United States Department of Agriculture
Natural Resources Conservation Service

Idaho Water Supply Outlook Report
May 1, 2012

What happened in April 2012?

Pictured above is the Big Lost River at Howell Ranch, located about 21 miles northwest of Mackay. This gage typically freezes every winter and in March this stream had 2-3 feet of ice on the river. In the picture above from April 25, snow is still visible on the far side of the river. Usually, warm temperatures gradually melt the ice and mid-elevation snow before the high elevation snow, but not this year. Record temperatures reaching 90 F in the valleys and 70 F in the mountains, jump started the melting of mid and higher elevation snowpack. In addition, 1-2 inches of rain on April 26 increased streams in central and northern Idaho to record high levels for this year. Luckily, cooler temperatures returned a few days later allowing mountain temperatures to dip below freezing at night, decreasing the amount of water draining from the snowpack and allowing streams to subside. In most basins across central and northern Idaho and the Upper Snake, there is enough snow remaining to provide another increase in flow when the remaining snow melts.

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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.

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IDAHO WATER SUPPLY OUTLOOK REPORT
MAY 1, 2012

SUMMARY

The rollercoaster of highs and lows that we characterized last month as 'March madness' continued into April. April precipitation was up and down across the state, ranging from 150% in the Northern Panhandle region to only 55% of average in the Bruneau and Salmon Falls basins. The timing of precipitation also varied greatly as the first half of the month was relatively dry, followed by a deluge of rain during the second half of the month. The combination of rain, snowmelt and record heat during the third week of April led to new daily high streamflows for many rivers across the state. Monthly streamflow volumes reached 200% of average for some rivers. This jump in flows caused reservoir managers to open gates and make flood control releases to maintain space in their reservoirs.

The high runoff in April was set up by conditions in March. March was warmer than normal and soaking rains fell as high as 7,000 feet. These conditions ripened snowpacks and caused the snow to start melting in early April. Typically snowpacks reach their peak snow water content and linger at that level as the snowpack ripens and slowly begins to melt. This didn't happen this year, instead like a rollercoaster, the snow water increased steeply through March and then immediately started melting after April 1. Next, came a heat wave across the West the third week of April. Mountain temperatures reached 70-75 F for several consecutive days and valley temperatures reached into the low 90s F in Boise. Using long term valley weather station data as a gauge, this heat wave was likely the hottest in April since 1875. With the snowpack ripe, this heat created record high melt rates of an inch/day in April. Water was flowing out the mid-elevation snowpack and even higher elevation sites at 9,000 feet started melting nearly a month early. With snowmelt in full swing the heat wave was followed by a cold front that brought heavy rains. Many SNOTEL sites in central Idaho received 1-2 inches of rain on April 26. This combination made streamflows increase like a good day on the stock market. Many streams set new daily high peaks in April. Once the brunt of the cold front's rain passed and freezing temperatures returned to the mountains, snowmelt slowed and the rivers began to recede. As of May 1 there is still enough snow in the higher elevations across central, northern and Upper Snake basins to produce another increase in flow when warm temperatures return. It is unlikely, however, that future peak flows in these areas will be higher then what we just saw without help from Mother Nature – either in the form of record high temperatures or an intense rain for several days.

SNOWPACK

The extremes in snowpack conditions we observed last month increased this month. As of May 1, snowpacks are 129% of average in the Kootenai and Priest basins of northern Idaho and decrease to zero at all snow measuring sites in the Owyhee basin. The Spokane basin snowpack is 106%, Clearwater basin is 96% and decreases to 78% in the Salmon and Payette basins. The remaining snow in the Weiser, and Boise is 71% while only the higher sites still have snow in the Big Lost basin which is 43% of average. Snowpack in the Upper Snake basin varies, ranging from 40% of average in the Hoback and Salt basins to 96% in Pacific Creek. Overall, the Snake basin above Palisades Reservoir is 61% of average. In the Bear River basin the snowpack is half of average in Smith, Thomas and Montpelier basins and decreases to 31% for the Bear River as a whole. The Salmon Falls and Bruneau basin snowpack is nearly gone at 10-15% of average, while the snow measuring sites in the Oakley and Owyhee are all melted.

PRECIPITATION

April precipitation varied across the state. Only 53-68% of average amounts fell in the Goose, Salmon Falls, Bruneau and the Little Lost basins. Amounts were 75-95% in the Owyhee, Bear, Upper Snake, Mud Lake, Big Lost, and Little Wood basins. The Big Wood, Salmon, Willow, Blackfoot and Portneuf basins received near normal April amounts. 110-150% of average amounts fell in the Weiser, Payette, Boise, Clearwater, Panhandle and Henrys Fork. Precipitation since the water year started October 1 also varies across the state ranging from 78-89% of average across southern Idaho, to near normal to 114% in the Panhandle and Big Lost basins. The unique part of April precipitation pattern is that the majority fell the last two weeks of the month. Many SNOTEL sites across central Idaho received 1-2 inches of rain on April 26.

RESERVOIRS

High inflows are keeping reservoir managers on their toes to mitigate flood impacts while maintaining adequate space available for future flows. For once nearly all of Idaho's major reservoirs are storing average or better levels for May 1. From north to south: Coeur d'Alene Lake is storing twice its normal summer capacity as inflows exceeded the maximum outflow at Post Falls which causes the lake to back-up. Dworshak Reservoir is currently at 69% full and will fill. The Payette system is 84% full, while the Boise is 91% full. Magic, Mackay and Little Wood are nearly full and passing inflows. Combined storage for Jackson Lake and Palisades reservoirs is 79% full. Oakley and Salmon Falls are 57% full while Wildhorse and Owyhee reservoirs are 85% full. Bear Lake is 84% full and even Montpelier Creek is full and passing inflow. Adequate water supplies are predicted this year in most areas. Carryover for next year will depend on how hot and dry summer is which determines irrigation demand. A cool wet summer like last year will help preserve some carryover for next year. This will help especially with May-September streamflow volumes predicted at below normal levels.

Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive and in some cases, dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in this report.

STREAMFLOW

April streamflow volumes were 150-279% of average for over half of the forecast points in this report. Pacific Creek in the headwaters of the Snake River, recorded the most. Other gages that recorded twice the normal April runoff or more include the South Fork Payette River at Lowman, Big Wood at Hailey, Salmon River at Salmon, Middle Fork Salmon River, South Fork Boise River, Boise River at Twin Springs, and Big Lost River at Howell. Only basins south of the Snake River, which ran out of snow mid-month, and high elevation basins, such as the Teton River where melt was slower to start, saw below normal volumes for the month. Not only were monthly volumes high but the heat during the third week of the month produced new daily flow records on many rivers across the state. For a summary of these records see the recreation section below. Looking ahead the May-July streamflow volume forecasts, like the snowpack percentages this month, range from very high to very low as you move north to south across Idaho. Forecasts in the Panhandle range from 100-130% of normal, Clearwater basin forecasts are all near normal, and Salmon River forecasts call for 80-100%. Forecasts in the Weiser, Payette and Boise basins are 90-100% of normal, while the Wood and Lost basin's forecasts are mostly 65-80%. The Upper Snake forecasts show the most variability ranging from 55-105%. The lowest forecasts in Idaho are for the Bear and Southside Snake basins, with most forecasts in the 20-50% range.

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 between the USDA NRCS and NOAA NWS; the joint west-wide Water Supply Outlook for the Western US is available at: http://www.wcc.nrcs.usda.gov/wsf/westwide.html.

RECREATION

Record setting heat broke April SNOTEL records dating back to the early 1980s and valley records dating back to 1875. The hot spell produced record melt rates for April and was followed by 1-2 inches of rain. The resulting runoff caused rivers to rise to record April levels across Idaho making for an early start to the high water season. Below is a short list of some record setting mean daily flow levels. These are not only the highest daily flows on record for the month of April, but often for much of May as well. The period of record is given to show how truly historic these April flows were. The Salmon River at Whitebird, at 70,000 cfs, set a new April record based on 100 years of data. The Boise River near Twin Springs, at 12,500 cfs, was the highest spring flow ever recorded and second highest all-time daily flow. December 24, 1965 at 15,400cfs was the only flow higher. As mentioned before, there is still plenty of snow to produce another increase on most rivers, but it will take extreme heat or rain to top these April values. Summer recreation will be excellent due to average or better peak snowpacks for most of Idaho this year.

River Gage	April 27, 2012 mean daily flow (cfs)	Highest ever daily flow level before	Period of record starts
Big Lost nr Howell	2,070	May 12	1950
Big Wood at Hailey	3,080	May 3	1917
Boise nr Twin Spring	12,500	2nd highest flow ever	1913
Lochsa nr Lowell	20,700	May 7	1931
MF Salmon at MF Lodge	11,000	May 17	1975-82, 2000-12
Salmon at Whitebird	70,000	May 7	1912
Selway nr Lowell	25,500	May 3	1931
SF Boise at Featherville	7,400	May 16	1947
SF Payette nr Lowman	4,850	May 15	1943
Snake at Flagg Ranch, WY	4,070	May 3	1985

WESTERN SNOW CONFERENCE MAY 2012

The 80th annual Western Snow Conference is in Anchorage, Alaska. The conference is May 21-24 at the Millennium Alaska Hotel. The theme for this year's conference is "Bright lights and winter nights – working with extremes". There will be a Short Course on Monday covering “Remote Data Collection Communication Options”. Much progress has been made from the original telegraph and line of site radio systems to the current use of satellite, cell and meteor burst technology. A combined panel of vendors, developers and end users will present lively discussions of four current communications options including meteor burst, GOES satellite, cell phone and Iridium satellite technology. Additional conference information is available at: http://www.westernsnowconference.org/.

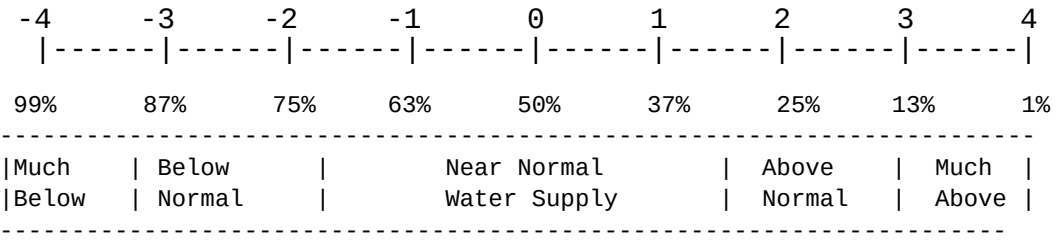
IDAHO SURFACE WATER SUPPLY INDEX (SWSI) May 1, 2012

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 1971 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 Shortages Occur When SWSI is Less Than*
Northern Panhandle	**2.2**	**2002**	**NA**
Spokane	**2.2**	**2009**	**NA**
Clearwater	**0.9**	**1999**	**NA**
Salmon	**-0.4**	**2003**	**NA**
Weiser	**0.1**	**2005**	**NA**
Payette	**0.7**	**2008**	**NA**
Boise	**1.4**	**2006**	**-1.8 to -2.1**
Big Wood	**0.9**	**1985 / 1993**	**0.6 to 0.0**
Little Wood	**0.3**	**2010**	**-1.6 to -2.6**
Big Lost	**-0.3**	**2005**	**0.5 to -0.2**
Little Lost	**-0.1**	**2006**	**1.5 to 0.7**
Teton	**-2.7**	**2003**	**-3.7 to -3.9**
Henrys Fork	**-1.6**	**2004**	**-3.4 to -3.6**
Snake (Heise)	**-1.4**	**1991**	**-1.3 to -1.6**
Oakley	**0.9**	**2005**	**0.0 to -0.5**
Salmon Falls	**0.7**	**1987 / 1993**	**-0.8 to -1.3**
Bruneau	**-2.5**	**2007**	**NA**
Owyhee	**-0.3**	**2000**	**-3.0 to -3.5**
Bear River	**1.7**	**2011**	**-3.0 to -3.4**

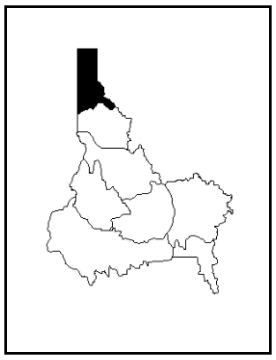
SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

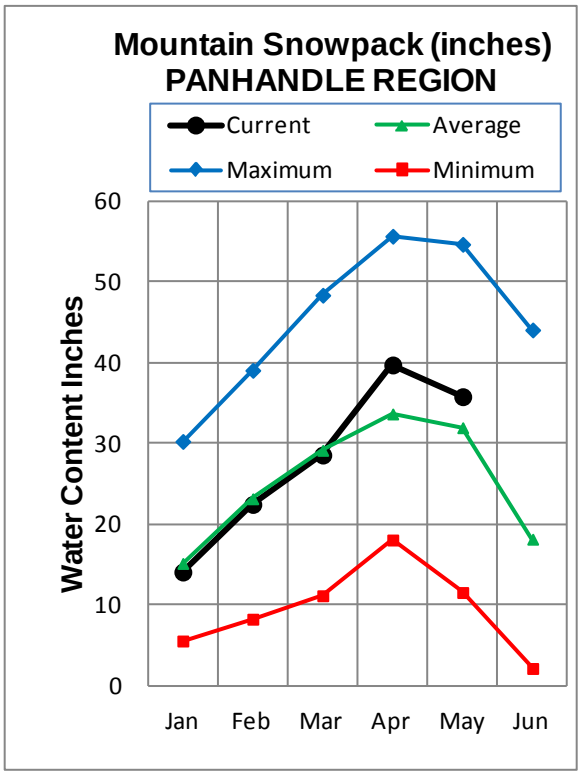


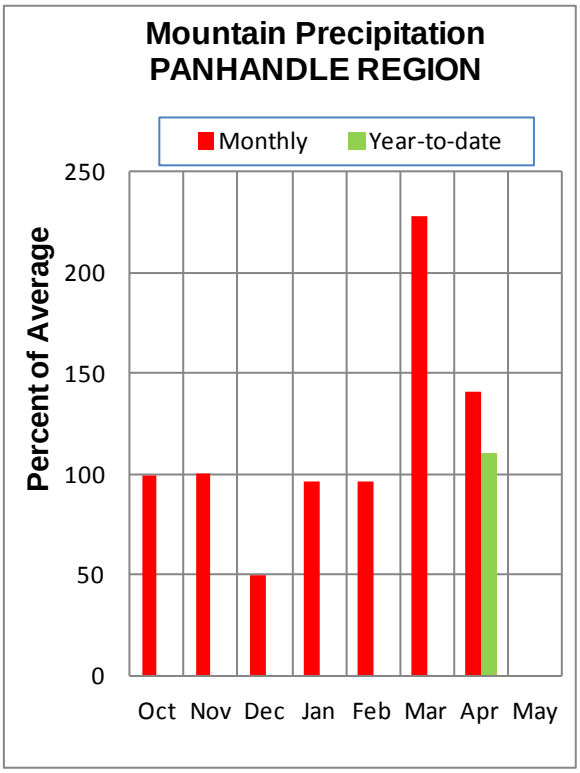
NA = Not Applicable, Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 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

MAY 1, 2012







WATER SUPPLY OUTLOOK

The Panhandle is holding on to the best snowpack in Idaho. Deep snow combined with a wet spring is causing rivers to remain high. The Panhandle's snowpack reached about 130% of its normal peak amount during the first half of April. Since that time the snow has been melting and May 1 amounts are presently 112% of average across the region. April brought 141% of its normal monthly precipitation amount, leaving precipitation totals since October 1 at 110% of average. Panhandle rivers ran high in April. For example, 142% of the normal volume of water came down the Moyie in April while the St. Joe River had nearly twice its average April volume. On April 25th, the St. Joe River at Calder set a new maximum mean daily flow value for the day at 21,100 cubic feet per second. Other rivers in the area also came close to or set new daily volume records during the same week. May-July streamflow volume forecasts range from 112% of normal for the St. Joe at Calder to 130% for Smith Creek near Porthill. As of May 1 Coeur d'Alene Lake is storing twice its normal capacity as inflows have exceeded the maximum outflow at Post Falls causing the lake level to back up. The long term climate forecasts call for drier weather during the May-July period. Dry weather will help reduce the risk of flooding, but even without rain there is still plenty of snow to drive high flows when the weather turns hot and increases melt rates again.

PANHANDLE REGION
Streamflow Forecasts - May 1, 2012

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)	MAY-JUL	5750	6670	7090	115	7510	8430	6170
	MAY-SEP	7130	7990	8390	116	8780	9640	7250
Moyie R at Eastport	MAY-JUL	325	365	395	120	425	465	330
	MAY-SEP	335	380	410	119	440	485	345
Smith Ck nr Porthill	MAY-JUL	104	123	135	130	147	166	104
	MAY-SEP	108	130	144	130	158	180	111
Boundary Ck nr Porthill	MAY-JUL	109	122	131	128	140	153	102
	MAY-SEP	114	128	137	127	146	160	108
Clark Fork at Whitehorse Rpds (1,2)	MAY-JUL	8660	9930	10500	110	11100	12300	9590
	MAY-SEP	9760	11200	11800	110	12500	13900	10700
Pend Oreille Lake Inflow (2)	MAY-JUL	9950	10900	11600	109	12200	13200	10600
	MAY-SEP	11100	12200	12900	109	13700	14800	11800
Priest R nr Priest River (1,2)	MAY-JUL	540	605	650	106	695	760	615
	MAY-SEP	580	655	705	105	755	830	670
NF Coeur d'Alene R at Enaville	MAY-JUL	340	455	530	121	605	720	440
	MAY-SEP	375	490	570	119	650	765	480
St. Joe R at Calder	MAY-JUL	775	875	945	112	1010	1110	845
	MAY-SEP	835	940	1010	111	1080	1180	910
Spokane R nr Post Falls (2)	MAY-JUL	1260	1540	1720	103	1900	2180	1670
	MAY-SEP	1320	1620	1820	103	2020	2320	1770
Spokane R at Long Lake (2)	MAY-JUL	1630	1960	2180	114	2400	2730	1910
	MAY-SEP	1840	2180	2420	114	2660	3000	2130

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Pend Oreille	1561.3	380.4	693.8	916.7
Coeur d'Alene	238.5	488.9	201.8	249.7
Priest Lake	119.3	134.9	71.5	102.5

PANHANDLE REGION
Watershed Snowpack Analysis - May 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	19	76	129
Moyie River	4	93	126
Priest River	4	87	129
Pend Oreille River	76	59	98
Rathdrum Creek	1	42	103
Coeur d'Alene River	7	64	113
St. Joe River	4	72	99
Spokane River	12	65	106
Palouse River	1	29	0

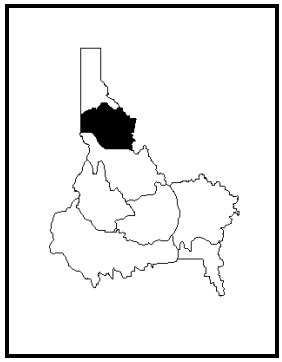
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

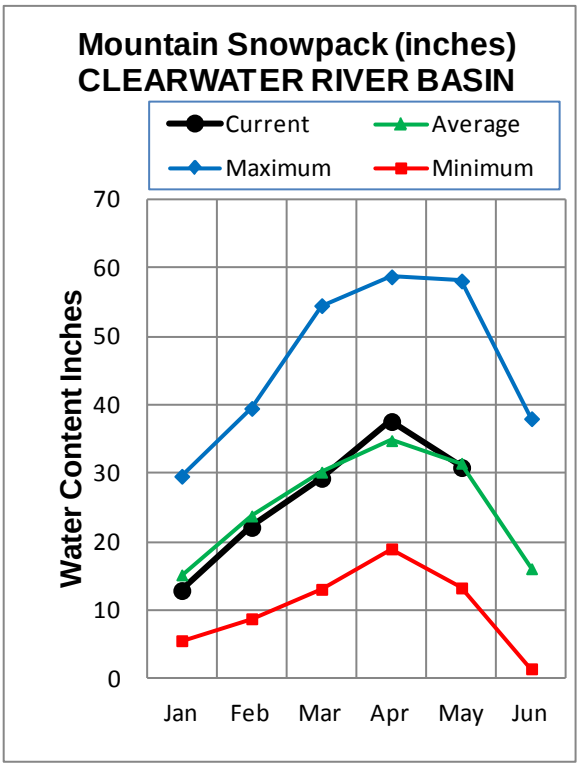
The average is computed for the 1971-2000 base period.

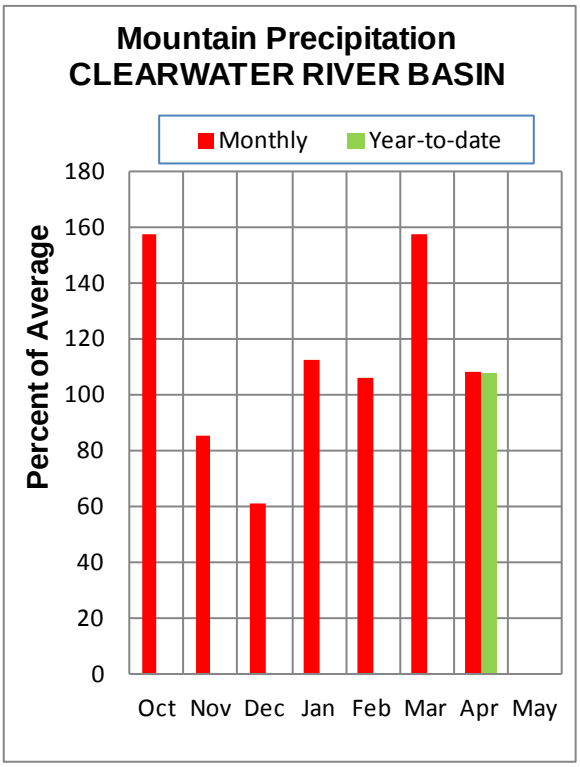
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

CLEARWATER RIVER BASIN

MAY 1, 2012







WATER SUPPLY OUTLOOK

By most measures the winter of 2012 turned out to be near average for the Clearwater Basin. Snow water content for 2012 peaked slightly higher than average (105%) during the first week of April. Since that time melt has been progressing a little faster than normal and May 1 snow amounts are a hair below average (96%). Monthly precipitation in April and water year to date precipitation since October 1 are both a little above average (108% and 107% respectively). With snow and precipitation inputs near average, it's not surprising that all rivers in the basin are forecast for near average volumes for the May-July period. Dworshak reservoir will fill and is currently storing 2,401,000 acre-feet, 94% of the average for May 1. Even though this year has had average snow and precipitation that doesn't guarantee that peak runoff amounts will also be average. For example, on April 27 an inch of rain combined with snowmelt to produce a new daily mean flow record for that day on the Lochsa at 20,700 cfs and the Selway at 25,500 cfs. Long range climate forecasts call for drier than normal conditions for the May-July period. Even if dry conditions do occur, there is still plenty of snow to produce another peak when temperatures get hot and increase snowmelt again. Without rain it's doubtful a snowmelt peak could exceed the flows on April 27.

CLEARWATER RIVER BASIN
Streamflow Forecasts - May 1, 2012

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 R nr Lowell	MAY-JUL	1410	1550	1650	96	1750	1890	1720
	MAY-SEP	1470	1640	1750	96	1860	2030	1830
Lochsa R nr Lowell	MAY-JUL	1100	1190	1250	100	1310	1400	1250
	MAY-SEP	1150	1250	1320	99	1390	1490	1330
Clearwater R at Orofino (1)	MAY-JUL	2910	3430	3660	98	3900	4420	3730
	MAY-SEP	3110	3660	3910	98	4160	4710	3990
Dworshak Res Inflow	MAY-JUL	1610	1930	2070	105	2210	2530	1970
	MAY-SEP	1740	2080	2240	105	2400	2740	2130
Clearwater R at Spalding (1,2)	MAY-JUL	4690	5490	5850	101	6210	7010	5770
	MAY-SEP	5060	5920	6310	102	6700	7560	6190

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Dworshak	3468.0	2401.0	1502.8	2560.7

CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - May 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	9	69	100
Lochsa River	3	59	86
Selway River	4	59	88
Clearwater Basin Total	16	65	96

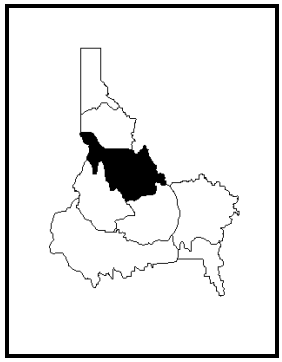
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

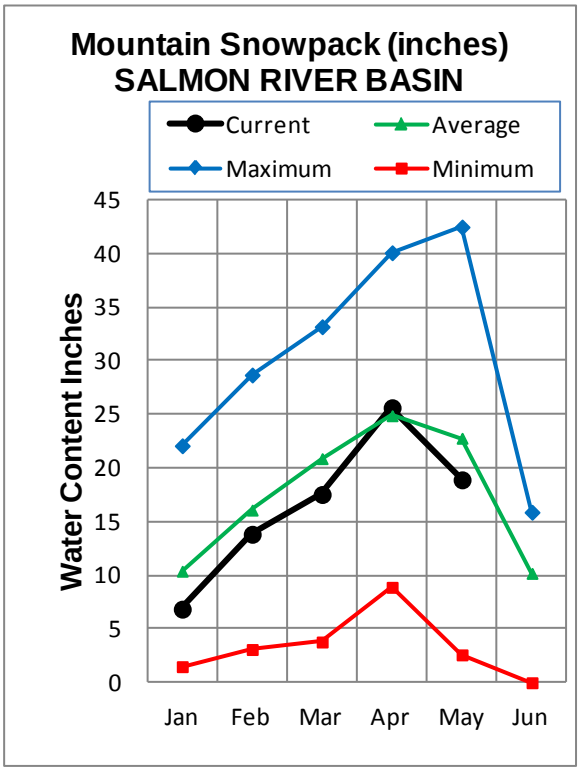
The average is computed for the 1971-2000 base period.

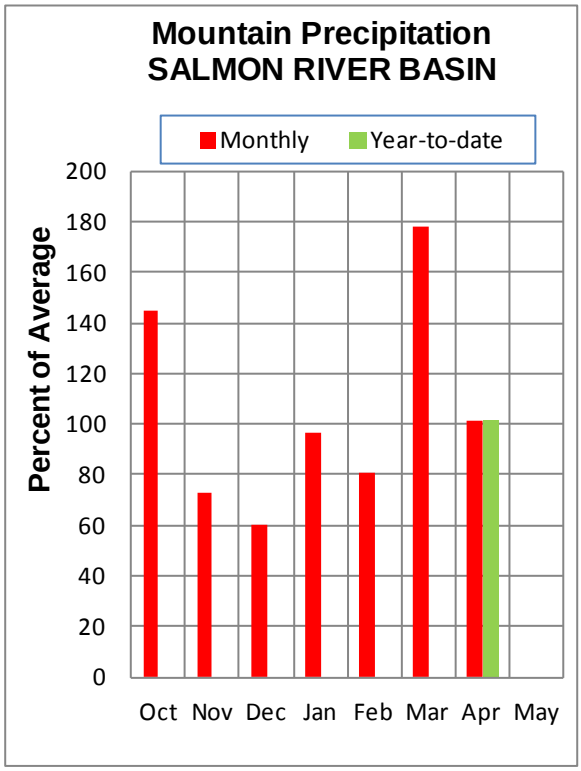
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

SALMON RIVER BASIN

MAY 1, 2012







WATER SUPPLY OUTLOOK

The Salmon Basin snowpack peaked in early April at average amounts of snow water. Since then, snowmelt has been occurring faster than normal and May 1 snow is now 78% of normal. April precipitation was normal, as has been water year precipitation since October 1. The main news from April includes record temperatures, rain and swollen rivers. Maximum daily temperatures from April 22-24 at Banner Summit SNOTEL, located at 7,040 feet elevation along highway 21 north of Stanley, were 70-77 degrees Fahrenheit. These temperatures set new SNOTEL records and produced snowmelt rates in excess of 1 inch of snow water per day. The cold front that arrived on the heels of the heat wave brought another 1.6 inches of rain to Banner Summit. All this snowmelt and precipitation drove the Middle Fork of the Salmon River to a new daily mean flow record of 11,000 cfs on April 27. This is the highest peak ever recorded before mid-May at the Middle Fork Lodge gage. The Middle Fork typically peaks when Banner Summit is half melted. This year, Banner Summit's snow water peaked at 29 inches. On May 1 its snow water was still 26.6 so another river peak is very likely in May. Using 2009 as a guide, it's unlikely the next peak will exceed the April 27 peak unless it is also fueled in part by rainfall. The May-July streamflow volume forecast calls for 90% of average for the Middle Fork and 80% of average for the Salmon River at Salmon. There should be plenty of water for river fun throughout the summer.

SALMON RIVER BASIN
Streamflow Forecasts - May 1, 2012

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)	MAY-JUL	415	550	610	80	670	805	760
	MAY-SEP	475	640	715	79	790	955	900
Lemhi R nr Lemhi	MAY-JUL	20	29	35	50	42	53	70
	MAY-SEP	30	40	47	53	55	68	89
MF Salmon R at MF Lodge	MAY-JUL	475	565	630	90	695	785	700
	MAY-SEP	520	630	705	90	780	890	785
SF Salmon R nr Krassel RS	MAY-JUL	193	220	240	96	260	285	250
	MAY-SEP	215	245	260	96	275	305	270
Johnson Ck at Yellow Pine	MAY-JUL	146	163	175	94	187	205	186
	MAY-SEP	160	176	187	94	198	215	199
Salmon R at White Bird (1)	MAY-JUL	3150	3970	4340	84	4710	5530	5150
	MAY-SEP	3520	4460	4880	84	5300	6240	5780

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

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

SALMON RIVER BASIN
Watershed Snowpack Analysis - May 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	8	63	81
Lemhi River	6	40	56
Middle Fork Salmon River	3	69	88
South Fork Salmon River	3	74	94
Little Salmon River	4	49	82
Salmon Basin Total	23	57	78

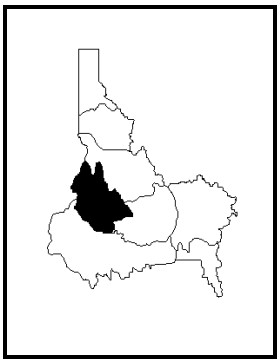
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

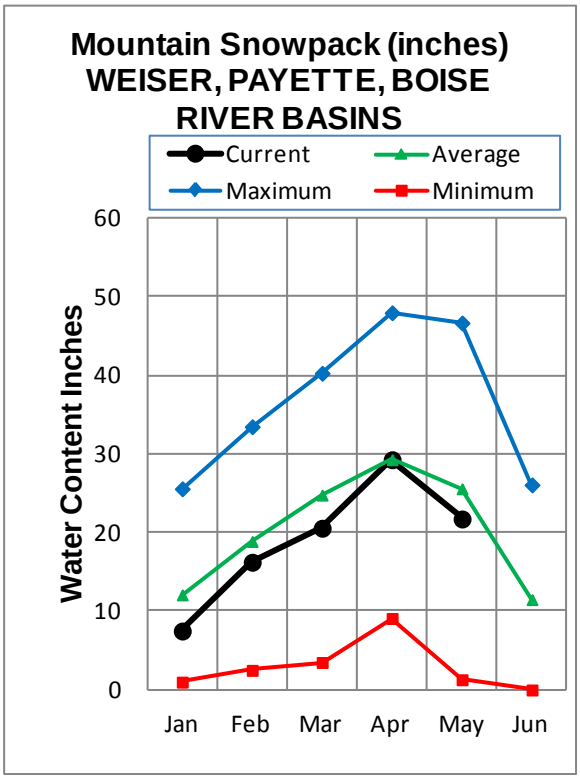
The average is computed for the 1971-2000 base period.

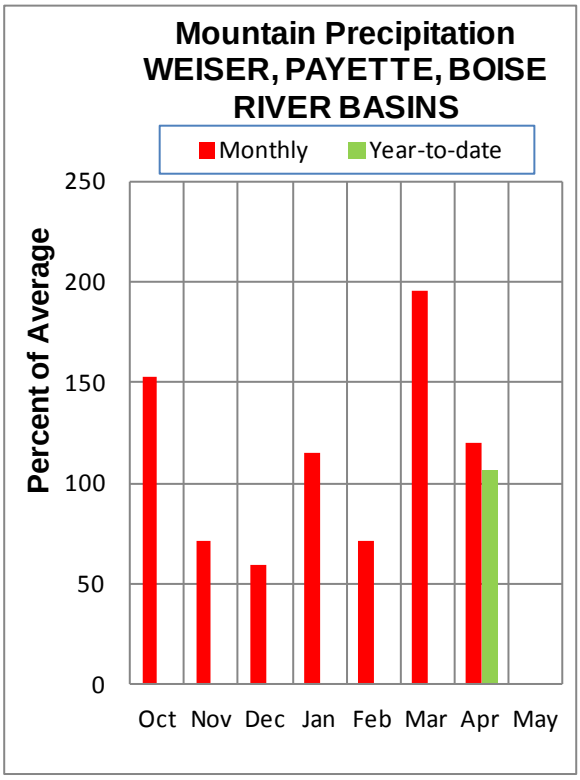
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WEISER, PAYETTE, BOISE RIVER BASINS

MAY 1, 2012







WATER SUPPLY OUTLOOK

Good precipitation, record heat and rapid snowmelt headline April's conditions in the Weiser, Payette and Boise basins. The west central mountains received 120% of average precipitation in April, leaving water year to date precipitation at 106% of normal. Snowpacks across the region peaked near normal at the start of April. Now after a month of melt, which at times was fueled by record temperatures, the May 1 snow amounts have dropped below average. May 1 snow is 71% of average in the Boise and Weiser basins and 78% for the Payette. Temperature records were set at SNOTEL sites across these basins as mountain locations reached 70 degrees Fahrenheit or more during the third week of April. Since SNOTEL data only goes back 30 years it's worthwhile to look at valley temperatures to gage how unusual this April heat wave was. At the Boise airport, back to back 91 degree days on April 22 and 23 set new records dating back to 1875. These temperatures were just 1 degree shy of the all time April record of 92 degrees. It's likely that SNOTEL temperatures during this period were also the highest April temperatures in the last century. The heat wave ended with a cold front that dropped 1 inch of rain in the valley and up to 2 inches in the mountains. Rivers responded in their own record setting way. Daily inflow to the Boise River reservoir system reached almost 23,000 cfs on April 27. This was the sixth highest inflow since 1950. Since the maximum safe outflow from the reservoir system is about 10,000 cfs, it takes more than two days of releasing water to pass the April 27 inflows through the city. The Army Corps of Engineers and the Bureau of Reclamation plan to continue maximum releases to maintain flood control space until it is safe to fill the reservoirs for summer. As of May 1 the Boise reservoir system is 91% full, leaving 93,900 acre-feet of flood control space. Elsewhere, the Payette system is 84% full. Summer streamflow forecasts are 90-100% of average across this region. Summer water supplies will be plentiful this summer.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - May 1, 2012

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)	MAY-JUL	122	193	230	90	270	370	255
	MAY-SEP	140	215	255	90	300	405	285
SF Payette R at Lowman	MAY-JUL	300	335	355	93	380	415	380
	MAY-SEP	340	375	400	92	425	465	435
Deadwood Resv Inflow (1,2)	MAY-JUL	90	107	114	98	121	138	116
	MAY-SEP	95	114	123	98	132	151	125
Lake Fork Payette R nr McCall	MAY-JUL	57	63	68	90	73	80	76
	MAY-SEP	58	65	70	89	75	83	79
NF Payette R at Cascade (1,2)	MAY-JUL	285	360	390	94	420	495	415
	MAY-SEP	290	370	405	93	440	520	435
NF Payette R nr Banks (2)	MAY-JUL	380	445	485	92	525	590	525
	MAY-SEP	390	460	505	92	550	620	550
Payette R nr Horseshoe Bend (1,2)	MAY-JUL	985	1150	1230	94	1310	1470	1310
	MAY-SEP	1090	1270	1350	94	1430	1610	1430
Boise R nr Twin Springs (1)	MAY-JUL	385	470	510	100	550	635	510
	MAY-SEP	430	520	565	100	610	700	565
SF Boise R at Anderson Ranch Dam (1,	MAY-JUL	285	370	405	94	440	525	430
	MAY-SEP	310	395	435	94	475	560	465
Mores Ck nr Arrowrock Dam	MAY-JUL	45	60	71	90	83	103	79
	MAY-SEP	48	64	76	89	89	110	85
Boise R nr Boise (1,2)	MAY-JUL	845	985	1050	97	1110	1260	1080
	MAY-SEP	940	1090	1160	98	1230	1380	1190

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Mann Creek	11.1	11.0	10.5	10.5
Cascade	693.2	585.2	453.3	462.5
Deadwood	161.9	133.0	109.5	103.4
Anderson Ranch	450.2	435.1	341.3	302.3
Arrowrock	272.2	259.4	132.1	180.9
Lucky Peak	293.2	227.2	225.3	207.9
Lake Lowell (Deer Flat)	165.2	130.1	140.0	141.5

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - May 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Mann Creek	1	31	67
Weiser River	3	36	71
North Fork Payette	8	53	80
South Fork Payette	5	65	87
Payette Basin Total	15	54	78
Middle & North Fork Boise	5	64	80
South Fork Boise River	7	68	80
Mores Creek	5	35	53
Boise Basin Total	14	54	71
Canyon Creek	1	0	0

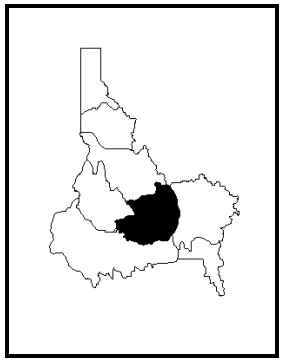
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

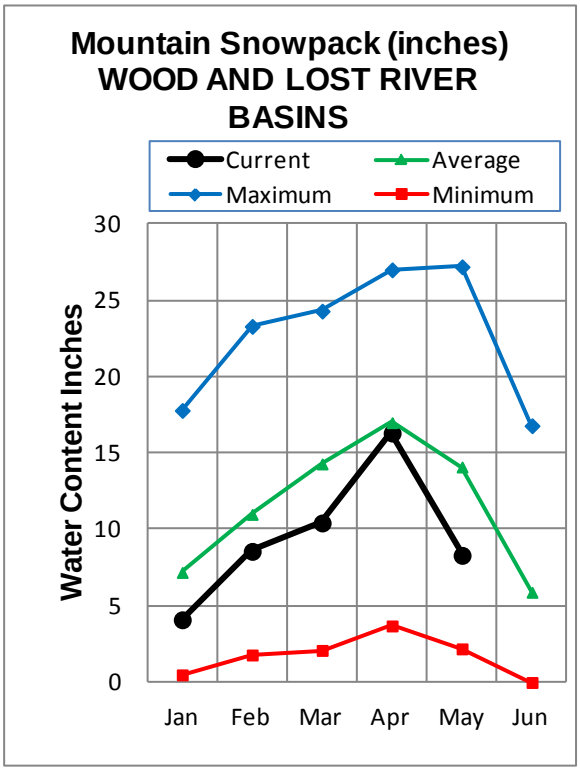
The average is computed for the 1971-2000 base period.

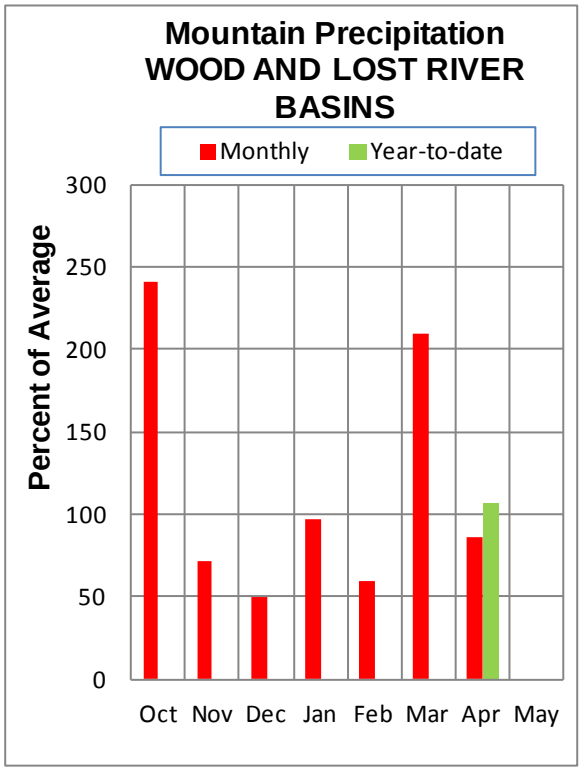
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WOOD and LOST RIVER BASINS

MAY 1, 2012







WATER SUPPLY OUTLOOK

The 'Miracle March' that we wrote about last month continued into April bringing near normal monthly precipitation. Snowpacks began melting in early April after March's rains ripened the snowpack. Most of April's precipitation fell as rain at the end of the month, so there was little to no new snow accumulation at SNOTEL sites. Record high temperatures and a deluge of rain towards the end of April resulted in rapid melt of the snow in the 6,000-8,500 foot elevation zone in the Big Wood and Big Lost basins. Sites between these elevations lost about 10 inches of snow water between April 10 and May 1. Higher elevation sites above 8,500 such as Vienna Mine, Dollarhide Summit, Galena Summit and Smiley Mountain only lost about 3 inches of snow water during this time period. This means there is still more snowmelt runoff that will come from higher elevations. Currently snowpacks are about 33% of average in the Little Wood and Little Lost basins, 43% in the Big Lost (this now includes Smiley Mountain's new average), and 60-70% in the Big Wood and Mud Lake area. Streamflow forecasts call for 65-80% of average streamflow for the May-July period. The 261% of average April runoff for the Big Lost River at Howell Ranch even made its way down valley past Arco to the Big Lost River Sinks near Howe. This is great news for the valley's surface and groundwater users. Magic, Mackay and Little Wood reservoirs are full and passing water. These basins had meager snowpacks most of the year, but will now have adequate water supplies because of the buzzer beating snow and rain in March and April which produced needed runoff. The remaining high elevation snow and better spring flows will provide high baseflows to make it through the dry summer months in the Big and Little Lost basins.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - May 1, 2012

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 R at Hailey (1)	MAY-JUL	107	159	182	81	205	255	225
	MAY-SEP	124	183	210	81	235	295	260
Big Wood R ab Magic Res	MAY-JUL	59	94	117	71	140	175	165
	MAY-SEP	62	100	125	70	150	188	179
Camas Ck nr Blaine	MAY-JUL	8.6	18.8	28	65	39	58	43
	MAY-SEP	9.3	19.7	29	66	40	60	44
Big Wood R bl Magic Dam (2)	MAY-JUL	72	115	145	71	175	220	205
	MAY-SEP	78	124	155	71	186	230	220
Little Wood R ab High Five Ck	MAY-JUL	24	33	40	69	48	61	58
	MAY-SEP	27	37	45	69	54	68	65
Little Wood R near Carey (2)	MAY-JUL	24	35	42	68	49	60	62
	MAY-SEP	27	39	47	67	55	67	70
Big Lost R at Howell Ranch	MAY-JUL	89	110	126	78	143	170	162
	MAY-SEP	101	126	144	77	164	195	186
Big Lost R bl Mackay Resv	MAY-JUL	69	82	91	71	100	113	129
	MAY-SEP	84	101	112	70	123	140	159
Little Lost R nr Howe	MAY-JUL	15.7	19.3	22	82	25	29	27
	MAY-SEP	20	25	28	80	32	37	35
Camas Ck at Camas	MAY-JUL	0.3	1.5	7.0	27	12.5	21	26

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Magic	191.5	187.6	176.8	150.4
Little Wood	30.0	29.2	19.1	24.3
Mackay	44.4	44.2	31.3	34.6

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - May 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Hailey	7	59	72
Camas Creek	3	0	0
Big Wood Basin Total	10	53	64
Fish Creek	0	0	0
Little Wood River	3	16	29
Big Lost River	4	20	26
Little Lost River	3	23	35
Birch-Medicine Lodge Cree	2	42	59
Camas-Beaver Creeks	2	0	0

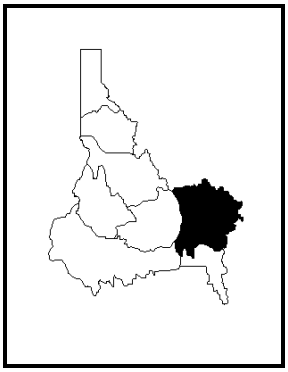
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

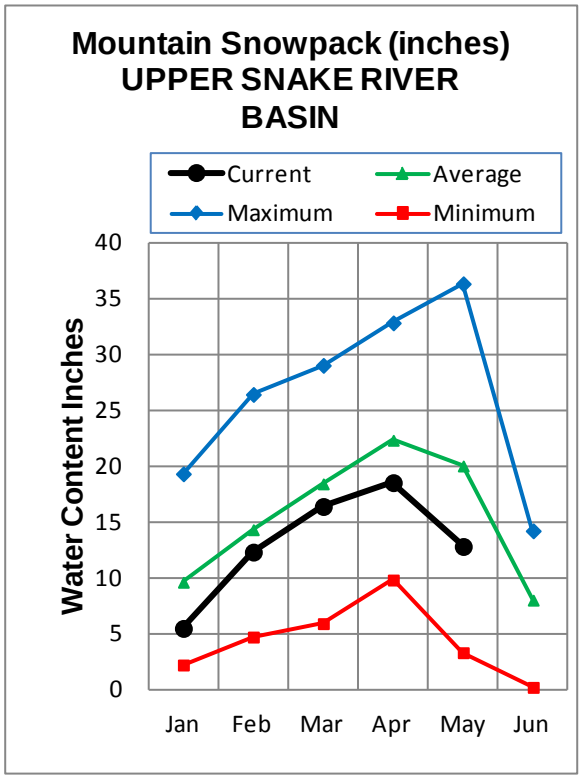
The average is computed for the 1971-2000 base period.

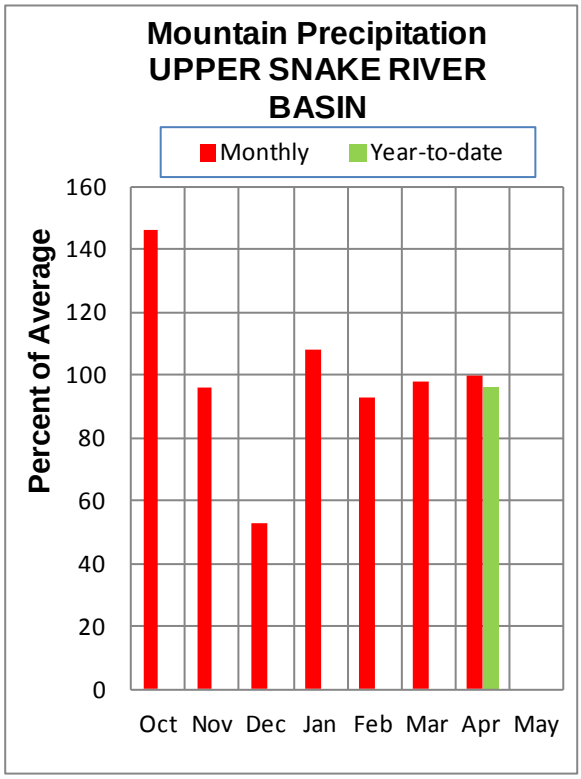
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

UPPER SNAKE BASIN

MAY 1, 2012







WATER SUPPLY OUTLOOK

The 2012 snowpack peaked at about 90% of normal for the Henrys Fork and Teton basins, and at 80% for the Snake above Palisades. These Upper Snake basins did a better job of holding on to their snow through most of April than much of the rest of Idaho. Snow melt and snow accumulation basically balanced each other until April 19 when a west-wide heat wave produced rapid snowmelt. May 1 snow amounts stand at 64% of normal for the Henrys Fork above Rexburg, and 61% of average for the Snake above Palisades. The Willow, Blackfoot and Portneuf snow measuring sites are nearly all snow free. For the Upper Snake basin taken as a whole, including all 37 sites above American Falls, the snowpack is currently 56%. April precipitation was average, and water year to date precipitation since October 1 is slightly less than average. Streamflow volume forecasts for the May-July period range from 36% of average for the Blackfoot River, to 50-60% for the Portneuf, Teton, Salt, and Willow Creek. Forecasts in the 70-80% of average range include the Greys, Snake near Heise, and Henrys Fork. Forecasts between 90-105% include most of the high elevation tributaries to the Snake above Jackson, as well as, the Falls River. The Snake's eight reservoirs are storing 4.1 million acre-feet, 121% of average and 89% of capacity. Water supplies remain in decent shape. The Surface Water Supply Index (SWSI) for the Snake River at Heise predicts an adequate water supply using the 50% exceedance forecast period. Should conditions turn dry, water supplies might become tight despite excellent reservoir storage.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - May 1, 2012

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)	MAY-JUL	270	320	355	79	395	455	450
	MAY-SEP	415	480	525	81	575	650	645
Falls R nr Ashton (2)	MAY-JUL	250	285	310	93	335	380	335
	MAY-SEP	300	345	375	93	405	455	405
Teton R nr Driggs	MAY-JUL	58	70	79	55	89	104	143
	MAY-SEP	75	91	103	55	116	136	188
Teton R nr St. Anthony	MAY-JUL	168	198	220	62	245	280	355
	MAY-SEP	205	245	270	62	300	340	435
Henrys Fork nr Rexburg (2)	MAY-JUL	875	980	1050	79	1120	1220	1330
	MAY-SEP	1210	1330	1410	79	1490	1610	1780
Snake R at Flagg Ranch	MAY-JUL	345	385	410	90	435	475	455
	MAY-SEP	380	425	455	90	485	530	505
Snake R nr Moran (1,2)	MAY-JUL	555	655	700	93	745	845	750
	MAY-SEP	615	730	780	93	830	945	840
Pacific Ck At Moran	MAY-JUL	126	152	169	106	186	210	160
	MAY-SEP	133	159	177	106	195	220	167
Buffalo Fork ab Lava nr Moran	MAY-JUL	220	245	265	91	285	310	290
	MAY-JUL	220	245	265	91	285	310	290
Gros Ventre R at Kelly	MAY-JUL	104	137	160	105	183	215	152
	MAY-JUL	104	137	160	105	183	215	152
Snake R nr Alpine (1,2)	MAY-JUL	1250	1490	1600	74	1710	1950	2160
	MAY-SEP	1370	1670	1800	71	1930	2230	2530
Greys R Nr Alpine	MAY-JUL	170	197	215	72	235	260	300
	MAY-SEP	200	235	255	72	275	310	355
Salt R Nr Etna	MAY-JUL	90	137	169	60	200	250	280
	MAY-SEP	124	181	220	61	260	315	360
Snake R nr Irwin (1,2)	MAY-JUL	1750	2020	2150	72	2280	2550	2980
	MAY-SEP	1940	2260	2400	68	2540	2860	3520
Snake R nr Heise (2)	MAY-JUL	1960	2160	2300	73	2440	2640	3170
	MAY-SEP	2160	2390	2550	68	2710	2940	3760
Willow Ck nr Ririe (2)	MAY-JUL	19.3	30	37	62	44	55	60
Blackfoot R ab Res nr Henry	MAY-JUN	6.0	13.4	20	36	28	42	56
Portneuf R at Topaz	MAY-JUL	24	30	34	52	39	46	65
	MAY-SEP	32	39	44	52	49	58	84
Snake River at Neeley	MAY-JUL	1070	1720	2020	77	2320	2970	2640
	MAY-SEP	1020	1730	2060	71	2390	3100	2910

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Henrys Lake	90.4	90.4	91.1	87.4
Island Park	135.2	136.1	108.7	123.2
Grassy Lake	15.2	13.2	13.8	12.7
Jackson Lake	847.0	729.7	544.5	471.1
Palisades	1400.0	1047.5	375.2	862.6
Ririe	80.5	79.4	69.0	56.2
Blackfoot	348.7	322.1	255.6	256.3
American Falls	1672.6	1673.2	1535.1	1493.8

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - May 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Henrys Fork-Falls River	7	46	74
Teton River	8	34	53
Henrys Fork above Rexburg	15	40	64
Snake above Jackson Lake	6	49	80
Pacific Creek	2	56	96
Gros Ventre River	3	34	45
Hoback River	5	25	39
Greys River	4	44	72
Salt River	5	23	41
Snake above Palisades	22	37	61
Willow Creek	7	10	27
Blackfoot River	3	0	0
Portneuf River	6	4	10
Snake abv American Falls	39	32	56

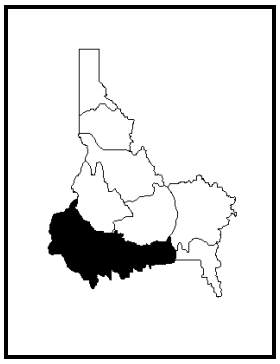
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

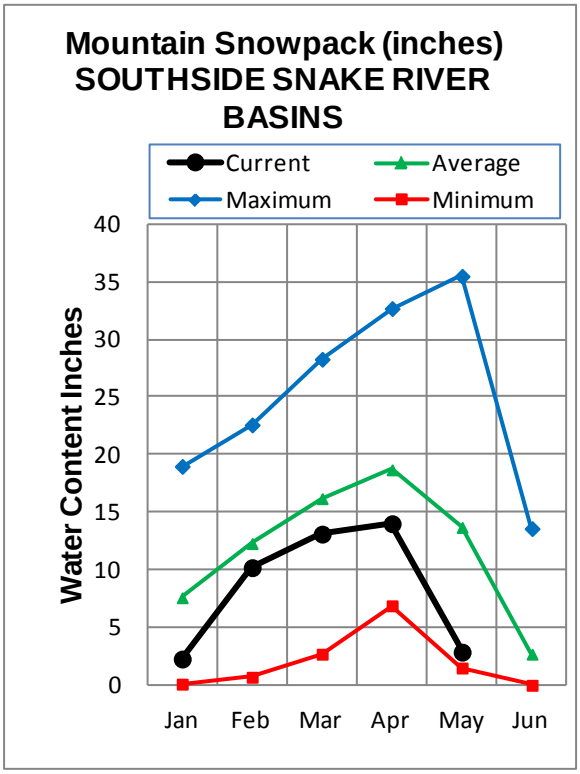
The average is computed for the 1971-2000 base period.

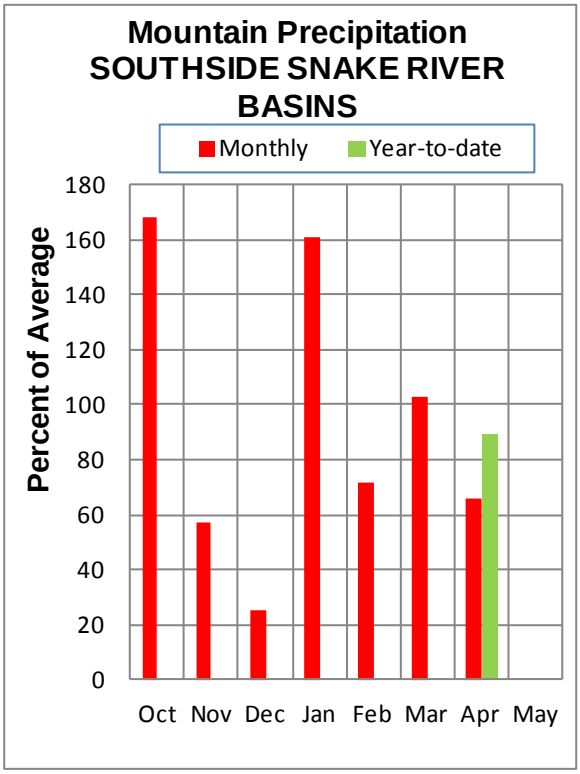
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

SOUTHSIDE SNAKE RIVER BASINS

MAY 1, 2012







WATER SUPPLY OUTLOOK

Nature took back most of the extra month of winter that the Southside Snake basins experienced a year ago. In 2011 snowpacks south of the Snake River peaked a month late in early May, this year snowpacks peaked in mid-March. On average April 1 is when snowpacks reach their greatest snow water amounts. Snowpack peaks were way below normal this year. In round numbers the Owyhee reached about 50% of its normal seasonal peak amount, Bruneau 60%, Salmon Falls 70%, and Goose 85%. As of May 1 all Goose and Owyhee snow sites are snow free, while Salmon Falls and Bruneau basins only have 11% and 16% of their normal snow respectively. April precipitation was half of normal in all but the Owyhee basin, which had 81%. Water year to date precipitation since October 1 ranges from 83% of normal in the Bruneau to 103% in Goose drainage. All rivers experienced early and low runoff peaks. Unlike the rest of the state where record high streamflows resulted from the April 22-27 heat wave and rain event, flows barely increased in southside streams since the snow was already melted. Flows in the Owyhee River near Rome have been 30-40% of normal since January. Salmon Falls Creek had near average streamflow through March, but April flows were only 46% of average. Summer streamflow estimates for May-July period are low, ranging from just 6% of normal for the Owyhee near Gold Creek, to 33-44% for Salmon Falls Creek, Oakley Inflow, and the Bruneau River. To reiterate what we have been saying all year, the only real good news is that much of last winter's bonus water remains in the reservoirs. Wildhorse, Owyhee, Salmon Falls and Oakley are all storing above average amounts. This stored water will be critical to get through the summer irrigation season. The Surface Water Supply Index indicates enough reservoir storage in the Owyhee basin to meet summer demand even without streamflow. Supplies should also be marginally adequate for Salmon Falls and Oakley water users based on even the drier streamflow forecasts.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - May 1, 2012

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	MAY-JUL	0.2	1.8	5.5	34	9.2	14.5	16.4
	MAY-SEP	0.4	2.4	6.2	34	10.0	15.7	18.1
Trapper Ck nr Oakley	MAY-JUL	1.7	2.3	2.7	60	3.1	3.7	4.5
	MAY-SEP	2.4	3.0	3.5	59	4.0	4.6	5.9
Oakley Res Inflow	MAY-JUL	3.6	6.3	8.5	41	11.1	15.5	21
	MAY-SEP	4.4	7.5	10.0	42	12.9	17.8	24
Salmon Falls Ck nr San Jacinto	MAY-JUL	7.3	13.5	18.8	33	25	36	57
	MAY-SEP	9.5	16.3	22	36	29	40	62
Bruneau R nr Hot Springs	MAY-JUL	33	54	72	44	92	126	162
	MAY-SEP	37	60	78	45	99	134	173
Owyhee R nr Gold Ck (2)	MAY-JUL	0.1	0.3	0.7	6	3.2	5.0	12.0
Owyhee R nr Rome	MAY-JUL	2.0	7.0	28	13	69	130	210
	MAY-SEP	3.0	7.0	39	17	81	142	230
Owyhee R bl Owyhee Dam (2)	MAY-JUL	13.0	30	46	20	65	99	225
	MAY-SEP	26	49	69	27	92	132	255
Snake R at King Hill (1,2)	MAY-JUL	825	1430	1710	84	1980	2590	2040
Snake R nr Murphy (1,2)	MAY-JUL	835	1480	1770	82	2060	2710	2150
Snake R at Weiser (1,2)	MAY-JUL	2340	3420	3910	98	4400	5480	3980
Snake R at Hells Canyon Dam (1,2)	MAY-JUL	2140	3340	3880	86	4420	5620	4520
Snake R bl Lower Granite Dam (1,2)	MAY-JUL	13300	15600	16600	99	17600	19900	16700
	MAY-SEP	15700	18300	19500	101	20600	23300	19300

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Oakley	75.6	43.8	34.8	41.0
Salmon Falls	182.6	102.3	92.1	87.9
WILDHORSE RESERVOIR	71.5	57.6	69.5	55.8
OWYHEE	715.0	631.0	666.1	613.6
Brownlee	1420.0	930.4	742.2	1069.2

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - May 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Raft River	1	32	60
Goose-Trapper Creeks	3	0	0
Salmon Falls Creek	7	7	11
Bruneau River	5	8	16
Reynolds Creek	6	36	58
Owyhee Basin Total	7	0	0
Owyhee Basin SNOTEL	7	0	0

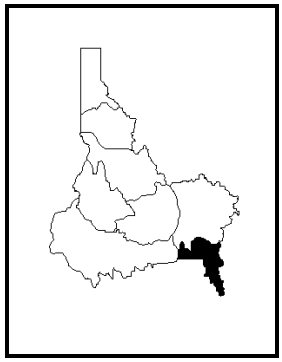
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

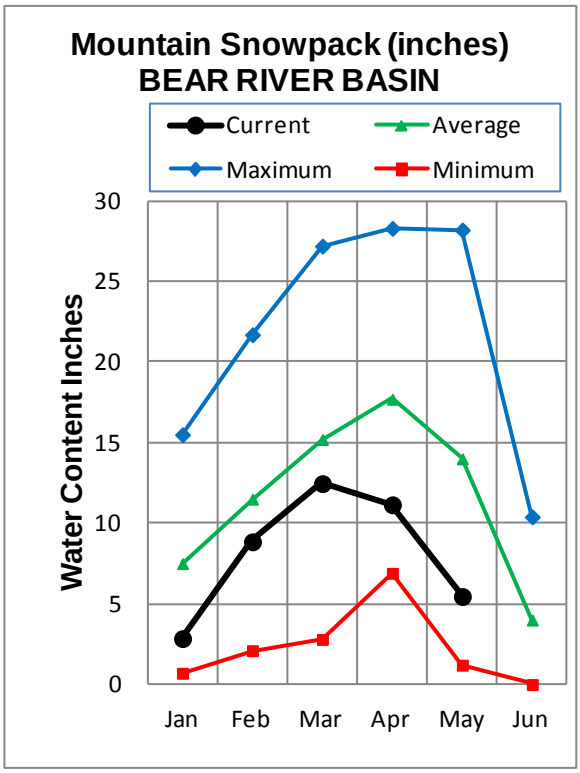
The average is computed for the 1971-2000 base period.

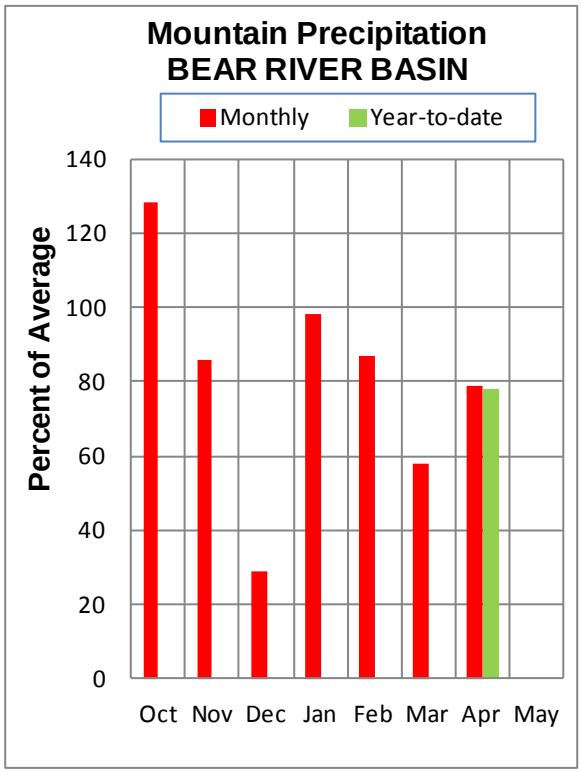
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

BEAR RIVER BASIN

MAY 1, 2012







WATER SUPPLY OUTLOOK

Water users who depend on Bear Lake should have no water supply worries this summer despite a drier than normal winter and early spring. The Bear's snowpack peaked at roughly 65% of its normal snow water content. With the exception of a few cool spells, snowmelt has been occurring at most sites since the third week of March. The May 1 snowpack is only 39% of normal. Half of the basin's 20 snow measuring sites have already melted out. April precipitation was 79% of average. This is similar to the water year precipitation since October 1 which is 78% of average. April was the sixth consecutive month with below normal precipitation. Compared to the other major river basins in Idaho, the Bear has had the least precipitation since the water year began. April streamflow for the Bear River above the reservoir was 70% of the normal amount for April despite active snowmelt. Streamflow forecasts for the May-July period range from 27% of average for Bear River below Stewart Dam to 56% of average for Bear River near the Utah-Wyoming State line. All of that emphasizes that the winter of 2012 was disappointing on a number of levels. Fortunately for water users, snowmelt from the winter of 2011 is still stored in Bear Lake. May 1 storage in Bear Lake is 1.2 million acre-feet or 122% of average, 84% of capacity. Water users that depend on Bear Lake storage will have adequate water supplies this season independent of actual streamflow.

BEAR RIVER BASIN
Streamflow Forecasts - May 1, 2012

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	40	54	63	56	72	86	113
	MAY-JUL	29	42	50	47	58	71	107
	APR-SEP	43	58	68	54	78	93	125
	MAY-SEP	32	46	55	46	64	78	119
Bear R ab Res nr Woodruff	APR-JUL	25	43	56	41	69	87	136
	MAY-JUL	13.0	30	42	36	54	71	116
	APR-SEP	27	45	58	41	71	89	142
	MAY-SEP	15.0	32	44	36	56	73	122
Big Ck nr Randolph	APR-JUL	1.6	2.4	3.0	61	3.6	4.4	4.9
	MAY-JUL	0.7	1.5	2.1	49	2.7	3.5	4.3
Smiths Fk nr Border	APR-JUL	38	46	51	50	56	64	103
	APR-SEP	46	55	62	51	69	78	121
	MAY-JUL	27	35	40	42	45	53	95
	MAY-SEP	35	44	51	46	58	67	112
Bear R bl Stewart Dam	APR-JUL	5.0	28	63	27	98	150	234
	APR-SEP	8.0	34	71	27	108	163	262
	MAY-JUL	4.0	15.0	35	19	63	104	186
	MAY-SEP	4.0	17.0	41	19	74	123	214
Little Bear R at Paradise	APR-JUL	4.5	13.7	20	44	26	36	46
	MAY-JUL	0.6	5.1	11.0	34	16.9	26	32
Logan R nr Logan	APR-JUL	41	55	64	51	73	87	126
	MAY-JUL	24	38	47	44	56	70	108
Blacksmith Fork nr Hyrum	APR-JUL	0.5	13.3	22	46	31	44	48
	MAY-JUL	0.4	6.1	14.0	35	22	34	40

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Bear Lake	1421.0	1187.3	708.7	971.0
Montpelier Creek	4.0	4.1	2.0	2.5

BEAR RIVER BASIN
Watershed Snowpack Analysis - May 1, 2012

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Smiths & Thomas Forks	3	30	53
Bear River ab WY-ID line	3	30	53
Montpelier Creek	2	28	52
Mink Creek	1	12	20
Cub River	1	17	33
Bear River ab ID-UT line	11	19	35
Malad River	1	0	0

* 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 1971-2000 base period.

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 1971-2000. 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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