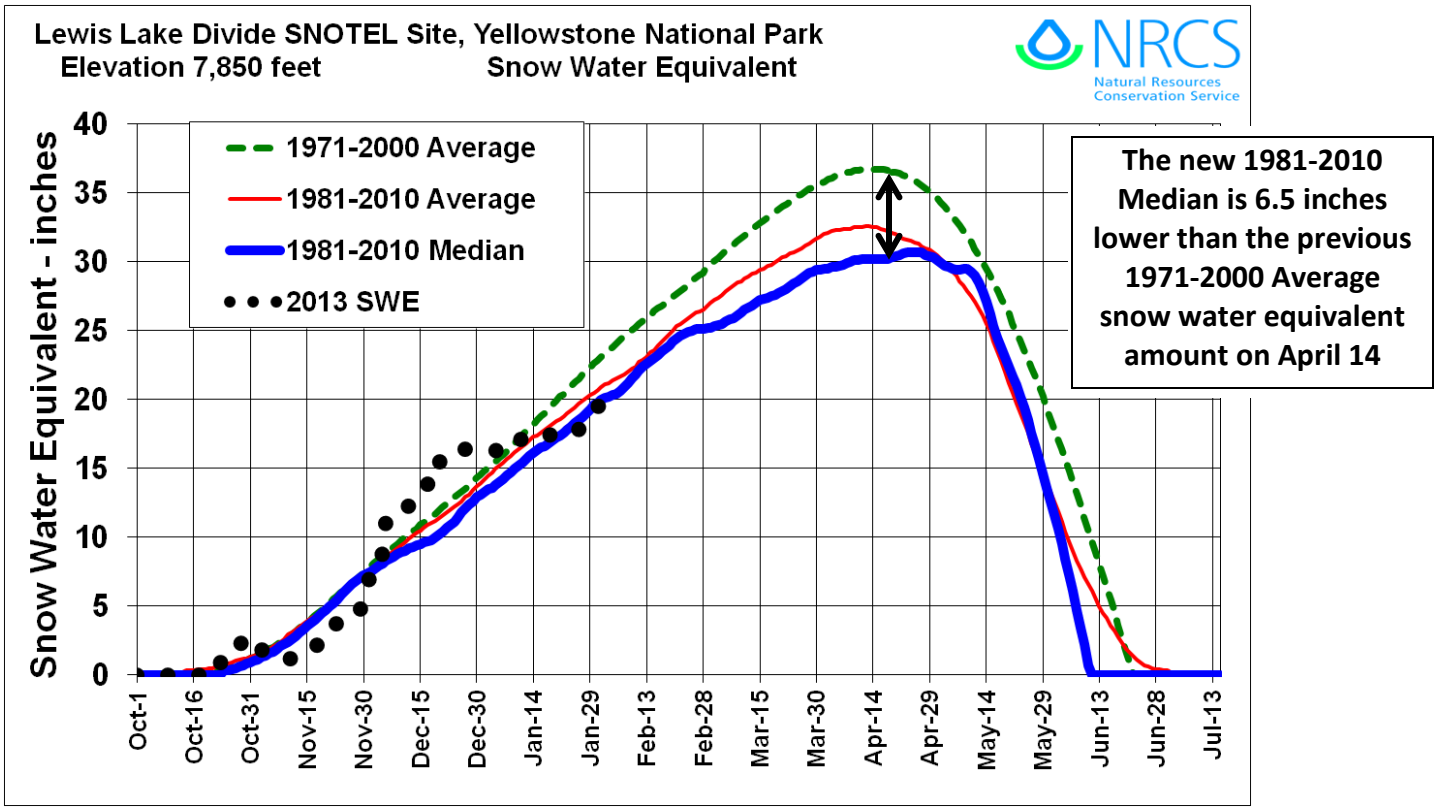
United States Department of Agriculture
Natural Resources Conservation Service

Idaho Water Supply Outlook Report
February 1, 2013



Use of Median vs. Average to Compare Snow Water Content

Although *average* is a commonly-used and well understood statistic, *median* is also a common descriptor used to express a "middle" value in a set of data. This "middle" value is also known as the *central tendency*. Median is determined by ranking the data from largest to smallest, and then identifying the middle so that there are an equal number of data values larger and smaller than it is. While the average and median can be the same or nearly the same, they are different if more of the data values are clustered toward one end of their range and/or if there are a few extreme values. In statistical terminology, this is called *skewness*. In this case, the average can be significantly influenced by the few values, making it not very representative of the majority of the values in the data set. Under these circumstances, median gives a better representation of central tendency than average.

In general, snow water equivalent for a given day over a historical period shows skewness. This is particularly evident at the onset of snow accumulation and near the time of melt out, when many years have very small or zero values and only a few have significant nonzero values. Skewness may also be noticeable throughout the year due to the presence of a few large snow years. In these cases, the median is typically different (usually smaller) than the average but better represents the central tendency of SWE than does the average. Also, note the daily median line is not a smooth line since it is based on the 30 years of daily SWE data. Since the median is typically lower than the average SWE, it acts to further inflate snow percentages as was highlighted on last month's cover.

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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
FEBRUARY 1, 2013

SUMMARY

In an effort to conserve resources, reduce costs, and meet government policy, we are reducing the number of printed and mailed copies of the Idaho Water Supply Outlook Report. Starting with the February 2013 issue, all Idaho NRCS Field Offices will no longer receive a hardcopy of the report in the mail. You can access these reports online at http://www.id.nrcs.usda.gov/snow/watersupply/ to print for your customers. If you are interested in helping us keep these costs down, please let us know by email at mailto:IDBOISE-NRCS-SNOW@one.usda.gov so we can remove your name from the mailing database and add you to our electronic email notification list when new reports are available. If you do not have access to the internet to view the reports online, please let us know so we can accommodate your needs. Thank you for helping us serve you more efficiently and manage our budget more effectively.

With one dry month behind us, concerns are increasing about adequate water supplies for this summer. Luckily, most of Idaho got off to a great start with good precipitation falling in November and December. We've learned in the past, that one dry month does not usually impact our water supply too much. It is when one dry month leads to two, or three, dry months in a row, that impacts will be felt. The key this year will be February and whether or not the dry trend continues. If February is dry, we'll see the snowpack and streamflow percentages decrease like they did in January and users may have to re-examine their decisions. Normal precipitation would help stabilize percentages during February.

As mentioned in last month's water supply report, all values are now compared to the 1981-2010 normal period. Snow water equivalent values are calculated as medians while precipitation, streamflow and reservoir storage levels are calculated as averages. Percentages may seem higher than last year because the new normals for the 1981-2010 period are lower than the 1971-2000 period across the state. Users should compare the actual water content for a true measure of this year to last year. An updated comparison of February 1 snow percentages with 1971-2000 averages side by side with the 1981-2010 medians is available at:
ftp://ftp-fc.sc.egov.usda.gov/ID/snow/data/averages/Feb1-71vs81.pdf

SNOWPACK

Currently, snowpack percentages range from a low of 77% of normal in the Coeur d'Alene basin, 60% of its seasonal peak, to 131% in the Big Lost basin, 80% of its seasonal peak. While the dry month of January saw snowpack percentages decrease by up to 30 percentage points from a month ago, Salmon Falls and Oakley basins increased by 12 percentage points to about 95% of normal thanks to an isolated pocket of normal precipitation. Also interesting is that Idaho's snowpacks are currently the same or less than last year at this time except in the headwater streams in Idaho's central mountains and in the Owyhee, Bruneau and Salmon Falls basins. Elevation trends in the snowpack that are still present, especially in the southern two-thirds of the state where low elevation snowpacks remain below normal, while higher elevation snow is in better shape.

PRECIPITATION

For most of the state, January precipitation was below normal. The lowest amounts were half of average in the central mountains stretching from the Boise basin to the Big Lost basin. The highest January amounts were near average or better in a few lucky southern Idaho basins that included the Bruneau, Salmon Falls and Oakley drainages. Elsewhere, January precipitation in the Bear River and Upper Snake basins was 65% of average, Salmon basin was 73%, Clearwater was 85%, and northern Idaho was 60-70%. Water year to date precipitation is still encouraging with most basins above average and only a handful of basins are below normal in the 90-100% of normal range. Below normal basins include the Bear, Boise and Upper Snake basins. The highest water year to date precipitation amounts are 120% of average in the Northern Panhandle, Weiser, Little Wood and Big Lost basins. Lessons learned in the past show that we can usually get by with one month of below normal precipitation, especially after a good start like this year. All eyes will be focused on February and to see if more storms enter the state, or if February precipitation is a bust. When there are two dry months in a row, negative impacts on the water supply start to occur. Water users should watch the weather closely and reexamine their water supply decisions as needed. Often, once the weather pattern is set, it is a challenge to catch back up to normal snow levels by the time the snowpack typically reaches its seasonal peak in early April. Let's hope the moisture returns before February passes us by. Otherwise, we will be keeping our eyes on the sky for those spring showers, which can often make or break a streamflow forecast.

RESERVOIRS

The lowest reservoir storage is south of the Snake River. This is result of the below normal runoff in 2012 that ranged from only 15-45% of average. From west to east - Owyhee Reservoir is 39% full, 64% of average; Salmon Falls is 16% full, 69% of average; and Oakley 27% full, 89% of average. Magic Reservoir is also low at 12% full, 33% of average because of dam maintenance work last fall. Bear Lake is in good shape at 62% full, 125% of average because of the ability to store the surplus runoff of 2011 which was 260% of average. Elsewhere across the state, reservoir storage is near average or better for the end of January.

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

With January behind us, streamflow forecasts decreased across most of the state matching snowpack declines. Only the Bruneau River and Salmon Falls Creek forecasts held steady from last month and are still forecast at about 85% of average. From north to south, Panhandle streams are forecast at slightly above average near the Canadian border and decrease to about 85% in the Coeur d'Alene basin. Dworshak Reservoir inflow is forecast at 96% of average along with other rivers in the Clearwater basins. In the Salmon basin, the highest forecasts mirror the better snowpacks in the higher elevations with the MF Salmon forecast at 114%, and SF Salmon and Johnson Creek forecast at 106% of average. The Salmon River at White Bird is forecast at 99%. The Weiser, Payette, and Boise streams are forecast at 85-105% of average with the exception of the low elevation drainage of Mores Creek, forecast at only 72% of average. Central Idaho hosts the tallest mountains in the state, the highest snowpack and

also the highest streamflow forecasts with the Big Lost and Little Wood rivers forecast at 120% of average. In contrast, the low elevation Camas Creek near Fairfield is forecast at only 63% of average. Streams in the Upper Snake range from 75% of average in the lower elevation tributaries to average in the Snake River headwaters in Wyoming. Streams south of the Snake River are forecast at 70-100% of average. The Bear River below Stewart Dam is forecast at only 35%. An inversion with colder than normal valley temperatures froze soils and pipes and caused freezing rain in the Treasure Valley. After having snow on the ground in the Treasure Valley for nearly a month, the snow finally melted, however, frozen soils are still present. Users should watch the weather closely as rain on top of frozen soils could lead to rapid runoff until the soils thaw more. The Orchard Range SNOTEL site, 25 miles southeast of Boise, reported soil temperatures of 24F at two inches deep and 28F at eight inches deep.

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 main-stem Snake River which are from the NWS.

RECREATION

Cold storms created ideal skiing conditions across the state during January. However as mentioned last month, the shallow snowpacks below 6,500 feet still exist. Winter recreationists just need to climb a little higher to find deeper snowpacks with better coverage. This distinct elevation break is noticeable across most of Idaho south of the Clearwater basin. If current conditions hold true for the rest of the winter, users will see an earlier melt out in these elevations compared to the higher elevations. For the river runners, whitewater and floating conditions are looking promising with streamflow forecasts ranging from 80-120% of average for most rivers. Even the desert rivers will hopefully have a better season than last year. Don't put those skis away too soon. Let's hope we get a new card dealer that switches the current weather patterns in the second half winter back to a return of how the season started.

NRCS AND NWS COLLBOR ATIVE FORECAST RELATIONSHIP

For years, NRCS and NWS Northwest River Forecast Center (NWRFC) used statistically-based water supply forecast models to predict seasonal runoff volumes. The models were run on the first of each month and grew into production of mid-month forecasts. Forecasters would share information to come up with a single forecast value. These final coordinated forecast values became the "official" forecasts published by both agencies.

This year and similar to last year, the NWRFC is using their hydrologic simulation models to produce volume forecasts. Because NWRFC models are so different from NRCS statistical models, a new paradigm was needed to replace the coordination process. The new approach is a collaborative process where information is still shared. However, a single unified forecast value is not produced. NRCS will publish forecasts from the NWRFC for the following points; these will usually reflect the forecast value on the first working day of the month. The rest of the forecasts published in the Idaho Water Supply Report are provided by NRCS. Daily NRCS Water Supply Forecasts are available from here to monitor changes between the first of month forecasts:
http://www.id.nrcs.usda.gov/snow/watersupply/daily_guidance.html

Snake River at King Hill	Snake River nr Murphy	Snake River at Weiser
Snake River at Hells Canyon	Snake River at Lower Granite	

IDAHO SURFACE WATER SUPPLY INDEX (SWSI) February 1, 2013

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	1.0	2008	NA
Spokane	-1.5	1995/1998	NA
Clearwater	0.0	2000	NA
Salmon	-0.3	2010	NA
Weiser	-0.5	2000/2003	NA
Payette	0.5	2008	NA
Boise	-0.3	2010	-1.6
Big Wood	0.5	2012	0.4
Little Wood	0.8	2012	-1.5
Big Lost	1.5	2011	0.5
Little Lost	0.3	2006	1.3
Teton	-0.8	2005	-3.8
Henrys Fork	-0.3	2011	-3.0
Snake (Heise)	-1.0	1989/1990	-1.5
Oakley	-1.3	1981/1987	0.1
Salmon Falls	-1.3	2000/2008	-1.0
Bruneau	-0.3	2010	NA
Owyhee	0.5	2005	-3.3
Bear River	0.5	2001	-3.5

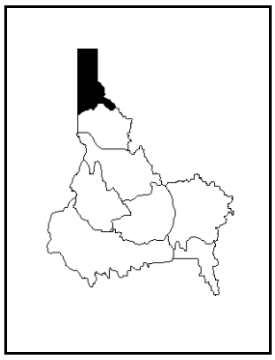
SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

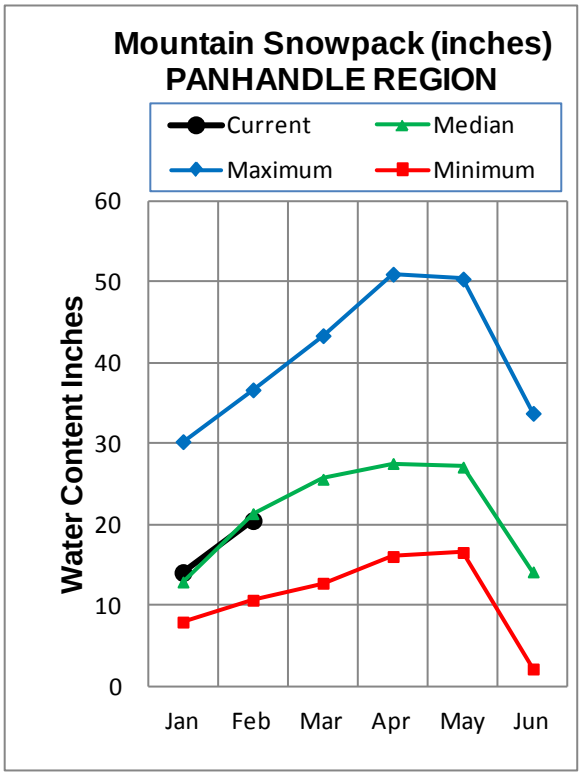
```
 -4      -3      -2      -1       0       1       2       3       4
  |------|------|------|------|------|------|------|------|------|
99%      87%     75%     63%     50%     37%     25%     13%     1%
-------------------------------------------------------------------
|Much    | Below      |        Near Normal        |  Above    |  Much  |
|Below   | Normal     |        Water Supply       |  Normal   |  Above |
-------------------------------------------------------------------
```

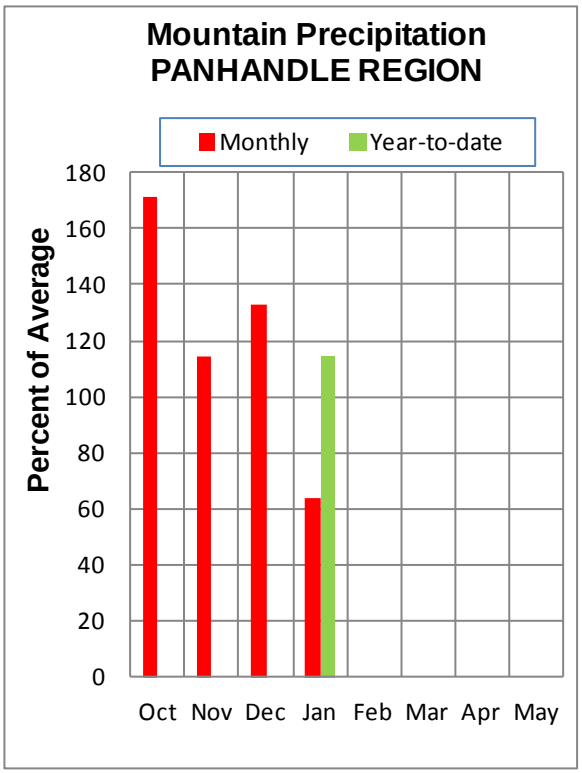
NA=Not Available / Not Applicable; Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater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

FEBRUARY 1, 2013







WATER SUPPLY OUTLOOK

January was the first month this water year that the Panhandle recorded drier than normal weather. Water year to date precipitation since October 1 remains above average, however January brought only 64% of normal precipitation for the month. As a result, the Northern Panhandle's snowpack decreased 25 percentage points from 126% of normal on January 1 to near normal this month. Snow in the Spokane basin decreased about 10% from last month and is currently 84% of normal. Current snow water contents amounts are similar to last year at this time in the Northern Panhandle, but little less than last year for the Spokane basin. Water levels are 121% of average in Pend Oreille Lake, 89% in Priest Lake and 69% in Coeur d'Alene Lake. Streamflow forecasts are highest for the Priest River at 115% of average. Forecasts are near average for the Kootenai, Moyie, and Clark Fork rivers, as well as, Boundary Creek and Pend Oreille Lake inflow. Further south, forecasts are 80-88% of average for the NF Coeur d'Alene, St. Joe, and Spokane rivers.

PANHANDLE REGION
Streamflow Forecasts - February 1, 2013

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	5430	6270	6650	101	7030	7870	6600
	APR-SEP	6430	7230	7600	100	7970	8770	7590
Moyie R at Eastport	APR-JUL	315	365	400	107	435	485	375
	APR-SEP	325	380	415	108	450	505	385
Boundary Ck nr Porthill	APR-JUL	93	107	117	100	127	141	117
	APR-SEP	96	111	121	98	131	146	123
Clark Fork at Whitehorse Rpds (1,2)	APR-JUL	8103	9820	10600	101	11380	13097	10500
	APR-SEP	9052	10873	11700	102	12527	14348	11500
Pend Oreille Lake Inflow (2)	APR-JUL	9823	11060	11900	101	12740	13977	11800
	APR-SEP	10910	12214	13100	102	13986	15290	12800
Priest R nr Priest River (1,2)	APR-JUL	735	833	900	115	967	1065	780
	APR-SEP	770	877	950	115	1023	1130	830
NF Coeur d'Alene R at Enaville	APR-JUL	355	485	570	81	655	785	700
	APR-SEP	390	515	605	82	695	820	740
St. Joe R at Calder	APR-JUL	710	840	925	88	1010	1140	1050
	APR-SEP	765	895	985	88	1070	1210	1120
Spokane R nr Post Falls (2)	APR-JUL	1360	1730	1980	83	2230	2600	2390
	APR-SEP	1440	1810	2060	83	2310	2680	2480
Spokane R at Long Lake (2)	APR-JUL	1560	1960	2240	86	2520	2920	2620
	APR-SEP	1750	2160	2440	86	2720	3130	2850

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNGRY HORSE	3451.0	2973.3	2896.0	2375.0
FLATHEAD LAKE	1791.0	966.5	933.9	955.6
NOXON RAPIDS	335.0	316.5	316.2	315.0
Pend Oreille	1561.3	914.7	632.2	753.9
Coeur d'Alene	238.5	66.2	49.6	96.3
Priest Lake	119.3	50.4	55.5	56.7

PANHANDLE REGION
Watershed Snowpack Analysis - February 1, 2013

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	10	91	96
Moyie River	3	85	91
Priest River	5	106	116
Pend Oreille River	64	89	92
Rathdrum Creek	4	155	99
Coeur d'Alene River	6	86	77
St. Joe River	4	86	83
Spokane River	14	97	84
Palouse River	2	91	87

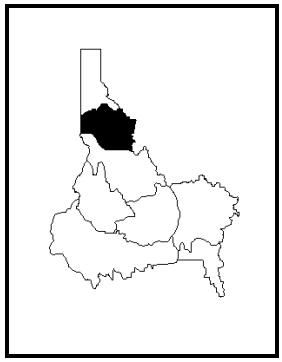
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

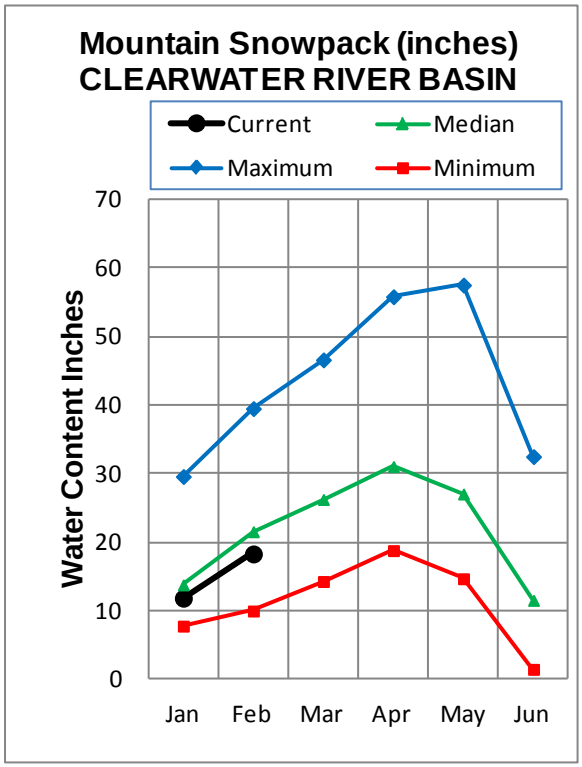
The average is computed for the 1981-2010 base period.

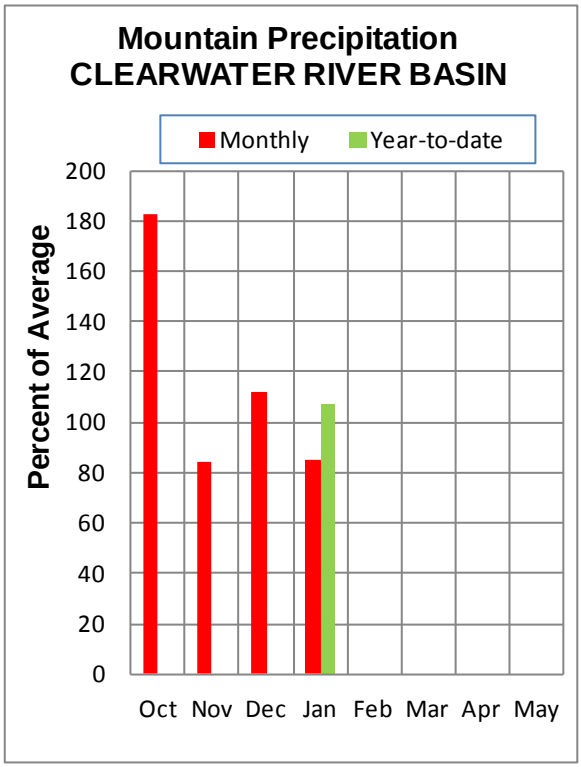
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

CLEARWATER RIVER BASIN

FEBRUARY 1, 2013







WATER SUPPLY OUTLOOK

The Clearwater basin had more precipitation in January than the rest of north Idaho keeping its snowpacks percentages similar to last month. January produced 85% of the normal monthly precipitation; about 10-15% better than the precipitation in adjacent basins to the north and south. Water year to date precipitation since October 1 is 107% of average. February 1 snowpacks are 85% of normal, only down 2 percentage points from last month. Dworshak Reservoir is storing 2,511,400 acre-feet which is 108% of average, 72% of capacity. Dworshak inflow is forecast at 96% for the April-July period. Other streamflow forecasts are also near average including those for the Selway and Locsha rivers, as well as, for the Clearwater River at Orofino. There is still time to boost snowpacks to average levels by April 1, but it will take 33% above average precipitation between now and early April to attain that mark.

CLEARWATER RIVER BASIN
Streamflow Forecasts - February 1, 2013

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	APR-JUL	1490	1720	1870	97	2020	2250	1920
	APR-SEP	1590	1810	1970	98	2130	2350	2020
Lochsa R nr Lowell	APR-JUL	1090	1260	1370	97	1480	1650	1410
	APR-SEP	1150	1320	1440	97	1560	1730	1480
Dworshak Res Inflow	APR-JUL	1590	2090	2310	96	2530	3030	2410
	APR-SEP	1730	2240	2470	96	2700	3210	2570
Clearwater R at Orofino (1)	APR-JUL	2370	3580	4130	96	4680	5890	4310
	APR-SEP	2620	3830	4380	97	4930	6140	4540
Clearwater R at Spalding (1,2)	APR-JUL	3590	5640	6570	95	7500	9550	6890
	APR-SEP	4000	6050	6980	96	7910	9960	7270

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Dworshak	3468.0	2511.4	2288.9	2335.0

CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - February 1, 2013

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	9	86	85
Lochsa River	2	76	86
Selway River	4	82	88
Clearwater Basin Total	16	85	86

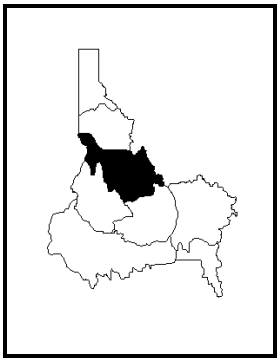
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

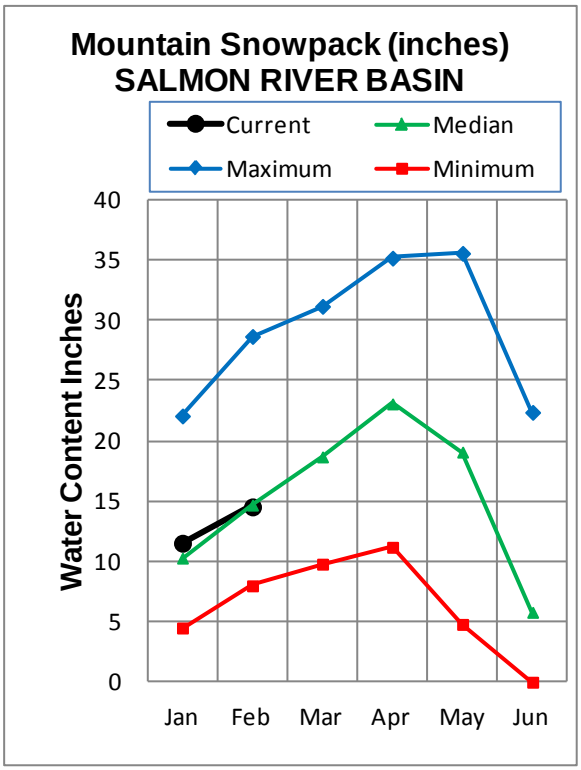
The average is computed for the 1981-2010 base period.

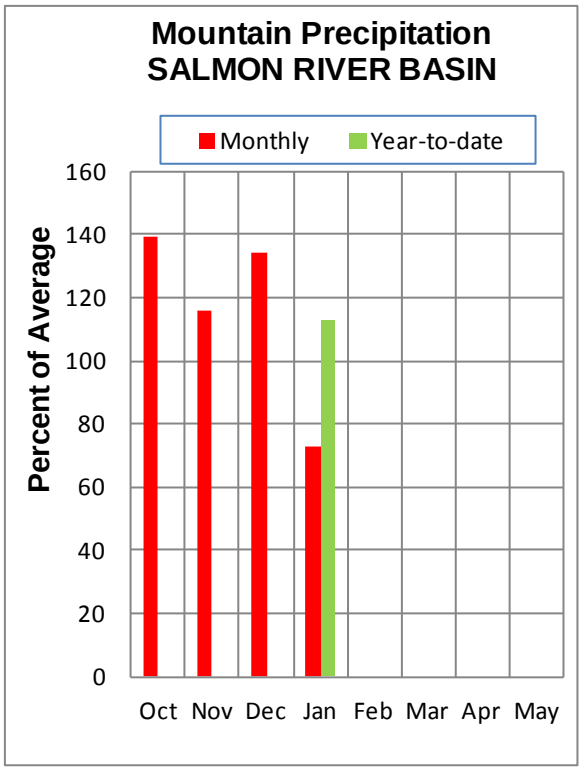
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

SALMON RIVER BASIN

FEBRUARY 1, 2013







WATER SUPPLY OUTLOOK

Water supplies in the Salmon Basin remain promising despite January being drier than normal. Basin-wide January precipitation was 73% of average, making it the first month this water year with less than average amounts. Monthly precipitation totals ranged widely across the basin. For example Mountain Meadows SNOTEL near the northern divide with the Clearwater basin, recorded 126% of normal precipitation for the month (5.9 inches), while Banner Summit SNOTEL near the southern divide with the Payette basin measured 49% of normal in January (2.7 inches). Water year to date precipitation since the beginning of October is above average, but dropped about 13 percentage points in the last month. The split in snowpack percentages between high and low elevations is still present, but less than last month. As of February 1, SNOTEL sites above 6,500 feet measured 107% of normal snow, while those below 6,500 feet had 90% of normal snow; last month the split was 123% to 80%. Overall the Salmon basin snowpack is near normal based on the 1981-2010 medians. Streamflow forecasts call for 114% of average flow this summer for the MF Salmon, while the SF Salmon and mainstem Salmon are closer to average. The lowest forecast is for the Lemhi River at 88% of average. January's drier than normal weather dropped forecasts about 10-15% in one month. Let's hope the slide does not continue through February.

SALMON RIVER BASIN
Streamflow Forecasts - February 1, 2013

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	480	715	820	106	925	1160	775
	APR-SEP	555	825	950	106	1070	1350	900
Lemhi R nr Lemhi	APR-JUL	35	52	65	88	80	104	74
	APR-SEP	44	64	79	88	96	123	90
MF Salmon R at MF Lodge	APR-JUL	515	675	785	114	895	1050	690
	APR-SEP	575	755	875	114	995	1170	770
SF Salmon R nr Krassel RS	APR-JUL	210	255	285	106	315	360	270
	APR-SEP	225	270	300	103	330	375	290
Johnson Ck at Yellow Pine	APR-JUL	158	186	205	107	225	250	191
	APR-SEP	172	200	220	107	240	270	205
Salmon R at White Bird (1)	APR-JUL	3360	4720	5340	99	5960	7320	5370
	APR-SEP	3720	5230	5910	100	6590	8100	5940

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

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

SALMON RIVER BASIN
Watershed Snowpack Analysis - February 1, 2013

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	8	110	108
Lemhi River	6	132	108
Middle Fork Salmon River	3	121	111
South Fork Salmon River	3	119	105
Little Salmon River	4	90	86
Salmon Basin Total	23	109	101

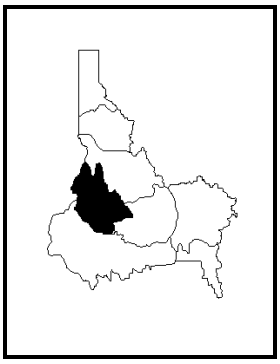
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

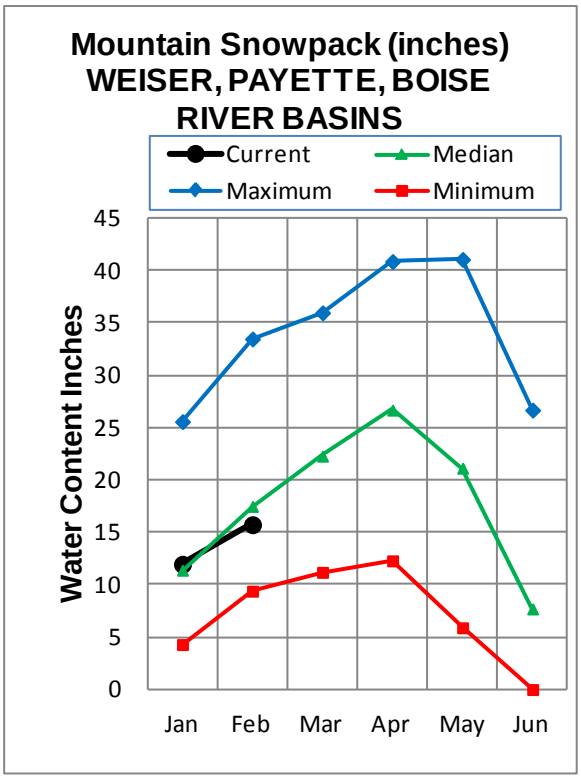
The average is computed for the 1981-2010 base period.

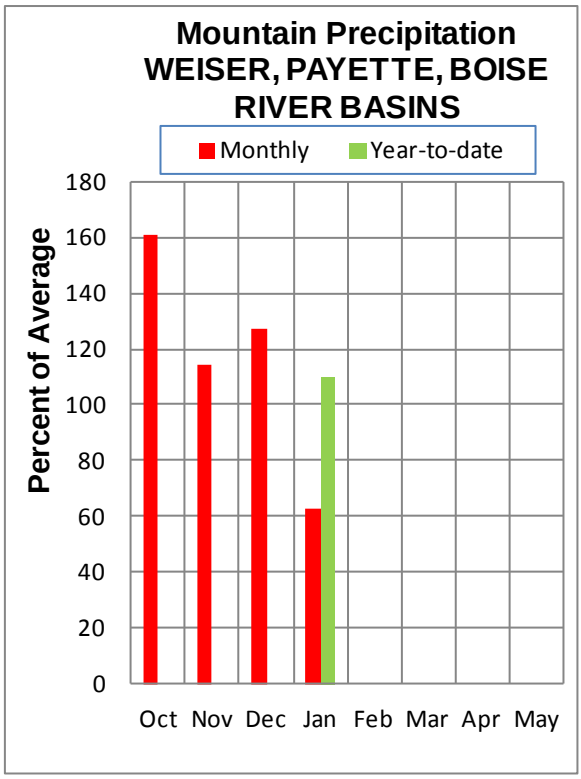
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WEISER, PAYETTE, BOISE RIVER BASINS

FEBRUARY 1, 2013







WATER SUPPLY OUTLOOK

The Weiser, Payette and Boise basins were not in sync in January. Monthly precipitation ranged from near average in the Weiser basin, to 67% in the Payette, down to half of normal in the Boise basin. The Weiser basin has the best water year to date precipitation that started October 1, 2012 at 123% of normal, while the Payette is 116% and the Boise has now slipped a few points below average. The best February 1 snowpack is in the Payette basin at 85% of normal, followed by the Boise and Weiser at about 75%. The spread in snowpack percentages across elevation bands continues to be wide. A few SNOTEL sites above 7,000 feet have above normal snowpacks, while most sites in the 5,500 to 6,000 foot band have less than half their normal snow. This month's snow is now less than last year at this time in the Boise and Weiser basins, while the Payette basin's snow is similar to last year. Combining Deadwood and Cascade reservoirs, storage in the Payette system is 114% of average. The Boise system is 107% of average. Most streamflow forecasts in these basins are 90-105% of average; the exceptions include the SF Payette at Lowman at 84% and Mores Creek at 72%.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - February 1, 2013

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	275	485	600	98	730	1050	615
	APR-JUL	163	290	360	97	440	635	370
	APR-SEP	179	310	385	96	465	670	400
SF Payette R at Lowman	APR-JUL	243	296	335	84	376	442	400
	APR-SEP	277	336	380	84	426	499	455
Deadwood Resv Inflow (1,2)	APR-JUL	77	105	118	96	131	159	123
	APR-SEP	81	112	126	96	140	171	131
Lake Fork Payette R nr McCall	APR-JUL	68	78	85	106	93	104	80
	APR-SEP	70	80	88	106	96	108	83
NF Payette R at Cascade (1,2)	APR-JUL	320	445	500	103	555	680	485
	APR-SEP	320	450	510	103	570	700	495
NF Payette R nr Banks (2)	APR-JUL	485	585	655	105	725	825	625
	APR-SEP	485	595	670	105	745	855	640
Payette R nr Horseshoe Bend (1,2)	APR-JUL	1030	1350	1500	101	1650	1970	1480
	APR-SEP	1090	1470	1650	101	1830	2210	1630
Boise R nr Twin Springs (1)	APR-JUL	310	450	515	88	580	720	585
	APR-SEP	340	490	560	88	630	780	635
SF Boise R at Anderson Ranch Dam (1,	APR-JUL	255	395	460	97	525	665	475
	APR-SEP	275	425	490	96	555	705	510
Mores Ck nr Arrowrock Dam	APR-JUL	43	65	83	72	103	136	115
	APR-SEP	45	68	86	72	107	141	119
Boise R nr Boise (1,2)	APR-JUN	662	901	1010	89	1119	1358	1140
	APR-JUL	635	975	1130	90	1280	1620	1260
	APR-SEP	735	1080	1230	90	1380	1720	1360

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Mann Creek	11.1	3.1	2.6	3.6
Cascade	693.2	520.9	501.6	455.5
Deadwood	161.9	97.1	96.4	87.9
Anderson Ranch	450.2	270.2	377.2	256.4
Arrowrock	272.2	206.7	238.5	174.8
Lucky Peak	293.2	97.9	94.3	103.5
Lake Lowell (Deer Flat)	165.2	118.9	120.1	92.8

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - February 1, 2013

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Mann Creek	1	106	84
Weiser River	7	93	76
North Fork Payette	9	101	88
South Fork Payette	5	93	90
Payette Basin Total	16	97	85
Middle & North Fork Boise	5	81	78
South Fork Boise River	7	91	91
Mores Creek	5	67	58
Boise Basin Total	14	79	75
Canyon Creek	2	48	44

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

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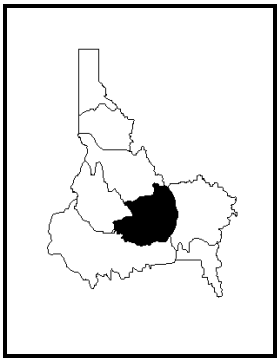
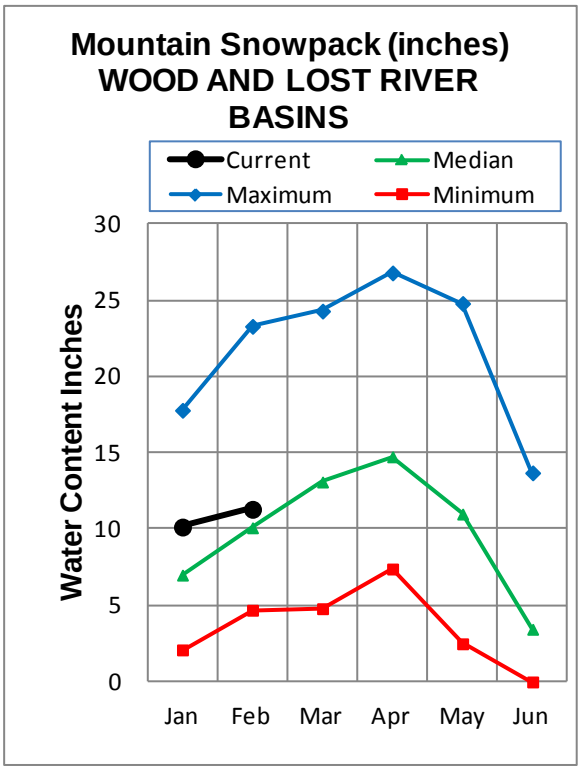
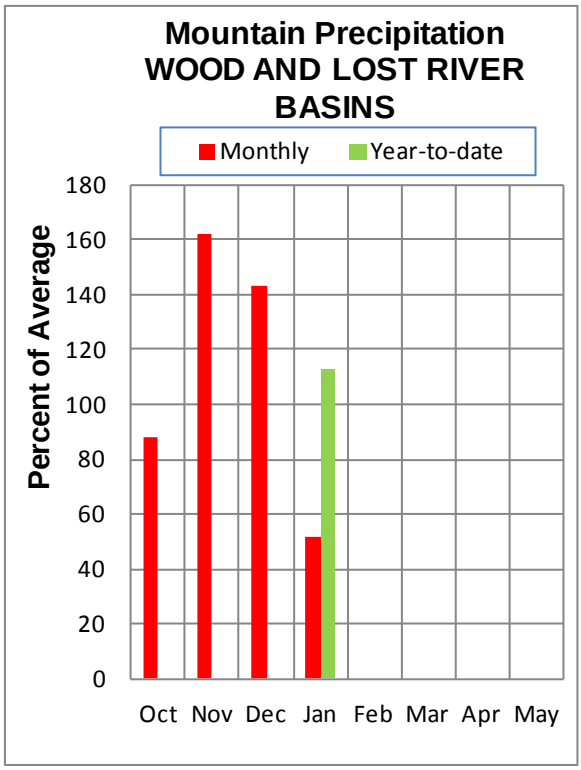
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WOOD and LOST RIVER BASINS

FEBRUARY 1, 2013







WATER SUPPLY OUTLOOK

January was a dry month in the Wood and Lost basins, but water supplies are still okay for now. Monthly precipitation in January was half of average in the Big Wood, Little Wood and Big Lost basins. The Little Lost and Birch basins fared slightly better with 70% of average precipitation for the month. Thanks to excellent precipitation in November and December, water year precipitation since October 1 remains above average, ranging from 105% in the Little Lost and Birch basins to 124% in the Little Wood. Snowpacks are best in the Big Lost basin with 131% of the 1981-2010 median. Snow in the Little Lost basin is 117% of median, followed by the Big Wood at 101% and Little Wood at 98%. Lower elevation snow measuring sites continue to have much less snow than normal. Two sites near Fairfield perfectly demonstrate this, Camas Creek Divide SNOTEL at 5,710 feet has 46% of normal snow and Soldier Ranger Station SNOTEL at 5,740 feet has 60% of normal snow. Water storage is near average in Little Wood Reservoir and 123% of average in Mackay Reservoir. Magic's storage is only 33% of average, but is recovering now that maintenance work that required drafting is finished. Most streamflow forecasts range from 95-120% of average. The only April to July forecasts for much less than average streamflow is Camas Creek near Blaine at 63%. Hopefully the storm track returns to central Idaho preserving an above average water supply.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - February 1, 2013

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)	APR-JUL	117	215	260	111	305	405	235
	APR-SEP	134	245	295	111	345	455	265
Big Wood R ab Magic Res	APR-JUL	95	145	187	110	235	325	170
	APR-SEP	103	155	200	110	250	345	182
Camas Ck nr Blaine	APR-JUL	13.5	33	52	63	75	115	82
	APR-SEP	14.1	34	53	64	76	117	83
Big Wood R bl Magic Dam (2)	APR-JUL	27	121	240	96	245	340	250
	APR-SEP	93	190	255	96	320	415	265
Little Wood R ab High Five Ck	MAR-JUL	40	67	89	116	114	157	77
	MAR-SEP	44	72	96	117	123	169	82
Little Wood R near Carey (2)	MAR-JUL	53	73	87	101	101	121	86
	MAR-SEP	57	79	94	102	109	131	92
	APR-JUL	45	65	79	103	93	113	77
Big Lost R at Howell Ranch	APR-JUL	115	158	188	118	218	261	159
	APR-SEP	126	176	210	117	244	294	180
Big Lost R Below Mackay Res	APR-JUL	75	120	150	122	180	225	123
	APR-SEP	92	144	179	119	214	266	150
Little Lost R nr Howe	APR-JUL	17.7	24	28	100	33	41	28
	APR-SEP	21	29	34	100	40	50	34
Camas Ck at Camas	APR-JUL	14.6	27	35	125	43	55	28

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Magic	191.5	22.7	121.1	68.9
Little Wood	30.0	16.0	26.4	16.3
Mackay	44.4	31.9	36.8	26.0

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - February 1, 2013

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Hailey	8	126	113
Camas Creek	3	54	50
Big Wood Basin Total	11	112	101
Fish Creek	3	109	84
Little Wood River	7	131	98
Big Lost River	6	190	133
Little Lost River	3	170	117
Birch-Medicine Lodge Cree	2	141	112
Camas-Beaver Creeks	4	151	99

* 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.
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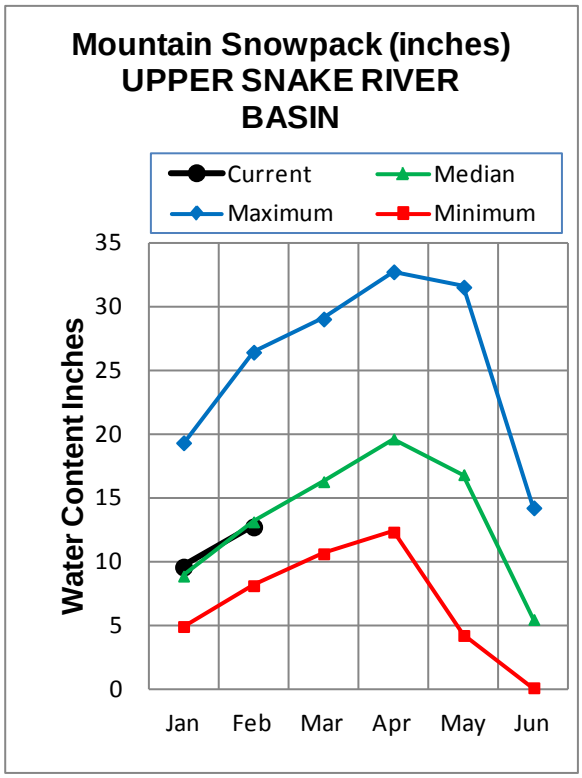
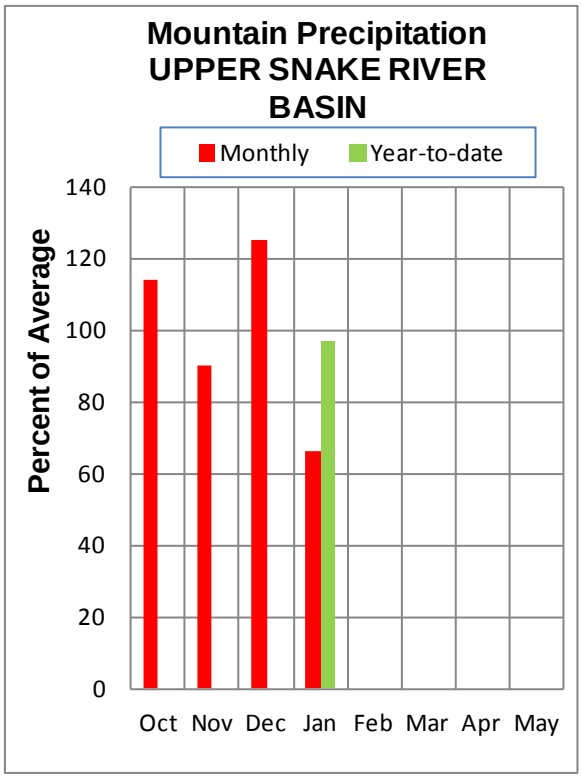
UPPER SNAKE BASIN

FEBRUARY 1, 2013





WATER SUPPLY OUTLOOK

Despite less than average precipitation in January water supplies still look adequate. Monthly precipitation in the Upper Snake was 66% of average in January, leaving water year to date precipitation since October 1 slightly less than normal at 97%. Despite a better start this winter, snowpacks are now less than last year at this time for most parts of the basin. Compared to the 1981-2010 median, snow is 90-100% of normal in the Henrys Fork, Teton and Snake River above Palisades basins. The Willow, Blackfoot and Portneuf basins have a snowpack that is about 70% of normal. Reservoir storage is best in Jackson Lake at 143% of average and least in Palisades with 61% of average. Taken together Jackson Lake and Palisades are storing 88% of average, 52% of capacity or 1,178,000 acre-feet. Collectively reservoirs on the Henrys Fork are storing 204,000 acre-feet which is slightly more than average for Henrys Lake, Grassy Lake and Island Park reservoirs at this time of year. American Falls has 1,104,700 acre-feet, an average storage amount for now and 66% of its capacity and should be close to full by April 1. Most streamflow forecasts are 75-100% of average, including the Snake River at Heise forecast for 2,820,000 acre-feet or 87% of average. Based on the Surface Water Supply Index, Heise runoff near 90% of average is needed to provide marginally adequate surface irrigation supplies. Water users should watch the weather conditions closely this month and into March for negative impacts on their water supplies.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - February 1, 2013

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	378	451	505	95	562	651	530
	APR-SEP	527	616	680	96	747	853	710
Henrys Fork nr Rexburg (2)	APR-JUL	1002	1168	1280	91	1392	1558	1400
	APR-SEP	1336	1523	1650	92	1777	1964	1790
Falls R nr Ashton (2)	APR-JUL	251	291	320	88	350	397	365
	APR-SEP	300	347	380	87	415	469	435
Teton R nr Driggs	APR-JUL	81	103	120	78	138	166	154
	APR-SEP	102	131	152	79	175	212	193
Teton R nr St. Anthony	APR-JUL	204	256	295	81	337	403	365
	APR-SEP	248	310	355	82	404	481	435
Snake R at Flagg Ranch	APR-JUL	368	426	465	100	504	562	465
	APR-SEP	401	463	505	99	547	609	510
Snake R nr Moran (1,2)	APR-JUL	530	657	715	94	773	900	765
	APR-SEP	582	725	790	94	855	998	845
Pacific Ck At Moran	APR-JUL	113	138	155	95	172	197	164
	APR-SEP	120	146	164	95	182	210	173
Buffalo Fork ab Lava nr Moran	APR-JUL	207	241	265	95	289	323	280
	APR-SEP	234	273	300	94	327	366	320
Snake R nr Alpine (1,2)	APR-JUL	1403	1772	1940	89	2108	2477	2170
	APR-SEP	1610	2036	2230	89	2424	2850	2500
Greys R Nr Alpine	APR-JUL	182	234	270	89	306	358	305
	APR-SEP	212	274	315	88	356	418	360
Salt R Nr Etna	APR-JUL	109	193	250	83	307	391	300
	APR-SEP	149	248	315	85	382	481	370
Snake R nr Irwin (1,2)	APR-JUL	1866	2398	2640	88	2882	3414	3010
	APR-SEP	2199	2798	3070	88	3342	3941	3500
Snake R nr Heise (2)	**APR-JUL**	**2161**	**2553**	**2820**	**87**	**3087**	**3479**	**3240**
	APR-SEP	**2549**	**2996**	**3300**	**87**	**3604**	**4051**	**3780**
Willow Ck nr Ririe	MAR-JUL	4.0	31	50	75	69	96	67
Blackfoot R ab Res nr Henry	APR-JUN	17.9	32	44	73	58	82	60
Snake R nr Blackfoot (1,2)	APR-JUL	2550	3245	3560	84	3875	4570	4260
	APR-SEP	3106	3955	4340	83	4725	5574	5220
Portneuf R at Topaz	MAR-JUL	38	49	57	75	66	80	76
	MAR-SEP	47	60	70	75	80	97	93
Snake R at Neeley (1,2)	APR-JUL	908	1865	2300	87	2735	3692	2650
	APR-SEP	813	1849	2320	83	2791	3827	2810

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Henrys Lake	90.4	90.8	87.2	80.1
Island Park	135.2	100.8	109.2	100.0
Grassy Lake	15.2	12.7	12.1	11.9
Jackson Lake	847.0	618.2	638.8	431.2
Palisades	1400.0	559.4	1236.5	911.2
Ririe	80.5	46.4	44.2	38.7
Blackfoot	348.7	222.9	283.3	176.3
American Falls	1672.6	1104.7	1162.7	1116.0

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - February 1, 2013

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Henrys Fork-Falls River	7	107	101
Teton River	4	75	79
Henrys Fork above Rexburg	11	96	94
Snake above Jackson Lake	9	87	97
Pacific Creek	3	78	103
Gros Ventre River	4	99	93
Hoback River	5	88	91
Greys River	4	93	93
Salt River	5	99	95
Snake above Palisades	28	90	94
Willow Creek	2	72	71
Blackfoot River	3	85	85
Portneuf River	6	71	61
Snake abv American Falls	40	90	92

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

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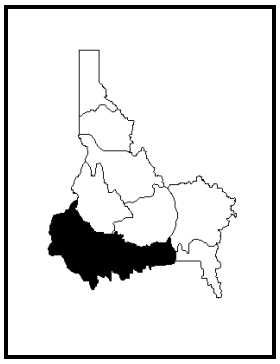
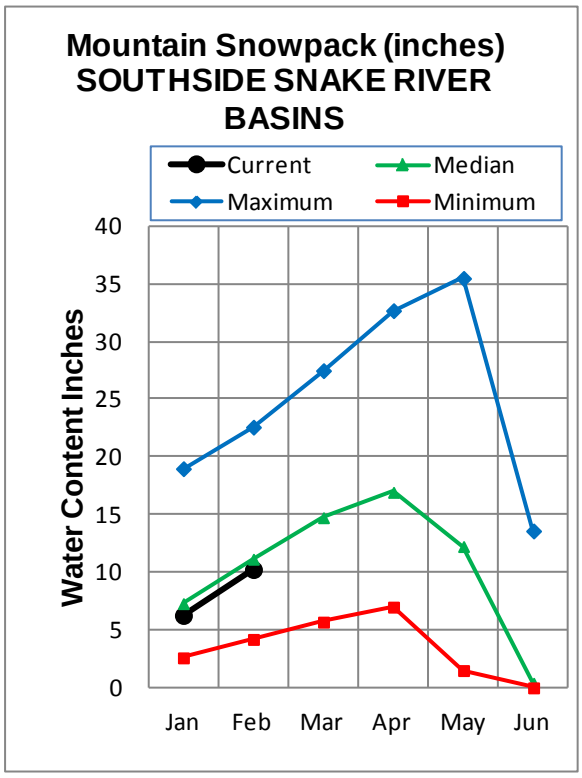
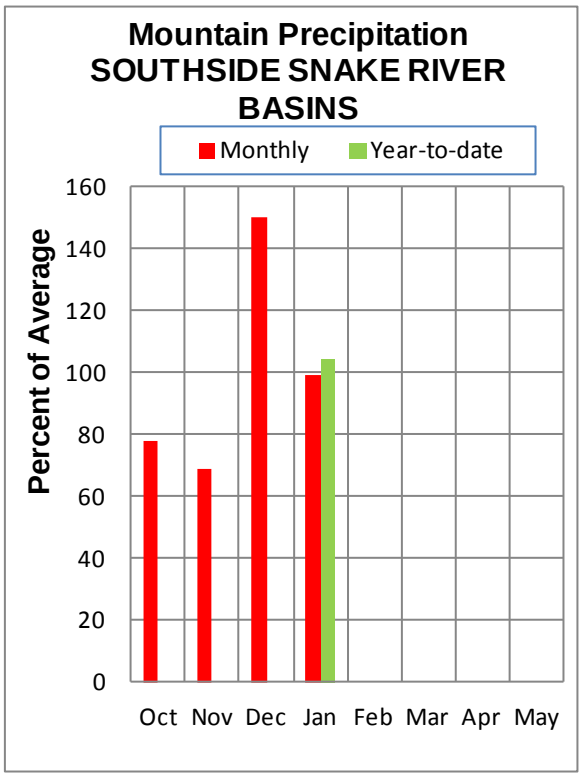
SOUTHSIDE SNAKE RIVER BASINS

FEBRUARY 1, 2013







WATER SUPPLY OUTLOOK

Unlike the rest of Idaho, which was dry in January, the basins south of the Snake River saw average or better precipitation for the month. The best monthly precipitation occurred in the Bruneau and Salmon Falls basins which each received about 115% of their normal monthly amount. Water year to date precipitation across these basins remains slightly better than average. Snowpack percentages edged a couple points closer to normal in the Goose Creek and Owyhee basins, and are now about 90% of normal. Snow in the Bruneau and Salmon Falls basins jumped about 12 percentage points from last month; both are near 95% of the normal for February 1. Reservoirs in this region are storing less than average amounts, the only exception is Brownlee which is near average. Oakley Reservoir is 27% of capacity, 89% of average. Salmon Falls Reservoir is 16% of capacity, 69% of average. Owyhee Reservoir is 39% of capacity, 64% of average and with a near average streamflow forecast, should have an adequate irrigation supply. But keep in mind, the Owyhee basin often needs a rain event to produce runoff. Streamflow forecasts for Oakley Reservoir inflow are for only 75% of average and shortages are likely based the Surface Water Supply Index. Salmon Falls Creek is forecast at 82% of average and when combined with reservoir storage shows that irrigation supplies may be marginally adequate. The Bruneau River is forecast at 87% of average which is nearly twice the volumes from last year which was 39% of average, 92,000 acre-feet.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - February 1, 2013

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	4.7	11.4	15.9	72	20	27	22
	MAR-SEP	4.7	11.8	16.7	70	22	29	24
Trapper Ck nr Oakley	MAR-JUL	3.4	4.4	5.0	85	5.6	6.6	5.9
	MAR-SEP	4.4	5.4	6.1	86	6.8	7.8	7.1
Oakley Res Inflow (2)	MAR-JUL	6.3	15.0	21	75	27	36	28
	MAR-SEP	7.2	16.6	23	74	29	39	31
Salmon Falls Ck nr San Jacinto	MAR-JUN	33	50	63	82	78	102	77
	MAR-JUL	34	52	66	82	82	108	81
	MAR-SEP	36	54	69	81	85	112	85
Bruneau R nr Hot Springs	MAR-JUL	95	141	178	87	220	285	205
	MAR-SEP	99	148	186	87	230	300	215
Reynolds Ck at Tollgate	MAR-JUL	1.3	4.0	5.8	66	7.6	10.3	8.8
Owyhee R nr Gold Ck (2)	MAR-JUL	9.9	15.8	21	75	27	38	28
	MAR-SEP	8.7	14.1	18.8	70	24	35	27
Owyhee R nr Rome	FEB-JUL	275	470	600	103	730	925	580
	FEB-SEP	280	475	610	103	745	940	595
Owyhee R bl Owyhee Dam (2)	FEB-JUL	350	515	645	102	790	1030	635
	FEB-SEP	370	535	665	100	810	1050	665
	APR-SEP	200	310	400	99	500	670	405
Snake R at King Hill (1,2)	APR-JUL	455	1270	1640	63	2010	2820	2620
Snake R nr Murphy (1,2)	APR-JUL	575	1430	1820	70	2210	3060	2610
Snake R at Weiser (1,2)	APR-JUL	865	2820	3710	74	4600	6560	5010
Snake R at Hells Canyon Dam (1,2)	APR-JUL	710	2810	3760	65	4710	6810	5760
Snake R bl Lower Granite Dam (1,2)	APR-JUL	8790	15200	18100	91	21000	27400	19850

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Oakley	75.6	20.1	34.2	22.5
Salmon Falls	182.6	29.9	85.7	43.3
WILDHORSE RESERVOIR	71.5	25.5	49.2	33.2
OWYHEE	715.0	280.7	516.6	438.3
Brownlee	1420.0	1226.1	1320.1	1189.0

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - February 1, 2013

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Raft River	2	92	97
Goose-Trapper Creeks	2	78	90
Salmon Falls Creek	7	119	99
Bruneau River	8	137	92
Reynolds Creek	6	88	75
Owyhee Basin Total	16	153	93
Owyhee Basin SNOTEL	8	117	86

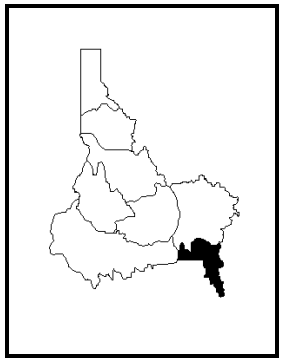
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

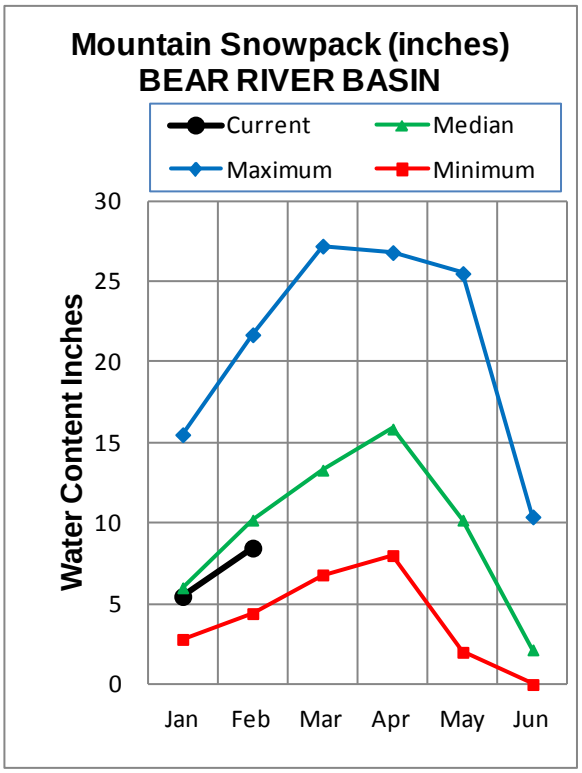
The average is computed for the 1981-2010 base period.

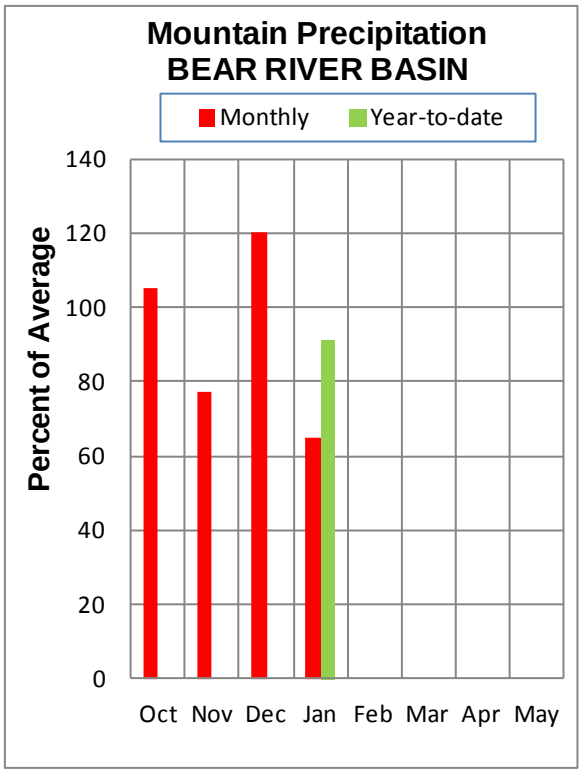
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

BEAR RIVER BASIN

FEBRUARY 1, 2013







WATER SUPPLY OUTLOOK

The Bear River missed precipitation that fell on other parts of southern Idaho last month. While most of southern Idaho had normal precipitation in January, the Bear River only saw 65% of average. Water year to date precipitation is 91% of average since October 1. The Bear River February 1 snowpack is 88% of the 1981-2010 median. Current snow water amounts are very similar to last year at this time. Bear Lake is storing 880,500 acre-feet which is 62% of capacity and 125% of the 1981-2010 average. Due to very low lake levels in the mid-2000s, the new averages for Bear Lake have shifted significantly downward. Take the January 31 average storage amounts for example, the 1971-2000 average was 906,100 acre-feet, while the new 1981-2010 average is 698,900 acre-feet. The new, lower average boosts this month's percent above average. If the older 1971-2000 average was still used, storage would be considered below average. This is a good example of how water users must recalibrate their thinking to the new averages. The Bear River below Stewart Dam is forecast for just 35% of average flow for the April-July period. Forecasts further upstream for the Bear River are about 75% of average for points near Woodruff and the Utah-Wyoming state line. Water users that rely on natural flow in the tributaries will see below normal runoff while the Bear Lake water users will have an adequate supply because of the good storage levels.

BEAR RIVER BASIN
Streamflow Forecasts - February 1, 2013

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	42	66	82	73	99	123	112
	APR-SEP	45	72	90	73	108	135	123
Bear R ab Res nr Woodruff	APR-JUL	5.0	53	91	75	129	185	121
	APR-SEP	4.0	48	96	75	144	216	128
Big Ck nr Randolph	APR-JUL	0.4	1.7	2.6	68	3.4	4.7	3.8
Smiths Fk nr Border	APR-JUL	33	54	68	76	83	104	89
	APR-SEP	41	65	81	78	97	121	104
Bear R bl Stewart Dam	APR-JUL	2.0	20	64	35	119	201	183
	APR-SEP	4.0	25	66	32	129	221	205
Little Bear R at Paradise	APR-JUL	1.2	11.8	22	54	32	47	41
Logan R nr Logan	APR-JUL	19.0	49	69	62	89	119	111
Blacksmith Fork nr Hyrum	APR-JUL	12.7	27	37	86	47	61	43

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
Bear Lake	1421.0	880.5	1091.1	703.8
Montpelier Creek	4.0	1.4	3.3	1.7

BEAR RIVER BASIN
Watershed Snowpack Analysis - February 1, 2013

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Smiths & Thomas Forks	4	94	95
Bear River ab WY-ID line	4	94	95
Montpelier Creek	2	114	89
Mink Creek	1	97	73
Cub River	1	95	79
Bear River ab ID-UT line	12	100	89
Malad River	1	84	80

* 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 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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