

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: January 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: February 9, 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:

The beginning of the calendar year brought an average of warmer temperatures across the Hydrologic Service Area (HSA), but for the beginning of the month, record low temperatures were set near Burley. Overall, mostly near normal precipitation fell across the HSA with the exception of the central mountains and the Caribou Highlands which received the most with amounts falling in the 125-200% of normal range. Overall, mostly two to five inches of precipitation fell across the mountainous parts of the HSA during the past month with most of the precipitation falling in Fremont, Madison, Teton, and Bonneville counties with a good amount in Caribou county as well. Temperature departures from normal for January show that across the HSA, we ranged mostly near normal in the southern half of the HSA; it was a little bit warmer in the northern half which was about 3 to 6 degrees F above normal. Mean average temperatures ranged from 12 to 29 degrees F across the HSA. The Oakley COOP station had 8 days of average temperatures over 35 degrees F during January.

As far as the short-term 8 to 14 day Climate Prediction Center Outlook is concerned, the forecast is for well above normal temperatures across Idaho with an unprecedented high pressure ridge giving us a 60% chance of above normal temperatures. Eastern Idaho transitions into a near to below normal pattern with a near normal to a 33 percent chance of below normal precipitation across eastern 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; mostly ranging from 33 to 50 percent chance of above normal temperatures within the HSA. As for precipitation, the outlook is for mostly near normal precipitation across southern and eastern Idaho.

Of the data available for the month, the stations within the HSA reaching the highest 24-hour temperature was the Bonanza RAWS station reaching 55°F on the 27th. The station (non-SNOTEL and non-RAWS) with the lowest recorded temperature was the Stanley COOP station at -33°F on January 3rd. The highest recorded 24-hr precipitation (non-SNOTEL) occurred at the Ashton COOP station where 1.00 inches fell on the 16th. The highest recorded precipitation total (non-SNOTEL) occurred at the Lava Hot Springs COOP where 2.89 total inches was recorded for the month. The Howell Canyon and Wildhorse Divide SNOTELs recorded 6.20 and 5.80 inches respectively of total precipitation for the month according to NRCS. The Goose-Trapper Creeks in southern Idaho received 126% of average precipitation for January with the Portneuf not lagging too far behind at 119%-based on SNOTEL data.

Reservoirs last month increased capacity overall by around 8% in the upper Snake River basin system (an increase of about 315 KAF occurred over the month and is currently sitting at 58% of capacity overall). Compared to last year at this time, it was about 75% of capacity. According to Natural Resources Conservation Service and U.S. Bureau of Reclamation reservoir data, the most notable increase in storage capacity is the American Falls, Mackay and Little Wood Reservoirs increasing percent capacity by 13% and 8% for both Mackay and Little Wood. Mackay is currently at 104% of average and Little Wood reservoir is currently at 70% of average. Magic Reservoir has the lowest relative storage; at 48% of average and Jackson Lake is the fullest at 131% of average.

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

Drought conditions across eastern Idaho remained the same since last month's assessment. Currently, about 4 percent and 58 percent of the state is in Severe and Moderate drought respectively. The latest U.S. Seasonal Drought Outlook shows a forecast of persistent drought primarily in the central mountains and up into Montana including the Henrys Fork basin-just north of the Snake River. The remainder of the HSA currently has no drought declarations.

According to the Idaho NRCS Snow Survey February 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 Oakley basin. This basin was given a SWSI rating of 1.5 (near to above normal). This rating reflects overall water availability in the basins and are mostly used for irrigational planning purposes. The two lowest ranked basins within the HSA are the Henrys Fork and Snake (Heise) basins both rated at -0.3, which are near normal.

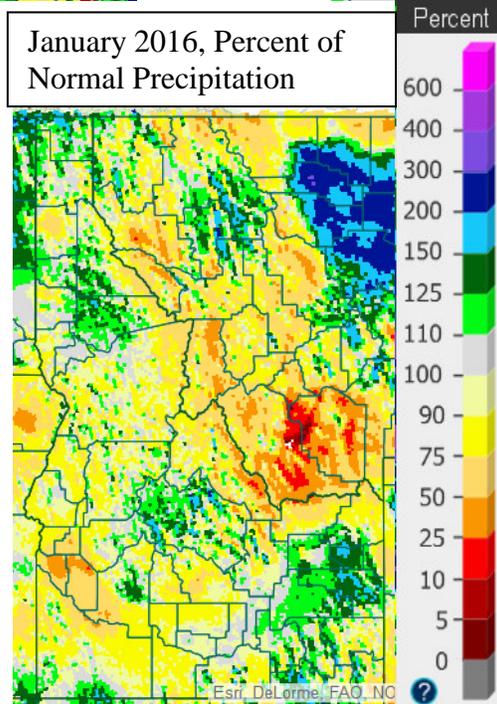
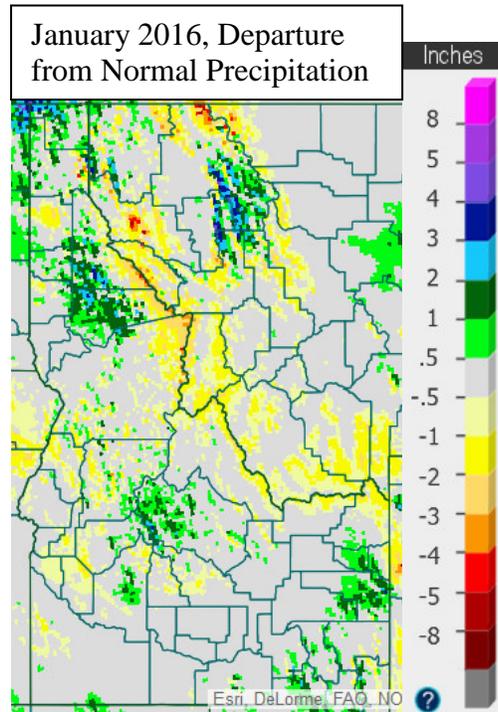
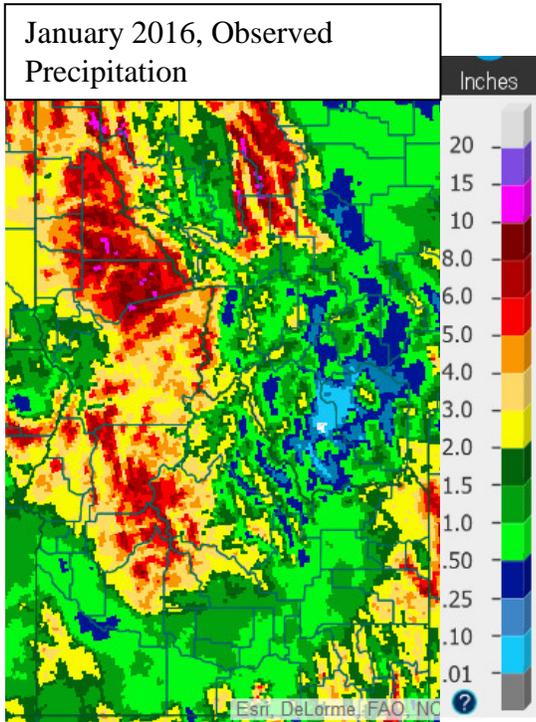
For more information on the Idaho Surface Water Supply Index (SWSI) February 1st Outlook please visit:
<ftp://ftp.wcc.nrcs.usda.gov/states/id/webftp/swsi/tables/Feb/SWSI02.pdf>

For more information on the Idaho Water Supply February 1st Outlook please go to:
<ftp://ftp.wcc.nrcs.usda.gov/states/id/webftp/wsor/2016/borid216.pdf>

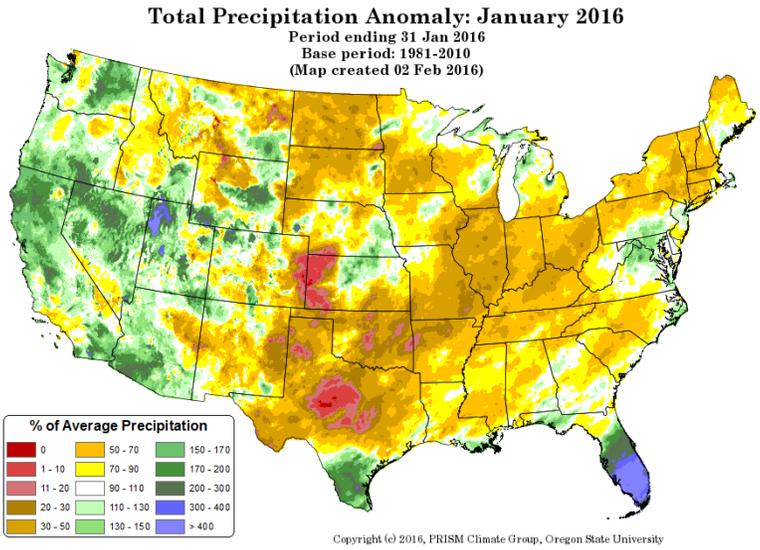
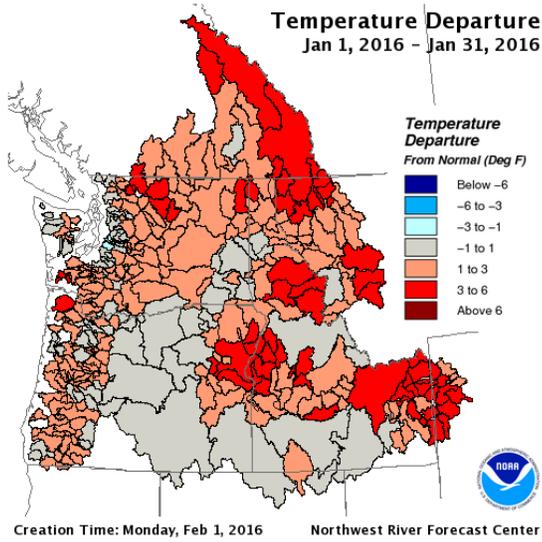
For a table format of the current volume forecasts and current runoff for WFO PIH:
www.nwrfc.noaa.gov/water_supply/ws_report.cgi

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

Precipitation:

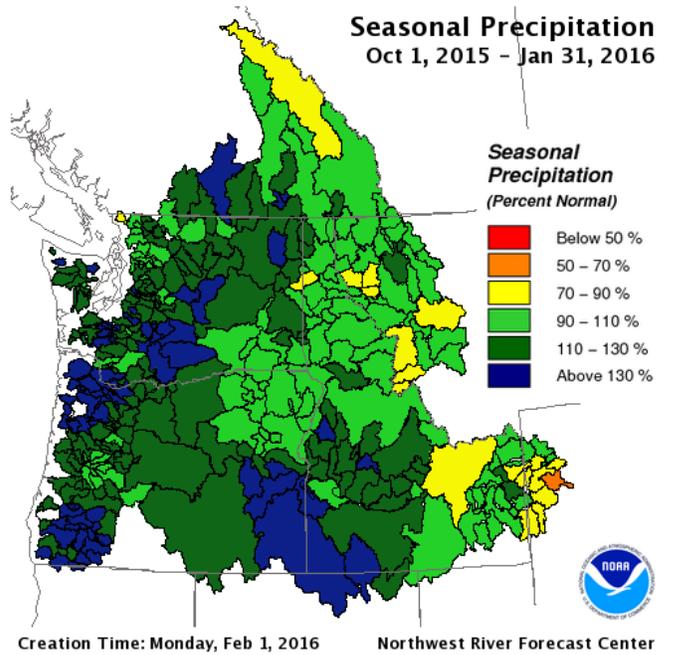
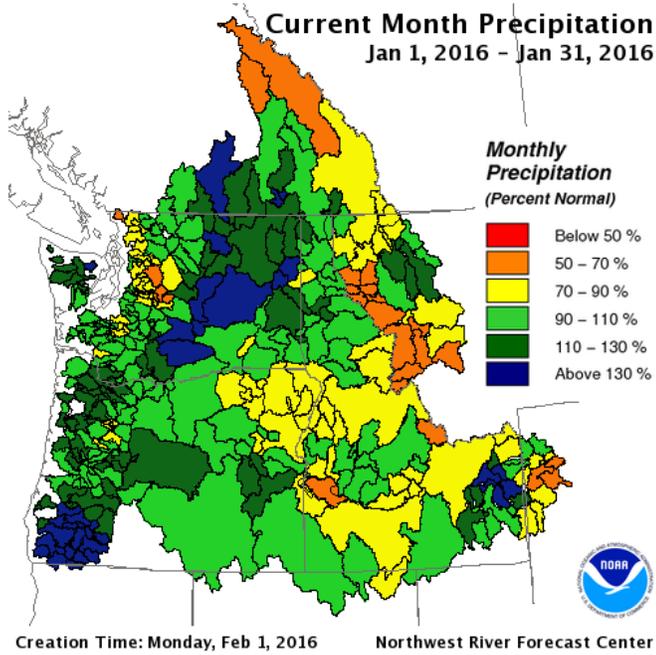


water.weather.gov/precip/#



nwrfc.noaa.gov/WAT_RES_wy_summary/20160201/CurMonMAT_2016Jan31_2016020116.png

prism.oregonstate.edu/



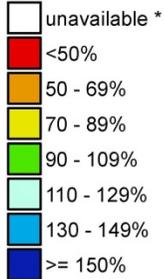
nwrfc.noaa.gov/WAT_RES_wy_summary/20160201/CurMonMAP_2016Jan31_2016020116.png

nwrfc.noaa.gov/WAT_RES_wy_summary/20160201/SeasonalMAP_2016Jan31_2016020116.png

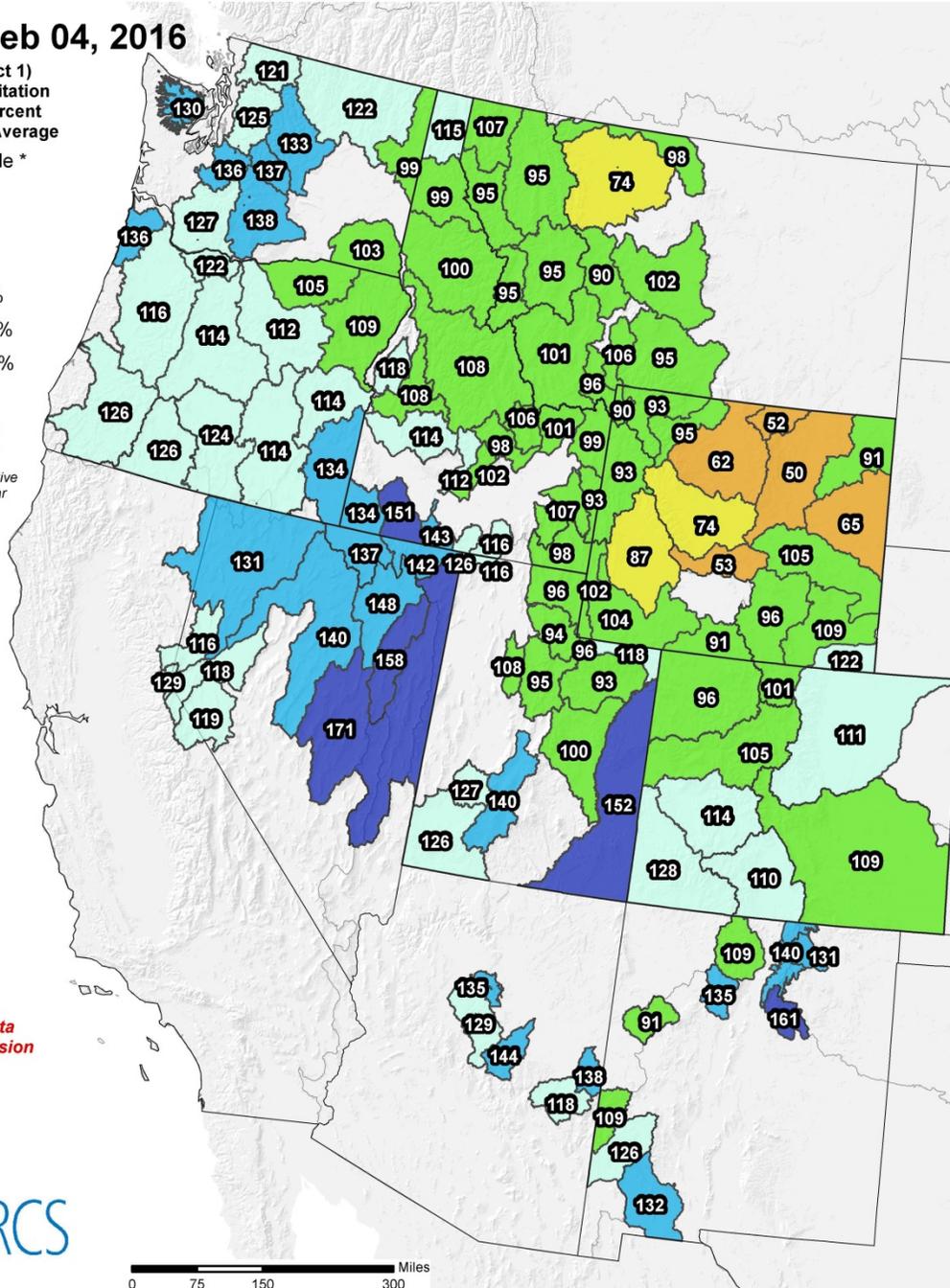
Westwide SNOTEL Water Year (Oct 1) to Date Precipitation % of Normal

Feb 04, 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

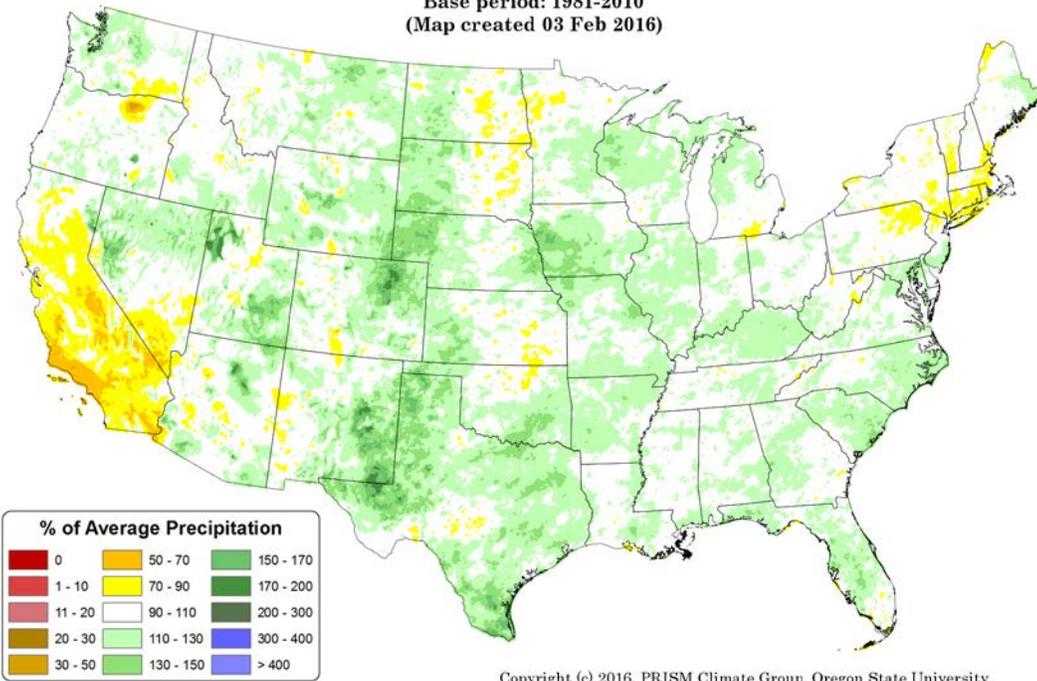
Past 2 Years of Precipitation % of Average:

Total Precipitation Anomaly: February 2014 - 02 February 2016

Period ending 7 AM EST 02 Feb 2016

Base period: 1981-2010

(Map created 03 Feb 2016)



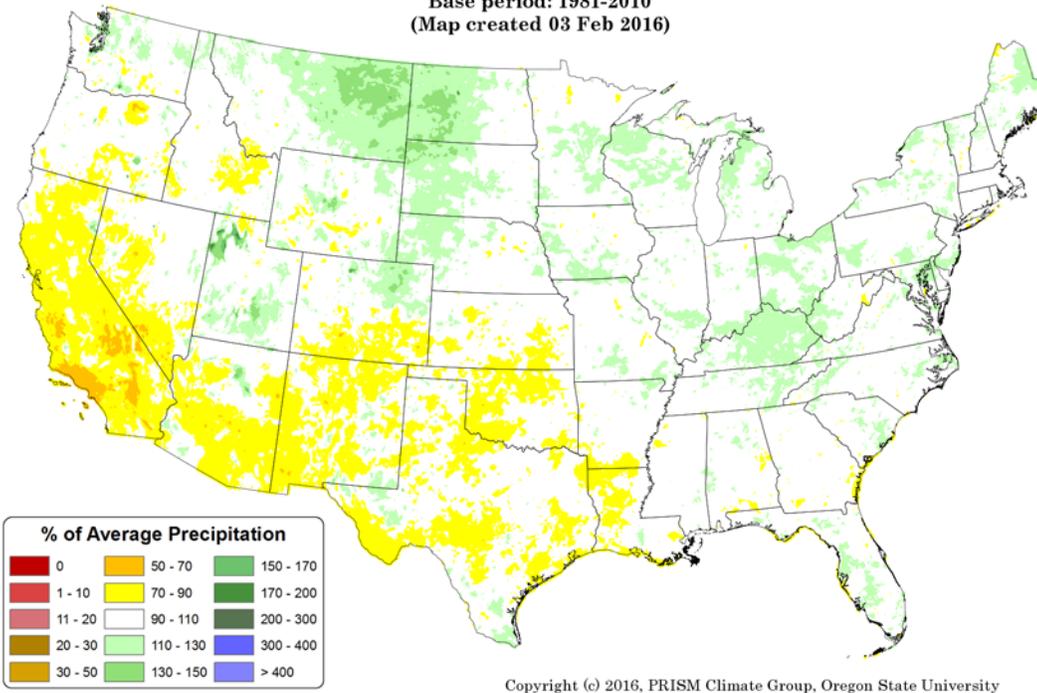
Past 6 Years of Precipitation % of Average:

Total Precipitation Anomaly: February 2010 - 02 February 2016

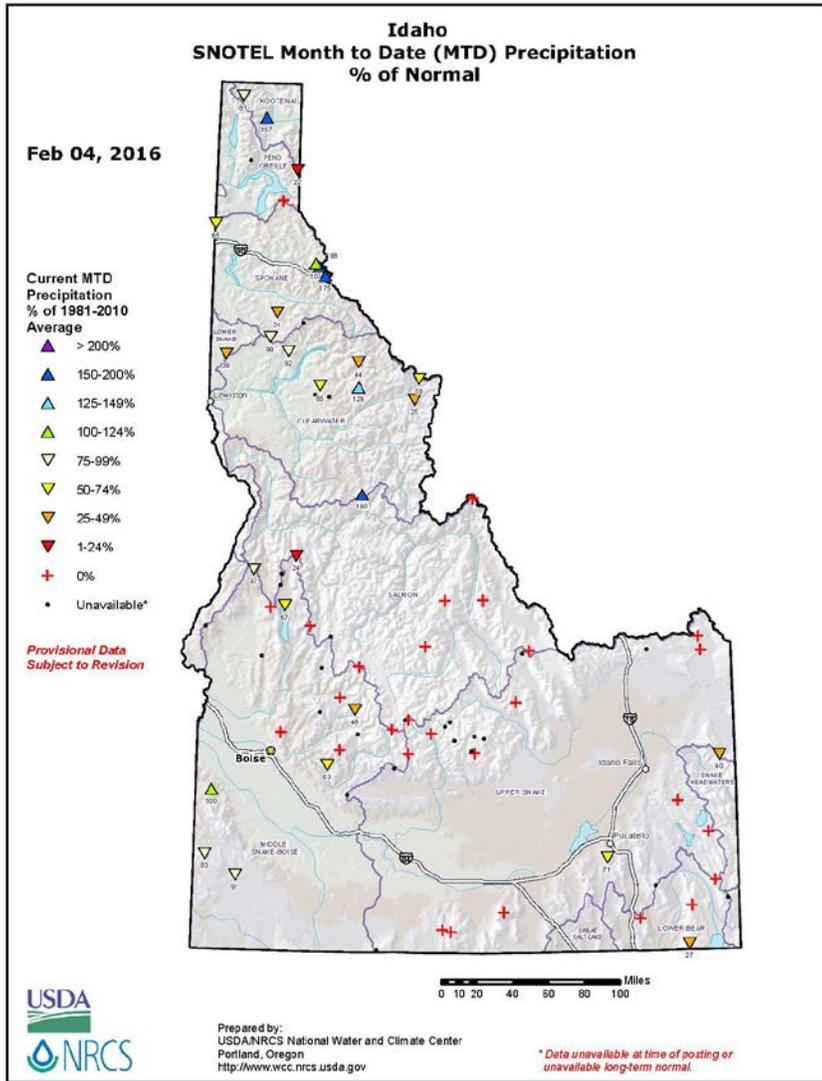
Period ending 7 AM EST 02 Feb 2016

Base period: 1981-2010

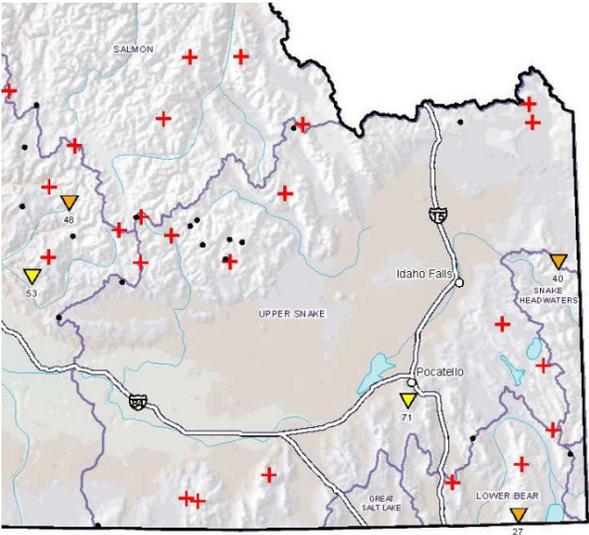
(Map created 03 Feb 2016)



prism.oregonstate.edu/comparisons/drought.php



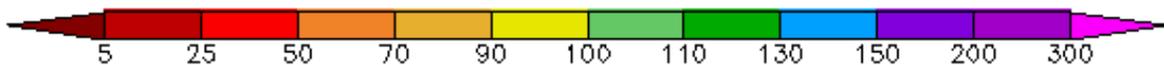
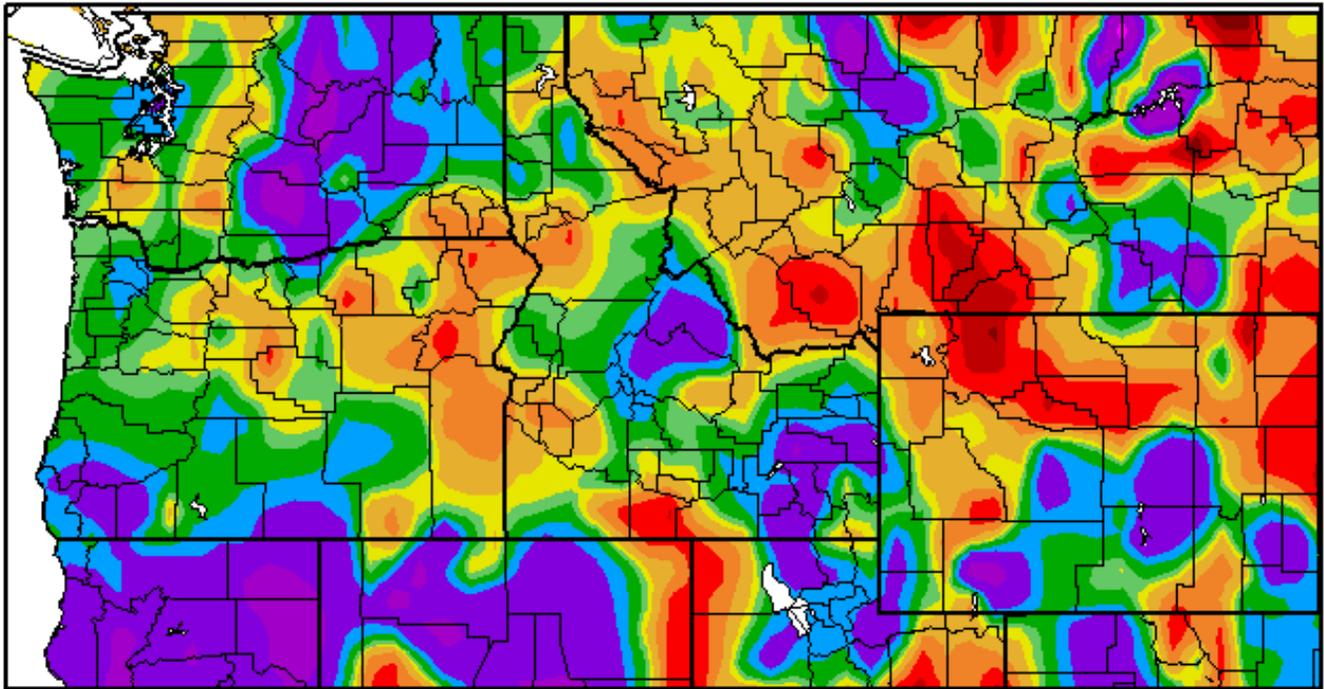
wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/id_mtdprecptnormal.pdf



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

January was a good month for snowpack in eastern Idaho. Bonneville, Bingham and Bannock counties all received over 150% of normal precipitation. Same goes for the Salmon basin in Idaho, eastern WA, northern NV and northern CA where well above normal precipitation occurred. Elsewhere in eastern Idaho the month of January was near to above normal. Northern Butte and eastern Custer counties received less than normal precipitation.

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

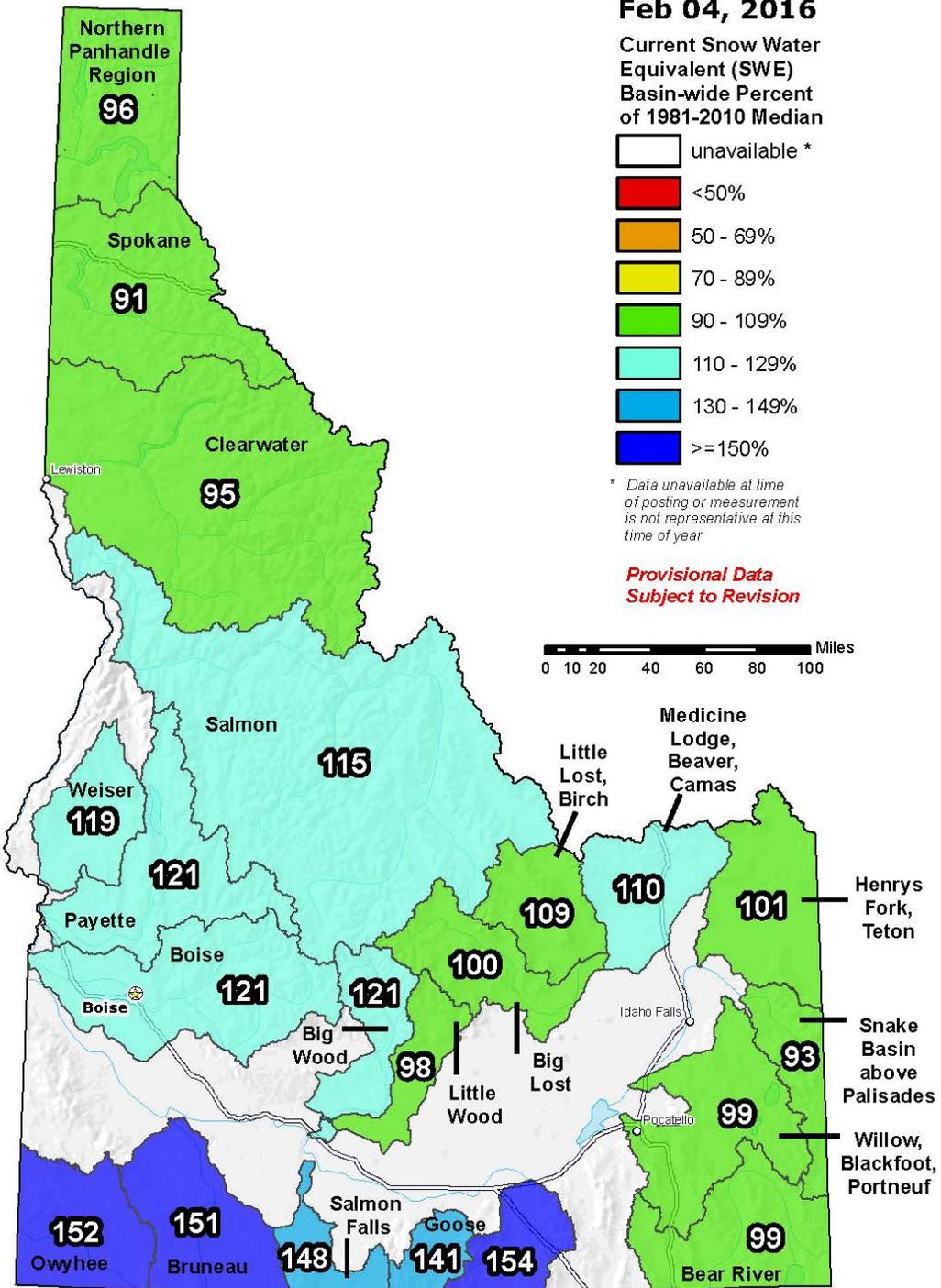


Generated 2/2/2016 at HPRCC using provisional data.

Regional Climate Centers

hprcc.unl.edu/maps.php?map=ACISClimateMaps

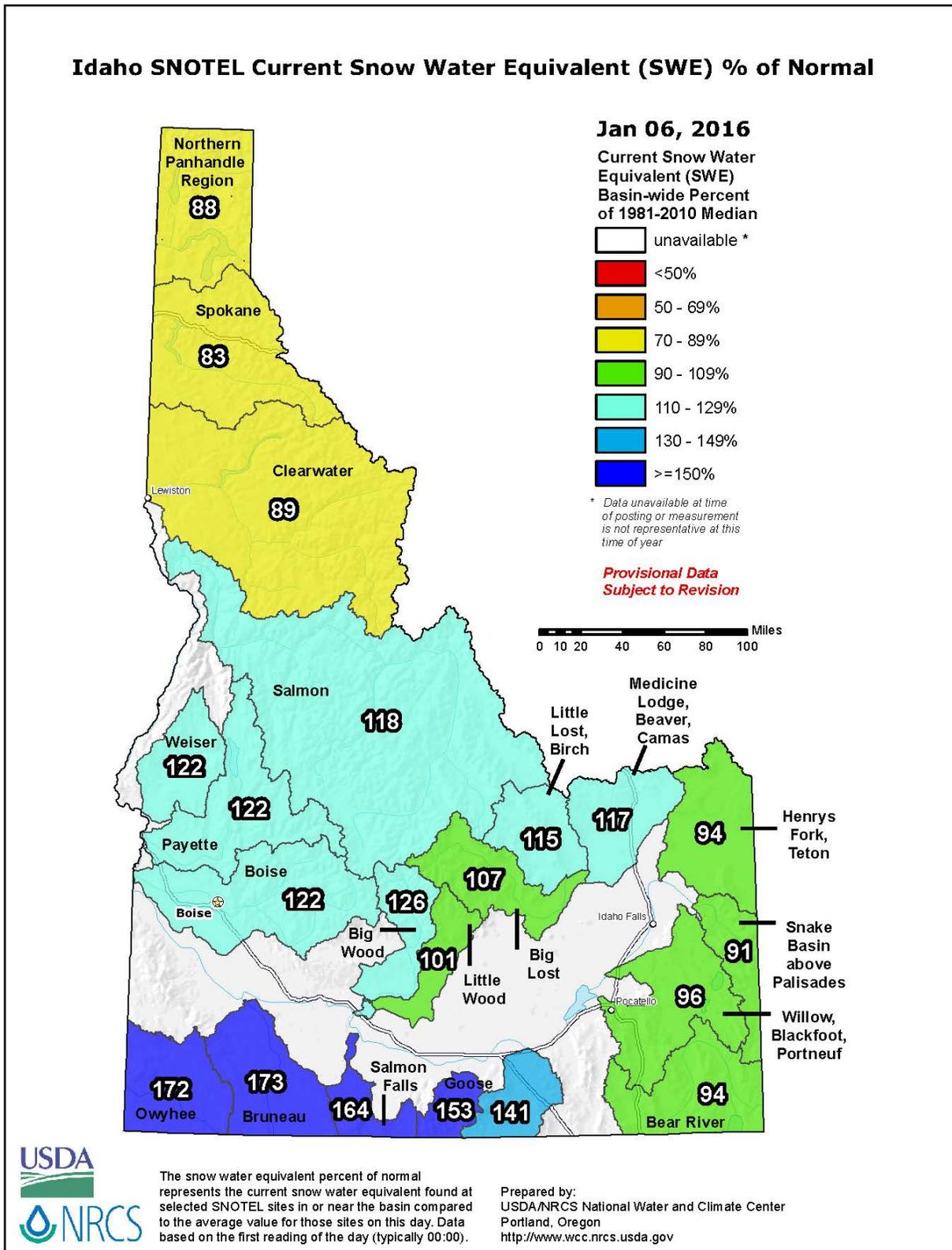
Idaho SNOTEL Current Snow Water Equivalent (SWE) % of Normal



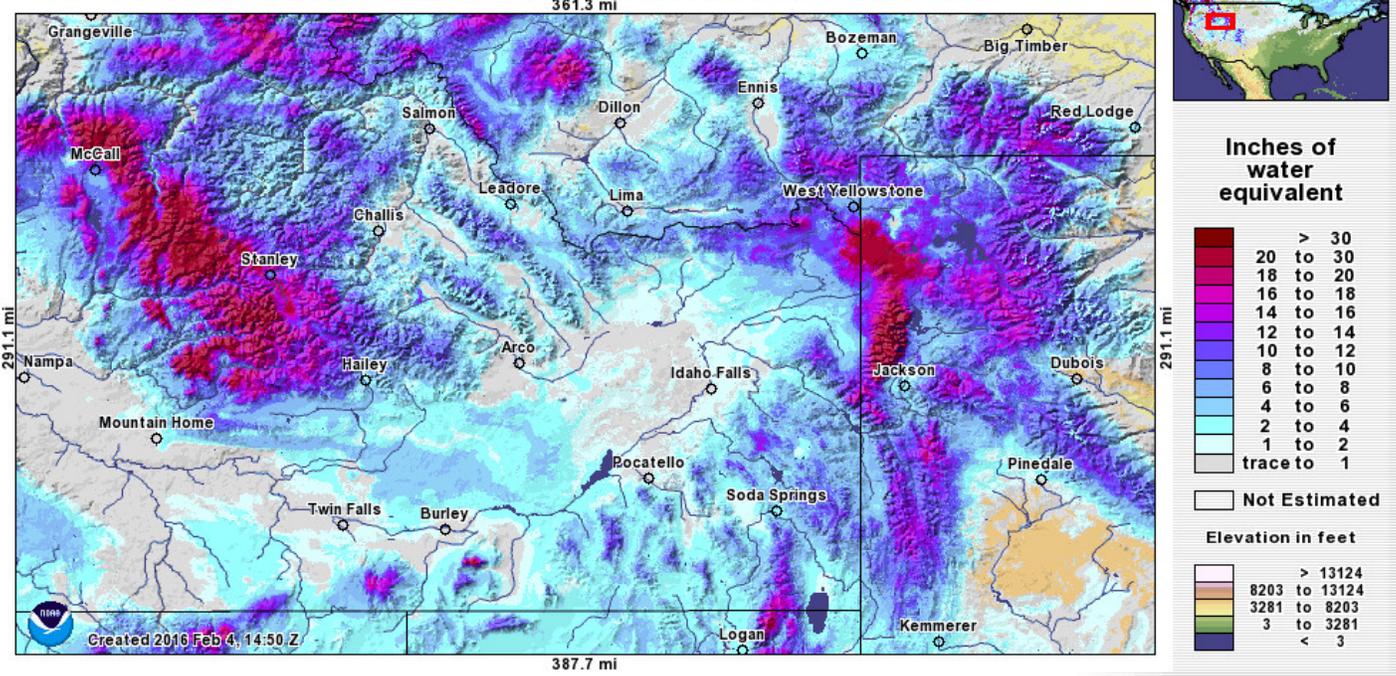
The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

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

Basinwide SWE compared to last month: improvements across basins along ID-WY border, central mountains dropped in swe as well as the Goose basin. Most notable gain was the Henrys Fork/Teton and most notable loss the Goose basin; compared to last month (see below):



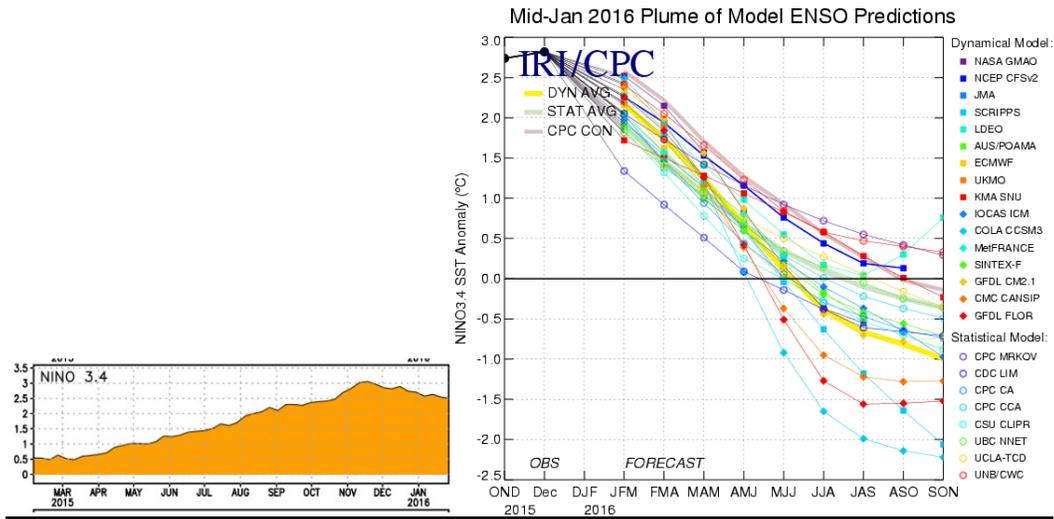
Modeled Snow Water Equivalent forecasted for 2016 February 4, 16:00 UTC



nohrc.noaa.gov/interactive/html/map.html

ENSO Update:

Latest Observed SST Departure: Niño 3.4 ~ 2.5 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 Advisory continues. The strong El Niño expected to gradually weakening through Spring 2016, and transition to ENSO-neutral late spring/early summer 2016.

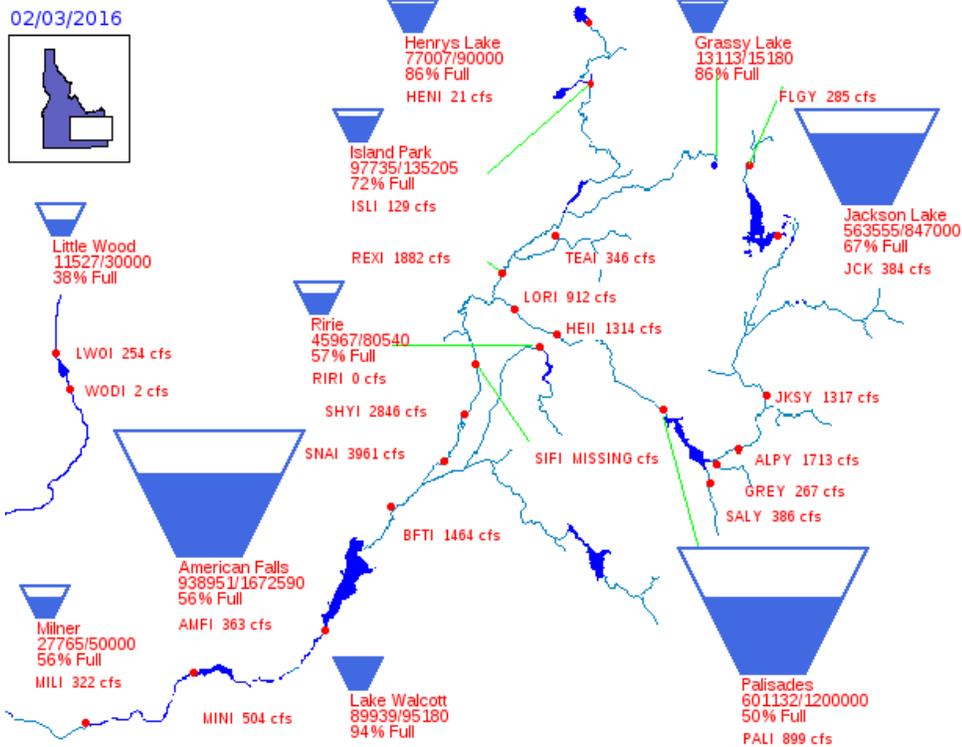
Note: Positive equatorial sea surface temperature (SSTs) anomalies continue across most of the Pacific Ocean. MJO recently became more active. The Pacific Decadal Oscillation (PDO) is currently positive.

Reservoirs:

Reservoir	% Capacity December 31 ¹	% Capacity January 31 ²	Percent Change	% of Average ²	% of Average Last Year ²
Jackson Lake	66	67	1	131	151
Palisades	50	57	7	87	124
Henrys Lake	83	85	2	96	110
Island Park	62	71	9	97	110
Grassy Lake	84	86	2	110	107
Ririe	55	57	2	118	118
Blackfoot	49	52	3	98	91
American Falls	42	55	13	82	106
Mackay	53	61	8	104	107
Little Wood	30	38	8	70	75
Magic	16	17	1	48	55
Oakley	16	18	2	61	76
Bear Lake	35	36	1	81	94
Lake Walcott	95 ³	94 ⁴	-1	n/a	n/a
Milner	59 ³	56 ⁴	-3	n/a	n/a

Source: (1) NRCS December 31, 2015; (2) NRCS January 31, 2016.
 (3) US Bureau of Reclamation (BOR) January 5, 2016 (4) BOR February 3, 2016

wcc.nrcs.usda.gov/ftpref/support/water/SummaryReports/ID/BRes_2_2016.pdf

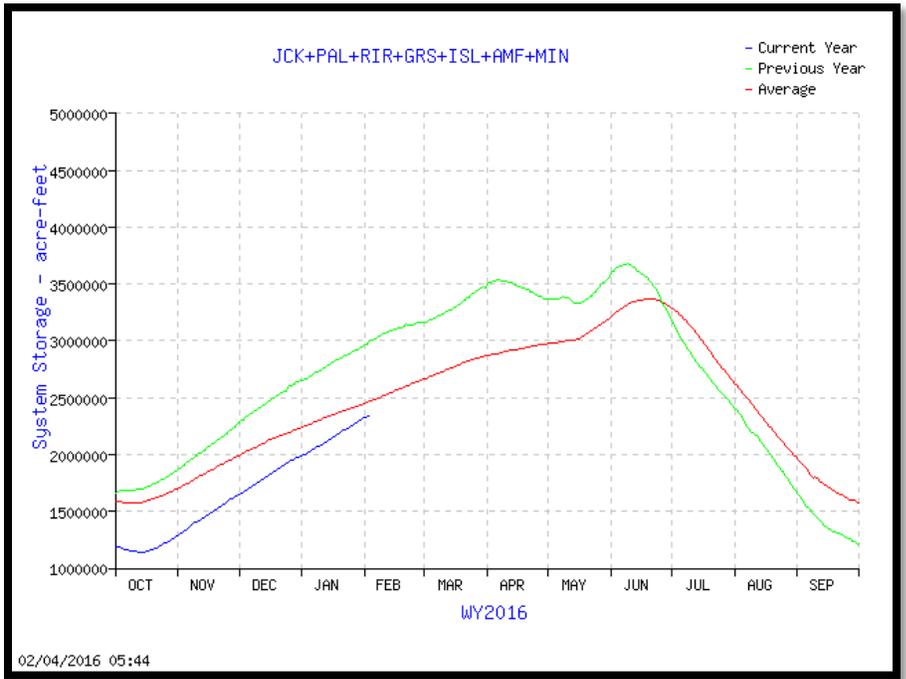


58% of Capacity in Upper Snake River System
 (Jackson Lake, Palisades, Grassy Lake, Island Park, Ririe, American Falls & Lake Walcott)

usbr.gov/pn/hydromet/burtea.html

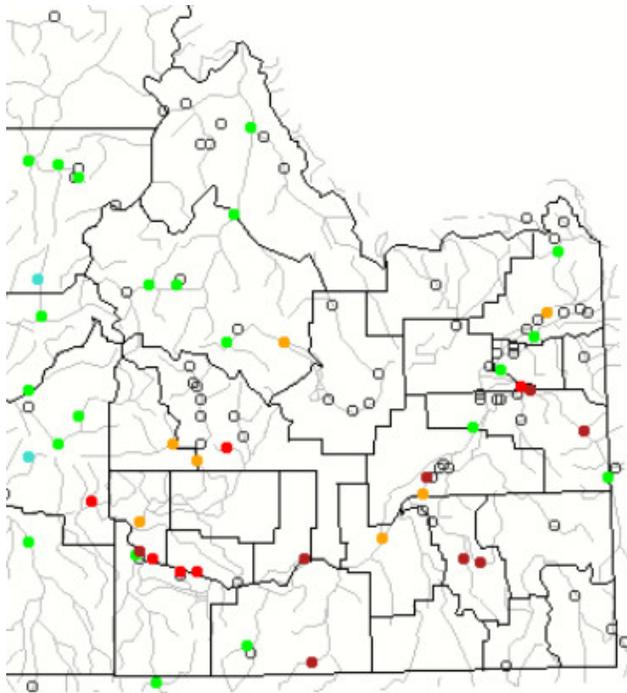
Upper Snake River:
 Total Space Available: 1,695,304 AF
 Total Storage Capacity: 4,045,695 AF

**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 January 2016.

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

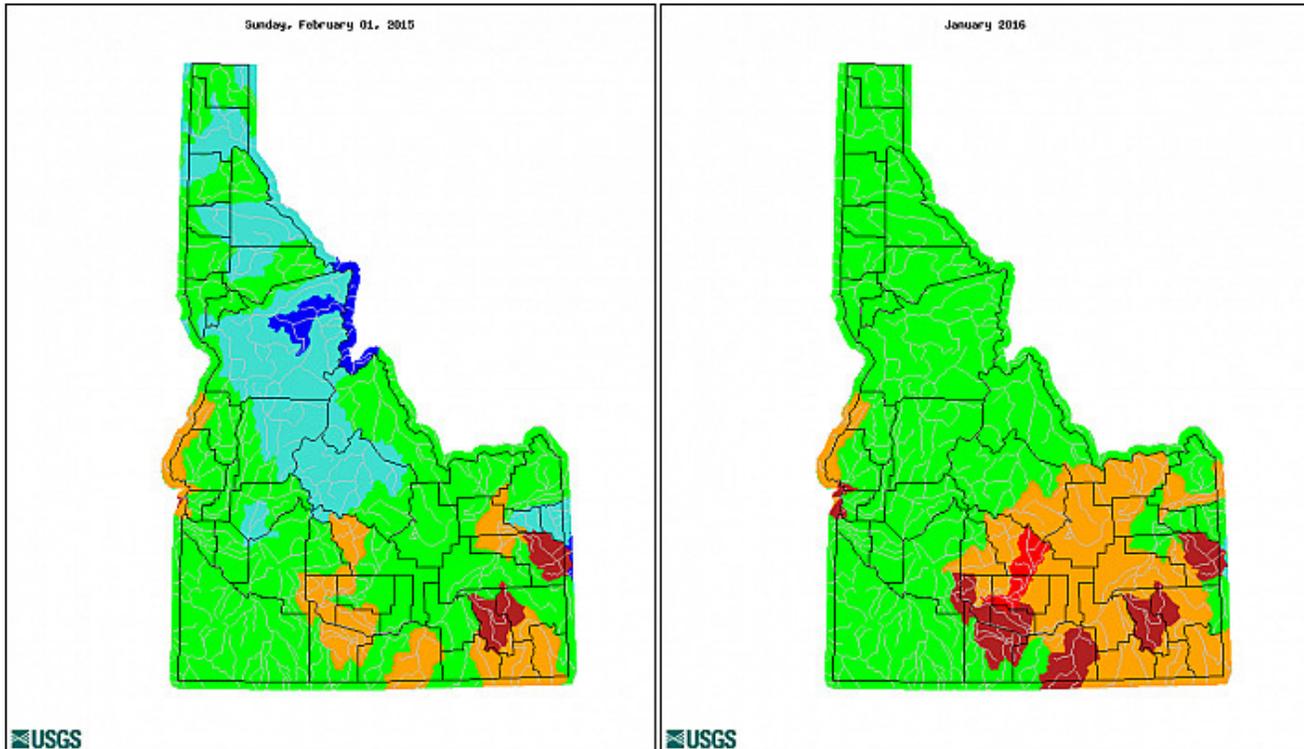
Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

Comparison of Streamflow Maps

Geographic area: **Water resource region:**
Map type: **Sub type:**

Date (YYYYMM):

Date (YYYYMM):



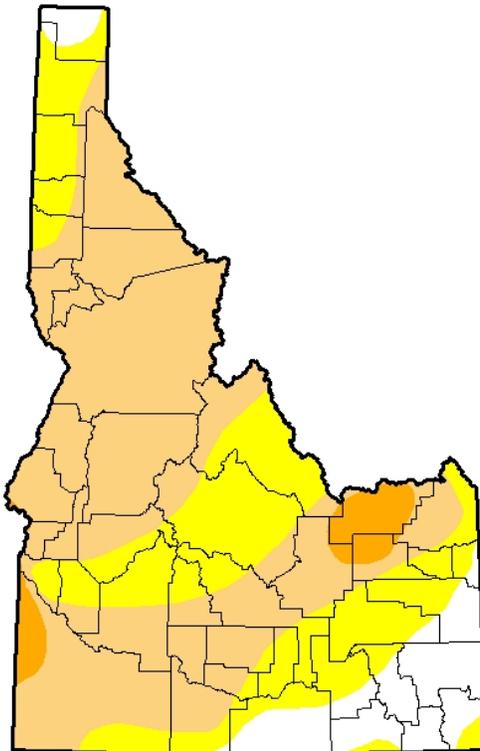
Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	No Data
	Much below normal	Below normal	Normal	Above normal	Much above normal		

waterwatch.usgs.gov/index.php

Drought:

**U.S. Drought Monitor
Idaho**

February 2, 2016
(Released Thursday, Feb. 4, 2016)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	11.19	88.81	58.25	3.90	0.00	0.00
Last Week <i>12/6/2015</i>	11.19	88.81	58.22	3.66	0.00	0.00
3 Months Ago <i>11/3/2015</i>	8.63	91.37	82.14	45.42	16.84	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>2/2/2015</i>	39.92	60.08	34.69	18.49	3.34	0.00

Intensity:

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

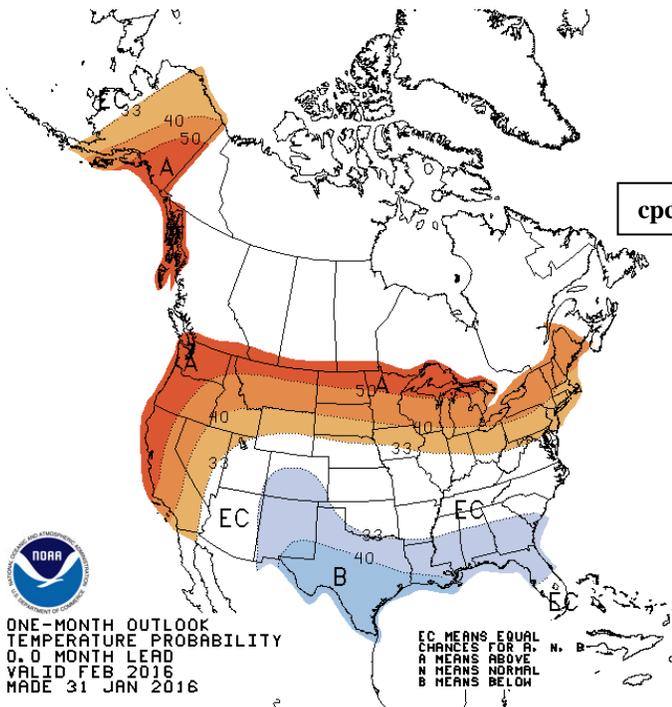
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

Anthony Artusa
NOAA/NWS/NCEP/CPC



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

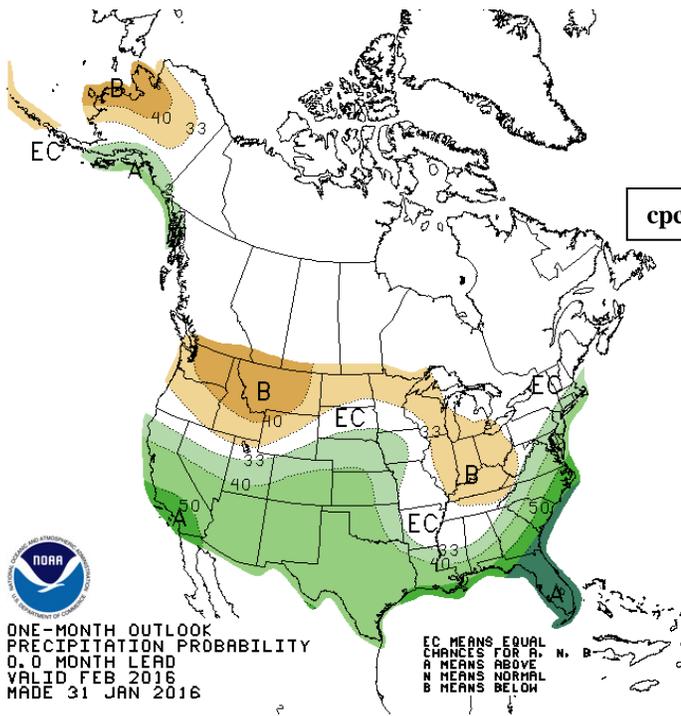


cpc.ncep.noaa.gov/products/predictions/30day/off15_temp.gif



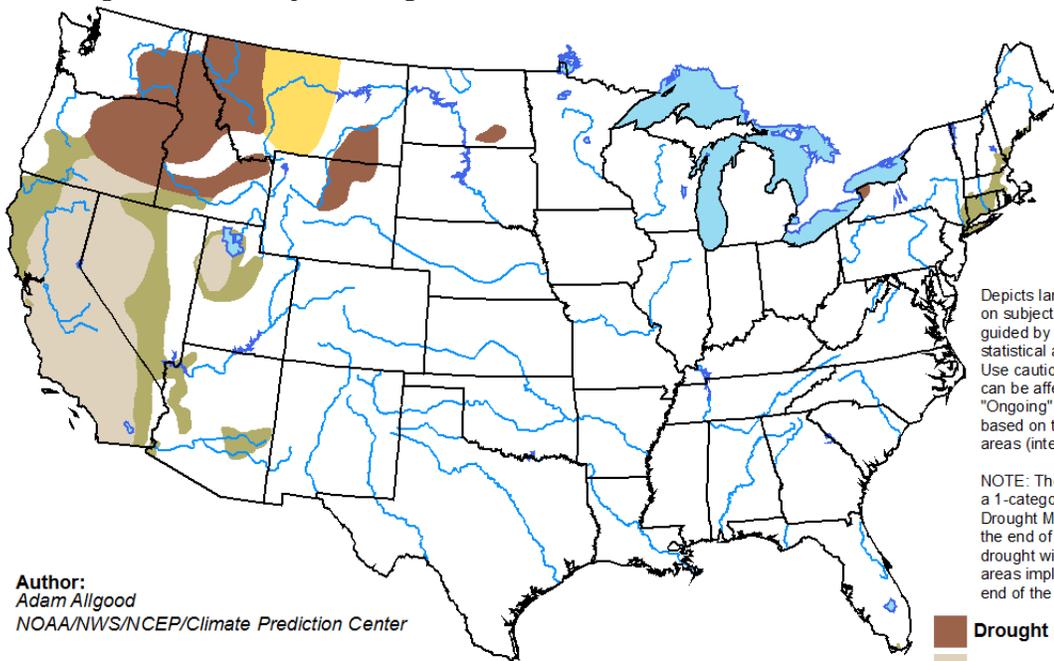
ONE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
0, 0 MONTH LEAD
VALID FEB 2016
MADE 31 JAN 2016

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



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

Valid for January 21 - April 30, 2016
Released January 21, 2016



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

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).

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

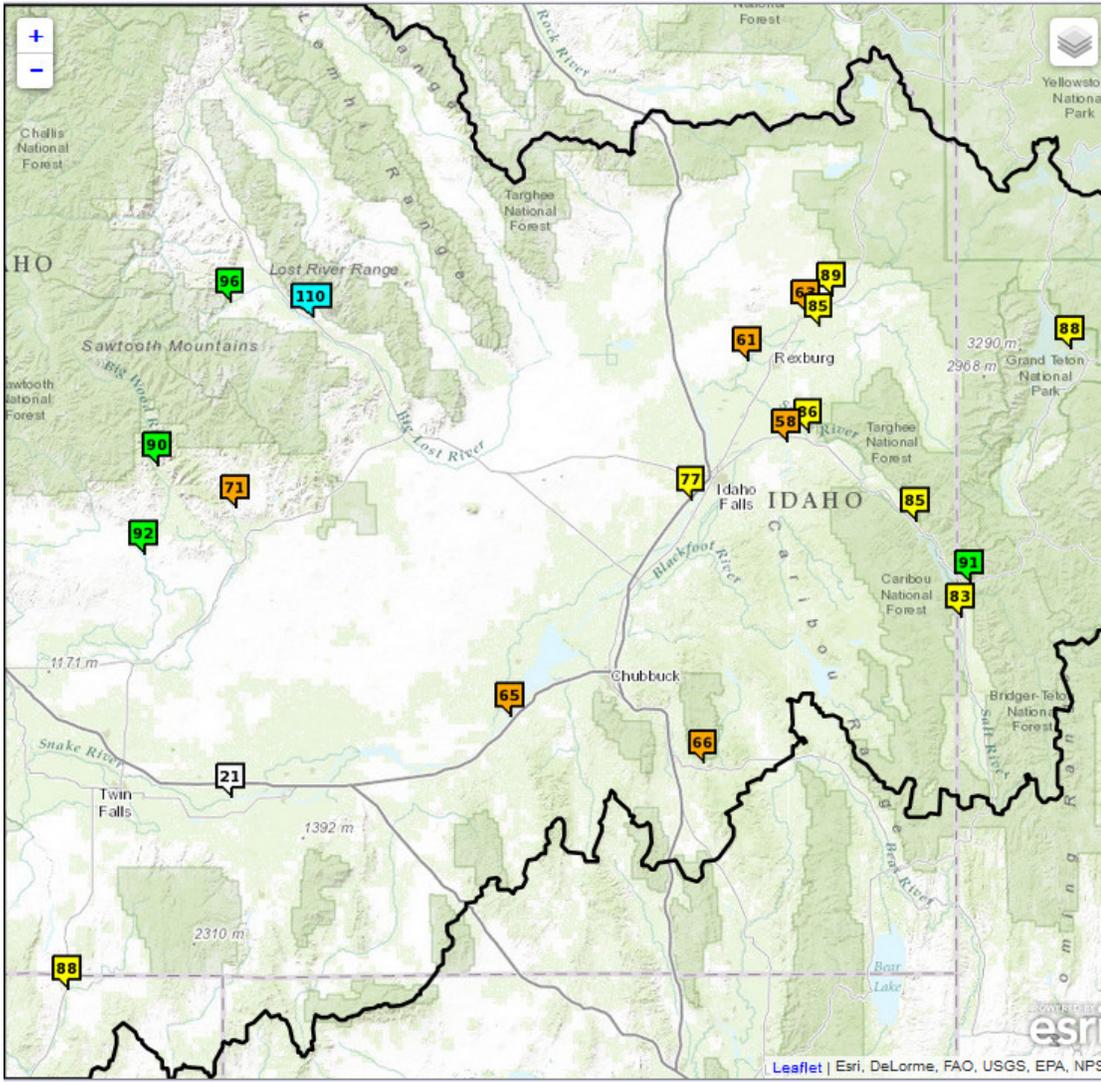


<http://go.usa.gov/3eZ73>

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

Water Supply:

NWRFC Water Supply Volume Forecast Map (2/4/16):



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 (February 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

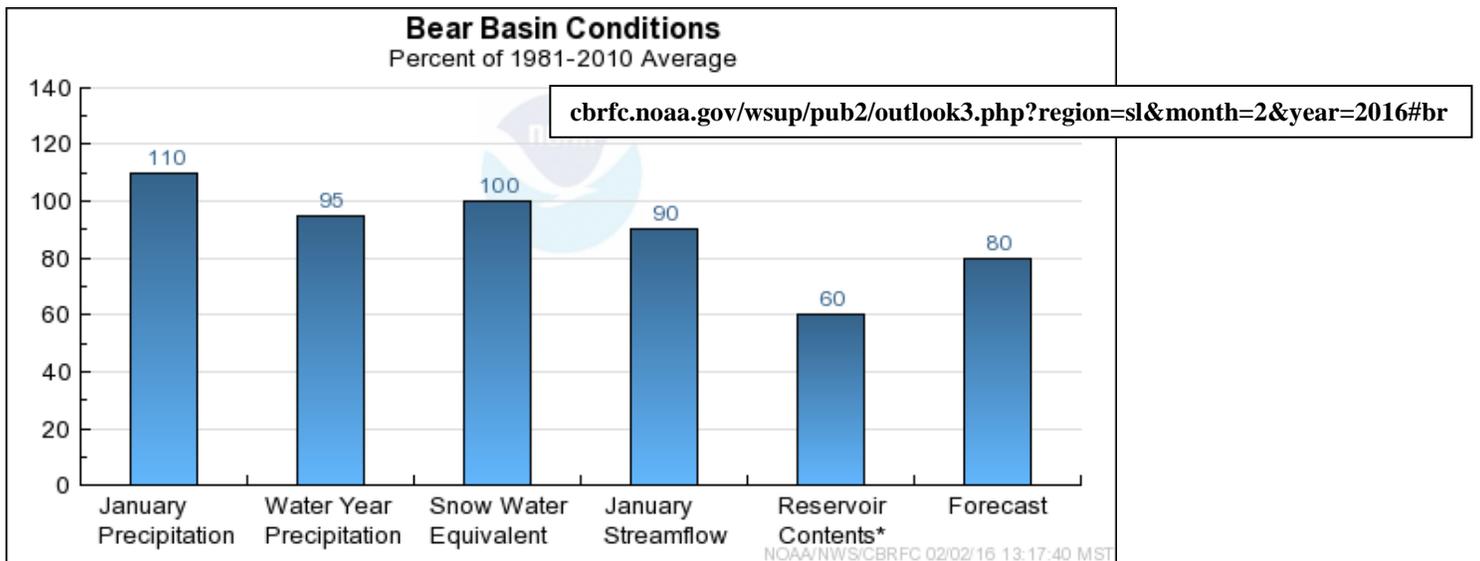
Columns (on/off): Area Sub Area NWS ID DS River Location Forecast Date Avg Cond Med Cond Forecast Period Min 90 P 70 MP 50 P 30 Max 10 Avg Med Pct Avg Pct Med

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	2016-2-1	▲	▲	Apr 01-Jul 31	73	88	103	116	137	112	106	92	97
2	Great	Bear	BEAW4	Bear	Woodruff Narrows Rsvr	2016-2-1	▲	▲	Apr 01-Jul 31	59	80	99	122	178	121	110	82	90
3	Great	Bear	BORW4	Smiths Fork	Border	2016-2-1	▲	▲	Apr 01-Jul 31	54	66	73	85	105	89	80	82	91
4	Great	Bear	STDH1	Bear	Montpelier	2016-2-1	▲	▲	Apr 01-Jul 31	51	70	90	109	160	182	117	49	77
5	Great	Bear	LGNU1	Logan	Logan	2016-2-1	▲	▲	Apr 01-Jul 31	65	80	92	101	128	111	97	83	95
6	Great	Bear	HRMU1	Blacksmith Fork	Hyrum	2016-2-1	▲	▲	Apr 01-Jul 31	24	29	36	44	60	43	29	84	124
7	Great	Bear	PRZU1	Little Bear	Paradise	2016-2-1	▲	▲	Apr 01-Jul 31	19.1	26	32	45	57	47	51	68	63

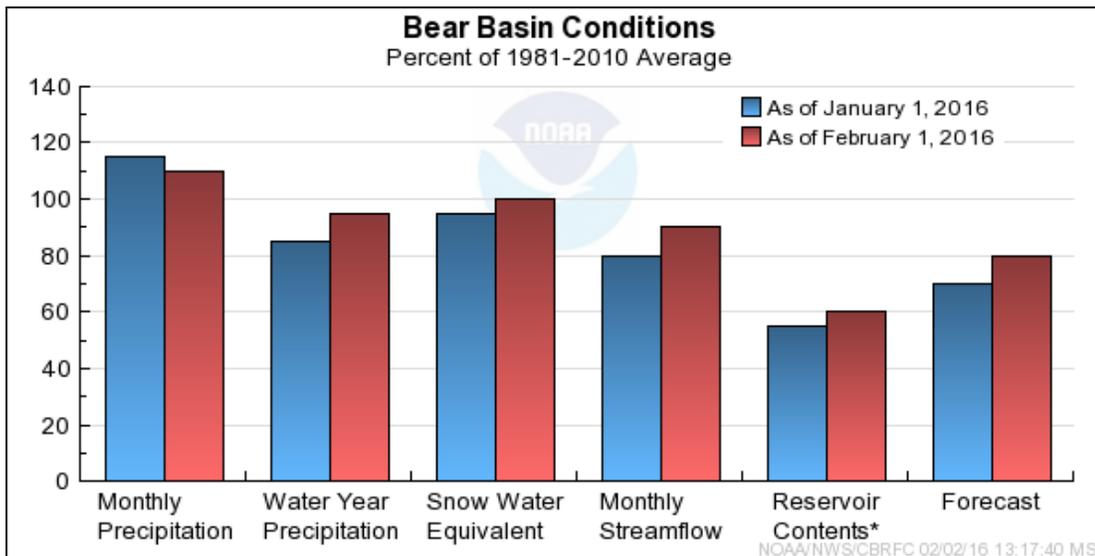
cbrfc.noaa.gov/rmap/wsup/wsuplist.php

Bear River Basin Conditions:



Snow Water Equivalent in Percent of Median.

* Percent usable capacity, not percent average contents.



cbrfc.noaa.gov/wsup/pub2/graph/png/br.cond.2016.1.png

**NRCS-NWCC Water Supply Forecast Report for the upper Snake River and Bear River basins
(February 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, Development and Operations Hydrologist, Northwest River Forecast Center
Michelle Stokes, Hydrologist-in-Charge, Colorado Basin River Forecast Center
Greg Smith, Acting 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