent chance of above normal precipitation.

Of the data available for the month, the station within the HSA reaching the highest 24-hour temperature was the Minidoka Dam station reaching 88°F on the 15th. The station (non-SNOTEL and non-RAWS) with the lowest recorded temperature was the Stanley COOP station at 15°F on May 11th. The highest recorded 24-hr precipitation (non-SNOTEL) occurred at the Island Park COOP station where 2.50 inches fell on the 24th. The highest recorded precipitation total (non-SNOTEL) occurred at the Bern COOP station where 4.41 total inches was recorded for the month. The Emigrant Summit SNOTEL recorded 5.10 inches of total precipitation for the month according to NRCS. The basins receiving the greatest precipitation were the Camas-Beaver Creeks and Little Wood River basins receiving 111% and 110% of average precipitation respectively for the month of May-based on SNOTEL data.

Reservoirs last month increased capacity overall by around 1% in the upper Snake River basin system (an increase of about 29 KAF occurred over the month and is currently sitting at 84% of capacity overall). Compared to last year at this time, it was about 91% of capacity. According to the Natural Resources Conservation Service and U.S. Bureau of Reclamation reservoir data, the most notable increase in storage

capacity was the Jackson Lake and Magic reservoirs increasing percent capacity by 19% and 11% respectively. Jackson Lake is currently at 131% of average. American Falls has dropped 6% of capacity and is at 94% of average currently. Most reservoirs are above or near average for capacity with the exception of Oakley and Bear Lake reservoirs, which are currently at 89% of average.

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

Drought conditions across eastern Idaho have progressively improved since the last few months. Currently, only about 8 percent of the state is in Abnormally Dry drought status with no areas in Moderate Drought. The latest U.S. Seasonal Drought Outlook shows a clear forecast of no drought conditions within the HSA.

According to the Idaho NRCS Snow Survey June 1st 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 Big Wood and Oakley basins. These basins were given a SWSI rating of 0.1 (near to above 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 Teton, Big and Little Lost River basins, rated at -2.0, -1.3 and -1.3 respectively, which are still rated at near normal with the exception of Teton being below normal. Most basins within the HSA are below average for the NRCS June through Sept streamflow volume forecasts: Wood/Lost ranges from 43-63%, upper Snake 65-78%, Southside 80-87% and Bear about 82% of average for June- July for points within our HSA.

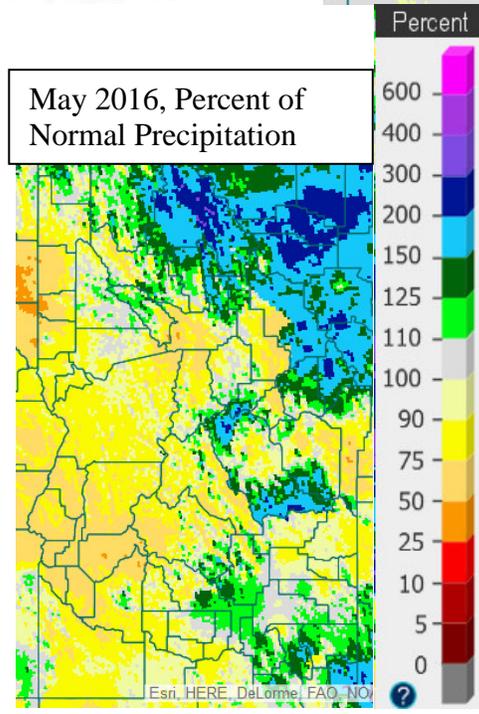
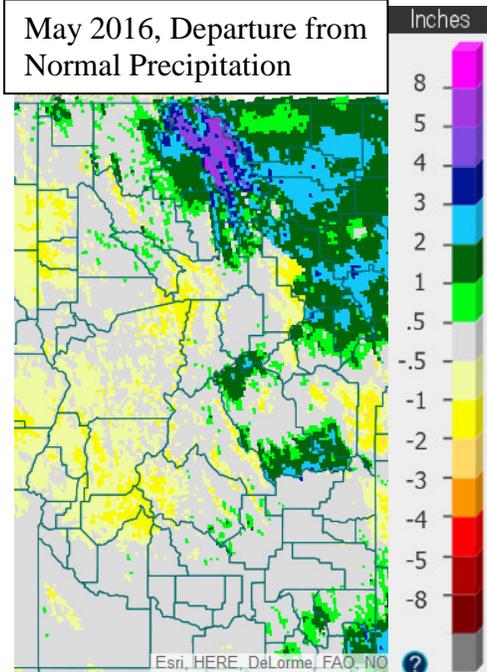
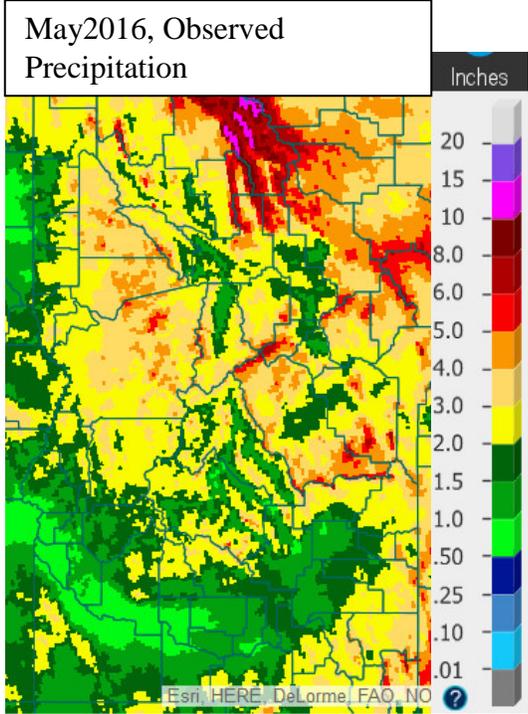
For more information on the Idaho Surface Water Supply Index (SWSI) June 1st Outlook please visit:
www.wcc.nrcs.usda.gov/ftpref/states/id/webftp/swsi/tables/Jun/SWSI06.pdf

For more information on the Idaho Water Supply June 1st Outlook please go to:
www.wcc.nrcs.usda.gov/ftpref/states/id/webftp/wsor/2016/borid616.pdf

For a table format of the current volume forecasts and current runoff for WFO PIH:
www.nwrfc.noaa.gov/water_supply/ws_report.cgi

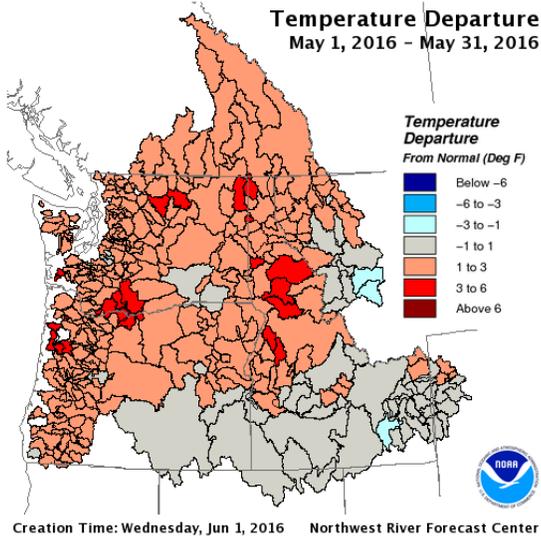
Please see the NWRFC (approximately daily computed ensembles), CBRFC, and NRCS Official June 1st streamflow volume forecasts and Bear Basin conditions below.

Precipitation:

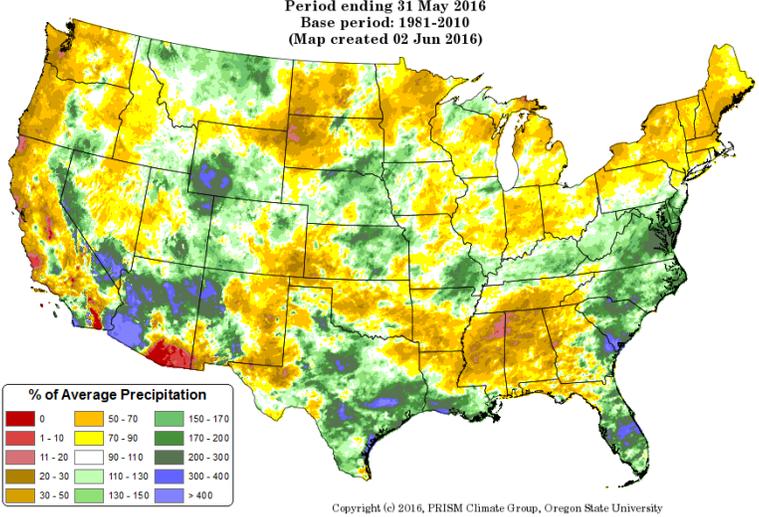


water.weather.gov/precip/#

Temperature Departure
May 1, 2016 - May 31, 2016



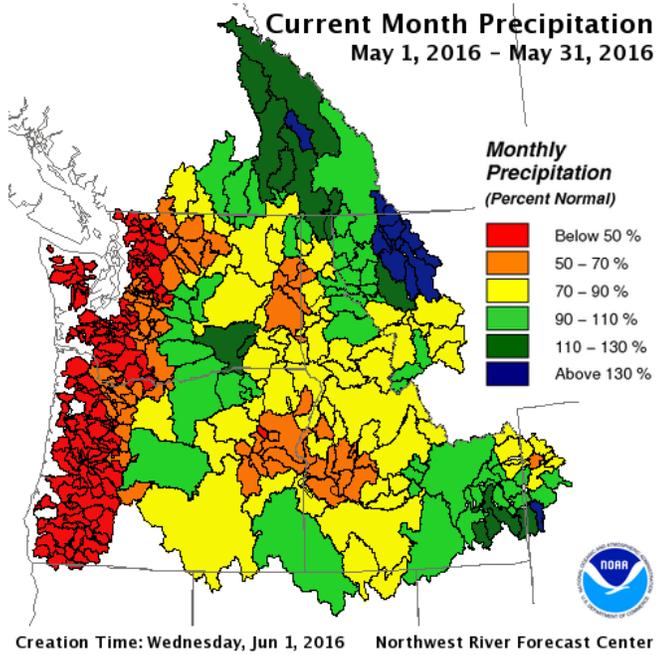
Total Precipitation Anomaly: May 2016



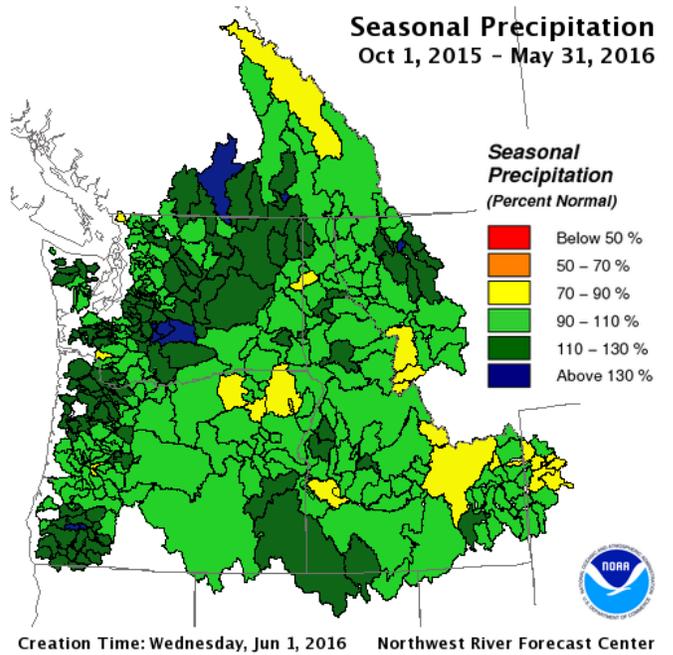
nwrfc.noaa.gov/WAT_RES_wy_summary/20160601/CurMonMAT_2016May31_2016060116.png

prism.oregonstate.edu/

Current Month Precipitation
May 1, 2016 - May 31, 2016

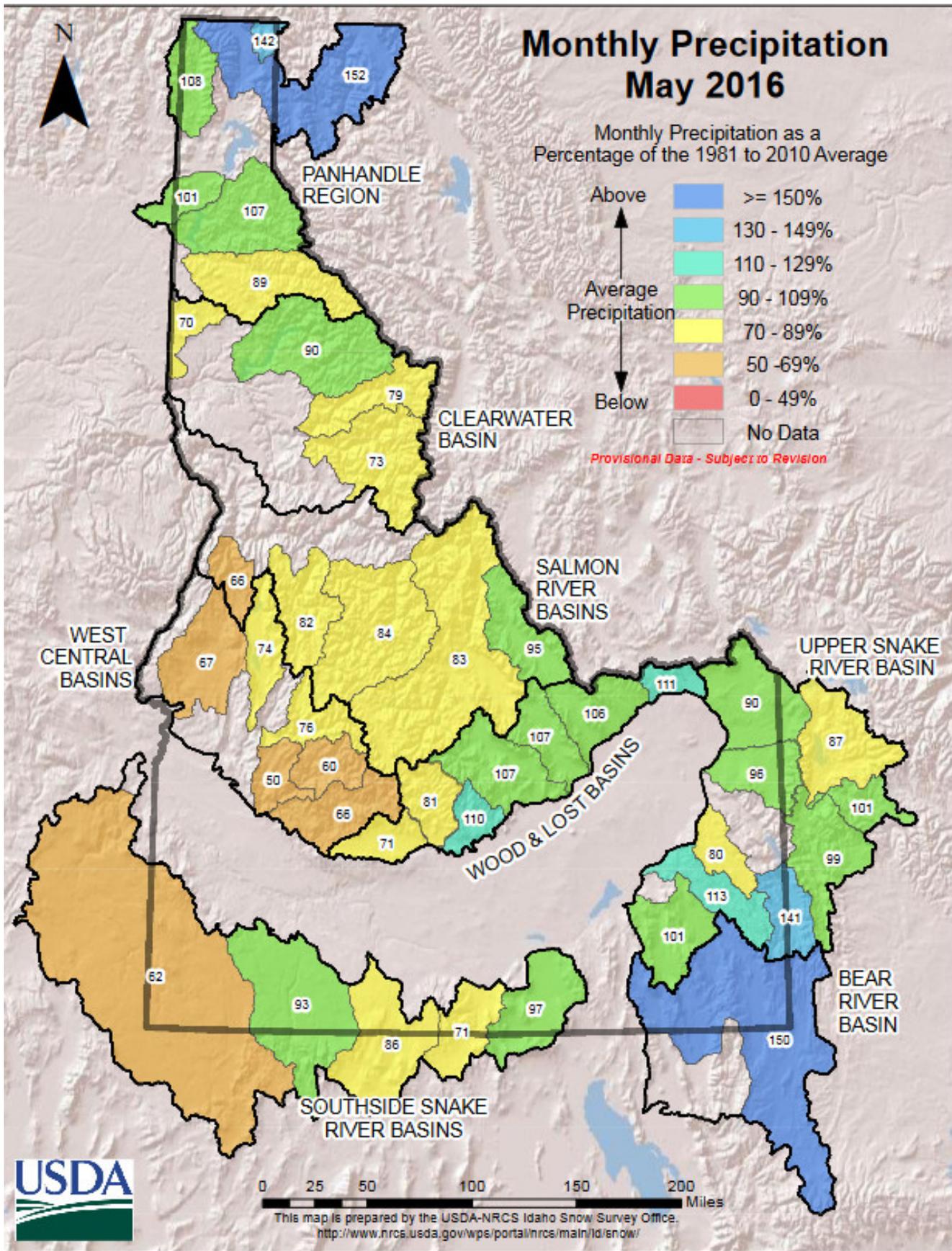


Seasonal Precipitation
Oct 1, 2015 - May 31, 2016



nwrfc.noaa.gov/WAT_RES_wy_summary/20160601/CurMonMAP_2016May31_2016060116.png

nwrfc.noaa.gov/WAT_RES_wy_summary/20160601/SeasonalMAP_2016May31_2016060116.png

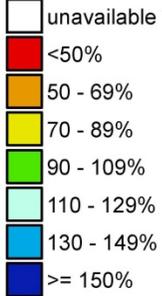


wcc.nrcs.usda.gov/ftpref/states/id/webftp/wsor/2016/borid616.pdf

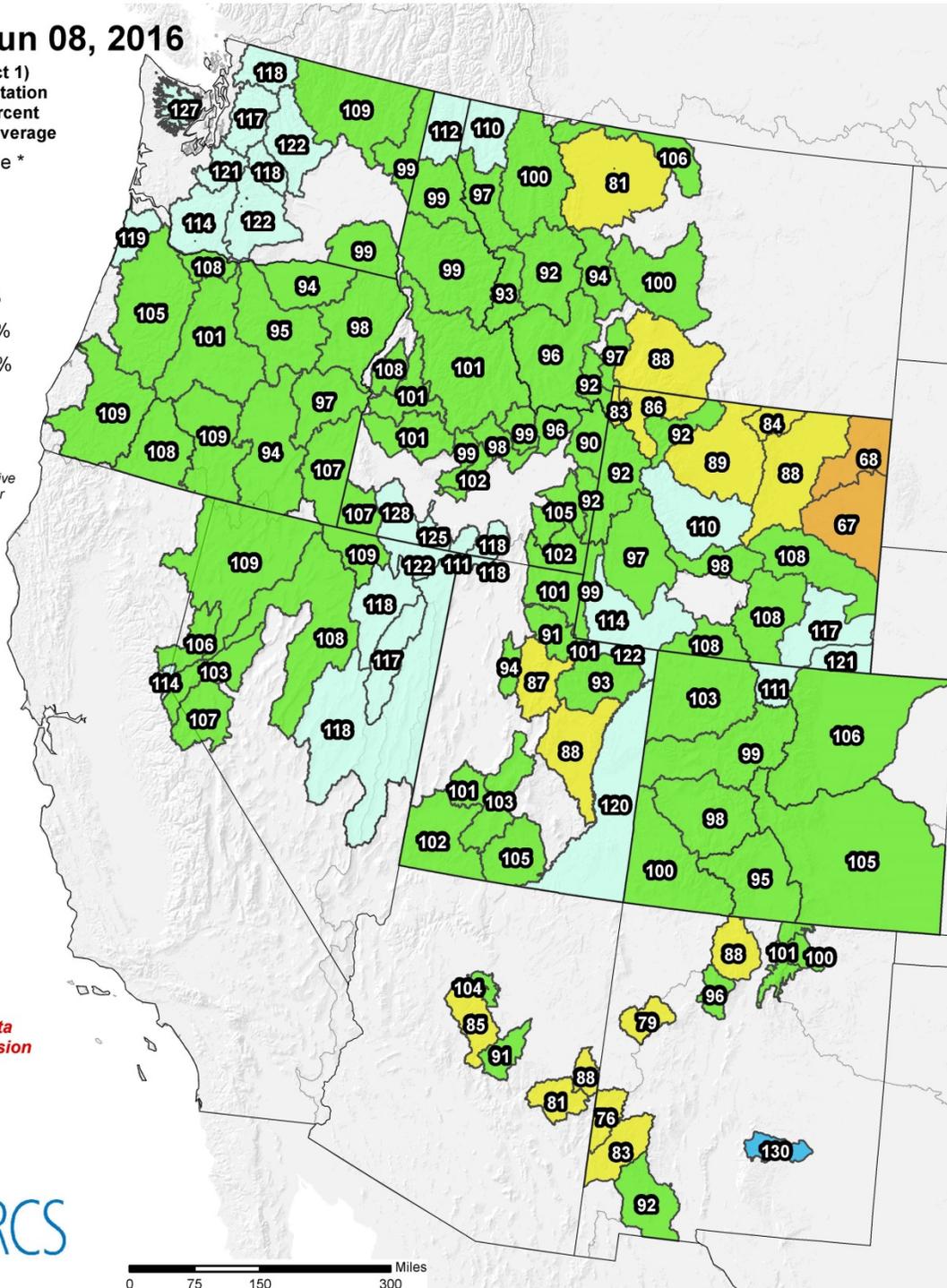
Westwide SNOTEL Water Year (Oct 1) to Date Precipitation % of Normal

Jun 08, 2016

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

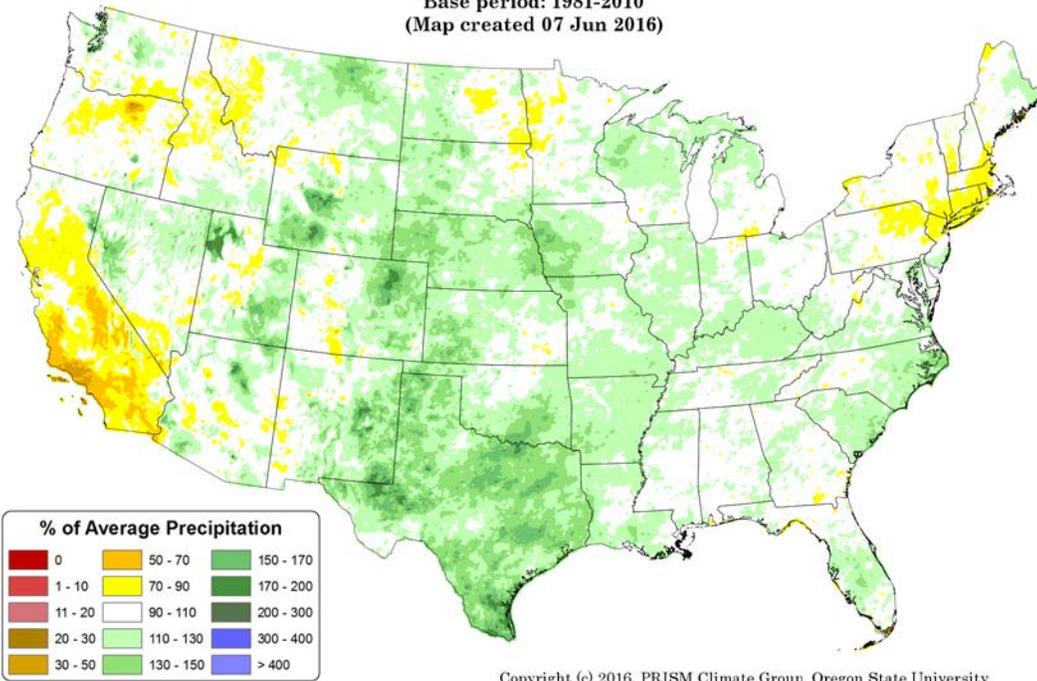
Past 2 Years of Precipitation % of Average:

Total Precipitation Anomaly: June 2014 - 06 June 2016

Period ending 7 AM EST 06 Jun 2016

Base period: 1981-2010

(Map created 07 Jun 2016)



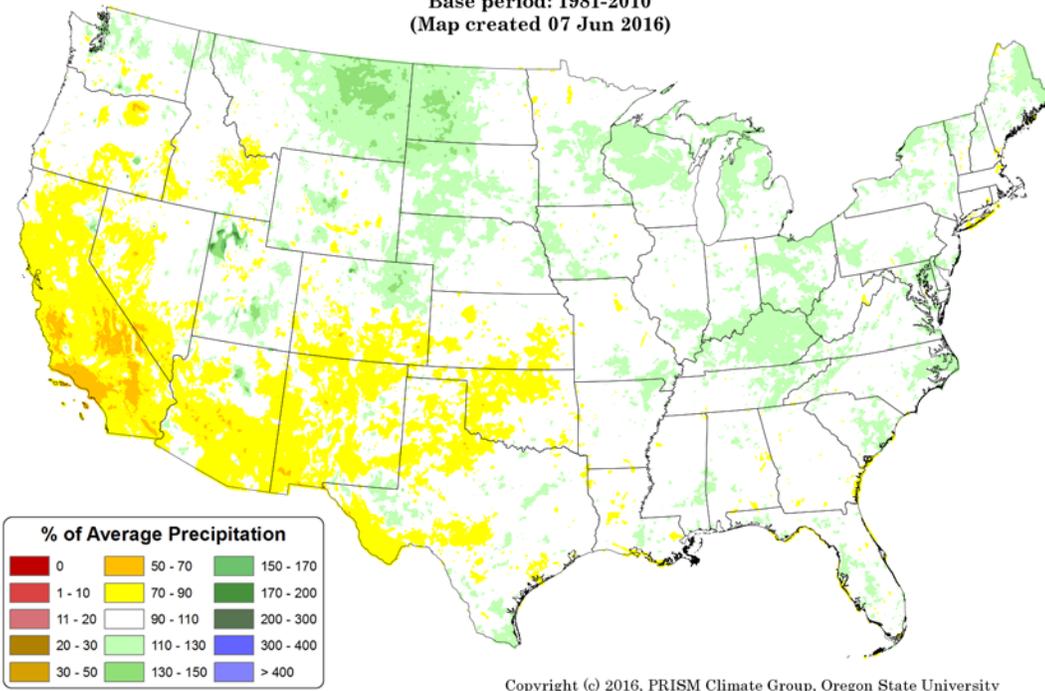
Past 6 Years of Precipitation % of Average:

Total Precipitation Anomaly: June 2010 - 06 June 2016

Period ending 7 AM EST 06 Jun 2016

Base period: 1981-2010

(Map created 07 Jun 2016)



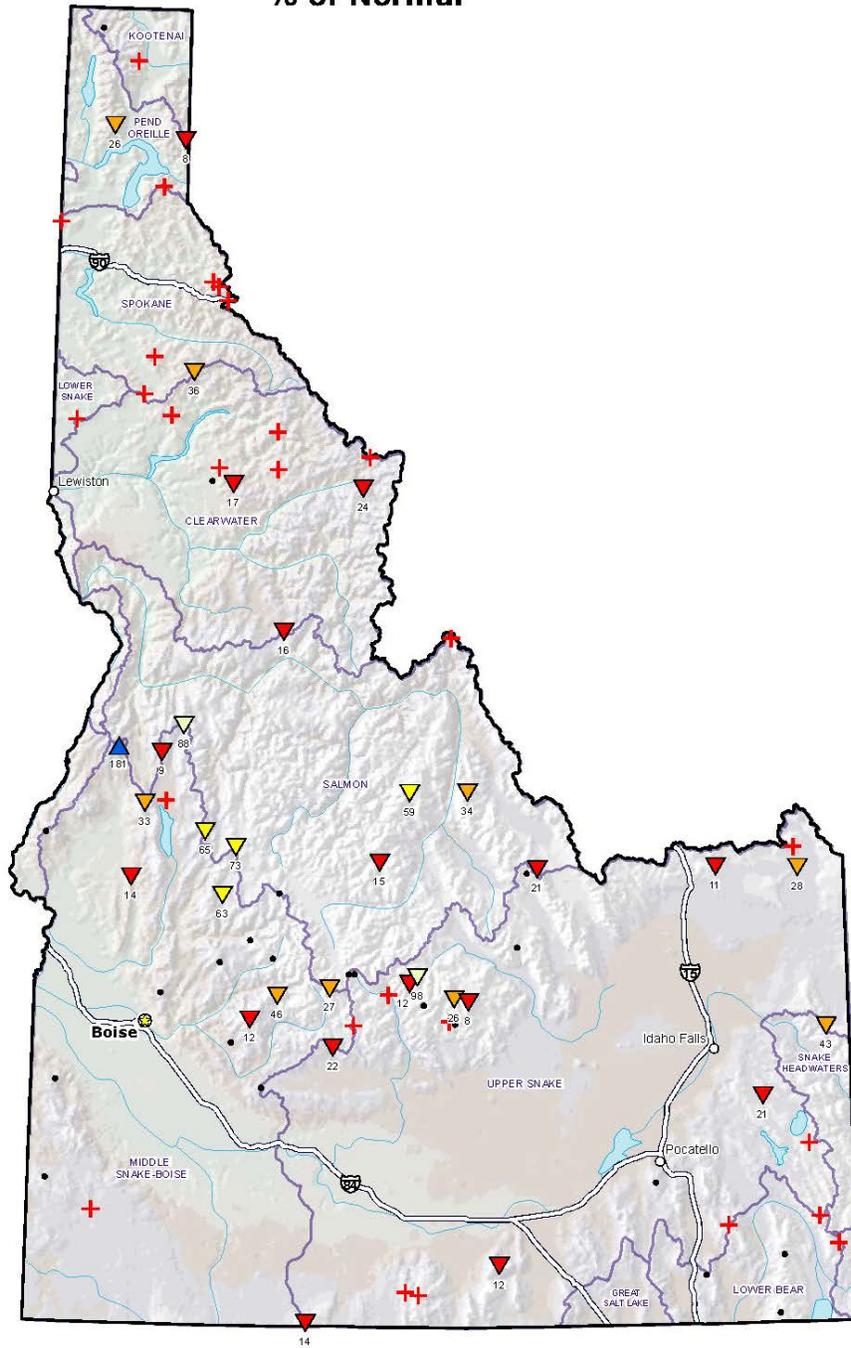
prism.oregonstate.edu/comparisons/drought.php

Idaho SNOTEL Month to Date (MTD) Precipitation % of Normal

Jun 08, 2016

- Current MTD
Precipitation
% of 1981-2010
Average**
- ▲ > 200%
 - ▲ 150-200%
 - ▲ 125-149%
 - ▲ 100-124%
 - ▼ 75-99%
 - ▼ 50-74%
 - ▼ 25-49%
 - ▼ 1-24%
 - +
 - Unavailable*

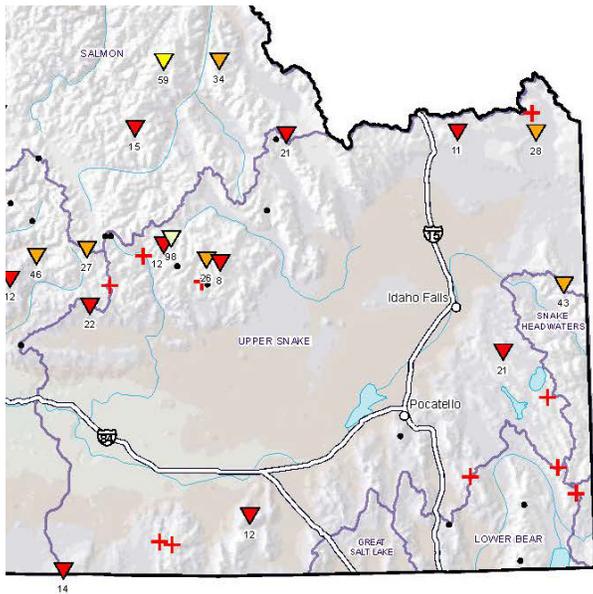
*Provisional Data
Subject to Revision*



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

** Data unavailable at time of posting or
unavailable long-term normal.*

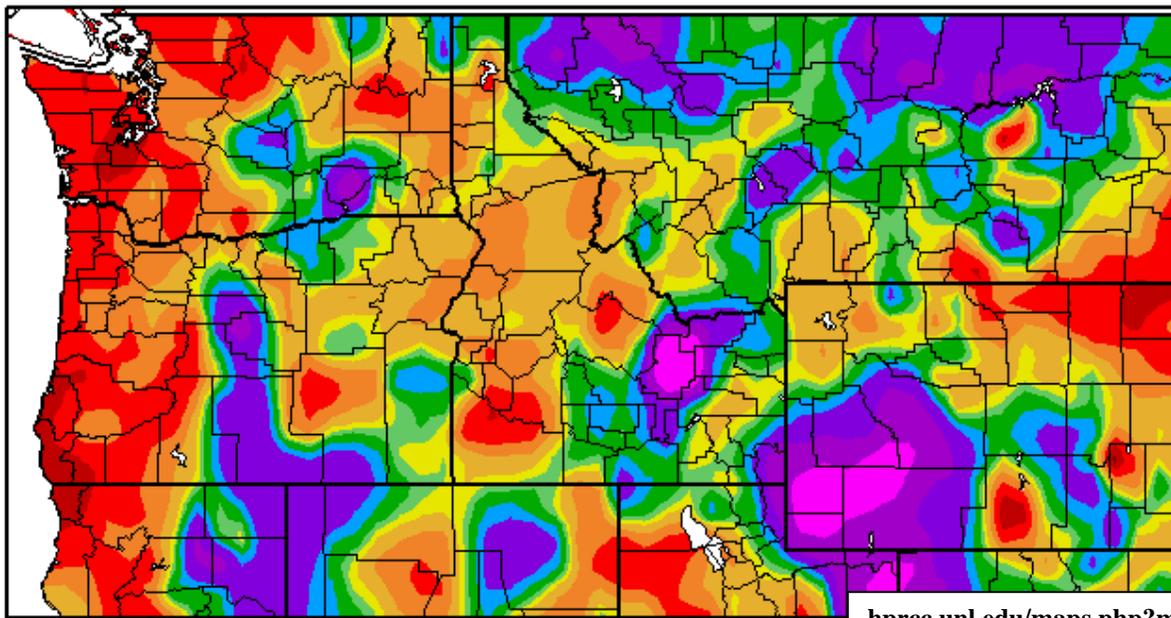
wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/id_mtdprecpcnormal.pdf



**SNOTEL MTD % of Normal
Precipitation for end of May 2016**
(image is cropped from above image)

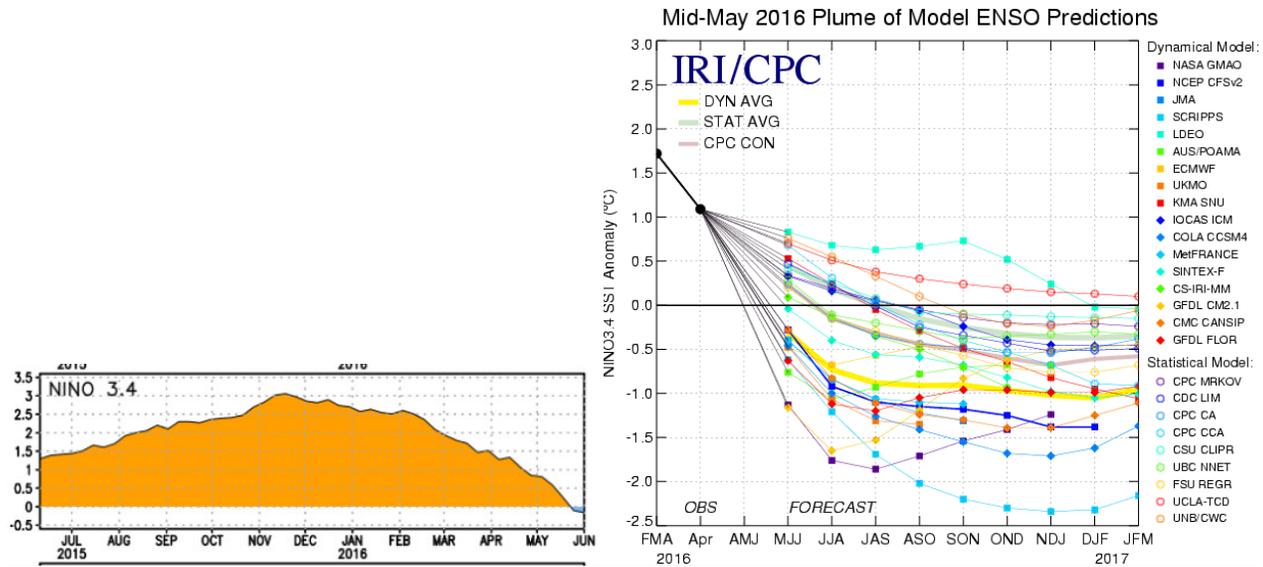
May brought a great amount of precipitation in southeastern Idaho, especially centered around Jefferson county where that region of the upper Snake received well over 300% of normal for the month. The Bear Lake area also fared well with 150 to over 200%. Our entire HSA was above normal with exception to the north Bannock and eastern Bingham counties; which were just below normal. Western Idaho and the north central mountains were much drier as well as west of the Cascades. Parts of MT, WY, CO, central OR, northern CA and parts of NV did very well with large areas in the 150 to 300% of normal category.

Percent of Normal Precipitation (%)
5/1/2016 – 5/31/2016



ENSO Update:

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



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

CPC Synopsis: El Niño is weakening, La Niña conditions favored to develop in northern hemisphere during summer 2016, then a 75% chance of La Niña during the fall and winter.

Note: Positive equatorial sea surface temperature (SSTs) anomalies are diminishing across most of the Pacific Ocean. MJO has been weak recently. The Pacific Decadal Oscillation (PDO) is currently positive.

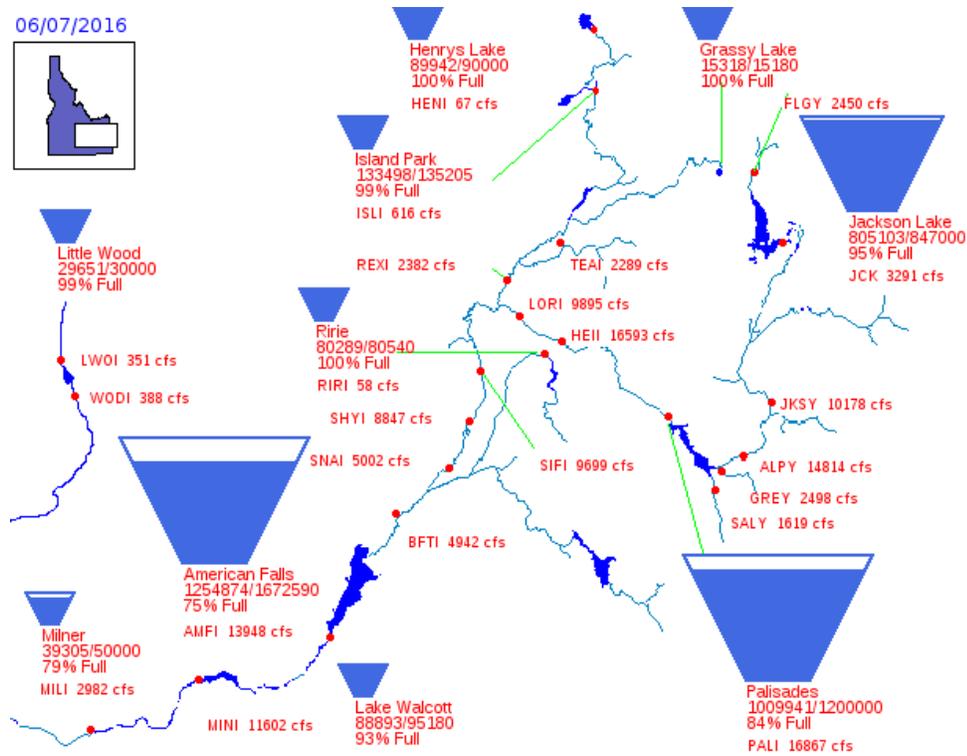
Reservoirs:

Reservoir	% Capacity April 30 ¹	% Capacity May 31 ²	Percent Change	% of Average ²	% of Average Last Year ²
Jackson Lake	74	93	19	131	140
Palisades	82	85	2	116	116
Henrys Lake	93	99	6	104	105
Island Park	97	100	3	101	100
Grassy Lake	93	101	8	107	108
Ririe	100	99	-1	115	90
Blackfoot	72	81	9	116	85
American Falls	87	81	-6	94	97
Mackay	90	94	4	121	103
Little Wood	89	99	10	109	73
Magic	83	94	11	138	61
Oakley	36	44	8	89	65
Bear Lake	43	49	6	89	90
Lake Walcott	95 ³	93 ⁴	-2	n/a	n/a
Milner	72 ³	79 ⁴	7	n/a	n/a

Source: (1) NRCS April 30, 2016; (2) NRCS May 31, 2016.
 (3) US Bureau of Reclamation (BOR) May 8, 2016 (4) BOR June 7, 2016

wcc.nrcs.usda.gov/ftpref/support/water/SummaryReports/ID/BRes_6_2016.pdf

06/07/2016

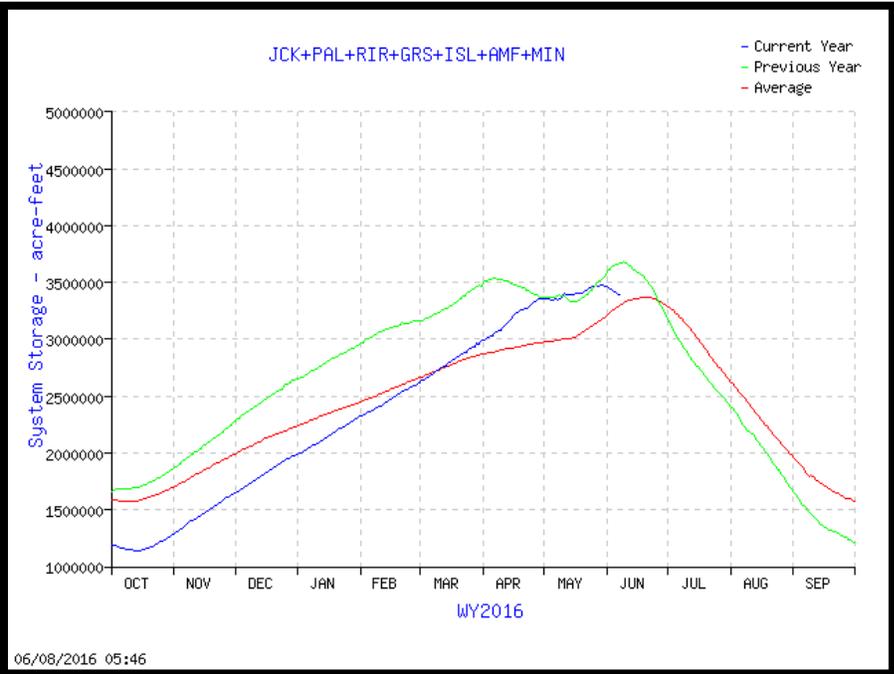


**84% of Capacity
in Upper Snake
River System**
(Jackson Lake, Palisades,
Grassy Lake, Island Park,
Ririe, American Falls &
Lake Walcott)

usbr.gov/pn/hydromet/burtea.html

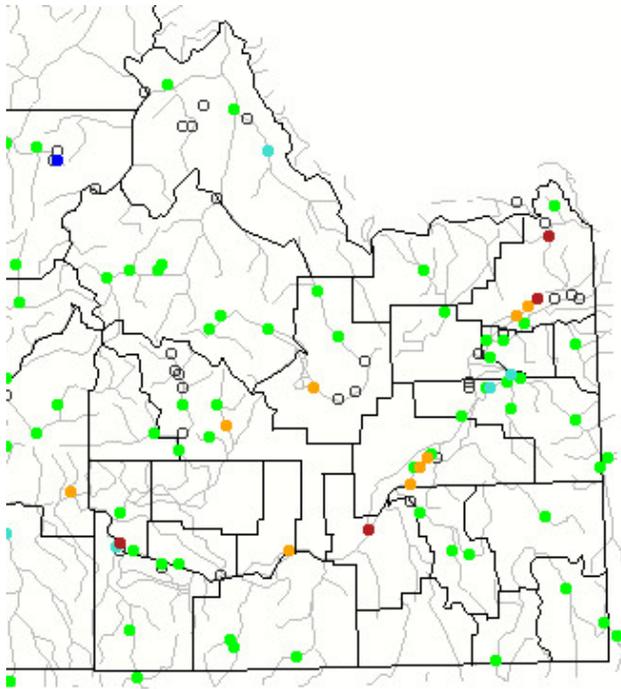
Upper Snake River:
Total Space Available: 657,780 AF
Total Storage Capacity: 4,045,695 AF

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



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

Streamflow:



Monthly average streamflow compared to historical average streamflow for May 2016.



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

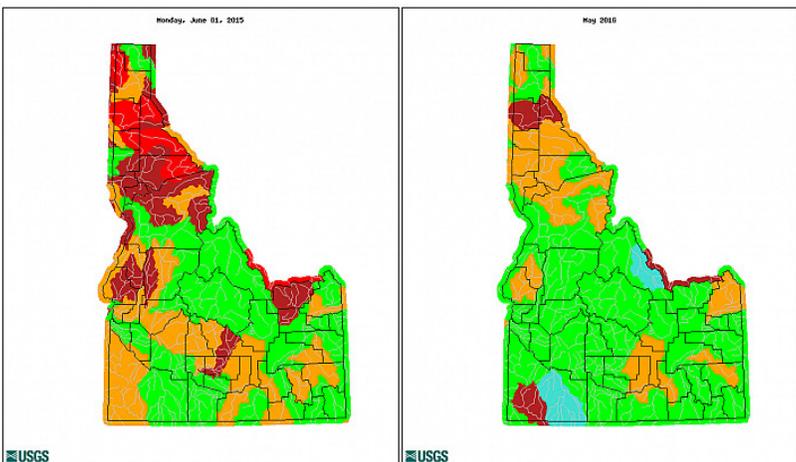
Comparison of Streamflow Maps

Geographic area: Water resource region:

Map type: Sub type:

Date (YYYYMM):

Date (YYYYMM):



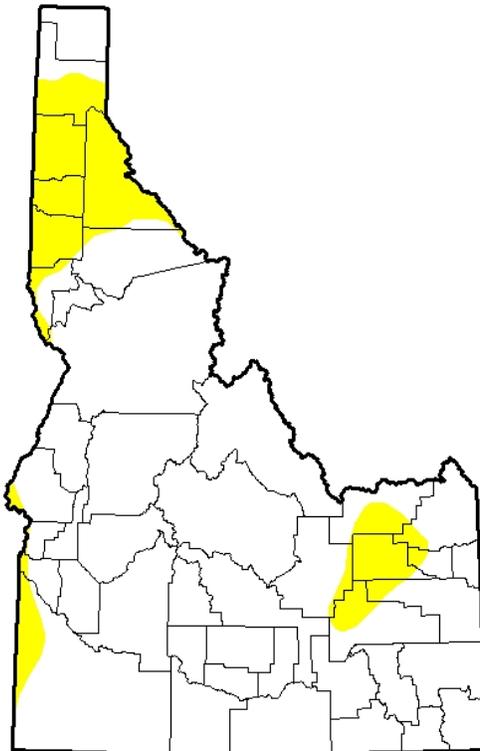
Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	No Data

waterwatch.usgs.gov/index.php

Drought:

**U.S. Drought Monitor
Idaho**

June 7, 2016
(Released Thursday, Jun. 9, 2016)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	86.12	13.88	0.00	0.00	0.00	0.00
Last Week <i>5/31/2016</i>	92.41	7.59	0.00	0.00	0.00	0.00
3 Months Ago <i>3/8/2016</i>	19.06	80.94	13.79	0.00	0.00	0.00
Start of Calendar Year <i>12/29/2015</i>	10.98	89.02	64.05	24.35	1.18	0.00
Start of Water Year <i>9/29/2015</i>	0.00	100.00	85.59	47.55	29.26	0.00
One Year Ago <i>6/9/2015</i>	0.00	100.00	65.15	24.01	9.19	0.00

Intensity:

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

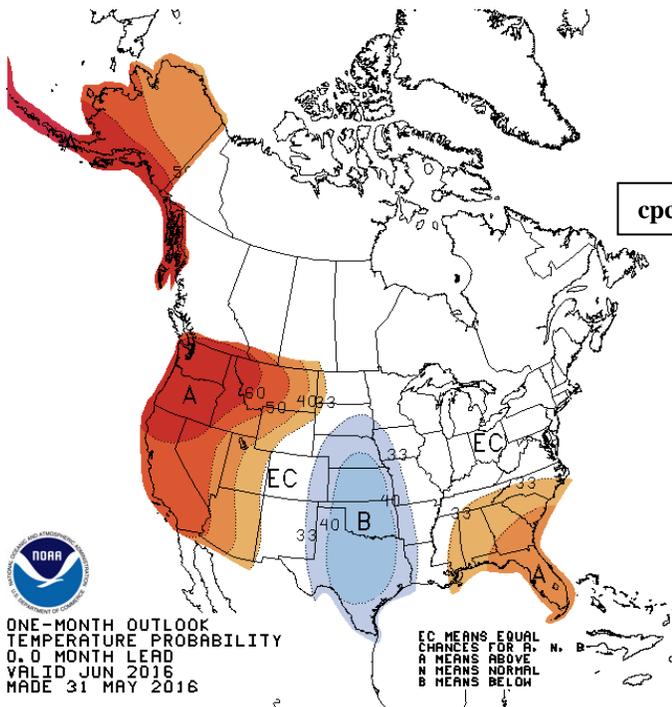
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

Deborah Bathke
National Drought Mitigation Center



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



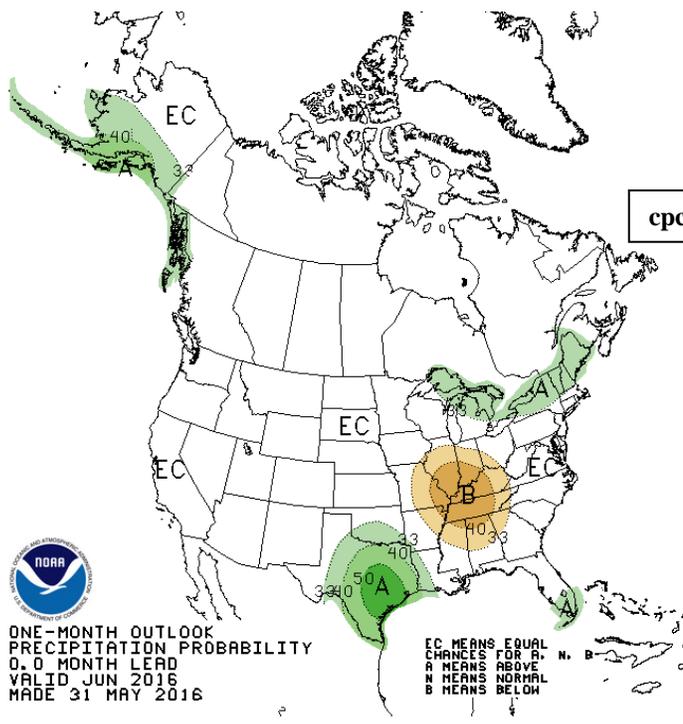
cpc.ncep.noaa.gov/products/predictions/30day/off15_temp.gif



ONE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
0, 0 MONTH LEAD
VALID JUN 2016
MADE 31 MAY 2016

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

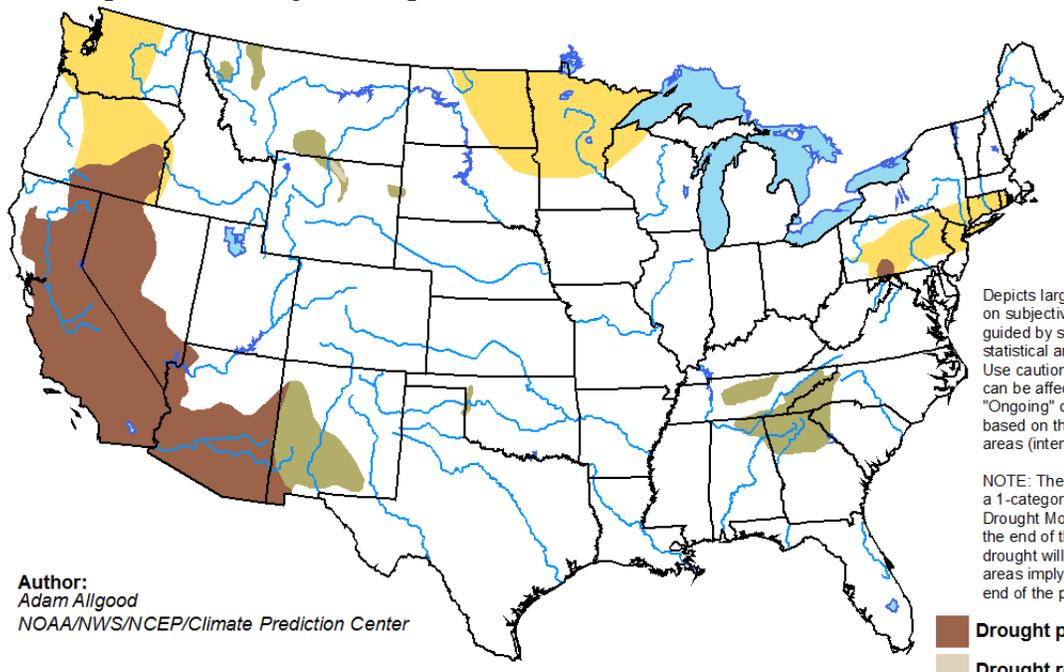
cpc.ncep.noaa.gov/products/predictions/30day/off15_prpc.gif



ONE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
0, 0 MONTH LEAD
VALID JUN 2016
MADE 31 MAY 2016

U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

Valid for May 19 - August 31, 2016
Released May 19, 2016

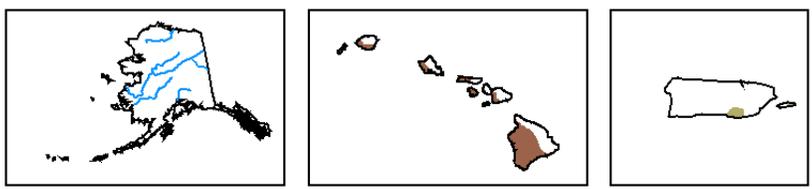


Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan 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).

Author:
Adam Allgood
NOAA/NWS/NCEP/Climate Prediction Center

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

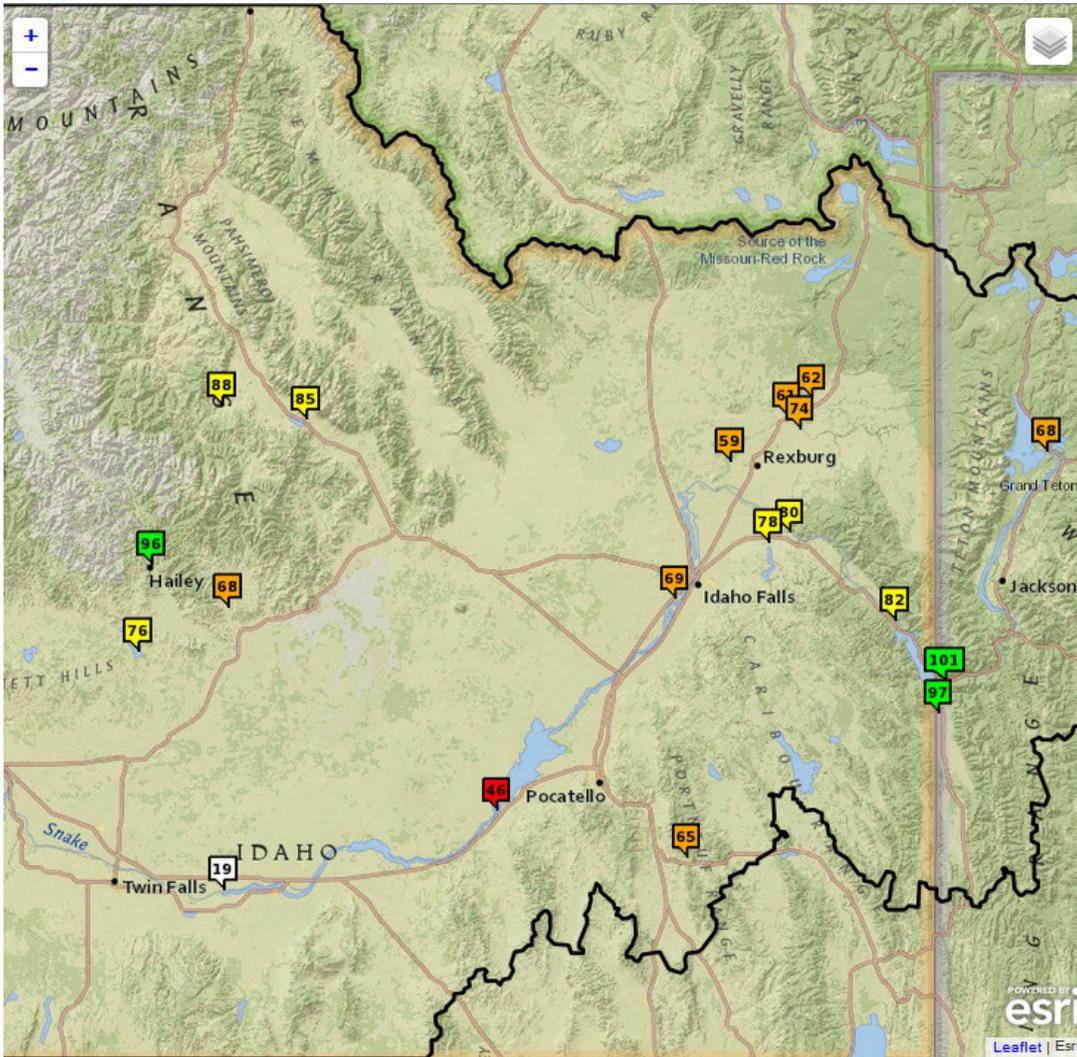


<http://go.usa.gov/3eZ73>

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

Water Supply:

NWRFC Water Supply Apr- Sept Volume Forecast Map (6/8/16):



nwrfc.noaa.gov/ws

NWRFC Water Supply Forecasts:

*For the current Forecast Period Table showing the 90% volume, 50% volume, Percent Normal (official forecast) and 10% volume Exceedence Forecast Ensemble Probabilities in conjunction with the current 30-Year Normal (1981 - 2010): (to select the locations within the Weather Forecast Office Pocatello, click on the column header "Servicing WFO" to sort to PIH)

www.nwrfc.noaa.gov/water_supply/ws_summary.cgi

*For a table format of the current Volume Forecasts and current Runoff statistics for various forecast periods for locations within the Weather Forecast Office Pocatello: (select type: WFO and Site: Pocatello)

www.nwrfc.noaa.gov/water_supply/ws_report.cgi

CBRFC Water Supply Forecast Report for Bear River basin (June 1 Forecast):

Water Supply Volume Percent Average/Median Condition
 ▲ <70 ▲ 70-90 ▲ 90-110 ▲ 110-130 ▲ >130 ▲ Regulated

Options (on/off): Plot
 Area: CBRFC Green Colorado San Juan Great Sevier Virgin Low Col WGRFC ABRFC

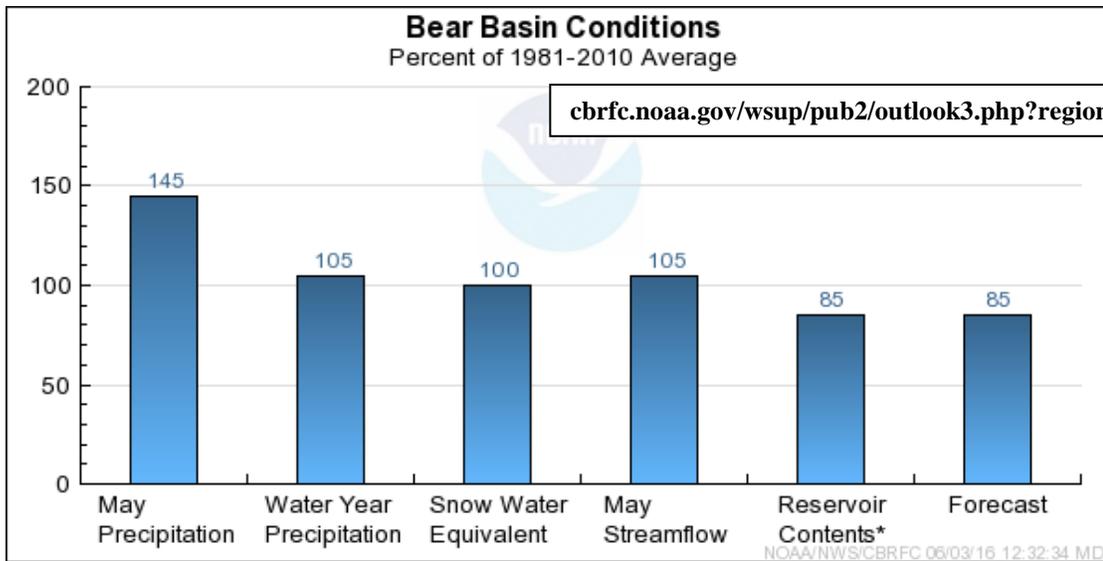
Columns (on/off): Area Sub Area NWS ID DS River Location Forecast Date Avg Cond Med Cond Forecast Period Min 90 P 70 MP 50 P 30 Max 10 Avg Me Med

Click column heading to sort by that data. Click ID to view point info. Click Area, Sub Area, or Forecast Period to show only those points.

	Area	Sub Area	NWS ID	River	Location	Forecast Date	Avg Cond	Med Cond	Forecast Period	Min 90	P 70	MP 50	P 30	Max 10	Avg	Med	Pct Avg	Pct Med
1	Great	Bear	BERU1	Bear	Utah	2016-6-1	▲	▲	Apr 01-Jul 31	95	101	105	109	114	112	106	94	99
2	Great	Bear	BERU1	Bear	Utah	2016-6-1	▲	▲	Jun 01-Jul 31	53	59	63	67	72	66	63	95	100
3	Great	Bear	BEAW4	Bear	Woodruff Narrows Rsvr	2016-6-1	▲	▲	Apr 01-Jul 31	94	101	106	110	117	121	110	88	96
4	Great	Bear	BEAW4	Bear	Woodruff Narrows Rsvr	2016-6-1	▲	▲	Jun 01-Jul 31	35	42	47	51	58	57	44	82	107
5	Great	Bear	BORW4	Smiths Fork	Border	2016-6-1	▲	▲	Apr 01-Jul 31	80	84	87	90	94	89	80	98	109
6	Great	Bear	BORW4	Smiths Fork	Border	2016-6-1	▲	▲	Jun 01-Jul 31	35	39	42	45	49	50	43	84	98
7	Great	Bear	STD1	Bear	Montpelier	2016-6-1	▲	▲	Apr 01-Jul 31	108	111	115	121	135	182	117	63	98
8	Great	Bear	STD1	Bear	Montpelier	2016-6-1	▲	▲	Jun 01-Jul 31	40	43	47	53	67	91	53	52	89
9	Great	Bear	LGNU1	Logan	Logan	2016-6-1	▲	▲	Apr 01-Jul 31	91	94	97	100	105	111	97	87	100
10	Great	Bear	LGNU1	Logan	Logan	2016-6-1	▲	▲	Jun 01-Jul 31	40	43	46	49	54	61	53	75	87

cbrfc.noaa.gov/rmap/wsuf/wsuflist.php

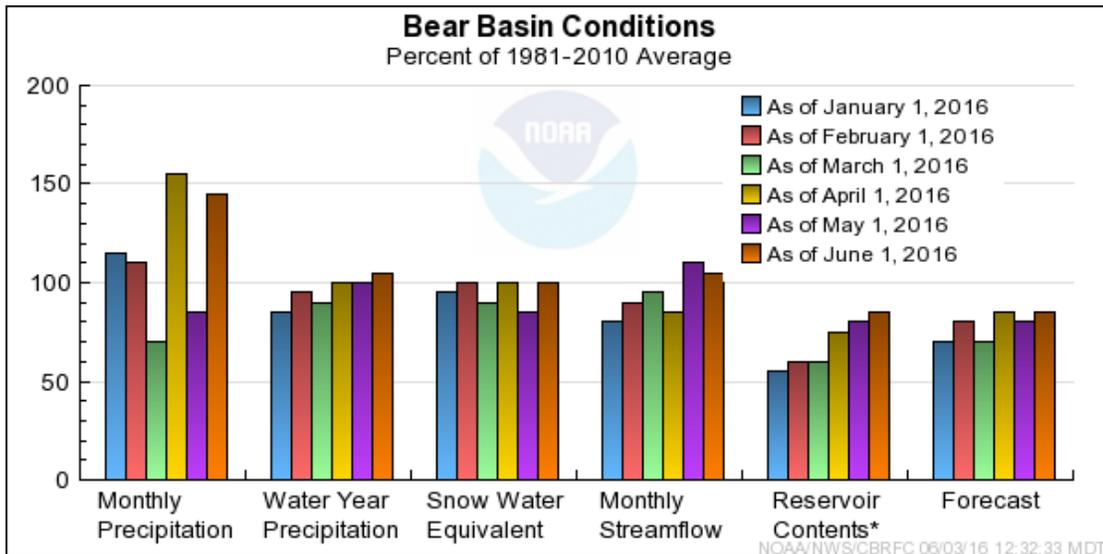
Bear River Basin Conditions:



cbrfc.noaa.gov/wsuf/pub2/outlook3.php?region=sl&month=6&year=2016#br

Snow Water Equivalent in Percent of Median.

* Percent usable capacity, not percent average contents.



cbrfc.noaa.gov/wsuf/pub2/graph/png/br.cond.2016.6.png

**NRCS-NWCC Water Supply Forecast Report for the upper Snake River and Bear River basins
(June 1 Forecast):**

*For a table format of the current Volume and Percent of Average Forecasts for both the upper Snake and Bear River basins which show various forecast periods for the 50% volume, percent of average (Official Forecast), max volume (10%), 30% volume, 70% volume, min volume (90%) and the 30-year 1981 - 2010 average, please visit:

www.wcc.nrcs.usda.gov/wsf/west_fcst.html
and click on appropriate first of month forecast and then either UPPER SNAKE or BEAR

cc:
Mike Schaffner, Western Region HCSD
Joe Intermill, Hydrologist-in-Charge, Northwest River Forecast Center
Steve King, Service Coordination Hydrologist /Acting DOH, Northwest River Forecast Center
Michelle Stokes, Hydrologist-in-Charge, Colorado Basin River Forecast Center
Paul Miller, Service Coordination Hydrologist, Colorado Basin River Forecast Center
John Lhotak, Development and Operations Hydrologist, Colorado Basin River Forecast Center
Hydrometeorological Information Center
Dean Hazen, Meteorologist-in-Charge, Pocatello, Idaho
Kurt Buffalo, Science and Operations Officer, Pocatello, Idaho
Vern Preston, Warning Coordination Meteorologist, Pocatello, Idaho
Troy Lindquist, Senior Service Hydrologist, Boise, Idaho
Brian McInerney, Senior Service Hydrologist, Salt Lake City, Utah
Kevin Berghoff, Senior Hydrologist, Northwest River Forecast Center
Taylor Dixon, Hydrologist, Northwest River Forecast Center
Brent Bernard, Hydrologist, Colorado Basin River Forecast Center
PIH Mets/HMT (pih.ops)

End

cbl