United States Department of Agriculture
Natural Resources Conservation Service

Idaho Water Supply Outlook Report
January 1, 2014

The views in Idaho's Sawtooth Mountains remain breathtaking even though this year's snowpack is lacking. This photo was taken by Abbie Abramovich January 2, 2014 at approximately 9,000 feet in elevation.

Basin Outlook Reports
and Federal - State - Private Cooperative Snow Surveys

For more water supply and resource management information:

Contact: Your local county Natural Resources Conservation Service Office
Internet Web Address: http://www.nrcs.usda.gov/wps/portal/nrcs/main/id/snow/
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How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when the snow melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to produce runoff forecasts. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertainty is in the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

IDAHO WATER SUPPLY OUTLOOK REPORT
January 1, 2014

SUMMARY

Where's the snow? You may have snow in your backyard, but it's not very plentiful in the mountains this year. Colder than normal temperatures kept the snow lingering in the valleys and prevented the minimal mountain snowfall from melting. Big storms that have ravaged the east, closing schools and roads, knocking out power, causing air travel delays have been absent in the west this winter. If the current dry trend continues, we'll soon find out how dependent we are on the mountain snowpack and the resulting water that produces our annual runoff. Current snowpacks range from less than 50% of average across central and southern Idaho to near normal in the Upper Snake. This means we are now playing catch-up and need the jet stream to target Idaho and the west instead of mid-west and eastern US.

Analog years that are similar to this year's climate indexes are 1969, 1982, and 2008 based on Oregon Department of Agriculture's findings. The ENSO neutral conditions present in the Pacific are expected to remain neutral though spring 2014. Short range forecasts now look promising for the first full week of January and will hopefully open the door for more storms to track across Idaho rather than the eastern US. Long range forecasts from the National Weather Service's Climate Prediction Center also reflect the ENSO neutral conditions and show no strong indication that future temperatures and precipitation will be either above or below normal in the coming months. Each scenario has equal chances of occurring. The good news is that such a forecast keeps the door open to the storm track shifting back across Idaho. In 1998, 2000, and 2008 Idaho had a similar January 1 snowpack and these years nearly returned to normal snowpacks by April 1. There is hope, but we definitely need a couple of big storms to get us back into this game to improve our water supply in the second half of winter.

SNOWPACK

After a very wet September to end one water year, the new water year started with near record low October-December precipitation at 18 central and southern Idaho sites. As a result, this translates to very low January 1 snow water content levels in these basins. For example, Camas Creek basin near Fairfield hosts the lowest snowpack in the state at a meager 24% of median. Next lowest, in the 35-50% of normal range, are Weiser, Mann, Mores, Boise, Big Wood above Magic Reservoir, Little Wood, and Oakley basins. Snowpacks in the 50-60% of normal range include: MF and SF Salmon, Payette, Big Wood above Hailey, Big Lost, Salmon Falls, Bruneau, and Owyhee basins. Snowpacks are to 70-90% of normal in the Panhandle Region, Clearwater, and Bear. The highest snowpacks are near normal along Idaho's eastern edge that include the Pend Oreille and Lemhi basins, Teton and Upper Snake tributaries in Wyoming, and Smiths/Thomas Forks because of the storms tracking down the eastside of the continental divide.

Cold temperatures and thin snowpacks mean frozen soils. Snow samplers noted frozen ground below the thin snowpacks in the 5,000-6,000 feet elevation zones in the Boise basin. This is probably the case in your backyard and many other low to mid-elevations across the state because of the extended valley inversion and cold temperatures across much of Idaho. Similar frozen soils occurred last year from the cold temperatures that followed the abundant rainfall that fell below 6,500 feet; however, this year the frozen soils are much drier across southern Idaho.

PRECIPITATION

Current water year to date precipitation amounts range from a high of 85-90% of average in the Henrys Fork and Upper Snake basin in Wyoming to a low of 45-60% across central and southern Idaho. September's rain and snow helped to put out fires and returned moisture to the dry soil profile, but a dry October let the soils dry out and brought a return to dusty roads by month's end. October precipitation ranged from 14% of normal in the Weiser basin to near normal in the Bear and Upper Snake River. November brought 80-95% of normal in the Clearwater, Panhandle and Henrys Fork basins, but only 50-55% of normal in the Wood, Big Lost, Bruneau, Owyhee, and Bear basins. A dry and cold December, normally one of our bigger precipitation months, brought precipitation amounts that were only 23% of normal in the Little Wood and Big Lost basins, 34% in the Weiser, and 45-55% in the Northern Panhandle, Payette, Boise, Owyhee, Salmon Falls, and Goose basins. Currently, about 27 SNOTEL sites across our region are at or near record low October-December totals. November, December, and January are typically our bigger precipitation months.

RESERVOIRS

Reservoir storage varies across the state. As a result of last year's below normal runoff and summer use, only Dworshak and Magic reservoirs have more water this year than a year ago. Reservoirs with a 90-95% of average storage include: Priest Lake, Dworshak, Payette system, and Bear Lake. The Boise system and Mackay Reservoir are about 85% of average, 42% full. Reservoirs that are 60-70% of average include Oakley, Magic, and Little Wood. The lowest storage amounts, less than half of average, include the combined storage in Upper Snake (Palisades and Jackson) at 48% of average, Wildhorse at 40%, Salmon Falls at 29%, and Owyhee at only 19% of average. The low streamflow forecasts across southern Idaho will keep outflows to minimum and some reservoirs from filling. Without a major change in the weather patterns, surface irrigation shortages will occur.

STREAMFLOW

The brown hills in the mid-elevations paint the best picture of this year's water supply. Camas Creek basin that drains into Magic Reservoir has the lowest forecast at only 20% of average. Combining this with the Big Wood River forecast that is 55% at Hailey and decreases to only 32% below Bellevue will provide only 28%, 70,000 acre-feet of inflow to Magic Reservoir. Last year's April-July runoff was 63,000, 24% of average. The best forecasts are 85-100% of average in the Panhandle, Clearwater, and Upper Snake. Elsewhere, streamflow forecasts mirror the low snowpack percentages ranging from 45-65% of average in the Payette, Boise, Little Wood, Big Lost, Salmon Falls, Bruneau, and Owyhee basins. Forecasts are 78% of average for the Salmon River at White Bird and 89% for the Snake River near Heise. It is unusual to have streamflow forecasts this low on January 1 in central Idaho with more than half the season to come, but current conditions dictate the low volumes. Additional January dryness will decrease expected volumes even more, while above normal precipitation is needed to help the forecasts recover. Users may wish to use the lower volume forecasts until the storm track changes and more snow accumulates in your watershed.

Note: The volumes referenced in these narratives are the 50% Chance of Exceeding Forecast, unless otherwise noted. Users may wish to use a different forecast to reduce their risk of having too much or too little water. Forecasts published in this report are produced by the NRCS with the exception of the NWS main-stem Snake River forecasts.

RECREATION

With minimal snowpacks across most of the state, be careful where you winter recreate. Luckily, cold temperatures have kept the snow that has fallen in place; early melt has not been a problem this year. Minimal storms in the Pacific Northwest and cold clear nights has kept the snow light and enjoyable to ski in the higher elevations of Idaho's backcountry as illustrated on the cover photograph. The best looking snowpacks in our region are along and east of the continental divide due to the storm track down from Canada and across the mid-west and eastern US. With most Idaho outdoor recreation tied to the water cycle and seasonal snowfall, there is never a bad year to enjoy the outdoors; just some years are snowier than others.

CHANGES and CHALLENGES

Snow course measurement schedule: At this time, most Idaho snow courses will be measured the same as last year. Exceptions are the Owyhee aerial marker which will be measured at least once, and possibly twice (February 1 and March 1) pending budgets. The Owyhee aerial markers were only measured once last year. The goal is to automate critical aerial markers with SNOLITE instruments to collect snow depth and air temperature data and then discontinue the flight if possible. The Oregon Snow Survey Office has automated 10 aerial markers and has equipment to do at least 5 more.

Internet web page: Last summer, all of USDA NRCS state web sites underwent a major overhaul of the style, look, and navigation options on the web pages. However, our agency did not realize the number of web products that we publish on the Idaho Snow Survey web page and the new process became cumbersome. We are still struggling with this while we find an interim solution that works toward getting our products updated. Best advice; use the links at bottom of Idaho Snow Survey web page until we are able to update the short cuts in the left hand margin.

Daily Water Supply Forecasts (DWSF): The DWSF are currently not operational but we are hoping to have the daily forecasts running by mid-January. These daily forecasts are very helpful to monitor increases or decreases in your water supply forecast between the first of month volume forecasts.

Forest fires and impacts on streamflow forecasts: Past analysis has illustrated an increase in spring snowmelt runoff from burned areas due to less vegetation, reduced interception, and evapotranspiration rates (1989 Western Snow Conference, Estimating Effects of Wildfire on Water Supplies in Northern Rocky Mountains by Farnes and Hartman). Recent USFS Rocky Mountain Research Station analysis by Charlie Luce shows runoff in the burned MF Boise watershed has increased 50,000 acre-feet compared to the non-burned SF Boise watershed for the 1995-2005 period versus the pre-fire 1946-1994 period. Users should keep in mind that at this time, NRCS will not attempt to increase runoff volumes due to complexity of variables affecting runoff. NRCS did remove Dollarhide Summit snow water equivalent values from the Big Wood and Boise river forecast equations, but will continue to use observed precipitation at this site. Because of weather, workload, and the government shutdown, we were only able to re-install a partial snow measuring station at this location in late October.

Western Snow Conference: Durango, Colorado April 14-17, 2014, abstracts are being accepted until January 31, 2014; see WSC web page at http://www.westernsnowconference.org/ for more information.

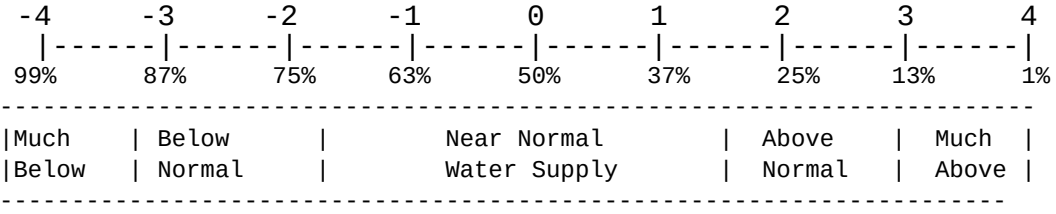
IDAHO SURFACE WATER SUPPLY INDEX (SWSI) January 1, 2014

The Surface Water Supply Index (SWSI) is a predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.0 (abundant supply) to -4.0 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences. The SWSI analysis period is from 1981 to present.

SWSI values provide a more comprehensive outlook of water availability by combining streamflow forecasts and reservoir storage where appropriate. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been determined for some basins to indicate the potential for agricultural irrigation water shortages.

BASIN or REGION	***SWSI Value***	***Most Recent Year With Similar SWSI Value***	***Agricultural Water Supply Shortage May Occur When SWSI is Less Than***
Northern Panhandle	NA	NA	NA
Spokane	-1.6	2004	NA
Clearwater	-1.1	2003	NA
Salmon	-1.6	2013	NA
Weiser	-2.1	2013	NA
Payette	-2.6	2007	NA
Boise	-2.6	2013	-1.5
Big Wood	-2.1	2002	0.5
Little Wood	-2.1	2013	-1.5
Big Lost	-1.6	2000	0.5
Little Lost	-1.6	2000	1.2
Teton	-0.6	2005	-3.9
Henrys Fork	-0.6	2010	-3.4
Snake (Heise)	-1.6	1994/2013	-1.5
Oakley	-2.3	2002	0.5
Salmon Falls	-3.3	2003	-0.7
Bruneau	-1.8	2013	NA
Owyhee	-3.1	2013	-3.4
Bear River	-0.3	1989/2001	-3.4

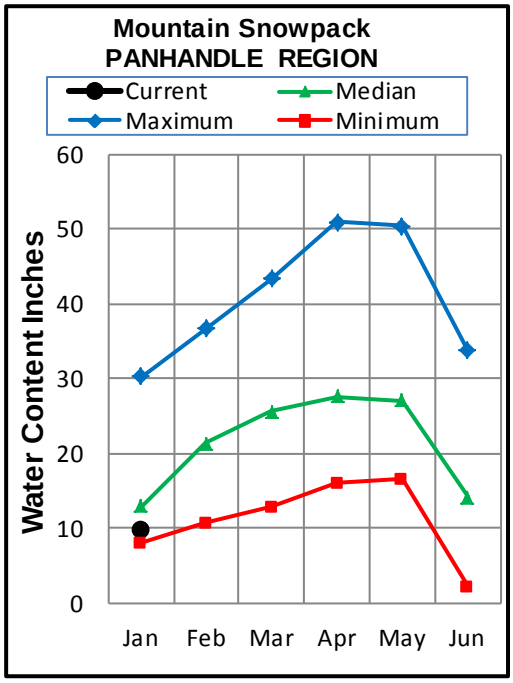
SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

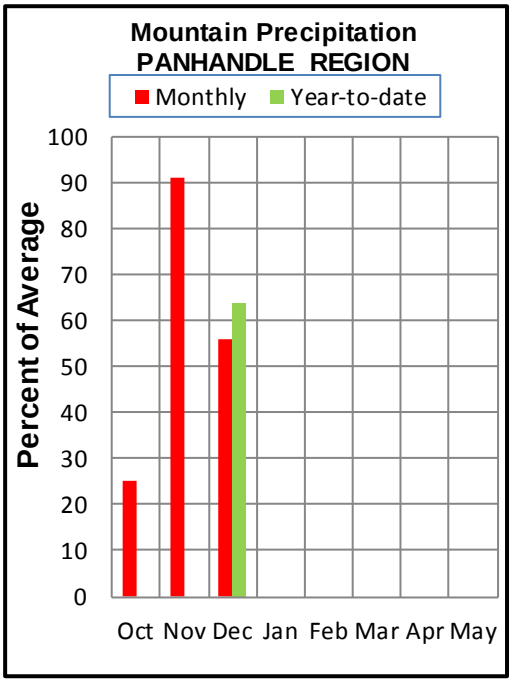


NA=Not Available / Not Applicable; Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply," represents three SWSI units and would be expected to occur about one-third (36%) of the time.

PANHANDLE REGION

JANUARY 1, 2014





WATER SUPPLY OUTLOOK

Water year precipitation since October 1 in Northern Idaho's Panhandle is 64% of normal. One quarter of normal precipitation fell in October, November was near normal and December brought about half of normal. It is worth noting that plentiful precipitation across the Panhandle in September is not reflected in the water year totals. Strong storms dropped up to four times the normal monthly amount of moisture during the last few days of the month. Most SNOTEL sites recorded 5 to 7 inches of precipitation for the month. Bear Mountain SNOTEL recorded 12.7 inches. As a result soil moisture rebounded and remains high despite the 64% of normal precipitation since October 1. Snow accumulation began in early November and was looking great by mid-month, unfortunately snowfall has not kept pace with normals and as of January 1 is 78% of normal in the northern Panhandle and 80% of average in the Spokane basin. Summer streamflow forecasts are average for the Clark Fork and Pend Oreille Lake inflow. Forecasts for the Coeur d'Alene, St. Joe, and Spokane rivers are 80-85% of average. Luckily, this region has been on the fringe of the storm track. Early January appears to be the best chance of seeing significant precipitation in the Panhandle but more storms are needed to keep the percentages from decreasing too much.

PANHANDLE REGION
Streamflow Forecasts - January 1, 2014

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Kootenai R at Leonia (1,2)	APR-JUL	4210	5270	5750	87	6230	7290	6600
	APR-SEP	5040	6110	6600	87	7090	8160	7590
Moyie R at Eastport	APR-JUL	179	260	315	84	370	450	375
	APR-SEP	187	270	325	84	380	465	385
Boundary Ck nr Porthill	APR-JUL	63	82	95	81	108	127	117
	APR-SEP	65	85	98	80	111	131	123
Clark Fork at Whitehorse Rpds (1,2)	APR-JUL	7210	9470	10500	100	11500	13800	10500
	APR-SEP	8140	10500	11600	101	12700	15100	11500
Pend Oreille Lake Inflow (2)	APR-JUL	8960	10700	11800	100	12900	14600	11800
	APR-SEP	9950	11700	12900	101	14100	15900	12800
Priest R nr Priest River (1,2)	APR-JUL	215	425	570	73	615	825	780
	APR-SEP	230	455	605	73	655	880	830
NF Coeur d'Alene R at Enaville	APR-JUL	280	455	575	82	695	870	700
	APR-SEP	310	490	610	82	730	910	740
St. Joe R at Calder	APR-JUL	550	750	890	85	1030	1230	1050
	APR-SEP	600	810	950	85	1090	1300	1120
Spokane R nr Post Falls (2)	APR-JUL	1050	1580	1950	82	2320	2850	2390
	APR-SEP	1100	1650	2020	81	2390	2940	2480
Spokane R at Long Lake (2)	APR-JUL	1190	1800	2210	84	2620	3230	2620
	APR-SEP	1340	1970	2400	84	2830	3460	2850

PANHANDLE REGION
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Hungry Horse Lake	3451.	2960.	3162.	2537.
Noxon Rapids Res	335.0	313.0	322.0	335.
Pend Oreille	1561.	522.0	900.3	708.2
Coeur d'Alene	238.5	36.9	72.9	93.7
Priest Lake	119.3	54.9	64.1	56.5

PANHANDLE REGION
Watershed Snowpack Analysis - January 1, 2014

Watershed	Number of Data Sites	This Year as % of Last Yr	Median
Kootenai ab Bonners Ferry	15	81	91
Moyie River	3	63	73
Priest River	5	51	75
Pend Oreille River	61	97	100
Rathdrum Creek	4	60	58
Coeur d'Alene River	6	78	74
St. Joe River	4	96	82
Spokane River	13	79	73
Palouse River	2	61	59

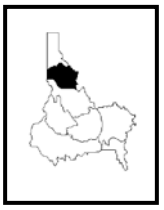
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

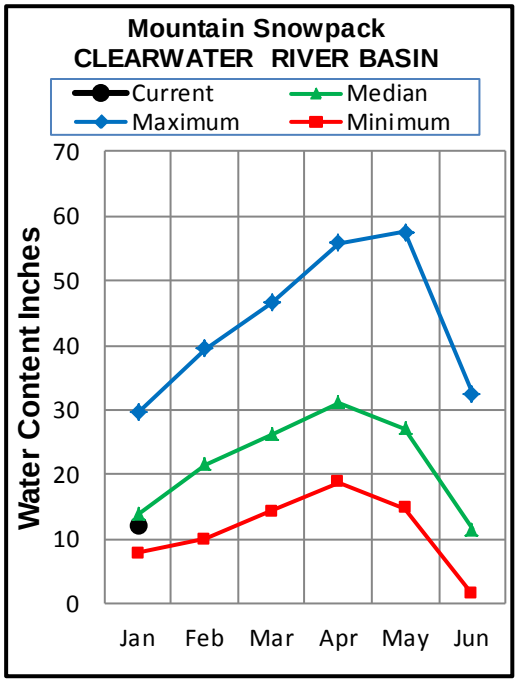
The average is computed for the 1981-2010 base period.

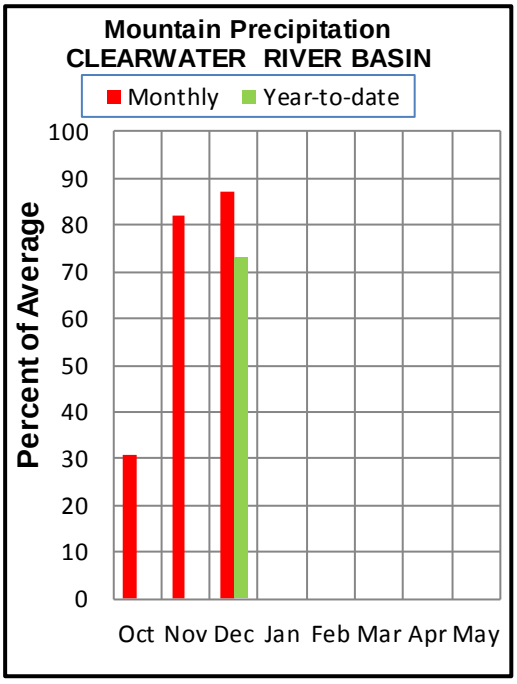
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

CLEARWATER RIVER BASIN

JANUARY 1, 2014







WATER SUPPLY OUTLOOK

Water year to date precipitation since October 1 is 73% of normal; however this percentage does not reflect September precipitation which was 2-3 times the normal monthly amount. Heavy rains totaling 3-7.6 inches at SNOTEL sites saturated the soil profile and the soil moisture remains high. Unfortunately, the spigot nearly turned off in October when monthly precipitation was only 31% of average. Monthly precipitation in November and December was 82% and 86%, respectively. Snow accumulation was near normal until early December, but has trailed off since then. Overall, the January 1 snowpack is 84% of normal for the basin. Snowpacks are skewed based on elevation. High elevation SNOTELs are measuring 85-100% of normal snow water, while SNOTELs at elevations below 5,000 feet are measuring 60-70% of normal snow water. Dworshak storage is 2.3 million acre-feet which is near normal and two-thirds of its capacity. Streamflow forecasts range from 88% of normal for Dworshak inflow to 93% for the Selway River. Short range forecasts look promising for the first week of January, but looking beyond that is hard to say due to neutral ENSO conditions in the Pacific. The Clearwater basin has been on the edge of the storm track but more storms are needed to keep this positive water supply outlook.

CLEARWATER RIVER BASIN
Streamflow Forecasts - January 1, 2014

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Selway River Near Lowell, Id	APR-JUL	1270	1570	1780	93	1990	2290	1920
	APR-SEP	1350	1660	1870	93	2080	2390	2020
Lochsa River Near Lowell, Id	APR-JUL	870	1090	1240	88	1390	1610	1410
	APR-SEP	935	1160	1310	89	1460	1690	1480
Dworshak Reservoir Inflow	APR-JUL	1030	1780	2120	88	2460	3210	2410
	APR-SEP	1140	1910	2260	88	2610	3380	2570
Clearwater River At Orofino, Id (1)	APR-JUL	2350	3460	3960	92	4460	5570	4310
	APR-SEP	2520	3660	4170	92	4680	5820	4540
Clearwater River At Spalding, Id(1,2)	APR-JUL	3450	5370	6240	91	7110	9030	6890
	APR-SEP	3740	5700	6590	91	7480	9440	7270

CLEARWATER RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Dworshak Reservoir	3468.0	2299.	1565.	2403.

CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - January 1, 2014

Watershed	Number of Data Sites	This Year as % of Last Yr	Median
North Fork Clearwater	9	105	88
Lochsa River	3	97	88
Selway River	4	98	84
Clearwater Basin Total	18	98	84

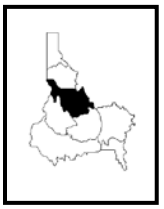
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

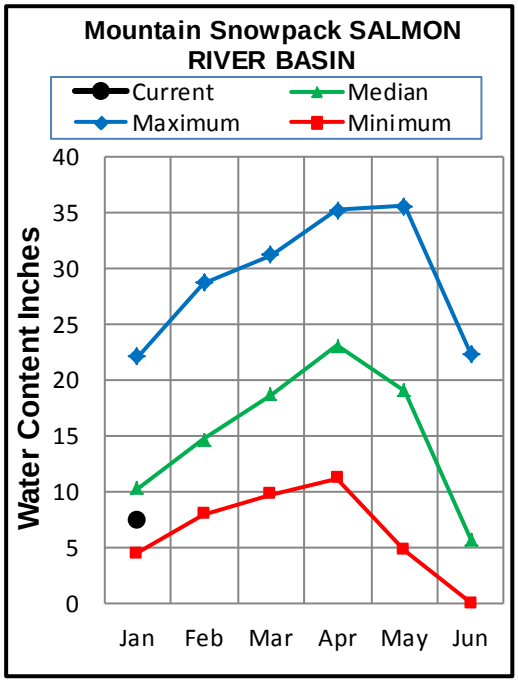
The average is computed for the 1981-2010 base period.

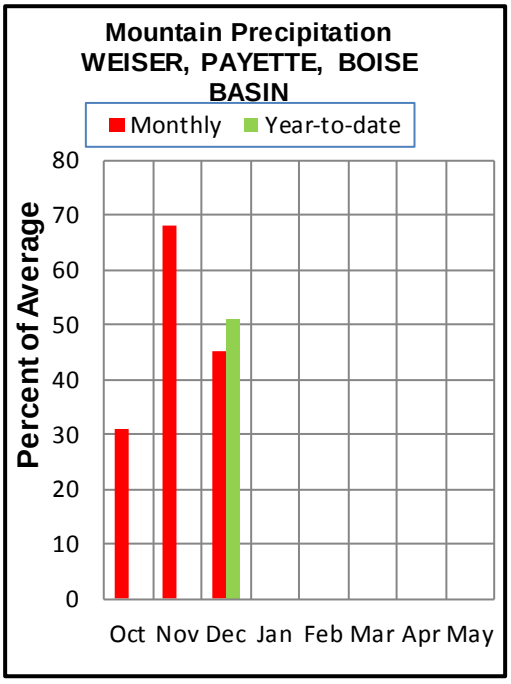
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

SALMON RIVER BASIN

JANUARY 1, 2014







WATER SUPPLY OUTLOOK

September ended water year 2013 with a bang and conditions looked great heading into water year 2014. Unfortunately, persistently dry conditions since October 1 have taken a toll on the Salmon's chance of having an above normal winter. Monthly precipitation in September was 2-4 times normal. SNOTEL sites received from 4 to 6 inches of moisture in September. Rain wet up soil profiles at lower elevations while at higher elevations snow fell. Since October 1, water year 2014 has only recorded 65% of normal precipitation. Monthly amounts were 57% of normal in October, 69% in November, and 65% in December. January 1 snowpacks are below normal at 79% of median. High elevation snow that fell in September explains why snow percentages are higher than water year to date precipitation. September precipitation is not counted towards water year 2014 totals, since the water year starts October 1. The snow that remained on the ground since September is however counted in snowpack measurements. This carryover snow helps streamflow forecasts which improve moving downstream on the main Salmon River and range from 68% for the Salmon River at Salmon to 78% for the Salmon River at White Bird. The MF Salmon River is the lowest in the basin at 64% of normal. Snow in the Middle Fork drainage is the fifth lowest since 1964 with current amounts similar to 1994, 1998, 2001, and 2010. Of these years only 1998 ended up with more than 90% of normal snow, the rest ended the season in the 50-70% of normal range. Finally, for SNOTEL data watchers please note that Deadwood Summit SNOTEL was experiencing data flutter issues with its snow water content data, but is now fixed thanks to Idaho Power.

SALMON RIVER BASIN
Streamflow Forecasts - January 1, 2014

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Salmon R at Salmon (1)	APR-JUL	141	410	530	68	650	920	775
	APR-SEP	173	480	620	69	760	1070	900
Lemhi R nr Lemhi	APR-JUL	25	42	55	74	70	96	74
	APR-SEP	33	52	68	76	86	115	90
MF Salmon R at MF Lodge	APR-JUL	113	310	445	64	580	775	690
	APR-SEP	148	365	510	66	655	870	770
SF Salmon R nr Krassel RS	APR-JUL	123	181	220	81	260	315	270
	APR-SEP	128	189	230	79	270	330	290
Johnson Ck at Yellow Pine	APR-JUL	86	125	151	79	177	215	191
	APR-SEP	89	129	157	77	185	225	205
Salmon R at White Bird (1)	APR-JUL	1860	3450	4180	78	4910	6500	5370
	APR-SEP	2120	3860	4650	78	5440	7180	5940

SALMON RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

SALMON RIVER BASIN
Watershed Snowpack Analysis - January 1, 2014

Watershed	Number of Data Sites	This Year as % of Last Yr	Median
Salmon River ab Salmon	8	51	69
Lemhi River	6	101	118
Middle Fork Salmon Rive	3	43	57
South Fork Salmon River	3	49	58
Little Salmon River	4	77	63
Salmon Basin Total	23	69	79

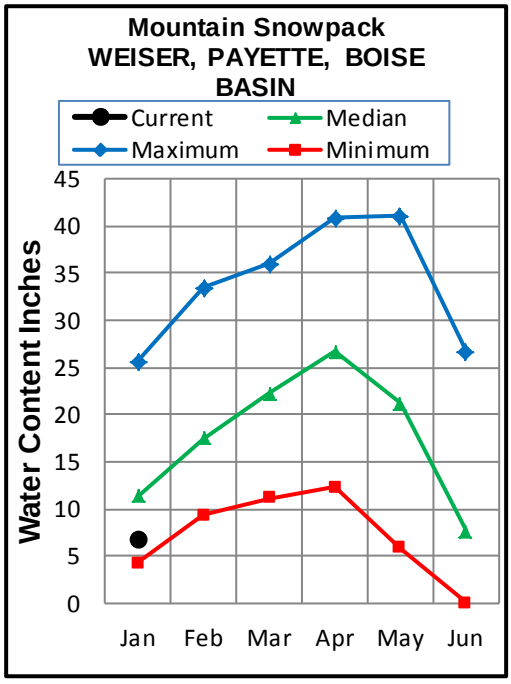
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

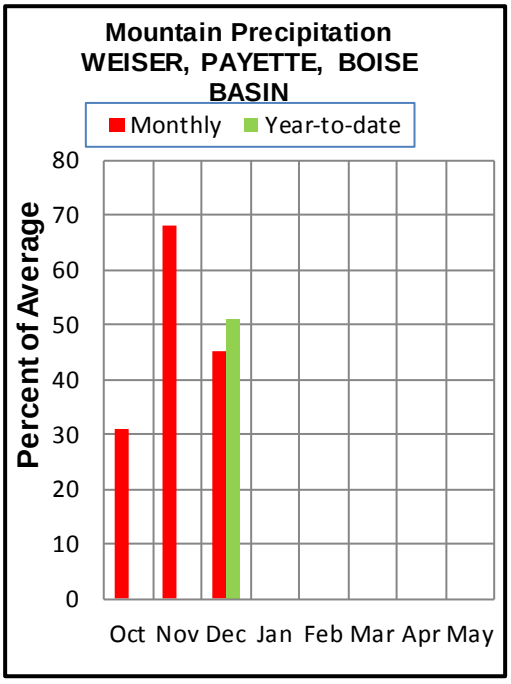
The average is computed for the 1981-2010 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WEISER, PAYETTE, BOISE RIVER BASINS

JANUARY 1, 2014





WATER SUPPLY OUTLOOK

The good news was September's rainfall that put a damper on the forest fire season. September's rainfall ranged from 340% of normal in the Boise to 430% in the Weiser basins. However, by the end of October, soils were drying out and mountain roads were dusty after October's precipitation amounts that were only 15-40% in these same west-central mountains. November brought 70% of normal moisture while December's totals were only 35-45%. Water year to date totals, which do not include the September moisture are 45-50% of normal with a few SNOTEL sites at record low totals. January 1 snowpacks are 36% of normal in the Weiser, 49% in the Boise, and 55% in the Payette. These snow water amounts are only 18 to 25% of the seasonal peaks that occur in early April and mean that the chance for the snowpack recovering to near normal levels by April is slim. For example the Boise basin snowpack in currently the 8th lowest since 1961; of the 12 lowest years, only two years, 1998 and 2000, came close to making a recovery to normal levels by April 1. Reservoir storage is 93% of average in the Payette system and 83% in the Boise system. Based on reservoir carryover storage, the Boise irrigators need a runoff of just over 1 million acre-feet or 75% of normal for the April-September period for an adequate supply. Water users should be prepared for possible shortages especially if the dry trend continues beyond January. Boise's current 50% chance of exceedance forecast for the April-September is for only 60% of normal, 815,000 acre-feet. The Weiser River is also forecast at 60% of normal while the Payette River at Horseshoe Bend is forecast at 64%. On the positive side, with extreme weather happening elsewhere in the country; we just need a couple of big storms to get back in this game for the second half of winter.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - January 1, 2014

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Weiser R nr Weiser (1)	FEB-JUL	79	260	375	61	510	890	615
	APR-JUL	44	151	220	59	300	530	370
	APR-SEP	53	167	240	60	325	560	400
SF Payette R at Lowman	APR-JUL	157	220	265	66	315	400	400
	APR-SEP	185	255	305	67	360	455	455
Deadwood Resv Inflow (1,2)	APR-JUL	13.8	54	73	59	92	132	123
	APR-SEP	16.1	60	80	61	100	144	131
Lake Fork Payette R nr McCall	APR-JUL	40	51	59	74	68	82	80
	APR-SEP	41	52	61	73	70	85	83
NF Payette R at Cascade (1,2)	APR-JUL	67	240	320	66	400	575	485
	APR-SEP	52	235	320	65	405	590	495
NF Payette R nr Banks (2)	APR-JUL	173	310	400	64	490	625	625
	APR-SEP	157	300	395	62	490	635	640
Payette R nr Horseshoe Bend (1,2)	APR-JUL	265	730	945	64	1160	1630	1480
	APR-SEP	300	780	995	61	1210	1690	1630
Boise R nr Twin Springs (1)	JAN-JUL	134	370	475	67	580	815	710
	APR-JUL	102	295	385	66	475	670	585
	APR-SEP	125	330	425	67	520	725	635
SF Boise R at Anderson Ranch Dam (1,2	JAN-JUL	100	190	310	55	400	630	560
	APR-JUL	70	150	250	53	330	535	475
	APR-SEP	90	170	275	54	350	575	510
Mores Ck nr Arrowrock Dam	JAN-JUL	36	67	93	56	124	177	167
	APR-JUL	22	44	63	55	86	125	115
	APR-SEP	23	45	65	55	88	129	119
Boise R nr Boise (1,2)	JAN-JUL	265	745	965	61	1180	1670	1590
	APR-JUN	167	505	655	57	805	1140	1140
	APR-JUL	127	540	730	58	920	1330	1260
	APR-SEP	205	625	815	60	1010	1420	1360

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Mann Creek	11.1	0.3	0.1	2.6
Cascade	693.2	430.2	502.2	456.7
Deadwood	161.9	76.6	94.9	85.4
Anderson Ranch	450.2	134.3	270.9	262.5
Arrowrock	272.2	189.1	174.8	146.3
Lucky Peak	293.2	100.7	91.7	99.5
Lake Lowell (deer Flat)	165.2	35.6	35.8	90.6

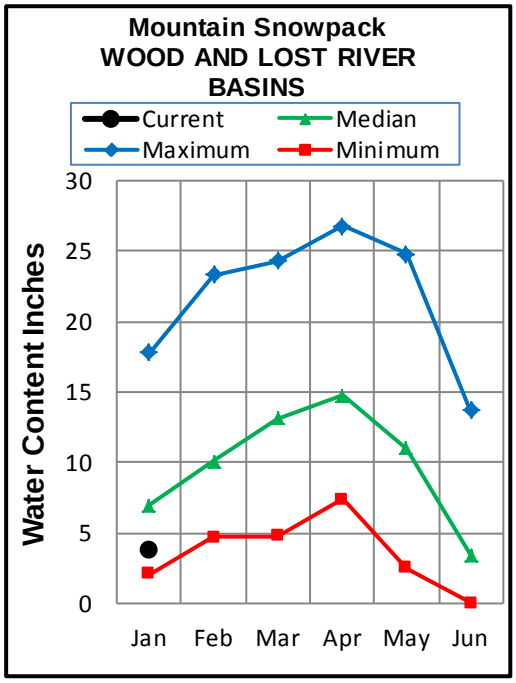
WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - January 1, 2014

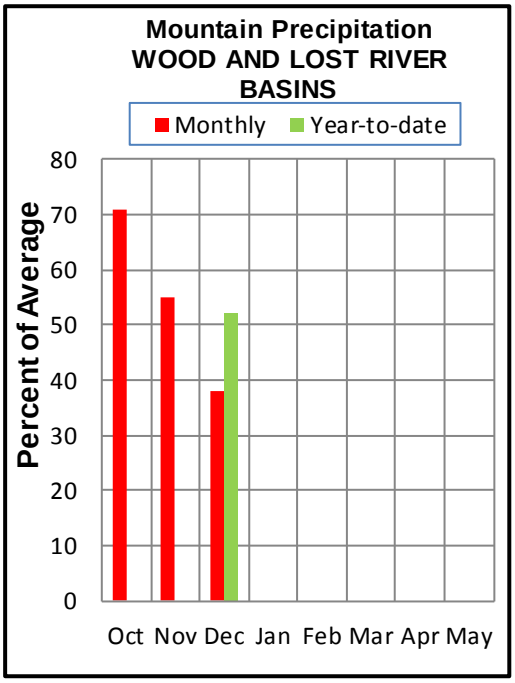
Watershed	Number of Data Sites	This Year as % of Last Yr	Median
Mann Creek	1	46	35
Weiser River	7	58	36
North Fork Payette	9	60	57
South Fork Payette	5	48	51
Payette Basin Total	16	58	55
Middle & North Fork Boi	5	61	60
South Fork Boise River	9	44	48
Mores Creek	6	87	48
Boise Basin Total	17	56	49
Canyon Creek	2	33	16

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.
The average is computed for the 1981-2010 base period.
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WOOD and LOST RIVER BASINS

JANUARY 1, 2014





WATER SUPPLY OUTLOOK

Despite two to four times normal monthly precipitation at SNOTEL sites in September, Wood and Lost river water users should prepare for water shortages if current conditions continue. September storms wet the soil profile which will help produce more efficient runoff in spring, but the weather since October 1 has not produced much snow. Water year to date precipitation is 45-50% of average in the Big Wood, Little Wood and Big Lost basins; amounts are better at 73% of average in the Little Lost. January 1 snowpacks are 39% of median in the Little Wood, 44% in the Big Wood, and 54% in the Big Lost basins. This year ranks 6th to 8th driest across these basins since 1961 when snow indexes began. The Little Lost basin has more snow at 82% of median, but that amount is still 12th lowest out of 54 years of record since 1961. Compared to the drought years in early the 2000s this year's snowpack is the lowest since 1998 in the Big Wood, and lowest since 2000 in the Little Wood and Big Lost basins. All in all it's been a discouraging start to winter from a water resources perspective. Streamflow forecasts are currently far from the volumes needed to meet demand based on current reservoir storage. The Big Wood basin is in the roughest shape. Magic reservoir storage is only 60% of average or 39,000 acre-feet. The April–September streamflow forecast for the Big Wood below Magic is 31% of average or 82,000 acre-feet. Big Wood water users need 275,000 acre-feet of water for an adequate irrigation supply, so current amounts are short and even the wetter forecasts barely give the basin a 10% chance of having adequate supplies. Little Wood and Mackay reservoirs are storing below normal amounts for this time of year, 71% and 86% of average respectively. The Little Wood basin only needs near half of average runoff to meet demand; even so, the current forecast is a little short at 46% of average. Forecasts are for 62% of average for the Big Lost River below Mackay Reservoir and 75% for the Little Lost River, each of these basins needs average runoff to meet irrigation demand. A major shift in the weather pattern is needed.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - January 1, 2014

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Big Wood River At Haily, Id Total (1)	APR-JUL	20	70	129	55	170	265	235
	APR-SEP	25	80	145	55	190	300	265
Big Wood River Above Magic Reservoir,	APR-JUL	5.0	15.0	54	32	105	170	170
	APR-SEP	8.0	18.0	58	32	110	180	182
Camas Ck nr Blaine	APR-JUL	1.50	4.6	16.2	20	35	75	82
	APR-SEP	1.70	4.8	16.5	20	35	75	83
Big Wood R bl Magic Dam (2)	APR-JUL	5.0	15.0	70	28	145	250	250
	APR-SEP	7.0	18.0	82	31	160	265	265
Little Wood ab High Five Ck	MAR-JUL	5.0	16.0	37	48	55	85	77
	MAR-SEP	7.0	18.0	40	49	60	90	82
	APR-JUL	5.0	15.0	32	46	50	80	69
	APR-SEP	7.0	18.0	35	47	55	85	75
Little Wood River Nr Carey, Id (2)	MAR-JUL	5.0	15.0	39	45	60	95	86
	MAR-SEP	7.0	17.0	42	46	65	100	92
	APR-JUL	4.0	13.0	33	43	55	85	77
	APR-SEP	5.0	14.0	36	43	60	90	83
Big Lost R at Howell Ranch	APR-JUL	30	76	107	67	138	184	159
	APR-SEP	34	86	121	67	156	210	180
Big Lost R Below Mackay Res (2)	APR-JUL	6.2	41	72	59	103	147	123
	APR-SEP	7.0	58	93	62	128	179	150
Little Lost R nr Howe	APR-JUL	11.3	16.7	21	75	26	34	28
	APR-SEP	14.0	21	26	76	32	42	34
Camas Ck at Camas	APR-JUL	1.00	4.6	14.5	52	24	39	28

WOOD AND LOST RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Magic	191.5	39.0	26.5	64.5
Little Wood	30.0	9.8	13.0	13.8
Mackay	44.4	18.8	28.3	21.8

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - January 1, 2014

Watershed	Number of Data Sites	This Year as % of Last Yr	Median
Big Wood ab Hailey	8	35	53
Camas Creek	5	35	24
Big Wood Basin Total	13	35	44
Fish Creek	0		
Little Wood River	4	28	39
Big Lost River	6	32	54
Little Lost River	3	60	82
Birch-Medicine Lodge Cr	2	84	109
Camas-Beaver Creeks	4	63	58

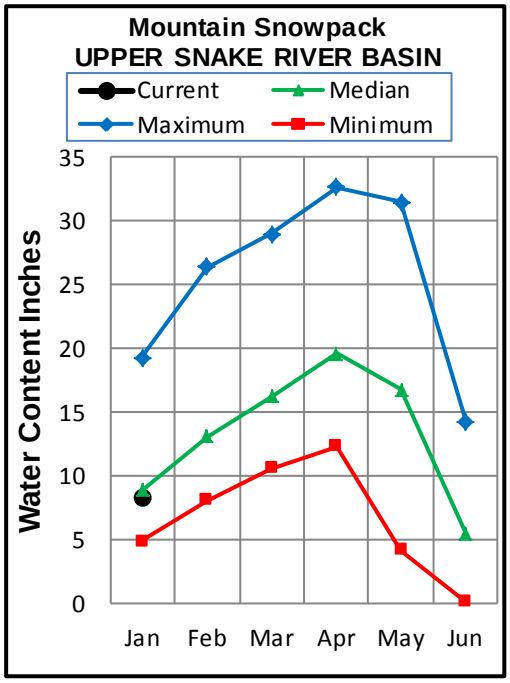
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

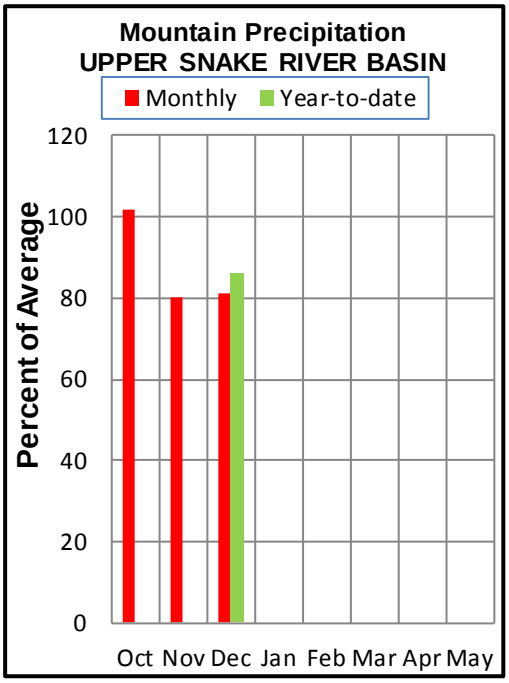
The average is computed for the 1981-2010 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

UPPER SNAKE BASIN

JANUARY 1, 2014





WATER SUPPLY OUTLOOK

The water year ended in September with more than 200% of normal precipitation falling in September. The new water year has brought 60-90% of normal monthly amounts to the Upper Snake watershed above American Falls, with less falling in the populated valleys and a little more in the mountains. Water year to date percentages reflect these differences with the Willow, Blackfoot and Portneuf basins at only 64% of normal, Henrys Fork at 86%, and Snake above Palisades at 90%. The Snake basin hosts the highest snowpack in the state at 101% of median in the Snake headwater basins, 97% in the Henrys Fork, but only 53% in the Portneuf basin. Combined Palisades and Jackson Lake reservoir storage is half of average, only 28% of capacity. This is the lowest storage since 2005, but 2002, and 2004 had even less in storage. Based on the reservoir carryover storage, surface irrigators need a runoff of just over 3.5 million acre-feet or 93% of normal for the April-September period. Water users should be prepared for possible shortages especially if the dry trend continues as the April-September 50% Chance of Exceedance Forecast for the Snake River near Heise is for 3.3 million acre-feet, 89% of average. As seen in the past, these forecasts will decrease with another dry month so users should evaluate their decisions based on all five exceedance forecasts. The Henrys Fork is forecast at 90% of average while the lower elevation streams of Willow, Blackfoot and Portneuf are forecast at 60-70% of average. The Upper Snake watershed needs a direct hit from storms rather than being on the edge of the storm track.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - January 1, 2014

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Henrys Fork nr Ashton (2)	APR-JUL	330	410	475	90	540	650	530
	APR-SEP	470	570	645	91	725	850	710
Henrys Fork nr Rexburg (2)	APR-JUL	1000	1170	1290	92	1410	1580	1400
	APR-SEP	1330	1520	1650	92	1780	1970	1790
Falls R nr Ashton (2)	APR-JUL	255	305	340	93	375	435	365
	APR-SEP	305	360	400	92	445	510	435
Teton R nr Driggs	APR-JUL	68	98	122	79	148	192	154
	APR-SEP	88	125	154	80	186	240	193
Teton R nr St. Anthony	APR-JUL	182	250	305	84	365	460	365
	APR-SEP	220	305	365	84	435	545	435
Snake R at Flagg Ranch	APR-JUL	285	370	425	91	480	565	465
	APR-SEP	315	405	465	91	525	615	510
Snake R nr Moran (1,2)	APR-JUL	410	605	690	90	775	970	765
	APR-SEP	455	670	765	91	860	1070	845
Pacific Ck At Moran	APR-JUL	103	139	164	100	189	225	164
	APR-SEP	111	148	173	100	198	235	173
Buffalo Fork ab Lava nr Moran	APR-JUL	200	245	275	98	305	350	280
	APR-SEP	230	280	315	98	350	400	320
Snake R nr Alpine (1,2)	APR-JUL	1080	1700	1980	91	2260	2880	2170
	APR-SEP	1260	1960	2280	91	2600	3300	2500
Greys R Nr Alpine	APR-JUL	191	250	290	95	330	390	305
	APR-SEP	220	290	335	93	380	450	360
Salt R Nr Etna	APR-JUL	99	189	250	83	310	400	300
	APR-SEP	139	245	315	85	385	490	370
Snake R nr Irwin (1,2)	APR-JUL	1720	2380	2680	89	2980	3640	3010
	APR-SEP	2040	2780	3120	89	3460	4200	3500
Snake R nr Heise (2)	APR-JUL	2060	2540	2860	88	3180	3660	3240
	APR-SEP	2440	2980	3350	89	3720	4260	3780
Willow Ck nr Ririe (2)	MAR-JUL	6.0	18.5	39	58	60	90	67
Blackfoot R ab Res nr Henry	APR-JUN	11.5	25	37	62	51	77	60
Snake R nr Blackfoot (1,2)	APR-JUL	2200	3170	3610	85	4050	5020	4260
	APR-SEP	2650	3840	4380	84	4920	6110	5220
Portneuf R at Topaz	MAR-JUL	28	42	54	71	67	89	76
	MAR-SEP	35	52	66	71	81	107	93
Snake R at Neeley (1,2)	APR-JUL	625	1810	2350	89	2890	4080	2650
	APR-SEP	490	1780	2360	84	2940	4230	2810

UPPER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Henrys Lake	90.4	71.4	69.7	79.3
Island Park	135.2	76.6	68.0	93.5
Grassy Lake	15.2	13.1	12.9	11.6
Jackson Lake	847.0	181.7	168.9	424.1
Blackfoot	348.7	146.5	217.1	171.3
American Falls	1672.0	701.9	824.2	948.5
Palisades	1400.0	439.5	492.5	882.5
Ririe	80.5	42.0	44.3	36.0

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - January 1, 2014

Watershed	Number of Data Sites	This Year as % of Last Yr	Median
Henrys Fork-Falls River	7	82	92
Teton River	4	109	108
Henrys Fork above Rexbu	11	91	97
Snake above Jackson Lak	9	78	95
Pacific Creek	3	89	112
Gros Ventre River	4	103	108
Hoback River	5	101	106
Greys River	4	100	105
Salt River	3	103	107
Snake above Palisades	23	89	101
Willow Creek	2	102	83
Blackfoot River	2	90	88
Portneuf River	3	66	53
Snake abv American Fall	33	87	96

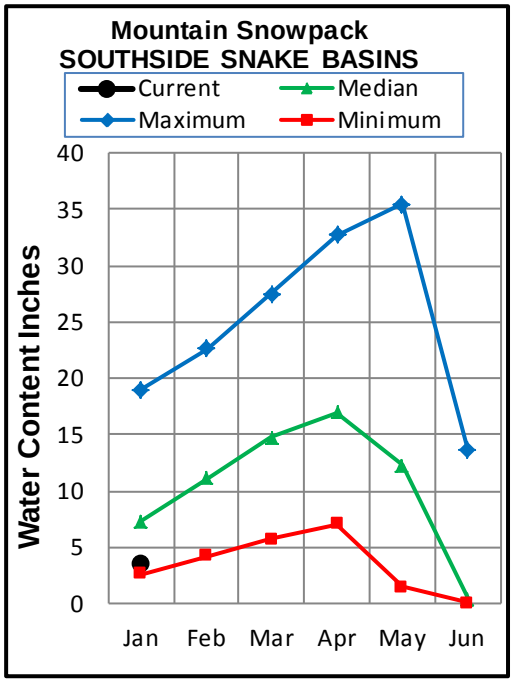
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

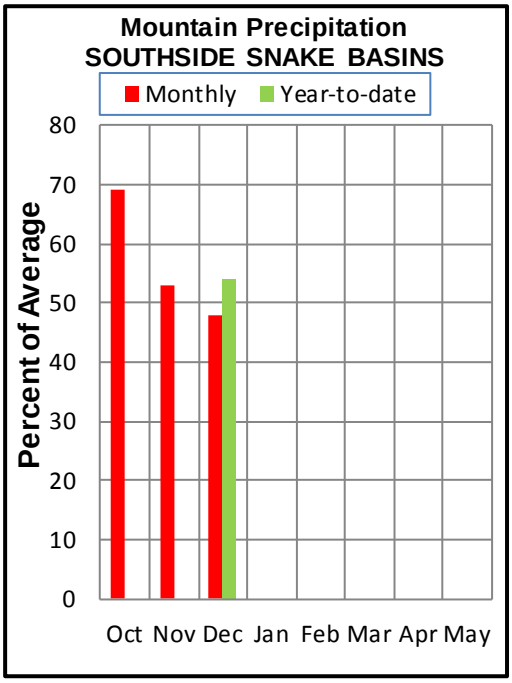
The average is computed for the 1981-2010 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

SOUTHSIDE SNAKE RIVER BASINS

JANUARY 1, 2014





WATER SUPPLY OUTLOOK

The water supply picture across southernmost Idaho is currently bleak; hopefully enough time exists for storms to track across these high desert basins before it is too late. September was wet with 2-3 inches of rain falling at most SNOTEL sites the last week of the water year; normal amounts are typically closer to an inch. Conditions since October 1 have been dry and water year to date precipitation across these basins ranges from half of normal in the Owyhee up to 60% in Salmon Falls. SNOTEL soil moisture sensors show that September rains helped recharge the upper portion of the soil profile down to 8 inches, but the deeper 20 inch sensors did not increase like those in other parts of Idaho. January 1 snowpacks are similar with all Southside Snake basins 45-55% of normal. Streamflow forecasts range from 46% of average for Salmon Falls, to about 55% for Goose Creek and Bruneau River, and up to 60% for the Owyhee River below the dam. Due to poor reservoir storage, all basins need much better runoff to meet summer irrigation demand. Oakley Reservoir at 65% of average, 17% of capacity, has the most storage while Salmon Falls is storing 29% of average, only 6% of capacity. With 60,000 acre-feet, the December 31 storage in Owyhee Reservoir is the 4th lowest since the reservoir was built in 1936; only 1993, 2004, and 1989 had less. With minimal reservoir carryover, Owyhee irrigators need a runoff of 375,000 acre-feet, 93% of average for the February-September period, for an adequate water supply. The current forecast is 61% of average, 360,000 acre-feet, but everyone knows that without rain the runoff will be much less. Surface Water Supply Index calculations reveal that water shortages are certain based on the 50% Chance of Exceedance Forecasts. Adding current reservoir storage to the best forecast, which only has a 10% of occurring, indicates supplies would barely be adequate to meet demand for the Oakley and Salmon Falls users. With so little water held behind the region's dams it is critical that the storm track starts to hit these southern Idaho basins. Water users should keep their eye on future weather trends, prepare for shortages and base their decisions on the likelihood of all 5 Exceedance Forecasts, not just the 50% Chance of Exceedance Forecast.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - January 1, 2014

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Goose Ck ab Trapper Ck nr Oakley	MAR-JUL	2.0	7.0	11.9	54	17.4	25	22
	MAR-SEP	2.5	7.6	12.5	52	18.4	27	24
Trapper Ck nr Oakley	MAR-JUL	1.93	3.2	4.1	69	5.0	6.3	5.9
	MAR-SEP	2.8	4.2	5.2	73	6.2	7.6	7.1
Oakley Reservoir Inflow	MAR-JUL	0.170	9.6	16.0	57	22	32	28
	MAR-SEP	0.78	10.9	17.7	57	25	35	31
Salmon Falls Ck nr San Jacinto	MAR-JUN	12.5	25	36	47	49	72	77
	MAR-JUL	12.5	26	37	46	51	74	81
	MAR-SEP	14.2	28	40	47	54	79	85
Bruneau R nr Hot Springs	MAR-JUL	45	82	113	55	149	210	205
	MAR-SEP	47	85	118	55	156	220	215
Reynolds Ck at Tollgate	MAR-JUL	0.50	1.67	3.7	42	5.7	8.7	8.8
Owyhee R nr Gold Ck (2)	MAR-JUL	2.6	6.3	10.1	36	15.2	25	28
	MAR-SEP	2.0	5.2	8.5	31	13.0	22	27
	APR-JUL	0.59	2.9	6.0	27	10.8	22	22
Owyhee R nr Rome	FEB-JUL	35	189	345	59	500	730	580
	FEB-SEP	36	200	360	61	520	755	595
	APR-SEP	18.2	124	235	64	345	510	365
Owyhee R bl Owyhee Dam (2)	FEB-JUL	127	260	380	60	520	770	635
	FEB-SEP	145	285	405	61	545	795	665
	APR-SEP	88	182	265	65	365	540	405

SOUTHSIDE SNAKE RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Oakley	75.6	13.2	18.5	20.3
Salmon Falls Reservoir	182.6	11.6	10.9	40.6
Wildhorse	71.5	12.9	24.8	32.4
Owyhee	715.0	59.9	263.9	312.7
Brownlee	1420.	823.9	1315.	1317.

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - January 1, 2014

Watershed	Number of Data Sites	This Year as % of Last Yr	Median
Raft River	1	52	51
Goose-Trapper Creeks	2	54	48
Salmon Falls Creek	6	85	52
Bruneau River	5	67	56
Reynolds Creek	6	85	52
Owyhee Basin Total	7	69	55
Owyhee Basin SNOTEL	7	69	55

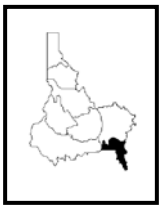
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

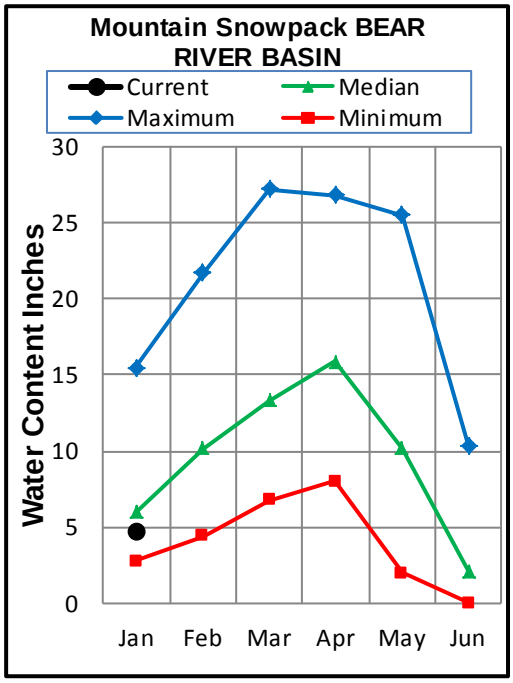
The average is computed for the 1981-2010 base period.

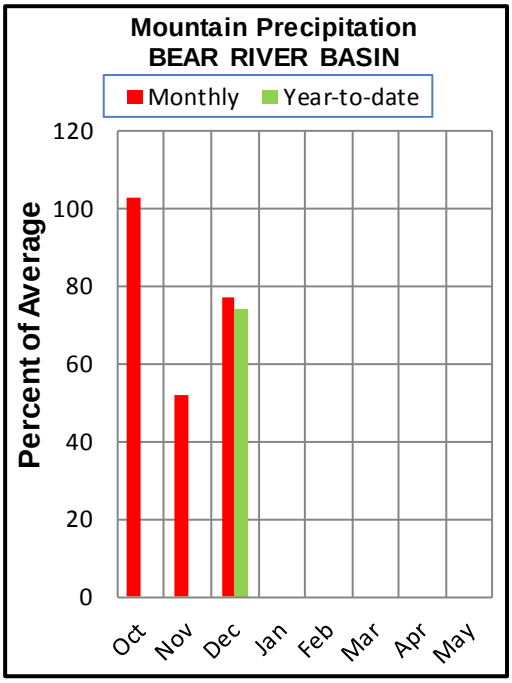
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

BEAR RIVER BASIN

JANUARY 1, 2014







WATER SUPPLY OUTLOOK

Monthly precipitation started promising in the new water year with near normal amounts falling in October, while November brought half of normal amounts, and December's precipitation was 77%. Water year to date precipitation is 74% of normal. The good news in the Bear River watershed is that Bear Lake has some of the best carryover in the state and should be able to provide adequate supplies for those with Bear Lake water rights. Bear Lake has 650,000 acre-feet, 93% of average, 46% full. The good storage is a result of the 2011 annual runoff that was 245% of normal. Those without storage water should expect similar supplies as the past two seasons which had well below normal runoff. Overall the Bear River snowpack is 79% of normal and the 6th lowest since 1991. Other years with similar snowpacks are 1998, 2000, and 2008, which all received abundant precipitation during the second half of winter and ended the season with near normal April 1 snowpacks. Stay tuned to see if nature repeats herself. Streamflow forecasts call for 85% of normal runoff in the headwater streams, but decrease to 77% at Stewart Dam. But if the dry trend continues, which now looks likely to happen in January, it will result in these forecasts dropping even more by next month. It will take several major storms, not a few wet days, to get the snowpack back where it should be for this time of the year.

BEAR RIVER BASIN
Streamflow Forecasts - January 1, 2014

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Bear R nr UT-WY State Line	APR-JUL	59	85	96	86	121	147	112
	APR-SEP	62	90	106	86	130	158	123
Bear R ab Res nr Woodruff	APR-JUL	45	82	103	85	132	169	121
	APR-SEP	46	84	109	85	134	172	128
Big Ck nr Randolph	APR-JUL	0.080	1.43	2.5	66	3.6	5.1	3.8
Smiths Fk nr Border	APR-JUL	33	55	70	79	85	107	89
	APR-SEP	41	66	83	80	100	124	104
Bear R bl Stewart Dam	APR-JUL	2.8	96	140	77	224	317	183
	APR-SEP	2.7	108	160	78	252	357	205
Little Bear R at Paradise	APR-JUL	0.82	15.9	28	68	40	58	41
Logan R nr Logan	APR-JUL	17.2	50	72	65	94	127	111
Blacksmith Fork nr Hyrum	APR-JUL	7.5	23	32	74	44	60	43

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Bear Lake	1421.0	650.7	875.1	698.9
Montpelier Creek	4.0	1.1	1.1	1.7

BEAR RIVER BASIN
Watershed Snowpack Analysis - January 1, 2014

Watershed	Number of Data Sites	This Year as % of Last Yr	Median
Smiths & Thomas Forks	3	91	93
Bear River ab WY-ID lin	9	78	84
Montpelier Creek	1	104	79
Mink Creek	1	72	55
Cub River	1	62	67
Bear River ab ID-UT lin	15	76	78
Malad River	1	72	54

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1981-2010 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Streamflow Adjustment List for All Forecasts Published in Idaho Water Supply Outlook Report: Streamflow forecasts are projections of runoff volumes that would occur without influences from upstream reservoirs or diversions. These values are referred to as natural, unregulated or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and inter-basin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made for each forecast point**. (Revised Dec 2011).**

Panhandle River Basins

Kootenai R at Leonia, MT
+ Lake Koocanusa storage change

Moyie R at Eastport – no corrections

Smith Creek nr Porthill – no corrections

Boundary Ck nr Porthill – no corrections

Clark Fork R at Whitehorse Rapids
+ Hungry Horse storage change
+ Flathead Lake storage change
+ Noxon Rapids Res storage change

Pend Oreille Lake Inflow
+ Pend Oreille R at Newport, WA
+ Hungry Horse storage change
+ Flathead Lake storage change
+ Noxon Rapids storage change
+ Pend Oreille Lake storage change
+ Priest Lake storage change

Priest R nr Priest R
+ Priest Lake storage change

NF Coeur d'Alene R at Enaville - no corrections

St. Joe R at Calder- no corrections

Spokane R nr Post Falls
+ Coeur d'Alene Lake storage change

Spokane R at Long Lake, WA
+ Coeur d'Alene Lake storage change
+ Long Lake, WA storage change

Clearwater River Basin

Selway R nr Lowell - no corrections

Lochsa R nr Lowell - no corrections

Dworshak Res Inflow
+ Clearwater R nr Peck
- Clearwater R at Orofino
+ Dworshak Res storage change

Clearwater R at Orofino - no corrections

Clearwater R at Spalding
+ Dworshak Res storage change

Salmon River Basin

Salmon R at Salmon - no corrections

Lemhi R nr Lemhi – no corrections

MF Salmon R at MF Lodge – no corrections

SF Salmon R nr Krassel Ranger Station – no corrections

Johnson Creek at Yellow pine – no corrections

Salmon R at White Bird - no corrections

Weiser, Payette, Boise River Basins

Weiser R nr Weiser - no corrections

SF Payette R at Lowman - no corrections

Deadwood Res Inflow
+ Deadwood R bl Deadwood Res nr Lowman
+ Deadwood Res storage change

Lake Fork Payette R nr McCall – no corrections

NF Payette R at Cascade
+ Cascade Res storage change
+ Payette Lake storage change

NF Payette R nr Banks
+ Cascade Res storage change
+ Payette Lake storage change

Payette R nr Horseshoe Bend
+ Cascade Res storage change
+ Deadwood Res storage change
+ Payette Lake storage change

Boise R nr Twin Springs - no corrections

SF Boise R at Anderson Ranch Dam
+ Anderson Ranch Res storage change

Mores Ck nr Arrowrock Dam – no corrections

Boise R nr Boise
+ Anderson Ranch Res storage change
+ Arrowrock Res storage change
+ Lucky Peak Res storage change

Wood and Lost River Basins

Big Wood R at Hailey - no corrections

Big Wood R ab Magic Res
+ Big Wood R at Stanton Crossing nr Bellevue
+ Willow Ck

Camas Ck nr Blaine – no corrections

Big Wood R bl Magic Dam nr Richfield
+ Magic Res storage change

Little Wood R ab High Five Ck – no corrections

Little Wood R nr Carey
+ Little Wood Res storage change

Big Lost R at Howell Ranch - no corrections

Big Lost R bl Mackay Res nr Mackay
+ Mackay Res storage change

Little Lost R bl Wet Ck nr Howe - no corrections

Upper Snake River Basin

Henrys Fork nr Ashton
+ Henrys Lake storage change
+ Island Park Res storage change

Falls R nr Ashton
+ Grassy Lake storage change
+ Diversions from Falls R ab nr Ashton

Teton R nr Driggs - no corrections

Teton R nr St. Anthony
- Cross Cut Canal into Teton R
+ Sum of Diversions for Teton R ab St. Anthony
+ Teton Dam for water year 1976 only

Henrys Fork nr Rexburg
+ Henrys Lake storage change
+ Island Park Res storage change
+ Grassy Lake storage change
+ 7 Diversions from Henrys Fk btw Ashton to St. Anthony
+ 21 Diversions from Henrys Fk btw St. Anthony to Rexburg
+ 3 Diversions from Falls R ab Ashton
+ 6 Diversions from Falls R nr Ashton to Chester
Snake R nr Flagg Ranch, WY – no corrections
Snake R nr Moran, WY
+ Jackson Lake storage change
Pacific Ck at Moran, WY - no corrections
Buffalo Fork ab Lava nr Moran, WY - no corrections
Gros Ventre R at Kelly, WY - no corrections
Snake R ab Res nr Alpine, WY
+ Jackson Lake storage change
Greys R nr Alpine, WY - no corrections
Salt R R nr Etna, WY - no corrections
Snake R nr Irwin
+ Jackson Lake storage change
+ Palisades Res storage change
Snake R nr Heise
+ Jackson Lake storage change
+ Palisades Res storage change
Willow Ck nr Ririe
+ Ririe Res storage change
The forecasted natural volume for Willow Creek nr Ririe does not include an adjustment for Grays Lake water diverted from Willow Creek drainage through the Clarks Cut diversion and into Blackfoot Reservoir.
Blackfoot R ab Res nr Henry
+ Blackfoot Res storage change
The forecasted Blackfoot Reservoir Inflow includes Grays Lake water diverted from the Willow Creek drainage through the Clarks Cut diversion and into Blackfoot Reservoir.
Portneuf R at Topaz - no corrections
Snake R at Neeley
+ Jackson Lake storage change
+ Palisades Res storage change
+ American Falls storage change
+ Teton Dam for water year 1976 only

Southside Snake River Basins
Goose Ck nr Oakley - no adjustments
Trapper Ck nr Oakley - no adjustments
Oakley Res Inflow - *flow does not include Birch Creek*
+ Goose Ck
+ Trapper Ck
Salmon Falls Ck nr San Jacinto, NV - no corrections
Bruneau R nr Hot Springs - no corrections
Reynolds Ck at Tollgate - no corrections
Owyhee R nr Gold Ck, NV
+ Wildhorse Res storage change
Owyhee R nr Rome, OR – no Corrections
Owyhee R bl Owyhee Dam, OR
+ Owyhee Res storage change
+ Diversions to North and South Canals

Bear River Basin
Bear R nr UT-WY Stateline, UT- no corrections
Bear R abv Res nr Woodruff, UT- no corrections
Big Ck nr Randolph, UT - no corrections
Smiths Fork nr Border, WY - no corrections
Bear R bl Stewart Dam nr Montpelier
+ Bear R bl Stewart Dam
+ Rainbow Inlet Canal
Little Bear R at Paradise, UT - no corrections
Logan R nr Logan, UT - no corrections
Blacksmith Fk nr Hyrum, UT - no corrections

Reservoir Capacity Definitions (Units in 1,000 Acre-Feet, KAF)
Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir storage terms include dead, inactive, active, and surcharge storage. This table lists these volumes for each reservoir, and defines the storage volumes NRCS uses when reporting capacity and current reservoir storage. In most cases, NRCS reports usable storage, which includes active and inactive storage. **(Revised Dec 2011)**

Basin/ Reservoir	Dead Storage	Inactive Storage	Active Storage	Surcharge Storage	NRCS Capacity	NRCS Capacity Includes
Panhandle Region						
Hungry Horse	39.73	---	3451.00	---	3451.0	Active
Flathead Lake	Unknown	---	1791.00	---	1791.0	Active
Noxon Rapids	Unknown	---	335.00	---	335.0	Active
Pend Oreille	406.20	112.40	1042.70	---	1561.3	Dead + Inactive + Active
Coeur d'Alene	Unknown	13.50	225.00	---	238.5	Inactive + Active
Priest Lake	20.00	28.00	71.30	---	119.3	Dead + Inactive + Active
Clearwater Basin						
Dworshak	Unknown	1452.00	2016.00	---	3468.0	Inactive + Active
Weiser/Boise/Payette Basins						
Mann Creek	1.61	0.24	11.10	---	11.1	Active
Cascade	Unknown	46.70	646.50	---	693.2	Inactive + Active
Deadwood	Unknown	---	161.90	---	161.9	Active
Anderson Ranch	24.90	37.00	413.10	---	450.1	Inactive + Active
Arrowrock	Unknown	---	272.20	---	272.2	Active
Lucky Peak	Unknown	28.80	264.40	13.80	293.2	Inactive + Active
Lake Lowell	7.90	5.80	159.40	---	165.2	Inactive + Active
Wood/Lost Basins						
Magic	Unknown	---	191.50	---	191.5	Active
Little Wood	Unknown	---	30.00	---	30.0	Active
Mackay	0.13	---	44.37	---	44.4	Active
Upper Snake Basin						
Henrys Lake	Unknown	---	90.40	---	90.4	Active
Island Park	0.40	---	127.30	7.90	135.2	Active + Surcharge
Grassy Lake	Unknown	---	15.18	---	15.2	Active
Jackson Lake	Unknown	---	847.00	---	847.0	Active
Palisades	44.10	155.50	1200.00	---	1400.0	Dead + Inactive+Active
Ririe	4.00	6.00	80.54	10.00	80.5	Active
Blackfoot	Unknown	---	348.73	---	348.7	Active
American Falls	Unknown	---	1672.60	---	1672.6	Active
Southside Snake Basins						
Oakley	0.00	---	75.60	---	75.6	Active
Salmon Falls	48.00	5.00	182.65	---	182.6	Active + Inactive
Wildhorse	Unknown	---	71.50	---	71.5	Active
Owyhee	406.83	---	715.00	---	715.0	Active
Brownlee	0.45	444.70	975.30	---	1420.0	Inactive + Active
Bear River Basin						
Bear Lake	5000.00	119.00	1302.00	---	1421.0 includes 119	Active + Inactive: that can be released
Montpelier Creek	0.21	---	3.84	---	4.0	Dead + Active

Interpreting Water Supply Forecasts

Introduction
Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflow forecasts are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

90 Percent Chance of Exceedance Forecast. There is a 90 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 10 percent chance that the actual streamflow volume will be less than this forecast value.

70 Percent Chance of Exceedance Forecast. There is a 70 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 30 percent chance that the actual streamflow volume will be less than this forecast value.

50 Percent Chance of Exceedance Forecast. There is a 50 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 50 percent chance that the actual streamflow volume will be less than this forecast value. Generally, this forecast is the middle of the range of possible streamflow volumes that can be produced given current conditions.

30 Percent Chance of Exceedance Forecast. There is a 30 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 70 percent chance that the actual streamflow volume will be less than this forecast value.

10 Percent Chance of Exceedance Forecast. There is a 10 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 90 percent chance that the actual streamflow volume will be less than this forecast value.

*Note: There is still a 20 percent chance that actual streamflow volumes will fall either below the 90 percent exceedance forecast or above the 10 percent exceedance forecast.

These forecasts represent the uncertainty inherent in making streamflow predictions. This uncertainty may include sources such as: unknown future weather conditions, uncertainties associated with the various prediction methodologies, and the spatial coverage of the data network in a given basin.

30-Year Average. The 30-year average streamflow for each forecast period is provided for comparison. The average is based on data from 1981-2010. The % AVG. column compares the 50% chance of exceedance forecast to the 30-year average streamflow; values above 100% denote when the 50% chance of exceedance forecast would be greater than the 30-year average streamflow.

AF - Acre-feet, forecasted volume of water are typically in thousands of acre-feet.

These forecasts are given to users to help make risk-based decisions. Users can select the forecast corresponding to the level of risk they are willing to accept in order to minimize the negative impacts of having more or less water than planned for.

To Decrease the Chance of Having Less Water than Planned for
A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive less than this amount). To reduce the risk of .having less water than planned for, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded such as the 90 or 70 percent exceedance forecasts.

To Decrease the Chance of Having More Water than Planned for
A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive more than this amount). To reduce the risk of having more water than planned for, users can base their operational decisions on one of the forecasts with a lesser chance of being exceeded such as the 30 or 10 percent exceedance forecasts.

Using the forecasts - an Example
Using the 50 Percent Exceedance Forecast. Using the example forecasts shown below, there is a 50% chance that actual streamflow volume at the Boise River near Twin Springs will be less than 685 KAF between April 1 and July 31. There is also a 50% chance that actual streamflow volume will be greater than 685 KAF.

Using the 90 and 70 Percent Exceedance Forecasts. If an unexpected shortage of water could cause problems (such as irrigated agriculture), users might want to plan on receiving 610 KAF (from the 70 percent exceedance forecast). There is a 30% chance of receiving *less* than 610 KAF.

Alternatively, if users determine the risk of using the 70 percent exceedance forecast is too great, then they might plan on receiving 443 KAF (from the **90** percent exceedance forecast). There is 10% chance of receiving less than 443 KAF.

Using the 30 or 10 Percent Exceedance Forecasts. If an unexpected excess of water could cause problems (such as operating a flood control reservoir), users might plan on receiving 760 KAF (from the 30 percent exceedance forecast). There is a 30% chance of receiving *more* than 760 KAF.

Alternatively, if users determine the risk of using the 30 percent exceedance forecast is too great, then they might plan on receiving 927 KAF (from the 10 percent exceedance forecast). There is a 10% chance of receiving more than 927 KAF.

Users could also choose a volume in between any of these values to reflect their desired risk level.

Weiser, Payette, Boise River Basins
Streamflow Forecasts – January 2006

Forecast Point	Forecast Period	Chance of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000 AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SF PAYETTE RIVER at Lowman	APR-JUL	329	414	471	109	528	613	432
	APR-SEP	369	459	521	107	583	673	488
BOISE RIVER near Twin Springs (1)	APR-JUL	443	610	685	109	760	927	631
	APR-SEP	495	670	750	109	830	1005	690

*90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table

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