United States Department of Agriculture
Natural Resources Conservation Service

Idaho Water Supply Outlook Report
January 1, 2010

This month's cover photo features surface hoar snow crystals observed on December 28th in the Boise Mountains. The Avalanche Handbook 3rd Edition (McClung and Schaerer, 2006) explains that surface hoar is the "solid equivalent to dew" which "usually forms on cold clear nights with calm or nearly calm conditions." The result is a snow surface of feathery crystals that sparkle like diamonds, but collapse like a house of cards when disturbed. Once buried surface hoar acts as a weak layer in the snowpack and can lead to avalanche formation. This winter has had perfect conditions to produce surface hoar. One period in December saw some of the coldest temperatures ever recorded across the SNOTEL network. In Idaho, a handful of sites reached -30 degrees Fahrenheit. Unfortunately for the water supply, such conditions have been accompanied by dry weather and as of January 1st the state's snowpack is only 45% to 75% of normal for this time of year.

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

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Internet Web Address
http://www.id.nrcs.usda.gov/snow/

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

IDAHO WATER SUPPLY OUTLOOK REPORT

January 1, 2010

SUMMARY

Frigid December temperatures made it feel like an old fashioned winter; this may have tricked some people into thinking Idaho's snowpack was also in good shape. These temperatures, however, were accompanied by below normal precipitation and snowpacks across the state are currently shallow. The lack of moderate temperatures and rain kept the snow light and fluffy. Snow surveyors making core samples of the snowpack found that their snow tubes sliced through the powder to the ground under the tube's own weight; this is not generally the case. Many surveyors also reported frozen soils under the light density snow. Warmer temperatures and valley rains over New Year's allowed the snow to settle somewhat and brought much needed moisture to the mountains. Current snowpacks, in general, range from 50-90% of average across the state with a few near record low levels in eastern Idaho. Water year to date precipitation is below average ranging from 65% of average in the Upper Snake to 85% in the basins south of the Snake River. Near or above average reservoir storage will help make up for the less than normal projected streamflow forecasts that range from 50-95% of average. With more than half the winter still to come, the water supply picture can still improve. Above average January precipitation is critical for there to be a realistic hope of returning to near average amounts by April. Historic data shows that the chance of recovering to near normal after February 1 is slim if the snowpack is still 50-70% of average at the end of January.

SNOWPACK

The good news is that there is some snow, but above average precipitation will be needed for the next three months to reach average snow water content amounts in the mountains by April. Storm tracks across the state have been mixed with no basin really standing out. The highest snowpacks are 75-80% of average in parts of the Panhandle region and the Weiser, Owyhee and Oakley basins. The lowest snowpacks are 40-55% of average in the Little Wood, Blackfoot, Camas-Beaver, Portneuf and Bear basins, as well as the critical Snake River Basin above Palisades Reservoir. Elsewhere, snowpacks are 58-68% of average. As of January 4, there were 15 SNOTEL sites in eastern Idaho at or near record low snow water equivalent amounts based on the 20 plus years of daily snow data. The Snake River basin above Palisades Reservoir is the lowest since 1994. January 15 is typically the half-way point of the winter snow accumulation season. Current snowpacks are only 20-30% of their seasonal peaks that occur around April first. To reach average by April 1, precipitation for the next three months needs to be 120-130% of average for most basins.

PRECIPITATION

The new water year started October 1 with the state receiving above average precipitation for the month. While this sounds promising, it doesn't take a lot of moisture to exceed October's average amount. November, December and January are generally Idaho's biggest precipitation months, but so far November and December have delivered two strikes against the water supply. November precipitation amounts were only 20-30% of average across southern Idaho and 40-60% in central and northern Idaho. December swung and missed at the curve ball of cold temperatures accompanied by below normal precipitation. Temperatures were the coldest in years with a few sites dipping to minus 30 degrees Fahrenheit and nearly all sites remaining below zero for a day or two. The lowest December precipitation amounts were 45% of average in the Big Lost, Little Lost and Mud Lake area near the Montana border. The best December precipitation was almost an average amount in Oakley, Salmon Falls and Owyhee basins. Water year to date precipitation ranges from 65-85% of average across the state; the lowest totals are in eastern Idaho and the Henrys Fork, Upper Snake and Bear River drainages. As of January 4, eight SNOTEL sites in the Upper Snake in Wyoming and Henrys Fork were at or near record low precipitation since daily precipitation gages were installed about 20 years ago. The combined

precipitation at Galena Summit, Lost-Wood Divide and Hilts Creek SNOTEL stations from November through December this year was 9.7 inches, the 5th lowest since daily records started 27 years ago. The wettest November-December period was 1983 with 31 inches falling, while the driest was 1990 with only 5 inches falling. Hopefully this trend doesn't result in strike three in January.

RESERVOIRS

The best news this year is the water in storage. Reservoir storage is 90-115% of average in Dworshak, as well as, the Payette, Boise and Upper Snake reservoir systems. Little Wood and Mackay are storing slightly better amounts at 130% of average. Storage in Priest Lake is 100% of average; Pend Oreille is 81% and Coeur d'Alene is even lower due to the cold temperatures and lack of winter runoff. Current storage in Oakley, Salmon Falls and Wildhorse reservoirs is below average at 73-86% of average, but this is much better than last year. Even Bear Lake, at 58% of average, is storing more today than a year ago. Owyhee Reservoir, which is 40% of average, 22% of capacity, has slightly less in storage than a year ago; this is primarily because last year's runoff was only 60% of average, one of the lowest amounts in the region.

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

Conditions leading into this year can be directly tied to the timely June rains last year that reduced irrigation demand and allowed more water to be stored. The rains helped to produce runoff in the 90-110% of average range in the west-central and northern Idaho drainages, the Snake River near Heise, Salmon Falls Creek and the headwater streams in the Big Wood and Big Lost basins. The lowest runoff amounts were 60% of average for the Big Wood below Magic Reservoir and Owyhee basin. October streamflows were closer to average than the November and December volumes, which were reduced by the dry weather and cold temperatures. As a result, the better reservoir carryover amounts are found in the basins that had near average runoff last year. Current streamflow forecasts mirror the meager snowpacks and call for 50-95% of average volumes across the state.

Note: Forecasts published in this report are NRCS guidance forecasts. NRCS is using SNOTEL data in a timely manner to provide timely streamflow forecast for users. Official jointly coordinated and published forecasts by the USDA Natural Resources Conservation Service and the US Department of Commerce, NOAA, National Weather Service are available at the joint west-wide Water Supply Outlook for the Western US at http://www.wcc.nrcs.usda.gov/wsf/westwide.html.

RECREATION

Recreation this winter has been frustrated by the right kind of weather occurring at the wrong time. Big snows in the central mountains stranded hunters on October 4th when 25 inches of snow fell at Smiley Mountain SNOTEL, located at 9,520 feet in the Big Lost basin. After a series of early storms during the first couple weeks of the new water year, the precipitation more or less dried up in November and December. Frigid temperatures in December brought dry, sub-zero weather to most areas of the state. In the mountains, these cold, clear nights transformed the early snowpack into facets creating a fragile base to this season's snowpack. The timing and magnitude of storms eventually did benefit recreationists just prior to Christmas allowing ski areas to open for the end of the year holidays. The holiday snow did not come in the same abundance as last season and the January 1 snowpack is still quite shallow as compared to usual. One of our staff commented on exposed sagebrush at almost 9,000 feet elevation in the Upper Wood River Valley on a New Year's yurt trip. Backcountry skiers, snowboarders, snowmobilers and snowshoers should be aware that all avalanche centers across the state are currently reporting an elevated warning due to a slab of recent snow lying on top of a weak, faceted base layer. To stay current with conditions as the season progresses you can access avalanche information from

http://avalanche.org/. The Idaho Snow Survey also has a number of products geared towards outdoor enthusiasts on our winter recreation webpage: http://www.id.nrcs.usda.gov/snow/recreation/.

SNOW SURVEY NEWS

There are many interesting and informative data, graphs and maps available from our snow survey web pages, a great way to keep abreast of current conditions as they change throughout the year. Click on http://www.id.nrcs.usda.gov/snow/ and let us know what you think.

Two new streamflow forecasts were requested and developed for the Gros Ventre River and Buffalo Fork, both tributary drainages to Upper Snake River in Wyoming. The request came from a working group composed of Grand Teton National Park, Trout Unlimited, Wyoming Game and Fish, and local irrigators who are formulating strategies to meet water needs while improving year round aquatic habitat. The Gros Ventre stream gage at Kelly, Wyoming was recently reactivated due to issues concerning de-watering in the lower reaches of the river and its effect on fish habitat. Forecasts of this type benefit the many users that rely on the water for their livelihood and those that manage the water.

A new SNOTEL site was installed to automate the Pierce Ranger Station Snow Course in the Clearwater basin. Funding for the upgrade was made by the Army Corps of Engineers. The original snow course was installed at the Forest Service work center in 1951 and measured consistently January-May each year. The site, at an elevation of 3,080 feet, represents the mid-elevation area in the basin. Soil moisture/temperature and snow depth sensors were also installed. Hourly data is available from our web page for these sensors along with snow water equivalent, precipitation, and air temperature.

Snow measurements have been discontinued at Corner Creek and Sage Creek Saddle snow courses near Coeur d'Alene. The two scheduled measurements at these sites will be estimated this year. Next year these points will be removed from our reports. These sites were originally requested for a research investigation, but this need is no longer present. Additionally, the sites were challenging to access and had become overgrown by the tree canopy.

The Idaho network of SNOTEL sites has caused some cold fingers already this winter as mid-season site repairs have been more numerous than usual. The antenna needed to be replaced at Schweitzer Basin after winds blew over the old one. The area next to this SNOTEL has opened up dramatically with the installation of a large snow making pond by the ski resort last summer. The antenna blowing over might be an indication that the site’s characteristics have also changed.

Brundage Reservoir SNOTEL, near McCall, had a tree fall across the snow pillow in mid-December. The snow depth sensor was damaged causing other electronics to go haywire. A work crew later got the site back online and removed most of the tree, which by then had been buried by 20 inches of snow. Daylight ran out before all the branches could be removed from under the snow. The remaining branches on the pillow may cause bridging in the snowpack as the winter progresses. We will be watching the snow pillow data closely this winter and making edits as needed. The historic relationship between the snow water content and precipitation are a 1:1 at this site. The site was edited to reflect the current snow water measured and this agrees closely with the precipitation gains since the snow started accumulating. Even so, data users should exercise caution and base decisions on multiple sites to minimize any error that might exist.

Lewis Lake Divide SNOTEL, a key site in the Upper Snake basin, has not been reporting since December 5th. This site also needs to have its antenna replaced and we are looking for a break in the weather to get this accomplished.

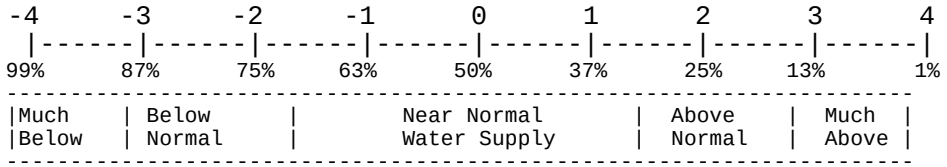
IDAHO SURFACE WATER SUPPLY INDEX (SWSI) As of January 1, 2010

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 Shortage May Occur When SWSI is Less Than*
PANHANDLE	-1.9	1995	NA
CLEARWATER	-2.1	2007	NA
SALMON	-1.5	2004	NA
WEISER	-1.1	2009	NA
PAYETTE	-1.8	2005	NA
BOISE	-1.4	2002	-1.8
BIG WOOD	-0.3	2009	0.0
LITTLE WOOD	0.3	2005/2009	-1.8
BIG LOST	-0.9	2009	0.0
LITTLE LOST	-1.8	2000	0.6
HENRYS FORK	-1.9	2004/2005	-3.4
TETON	-2.6	2003	NA
SNAKE (HEISE)	-1.8	1991/1994	-1.8
OWYHEE	-1.4	2007	-3.3
OAKLEY	-0.9	2009	-0.5
SALMON FALLS	-1.8	2000	-1.1
BRUNEAU	-1.4	2004	NA
BEAR RIVER	-1.5	2006	-2.9

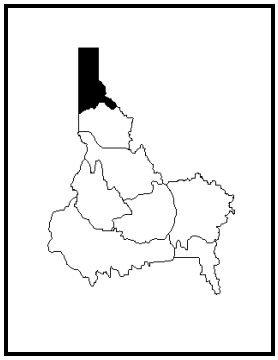
SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

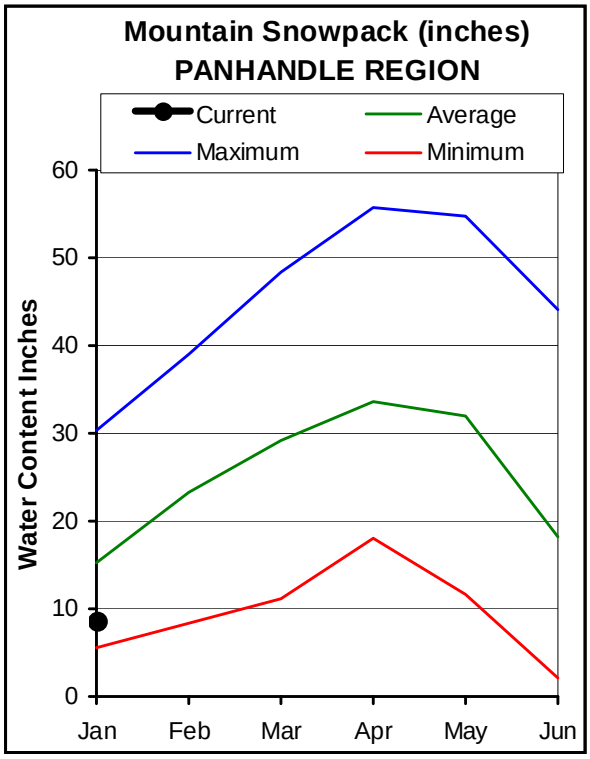


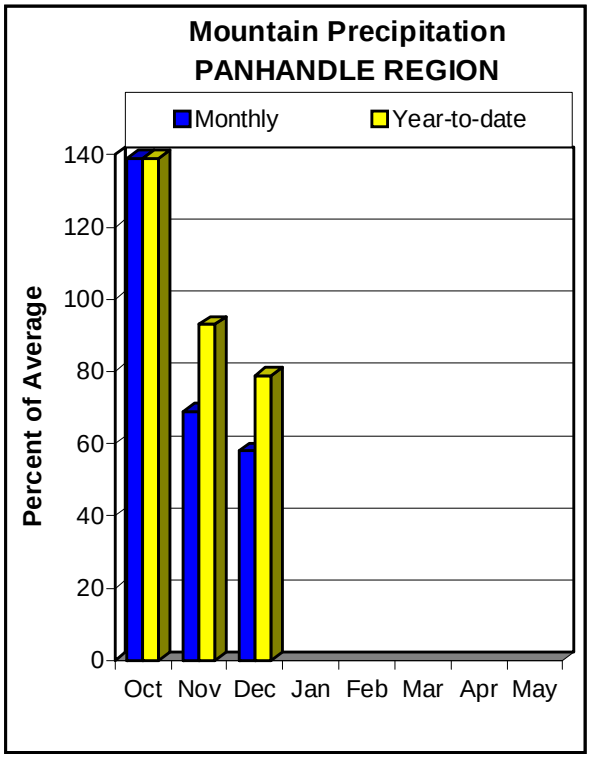
NA = Not Applicable

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
JANUARY 1, 2010







WATER SUPPLY OUTLOOK

Monthly precipitation in October was 140% of average, a good start to the water year. However, November and December brought less than three-quarters of the normal precipitation. As a result of missing out in those two normally productive months, precipitation since the water year started October 1 is just 79% of average; a little less than last year at this time. Snowpacks in Idaho's Panhandle Region are among the lowest in the state ranging from 55% of average in the St. Joe basin to 78% in the Kootenai basin which is only about three-quarters of last year's January 1 amounts. The St. Joe basin snowpack is actually the 4th lowest January 1 snowpack since 1961 based on a three station SNOTEL index. Several fall precipitation events produced streamflow increases, but reservoir levels in Priest and Pend Oreille lakes are 81 to 100% of average, while Coeur d'Alene Lake is much lower (38%) due to winter releases and cold dry weather. Despite the low snowpacks, streamflow forecasts range from 75-95% of average for most streams. That is mainly because it is still early in the snow accumulation season with a reasonable opportunity for conditions to improve by April, which is when the snowpack reaches its peak for the year. Precipitation and snow increments would need to be about 30% above average over the next three months to reach average snow levels by April 1, so the overall outlook for this year is pointed in a less than normal direction.

PANHANDLE REGION
Streamflow Forecasts - January 1, 2010

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KOOTENAI at Leonia (1,2)	APR-JUL	4770	5790	6250	89	6710	7730	7040
	APR-SEP	5460	6650	7190	89	7730	8920	8120
MOYIE RIVER at Eastport	APR-JUL	250	310	350	86	390	450	405
	APR-SEP	265	325	365	87	405	465	420
SMITH CREEK	APR-JUL	82	102	116	94	130	150	123
	APR-SEP	84	107	122	95	137	160	129
BOUNDARY CREEK	APR-JUL	84	101	112	91	123	140	123
	APR-SEP	89	106	117	91	128	145	129
CLARK FK at Whitehorse Rpds (1,2)	APR-JUL	8730	9260	9500	84	9740	10300	11300
	APR-SEP	9530	10100	10400	83	10700	11300	12500
PEND OREILLE Lake Inflow (2)	APR-JUL	10100	10400	10600	83	10800	11100	12700
	APR-SEP	11000	11400	11600	83	11800	12200	13900
PRIEST near Priest River (1,2)	APR-JUL	330	565	675	83	785	1020	815
	APR-SEP	355	600	715	82	830	1080	870
NF COEUR D'ALENE RIVER at Enaville	APR-JUL	260	440	565	76	690	870	740
	APR-SEP	290	475	600	77	725	910	780
ST. JOE at Calder	APR-JUL	500	730	885	78	1040	1270	1140
	APR-SEP	555	785	945	79	1100	1340	1200
SPOKANE near Post Falls (2)	APR-JUL	1210	1630	1910	75	2190	2610	2550
	APR-SEP	1340	1730	1990	75	2250	2640	2650
SPOKANE at Long Lake (2)	APR-JUL	1140	1780	2210	78	2640	3280	2850
	APR-SEP	1280	1950	2410	79	2870	3540	3070

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNGRY HORSE	3451.0	2894.0	2646.0	2420.9
FLATHEAD LAKE	1791.0	1209.0	1181.0	1192.7
NOXON RAPIDS	335.0	314.2	319.0	315.8
PEND OREILLE	1561.3	545.6	389.0	673.4
COEUR D'ALENE	238.5	41.3	52.2	110.1
PRIEST LAKE	119.3	48.0	53.6	55.7

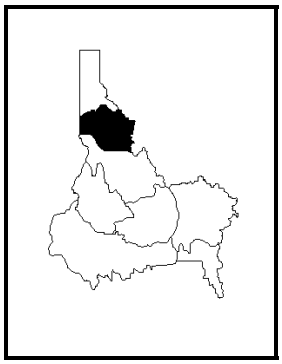
PANHANDLE REGION
Watershed Snowpack Analysis - January 1, 2010

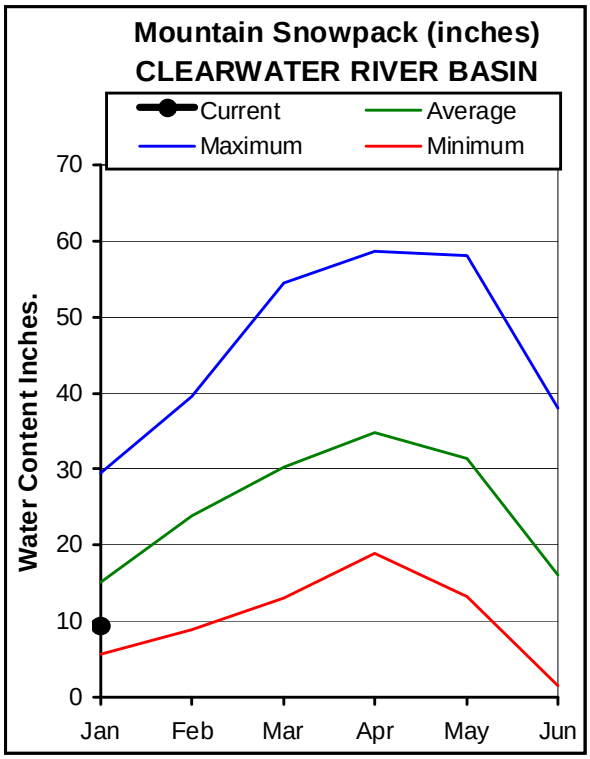
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	8	122	78
Moyie River	1	127	81
Priest River	4	82	72
Pend Oreille River	63	91	74
Rathdrum Creek	3	51	61
Hayden Lake	0	0	0
Coeur d'Alene River	6	72	56
St. Joe River	4	76	55
Spokane River	13	70	56
Palouse River	1	45	51

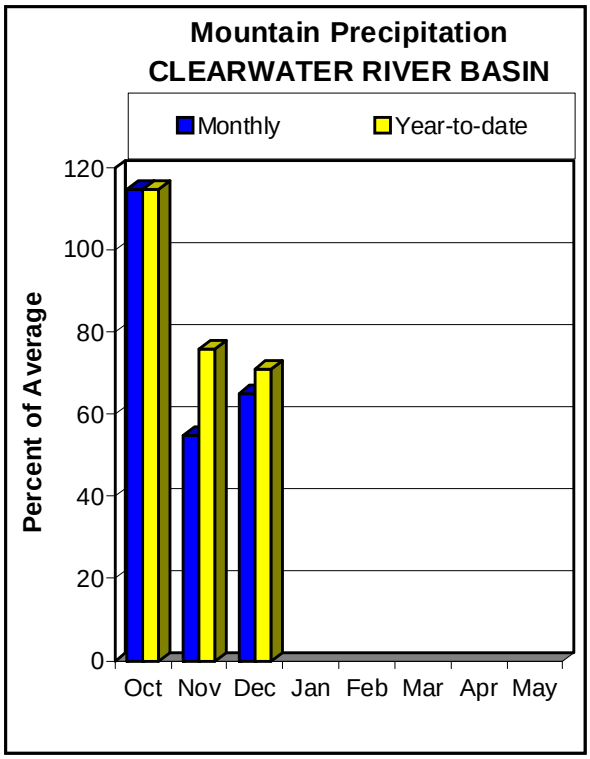
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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

CLEARWATER RIVER BASIN
JANUARY 1, 2010







WATER SUPPLY OUTLOOK

This year started off very good with above normal precipitation in October, but quickly dried up with just 55% and 65% of monthly averages for November and December, respectively. As a result, the water year total since October 1 is just 71% of average. In an average year, November and December combined account for one-quarter of the annual total, so missing out during these two months alone puts a real moisture deficit into effect and difficult to make up for in the coming runoff season. The snowpacks in the basin reflect the lack of precipitation, and are in the 61-65% of average range as of January 1. This is well below last year at this time, but remarkably similar to both 2003 and 2005. An index of 13 snow stations in the Clearwater basin shows this year's snowpack is the 9th lowest since 1961. Streamflow forecasts for the coming season are 70-78% of average for the April through September period. Dworshak Reservoir level is 62% of capacity, 96% of average, and with the Dworshak Reservoir inflow forecast for only 70% of average for April through July, available water supplies for the many uses of the water will be less this year. Even though the snow accumulation season is less than half way along, it is unlikely the snowpack could return to 90% of average by April 1 based on comparing the last 50 years of January 1 data to April 1 data.

CLEARWATER RIVER BASIN
Streamflow Forecasts - January 1, 2010

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Selway R nr Lowell	APR-JUL	1036	1342	1550	75	1758	2064	2060
	APR-SEP	1109	1419	1630	75	1841	2151	2170
Lochsa R nr Lowell	APR-JUL	795	1024	1180	77	1336	1565	1530
	APR-SEP	855	1084	1240	77	1396	1625	1610
DWORSHAK Resv. Inflow (1,2	APR-JUL	755	1515	1860	70	2205	2965	2640
	APR-SEP	861	1631	1980	71	2329	3099	2800
CLEARWATER at Orofino (1)	APR-JUL	1401	2920	3610	78	4300	5819	4650
	APR-SEP	1621	3140	3830	78	4520	6039	4900
CLEARWATER at Spalding (1,2)	APR-JUL	1812	4383	5550	75	6717	9288	7430
	APR-SEP	2152	4723	5890	75	7057	9628	7850

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DWORSHAK	3468.0	2149.0	2378.1	2228.2

CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - January 1, 2010

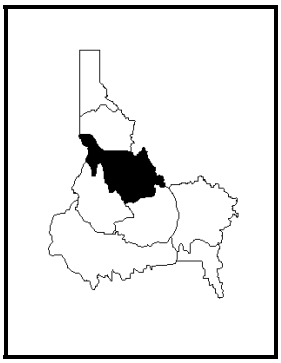
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	9	83	63
Lochsa River	3	78	65
Selway River	4	65	61
Clearwater Basin Total	16	77	

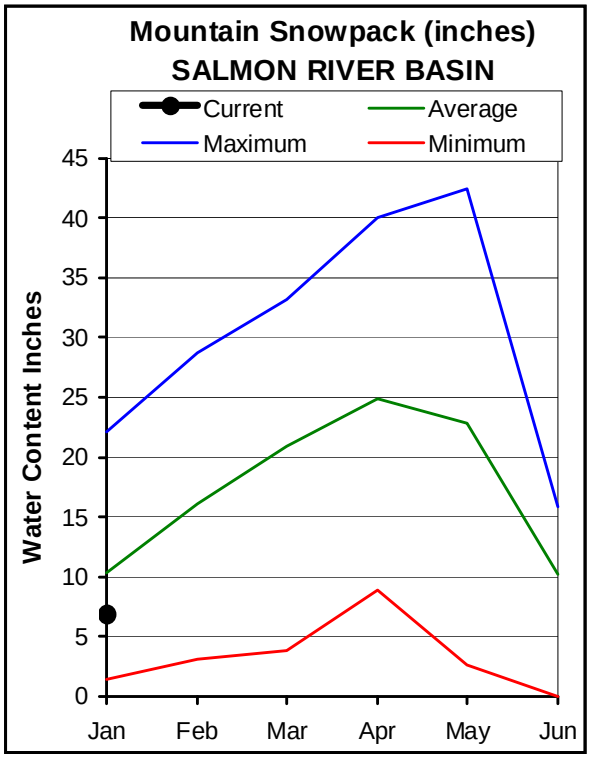
63

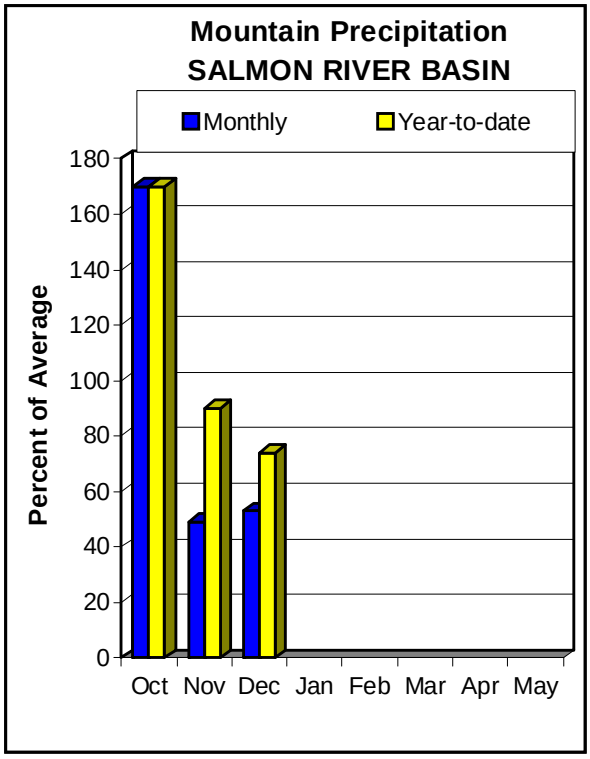
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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

SALMON RIVER BASIN
JANUARY 1, 2010







WATER SUPPLY OUTLOOK

The Salmon basin had a great start this water year with 170% of average precipitation in October and an early start to the snowpack in the high elevations! October precipitation resulted in a daily peak flow of 1,220 cfs on October 15th on the Middle Fork. Since then, monthly base flows on the Middle Fork have been about 88% of average in November and December. Hopes faded quickly as cold dry weather settled over the state in November with just sporadic light precipitation. These conditions continued through December, yielding only about half of normal monthly amounts in both months, further dimming the prospect for an abundant 2010 runoff season. As a result, the water year precipitation total is now at just 74% of average. November and December on average are the two highest precipitation months in the year. The snowpack conditions in the Salmon basin reflect the lack of precipitation and range from 54% of average in the Middle Fork to 83% in the Lemhi. Compared with the past, the Middle Fork has the 5th lowest snow amount out of 48 years of measurement; only 1977, 1987, 1990 and 1994 had less snow. The highest elevation sites, like those in the Lemhi, have the greatest amounts because the October snows did not fade away like the lower elevations snow did during the extended dry spell in November. Overall, the Salmon basin snowpack is 66% of the January 1 average and it will be difficult to rebound to normal conditions in the remaining three months before the snowpack reaches its peak in early April. Streamflow forecasts vary among the sub-basins, ranging from 65% in the Salmon at Salmon to 71% in the Salmon at Whitebird. Despite the lower than normal forecasts, river enthusiasts should polish their skills in the indoor pools and get their gear in shipshape because even in lower years, plenty of good whitewater still occurs and road access to the streams becomes easier earlier in the season.

SALMON RIVER BASIN
Streamflow Forecasts - January 1, 2010

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SALMON at Salmon (1)	APR-JUL	166	434	555	65	676	944	855
	APR-SEP	208	515	655	66	795	1102	1000
Lemhi R nr Lemhi	APR-JUL	27	44	58	67	74	100	86
	APR-SEP	35	55	71	68	89	119	105
MF Salmon at MF Lodge	APR-JUL	193	391	525	67	659	857	785
	APR-SEP	228	443	590	67	737	952	875
Salmon at White Bird (1)	APR-JUL	1806	3404	4130	71	4856	6454	5850
	APR-SEP	2074	3811	4600	71	5389	7126	6480

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

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

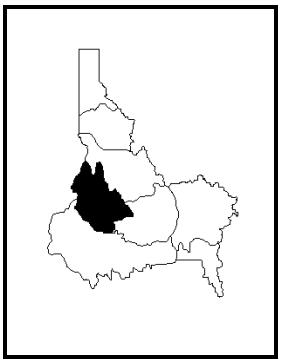
SALMON RIVER BASIN
Watershed Snowpack Analysis - January 1, 2010

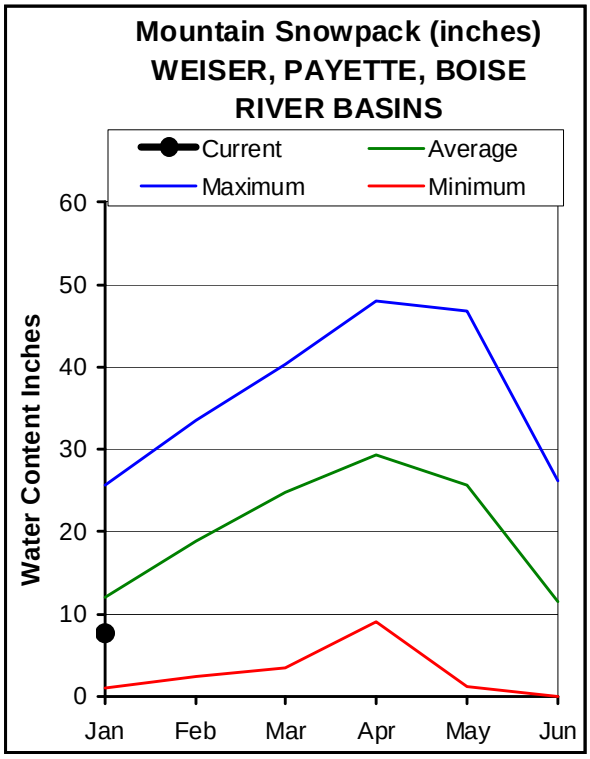
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	8	70	61
Lemhi River	6	79	83
Middle Fork Salmon River	3	66	54
South Fork Salmon River	3	78	62
Little Salmon River	4	80	71
Salmon Basin Total	24	76	67

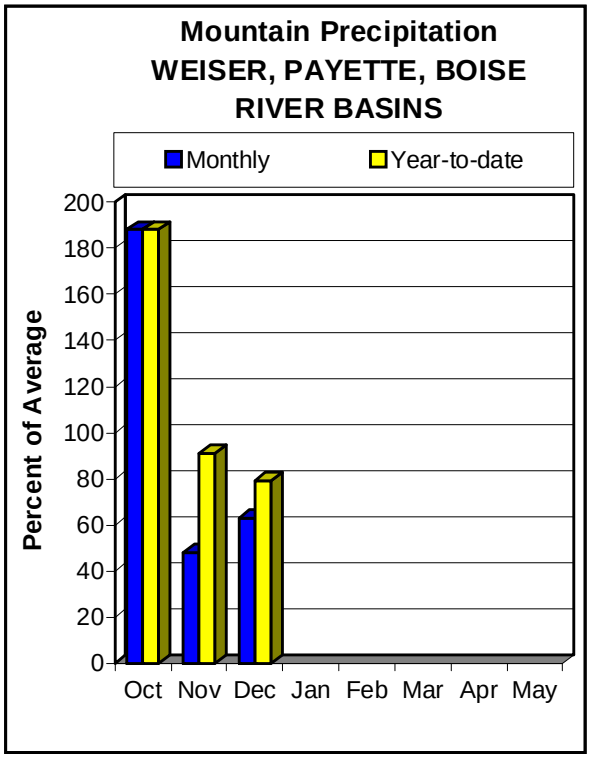
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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

WEISER, PAYETTE, BOISE RIVER BASINS
JANUARY 1, 2010







WATER SUPPLY OUTLOOK

Snow in the west central mountains of Idaho is only near 65% of average for the Boise and Payette basins and 76% of average for the Weiser; these amounts equal about 25% of the average peak for the season. In the Boise and Payette basins it is the 10th and 11th slowest start to winter since measurements began 50 years ago. Precipitation for the water year got off to a promising start with nearly twice the average amount falling in October; however, drier conditions in November and December produced 49% and 63% of average for these months respectively. Last year, we saw a similar dry start to winter however holiday storms in rapid succession quickly caught conditions back to normal by January 1st. This year precipitation since October 1st is 79% of average as of the start of January. Fortunately reservoirs currently have normal carry-over storage thanks to above normal precipitation last spring. Taken together the Boise River reservoirs including Anderson Ranch, Arrowrock and Lucky Peak are 54% of capacity. Deadwood and Cascade Reservoirs on the Payette are 61% of capacity. Summer streamflow volumes are forecast in the 61-79% of average range. Reservoir storage in the Boise and Payette basins will provide the buffer to assist water users in the valley if the snowpack continues to lag. Without the advantage of a major reservoir in the Weiser basin, more snow or rain will benefit the users in the Weiser River basin.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - January 1, 2010

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Weiser R nr Weiser (1)	FEB-JUL	142	365	500	77	657	1077	650
	APR-JUL	84	218	300	77	395	650	390
	APR-SEP	94	235	320	76	418	680	420
SF Payette R at Lowman	APR-JUL	192	259	310	70	366	456	440
	APR-SEP	224	298	355	72	417	516	495
Deadwood Resv Inflow (1,2)	APR-JUL	33	73	92	69	111	151	134
	APR-SEP	35	79	99	70	119	163	142
Lake Fork Payette R nr McCall	APR-JUL	46	58	67	79	76	91	85
	APR-SEP	48	61	70	79	80	96	89
NF Payette R at Cascade (1,2)	APR-JUL	132	306	385	74	464	638	520
	APR-SEP	122	306	390	72	474	658	540
NF PAYETTE nr Banks (2)	APR-JUL	263	398	490	73	582	717	675
	APR-SEP	252	394	490	70	586	728	700
PAYETTE nr Horseshoe Bend (1,2)	APR-JUL	479	947	1160	71	1373	1841	1640
	APR-SEP	534	1013	1230	70	1447	1926	1760
Boise R nr Twin Springs (1)	JAN-JUL	234	468	575	75	682	916	770
	APR-JUL	187	382	470	74	558	753	635
	APR-SEP	210	416	510	74	604	810	690
SF BOISE at Anderson Ranch Dam (1,2	JAN-JUL	101	327	430	68	533	759	635
	APR-JUL	61	263	355	66	447	649	540
	APR-SEP	72	284	380	66	476	688	580
MORES CK nr Arrowrock Dam	JAN-JUL	51	87	117	61	151	210	191
	APR-JUL	32	58	80	61	105	149	131
	APR-SEP	34	61	83	61	109	154	137
Boise R nr Boise (1,2)	JAN-JUL	529	1011	1230	69	1449	1931	1780
	APR-JUN	372	708	860	68	1012	1348	1260
	APR-JUL	362	777	965	68	1153	1568	1410
	APR-SEP	440	860	1050	69	1240	1660	1530

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MANN CREEK	11.1	0.9	2.2	3.3
CASCADE	693.2	430.0	459.4	456.4
DEADWOOD	161.9	92.6	80.6	82.5
ANDERSON RANCH	450.2	303.1	262.9	296.8
ARROWROCK	272.2	164.7	182.1	173.1
LUCKY PEAK	293.2	78.8	89.8	95.5
LAKE LOWELL (DEER FLAT)	165.2	114.5	90.0	98.4

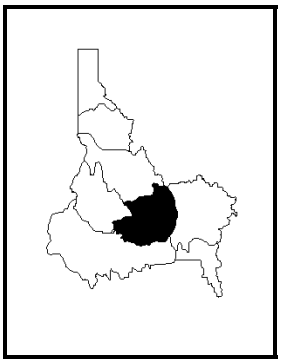
WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - January 1, 2010

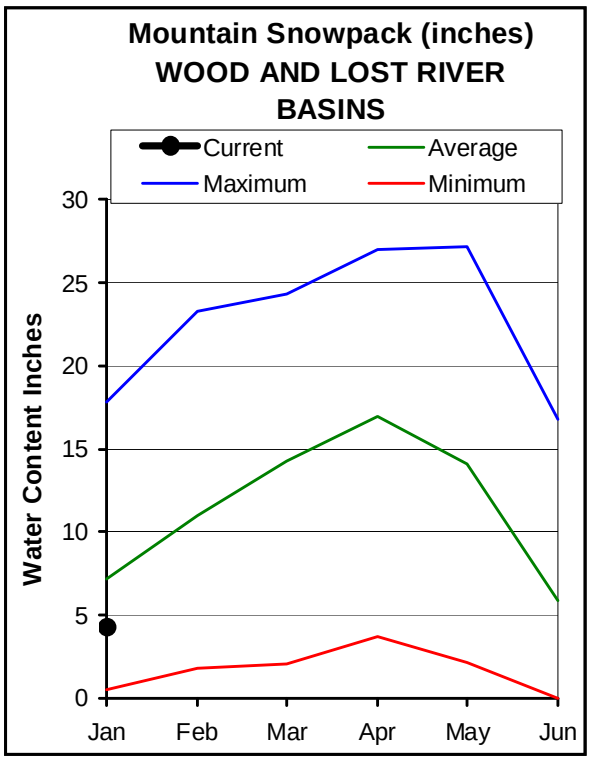
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Mann Creek	1	115	89
Weiser River	3	90	76
North Fork Payette	8	85	70
South Fork Payette	5	69	59
Payette Basin Total	14	77	65
Middle & North Fork Boise	5	71	64
South Fork Boise River	9	69	68
Mores Creek	5	63	68
Boise Basin Total	16	68	68
Canyon Creek	2	88	131

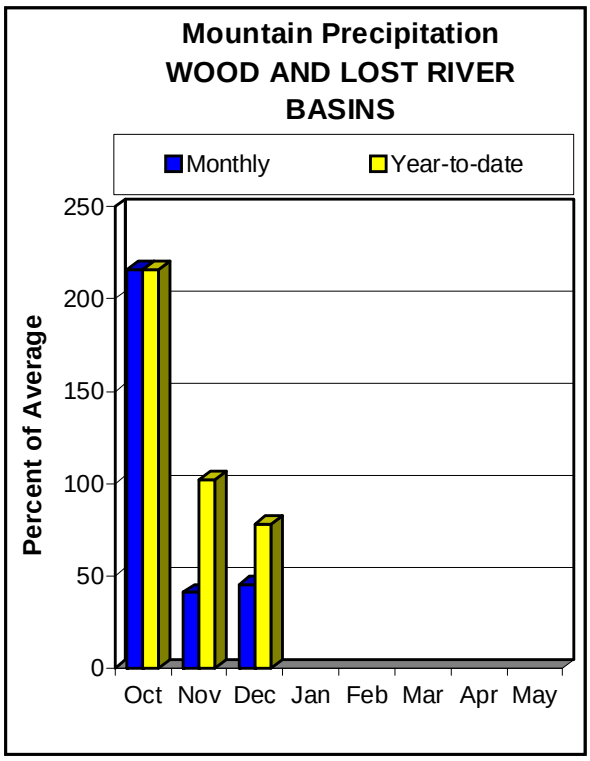
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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

WOOD and LOST RIVER BASINS
JANUARY 1, 2010







WATER SUPPLY OUTLOOK

The Wood and Lost River basin snowpack is having one of the slowest starts in the last 50 years since measurements began. The Little Wood snowpack, at 51% average, is the lowest in the region and the 6th lowest amount in 50 years. The other three basins have 53-65% of average snow; out of 50 years this is the 9th lowest January 1 snow for the Big Lost, 10th lowest for the Little Lost and 11th lowest for the Big Wood. Visually these basins are still showing a lot of sagebrush exposed above the snow up to nearly 9000 feet elevation. Water year precipitation since October 1 is 78% of average across the region, but most of this came during the first two weeks of October. Since the middle of October, conditions have been quite dry. November had 41% of average monthly precipitation and December had 45%. Carry-over storage in reservoirs is excellent this winter thanks to precipitation last year that was about 140% of average in the Lost and Big Wood basins and 165% of average in the Little Wood Basin. Storage is nearly average for January 1 in Magic Reservoir which contains 39% of capacity. Storage is about 135% of average for Little Wood and Mackay reservoirs, which equals 62% and 72% of capacity respectively. Streamflow forecasts range from 55-59% at the Big Wood River and the Camas Creek near Blaine to near 70% at the Little Lost near Howe, Big Lost at Howell Ranch and the Little Wood near Carey. It is too early to discuss water shortages in detail at this point, but if the snowpack doesn't improve dramatically over the next couple of months basins without reservoir storage will be in trouble.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - January 1, 2010

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Big Wood R at Hailey (1)	APR-JUL	5.4	119	171	67	225	335	255
	APR-SEP	92	162	200	69	240	350	290
BIG WOOD ab Magic Reservoir	APR-JUL	37	75	112	59	160	252	190
	APR-SEP	40	80	121	59	174	252	205
Camas Ck nr Blaine	APR-JUL	7.7	31	55	55	86	145	100
	APR-SEP	8.2	31	56	55	88	147	101
BIG WOOD below Magic Dam (2)	APR-JUL	11.6	85	162	56	239	352	290
	APR-SEP	21.0	95	174	57	253	370	305
LITTLE WOOD R abv High Five Ck	MAR-JUL	15	33	50	59	70	105	85
	MAR-SEP	16.5	36	54	59	75	113	92
	APR-JUL	17.3	33	47	60	63	91	78
	APR-SEP	19.9	37	52	61	69	99	85
LITTLE WOOD near Carey (2)	MAR-JUL	13	46	68	71	90	123	96
	MAR-SEP	16.4	51	74	71	97	132	104
	APR-JUL	8.6	40	61	70	82	113	87
	APR-SEP	11	44	66	70	88	121	94
BIG LOST at Howell Ranch	APR-JUL	58	93	121	70	153	207	173
	APR-SEP	66	105	137	70	173	234	197
BIG LOST blw Mackay Resv	APR-JUL	11.3	56	86	61	116	161	141
	APR-SEP	17.6	71	108	63	145	198	172
Little Lost R nr Howe	APR-JUL	11.3	16.7	21	68	26	34	31
	APR-SEP	14.7	22	27	69	33	43	39

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MAGIC	191.5	74.7	24.0	79.7
LITTLE WOOD	30.0	18.7	8.1	14.1
MACKAY	44.4	32.0	18.6	23.7

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - January 1, 2010

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Hailey	8	76	64
Camas Creek	5	55	68
Big Wood Basin Total	13	69	65
Fish Creek	0	0	0
Little Wood River	5	49	51
Big Lost River	5	53	53
Little Lost River	3	68	58
Birch-Medicine Lodge Cree	2	91	92
Camas-Beaver Creeks	4	38	40

* 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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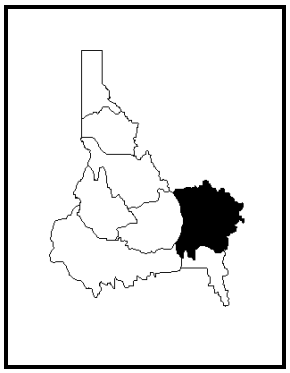
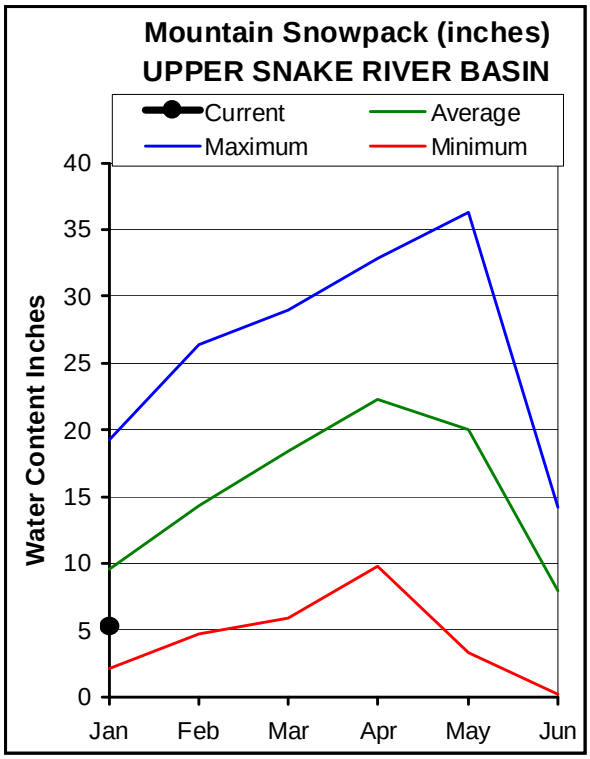
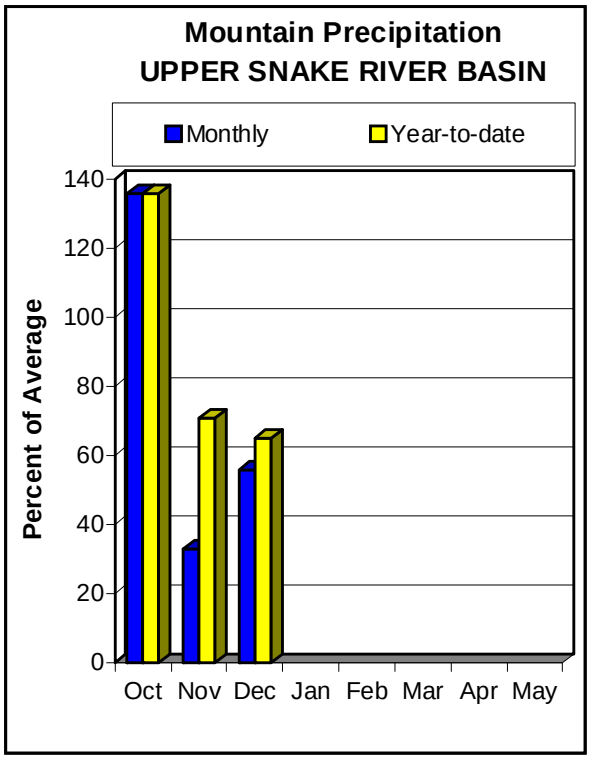
UPPER SNAKE BASINS
JANUARY 1, 2010







WATER SUPPLY OUTLOOK

Eastern Idaho and the Upper Snake River basin in Wyoming host some of the lowest snowpacks in the region at 42-67% of average. The lowest snow is 42% of average in the Hoback and Portneuf basins. The highest snow is 63-67% of average in the Snake River above Jackson Lake, Pacific Creek, and Gros Ventre basins. A five station index of the January 1 snow level for the Snake River above Jackson Lake shows the snow is the 8th lowest since 1961 and the lowest since 2000. December precipitation was disappointing and the lowest in the region at only a little over half of average. Water year to date precipitation is at 65% of average in these Upper Snake basins. Streamflow forecasts mirror the low snow levels and range from only 55% of average for the Blackfoot River and American Falls Reservoir inflow to 76% of average for the Snake River at Flagg Ranch and Henrys Fork near Ashton. Reservoir combined storage in Jackson and Palisades is 75% full and 112% of average. If the dry conditions persist, the reservoirs should be nearly full at the onset of irrigation and will then be quickly drafted if natural flows are low due to poor snowpack and minimal spring precipitation. There is still time for the outlook to improve with more than half the winter to go, but to reach average snow levels by April, precipitation for the next three months needs to be 35% above average.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - January 1, 2010

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
HENRYS FORK nr Ashton (2)	APR-JUL	287	366	425	75	489	590	570
	APR-SEP	422	519	590	77	666	785	765
HENRYS FORK near Rexburg (2)	APR-JUL	814	984	1100	71	1216	1386	1560
	APR-SEP	1106	1299	1430	71	1561	1754	2010
Falls R nr Ashton (2)	APR-JUL	214	258	290	76	324	378	380
	APR-SEP	252	303	340	76	380	442	450
Teton R nr Driggs	APR-JUL	52	79	100	61	124	164	165
	APR-SEP	67	100	126	60	155	204	210
Teton R nr St. Anthony	APR-JUL	140	202	250	62	304	392	405
	APR-SEP	165	235	290	60	351	451	480
Snake River At Flagg Ranch	APR-JUL	240	323	380	77	437	520	495
	APR-SEP	263	354	415	76	476	567	545
SNAKE nr Moran (1,2)	APR-JUL	291	483	570	70	657	849	815
	APR-SEP	325	538	635	70	732	945	905
Pacific Ck At Moran	APR-JUL	49	85	110	64	135	171	171
	APR-SEP	53	90	115	65	140	177	178
Buffalo Fork ab Lava nr Moran, WY	APR-JUL	125	170	200	66	230	275	301
	APR-SEP	141	191	225	65	259	309	344
Gros Ventre R at Kelly, WY	APR-JUL	18.9	85	130	65	175	241	200
	APR-SEP	39	111	160	66	209	281	244
SNAKE abv Resv nr Alpine (1,2)	APR-JUL	613	1230	1510	64	1790	2407	2370
	APR-SEP	734	1433	1750	64	2067	2766	2730
Greys R Nr Alpine	APR-JUL	136	195	235	69	275	334	340
	APR-SEP	159	228	275	70	322	391	395
Salt R Nr Etna	APR-JUL	49	139	200	59	261	351	340
	APR-SEP	84	189	260	62	331	436	420
SNAKE nr Irwin (1,2)	APR-JUL	1042	1701	2000	60	2299	2958	3330
	APR-SEP	1272	2013	2350	61	2687	3428	3870
SNAKE near Heise (2)	APR-JUL	1340	1816	2140	60	2464	2940	3560
	APR-SEP	1627	2171	2540	61	2909	3453	4160
WILLOW CREEK nr Ririe (2)	MAR-JUL	22	45	60	68	75	98	88
Blackfoot R ab Res nr Henry	APR-JUN	13.2	27	40	55	55	81	73
SNAKE nr Blackfoot (1,2)	APR-JUL	1165	2138	2580	56	3022	3995	4600
	APR-SEP	1775	2748	3190	57	3632	4605	5620
Portneuf R at Topaz	MAR-JUL	27	41	53	60	66	88	89
	MAR-SEP	34	51	65	60	80	106	109
AMERICAN FALLS RESV INFLOW (1,2)	APR-JUL	150	1161	1700	52	2239	3425	3240
	APR-SEP	175	1361	1900	54	2439	3625	3510

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HENRYS LAKE	90.4	84.9	85.7	82.5
ISLAND PARK	135.2	108.6	104.9	96.1
GRASSY LAKE	15.2	12.5	12.7	11.6
JACKSON LAKE	847.0	628.7	639.5	481.7
PALISADES	1400.0	1066.3	829.1	1036.5
RIRIE	80.5	38.1	38.0	34.5
BLACKFOOT	348.7	191.7	85.5	215.3
AMERICAN FALLS	1672.6	1204.2	955.5	986.6

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - January 1, 2010

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Henrys Fork-Falls River	7	65	60
Teton River	7	55	49
Henrys Fork above Rexburg	14	63	55
Snake above Jackson Lake	5	70	64
Pacific Creek	2	68	67
Gros Ventre River	2	53	63
Hoback River	5	51	42
Greys River	4	63	55
Salt River	3	57	56
Snake above Palisades	17	60	55
Willow Creek	7	47	63
Blackfoot River	3	57	56
Portneuf River	3	47	42
Snake abv American Falls	32	60	56

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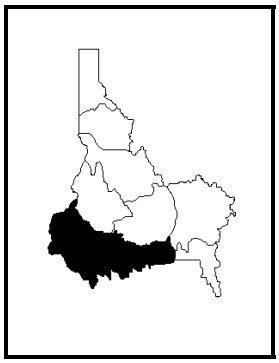
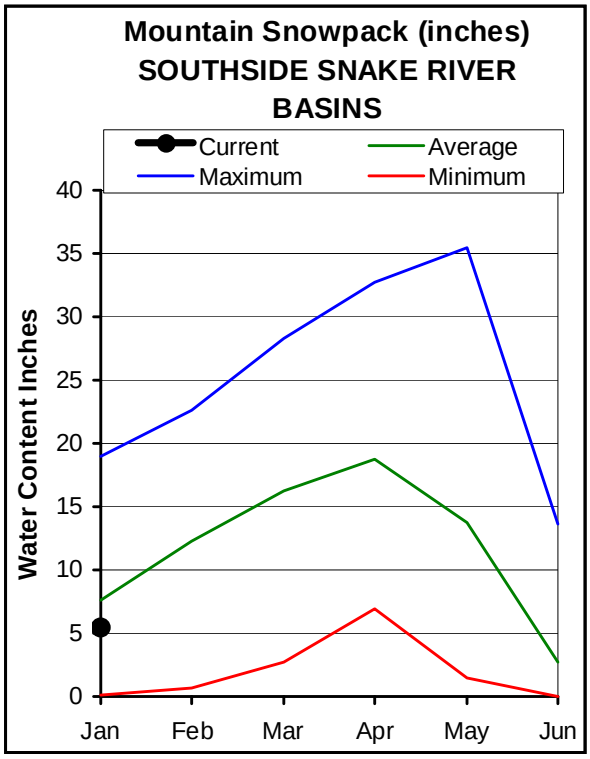
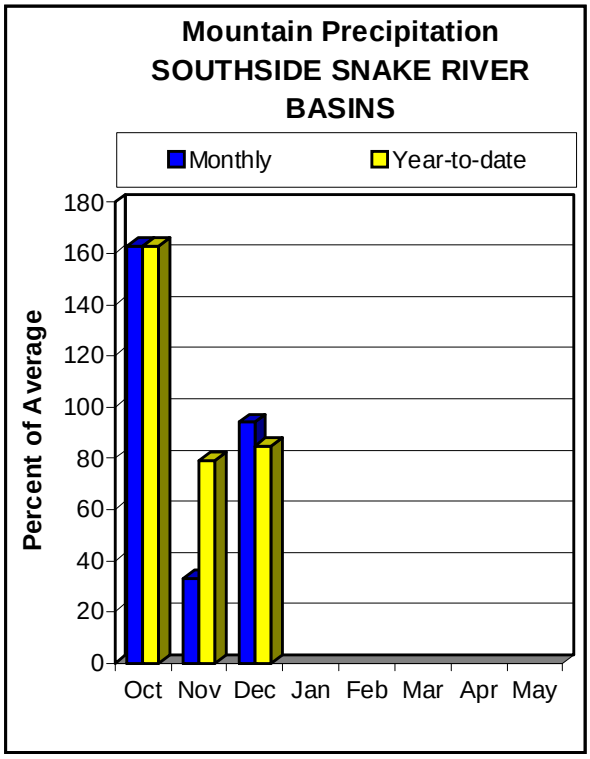
SOUTHSIDE SNAKE RIVER BASINS
JANUARY 1, 2010







WATER SUPPLY OUTLOOK

The Oakley and Owyhee basins have some of the best snow in the state at 80% of average and may have benefitted from a southern storm track. Precipitation was variable and did not bring as much to the Bruneau or Salmon Falls basins. The snowpacks are in the 63-66% of normal range in these basins. Overall, precipitation is 85% of normal in the Southside basins since October first; it comes in spurts as October precipitation was 163% of average, followed by only 33% of normal in November and 94% precipitation in December. Oakley, Salmon Falls and Owyhee Reservoirs are 22-29% of capacity, with Oakley and Salmon Falls at 86% and 80% of average respectively and Owyhee with the greatest deficit at 40% of average. Streamflow forecasts range from 51% of average in the Salmon Falls basin and near 60-65% of average in the Oakley, Bruneau and Owyhee drainages. It is early enough in the winter that the water supply outlook still has time to improve. Hopefully southern Idaho will continue to benefit from the El Nino conditions in the Pacific which is bringing abundant moisture to Southern Utah, Arizona and New Mexico.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - January 1, 2010

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Oakley Reservoir Inflow	MAR-JUL	8.7	15.9	22	65	29	41	34
	MAR-SEP	9.7	17.5	24	65	32	45	37
Salmon Falls Ck nr San Jacinto	MAR-JUN	18.1	33	45	51	59	84	89
	MAR-JUL	18.6	34	47	51	62	88	93
	MAR-SEP	20	36	50	51	66	93	98
Bruneau R nr Hot Springs	MAR-JUL	63	106	141	60	181	250	235
	MAR-SEP	66	110	147	59	189	260	250
Owyhee R nr Gold Creek (2)	MAR-JUL	7.2	13.8	20	63	28	43	32
	MAR-SEP	6.3	12.3	18	58	25	39	31
Owyhee R nr Rome	FEB-JUL	168	317	445	68	595	855	655
	FEB-SEP	177	330	460	68	612	875	675
	APR-SEP	80	165	240	60	329	486	400
OWYHEE RESV INFLOW (2)	FEB-JUL	219	373	500	71	646	895	700
	FEB-SEP	246	405	535	73	684	935	730
	APR-SEP	132	229	310	72	403	563	430
Reynolds Ck at Tollgate	MAR-JUL	2.1	4.2	6.1	63	8.3	12.1	9.7

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
OAKLEY	75.6	22.2	16.0	25.7
SALMON FALLS	182.6	42.1	16.6	52.6
WILDHORSE RESERVOIR	71.5	27.5	25.0	37.8
OWYHEE	715.0	159.9	185.7	398.1
BROWNLEE	1420.0	1295.9	1311.3	1303.0

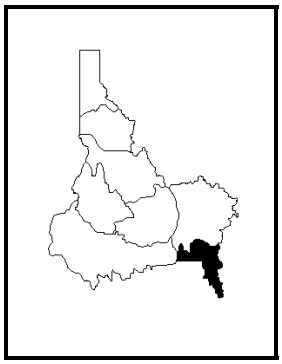
SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - January 1, 2010

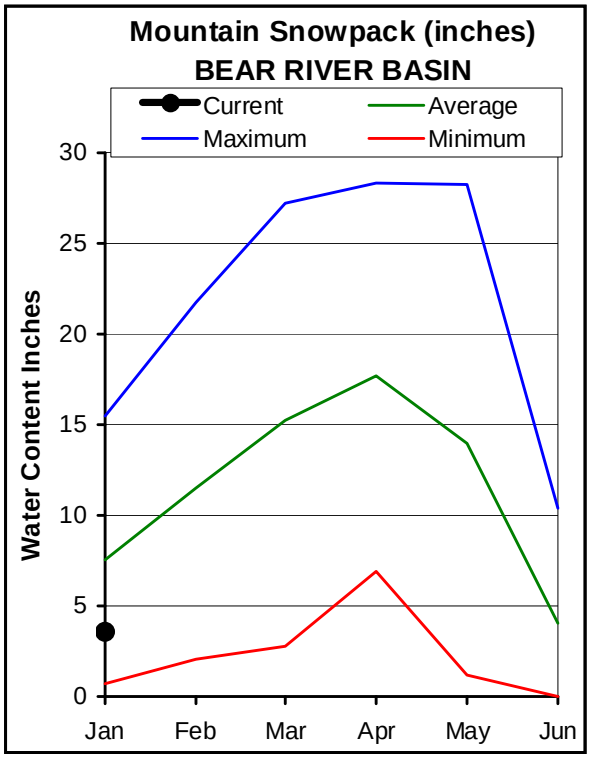
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Raft River	1	97	91
Goose-Trapper Creeks	3	83	80
Salmon Falls Creek	6	61	66
Bruneau River	5	58	63
Reynolds Creek	6	52	57
Owyhee Basin Total	8	77	80

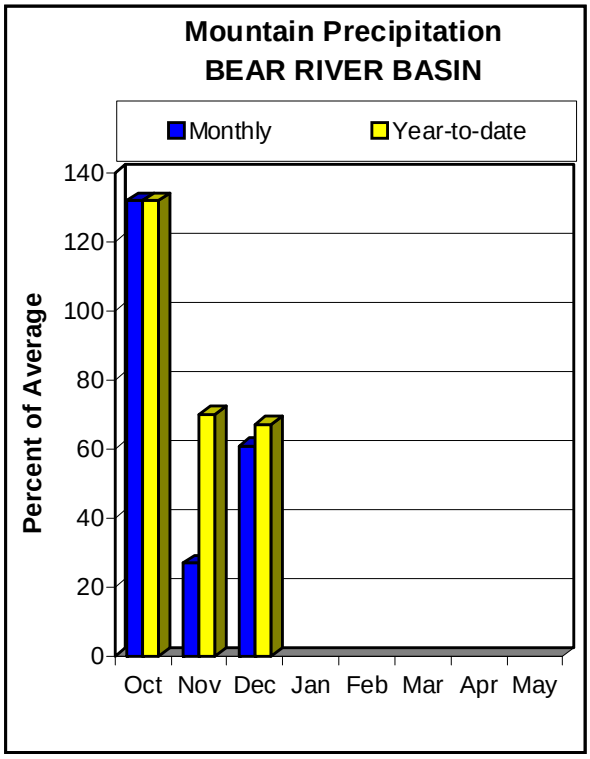
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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

BEAR RIVER BASIN
JANUARY 1, 2010







WATER SUPPLY OUTLOOK

The snow in the upper Bear River above the Idaho-Wyoming state line is 59% of average making it the 4th lowest amount in the last 30 years since measurements began. Snow in the Malad basin is 41% of average, also the 4th lowest in the same period. Taken as a whole, the Bear River above the Idaho-Utah border is 54% of average. Precipitation since October 1 ended up at 67% of average. Monthly precipitation in October was 132% of average but then November and December dried out bringing only 27% and 61% of normal amounts respectively. Bear Lake storage is better than last year at this time by 164,000 acre-feet. The Lake currently contains 525,770 acre-feet, which is 37% of capacity and 58% of average. Montpelier reservoir contains 141% of average, 60% of capacity. Streamflow forecasts for the basin call for 60-65% of average for the Bear at Stewart Dam, Blacksmith Fork, Logan River and the Little Bear at Paradise. The streams are forecast at near 75-80% for the Smiths Fork, the Bear River near the Utah-Wyoming border and the Bear above the Reservoir near Woodruff.

BEAR RIVER BASIN
Streamflow Forecasts - January 1, 2010

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Bear River nr UT-WY State Line	APR-JUL	54	77	93	82	109	132	113
	APR-SEP	56	82	100	80	118	144	125
Bear River ab Reservoir nr Woodruff	APR-JUL	38	75	100	74	125	162	136
	APR-SEP	39	77	102	72	127	165	142
Big Creek nr Randolph	APR-JUL	0.52	2	3	61	4	5.5	4.9
Smiths Fork nr Border	APR-JUL	40	62	77	75	92	114	103
	APR-SEP	47	72	89	74	106	131	121
Bear River at Stewart Dam	APR-JUL	4.7	65	140	60	215	325	234
	APR-SEP	5.2	65	150	57	235	360	262
Little Bear River at Paradise	APR-JUL	12.3	22	30	65	39	56	46
Logan R Abv State Dam Nr Logan	APR-JUL	39	61	78	62	97	130	126
Blacksmith Fk Abv Up&L Dam Nr Hyrum	APR-JUL	13.3	22	30	63	39	53	48

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEAR LAKE	1421.0	525.8	362.0	907.5
MONTPELIER CREEK	4.0	2.4	2.4	1.7

BEAR RIVER BASIN
Watershed Snowpack Analysis - January 1, 2010

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Smiths & Thomas Forks	3	63	52
Bear River ab WY-ID line	9	69	59
Montpelier Creek	1	63	42
Mink Creek	1	48	44
Cub River	1	55	53
Bear River ab ID-UT line	15	62	54
Malad River	1	41	41

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

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow 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 Nov. 2007).**

Panhandle River Basins

Kootenai R at Leonia, ID
+ Lake Koocanusa (Storage Change)

Boundary Ck nr Porthill, ID – No Corrections

Moyie R at Eastport, ID – No Corrections

Smith Creek nr Porthill, ID – No Corrections

Clark Fork R at Whitehorse Rapids, ID
+ Hungry Horse (Storage Change)
+ Flathead Lake (Storage Change)
+ Noxon Rapids Resv (Storage Change)

Pend Oreille Lake Inflow, ID
+ 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, ID
+ Priest Lake (Storage Change)

NF Coeur d'Alene R at Enaville, ID - No Corrections

St. Joe R at Calder, ID - No Corrections

Spokane R nr Post Falls, ID
+ 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 Resv Inflow, ID
+ Clearwater R nr Peck, ID
- Clearwater R at Orofino, ID
+ Dworshak Resv (Storage Change)

Clearwater R at Orofino, ID - No Corrections

Clearwater R at Spalding, ID
+ Dworshak Resv (Storage Change)

Salmon River Basin

Salmon R at Salmon, ID - No Corrections

Lemhi R nr Lemhi, ID – No Corrections

MF Salmon R at MF Lodge, ID – No Corrections

Salmon R at White Bird, ID - No Corrections

Weiser, Payette, Boise River Basins

Weiser R nr Weiser, ID - No Corrections

SF Payette R at Lowman, ID - No Corrections

Deadwood Resv Inflow, ID
+ Deadwood R blw Deadwood Resv nr Lowman
+ Deadwood Resv (Storage Change)

Lake Fork Payette R nr Mccall, ID – No Corrections

NF Payette R at Cascade, ID
+ Cascade Resv (Storage Change)
+ Payette Lake (Storage Change)

NF Payette R nr Banks, ID
+ Cascade Resv (Storage Change)
+ Payette Lake (Storage Change)

Payette R nr Horseshoe Bend, ID
+ Cascade Resv (Storage Change)
+ Deadwood Resv (Storage Change)
+ Payette Lake (Storage Change)

Boise R nr Twin Springs, ID - No Corrections

SF Boise R at Anderson Ranch Dam, ID
+ Anderson Ranch Resv (Storage Change)

Boise R nr Boise, ID
+ Anderson Ranch Resv (Storage Change)
+ Arrowrock Resv (Storage Change)
+ Lucky Peak Resv (Storage Change)

Wood and Lost River Basins

Big Wood R at Hailey, ID - No Corrections

Big Wood R abv Magic Resv, ID
+ Big Wood R nr Bellevue, ID
+ Willow Ck

Camas Ck nr Blaine – No Corrections

Big Wood R blw Magic Dam nr Richfield, ID
+ Magic Resv (Storage Change)

Little Wood R abv High Five Ck, ID – No Corrections

Little Wood R nr Carey, ID
+ Little Wood Resv (Storage Change)

Big Lost R at Howell Ranch, ID - No Corrections

Big Lost R blw Mackay Resv nr Mackay, ID
+ Mackay Resv (Storage Change)

Little Lost R blw Wet Ck nr Howe, ID - No Corrections

Upper Snake River Basin

Henrys Fork nr Ashton, ID
+ Henrys Lake (Storage Change)
+ Island Park Resv (Storage Change)

Henrys Fork nr Rexburg, ID
+ Henrys Lake (Storage Change)
+ Island Park Resv (Storage Change)
+ Grassy Lake (Storage Change)
+ Diversions from Henrys Fk btw Ashton to St. Anthony, ID
+ Diversions from Henrys Fk btw St. Anthony to Rexburg, ID
+ Diversions from Falls R abv nr Ashton, ID
+ Diversions from Falls R nr Ashton to Chester, ID

Falls R nr Ashton, ID
+ Grassy Lake (Storage Change)
+ Diversions from Falls R abv nr Ashton, ID

Teton R nr Driggs, ID - No Corrections

Teton R nr St. Anthony, ID
- Cross Cut Canal into Teton R
+ Sum of Diversions for Teton R abv St. Anthony, ID

Snake R nr Moran, WY
+ Jackson Lake (Storage Change)

Pacific Ck at Moran, WY – No Corrections

Buffalo Fork ab Lava Ck nr Moran, WY – No Corrections

Gros Ventre R at Kelly, WY – No Corrections

Snake R abv Palisades, WY
+ Jackson Lake (Storage Change)
Greys R abv Palisades, WY – No Corrections
Salt R abv Palisades, WY – No Corrections
Snake R nr Irwin, ID
+ Jackson Lake (Storage Change)
+ Palisades Resv (Storage Change)
Snake R nr Heise, ID
+ Jackson Lake (Storage Change)
+ Palisades Resv (Storage Change)
Willow Ck nr Ririe, ID
+ Ririe Resv (Storage Change)
Blackfoot Resvervoir Inflow, ID
+ Blackfoot Reservoir releases
+ Blackfoot Resv (Storage Change
Portneuf R at Topaz, ID - No Corrections
Snake River at Neeley, ID
+ Snake River at Neeley (observed)
+ All Corrections made for Henrys Fk nr Rexburg, ID
+ Jackson Lake (Storage Change)
+ Palisades Resv (Storage Change)
+ Diversions from Snake R btw Heise and Shelly
+ Diversions from Snake R btw Shelly and Blackfoot

Southside Snake River Basins

Oakley Resv Inflow, ID
+ Goose Ck abv Trapper Ck
+ Trapper Ck nr Oakley
(Does not include inflow from Birch Creek)
Salmon Falls Ck nr San Jacinto, NV - No Corrections
Bruneau R nr Hot Springs, ID - No Corrections
Owyhee R nr Gold Ck, NV
+ Wildhorse Resv (Storage Change)
Owyhee R nr Rome, OR – No Corrections
Owyhee R blw Owyhee Dam, OR
+ Owyhee R blw Owyhee Dam, OR (observed)
+ Owyhee Resv (Storage Change)
+ Diversions to North and South Canals
Snake R at King Hill, ID - No Corrections
Snake R nr Murphy, ID - No Corrections
Snake R at Weiser, ID - No Corrections
Snake R at Hells Canyon Dam, ID
+ Brownlee Resv (Storage Change)

Bear River Basin

Bear R nr UT-WY Stateline, UT – No Corrections
Bear R abv Resv nr Woodruff, UT – No Corrections
Smiths Fork nr Border, WY - No Corrections
Bear R blw Stewart Dam nr Montpelier, ID
+ Bear R blw Stewart Dam
+ Rainbow Inlet Canal

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 volumes for each reservoir, and defines the storage volumes NRCS uses when reporting capacity and current storage. In most cases, NRCS reports usable storage, which includes active and inactive storage. **(Revised Dec. 2005)**

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	---	13.50	225.00	---	238.5	Inactive+Active
Priest Lake	20.00	28.00	71.30	---	119.3	Dead+Inactive+Active
Clearwater Basin						
Dworshak	---	1452.00	2016.00	---	3468.0	Inactive+Active
Weiser/Boise/Payette Basins						
Mann Creek	1.61	0.24	11.10	---	11.1	Active
Cascade	---	46.70	646.50	---	693.2	Inactive+Active
Deadwood	---	---	161.90	---	161.9	Active
Anderson Ranch	24.90	37.00	413.10	---	450.1	Inactive+Active
Arrowrock	---	---	272.20	---	272.2	Active
Lucky Peak	---	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	---	---	30.00	---	30.0	Active
Mackay	0.13	---	44.37	---	44.4	Active
Upper Snake Basin						
Henrys Lake	---	---	90.40	---	90.4	Active
Island Park	0.40	---	127.30	7.90	135.2	Active+Surcharge
Grassy Lake	---	---	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	---	---	348.73	---	348.7	Active
American Falls	---	---	1672.60	---	1672.6	Active
Southside Snake Basins						
Oakley	---	---	75.60	---	75.6	Active
Salmon Falls	48.00	5.00	182.65	---	182.6	Active+Inactive
Wildhorse	---	---	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						
Montpelier Creek	0.21	---	3.84	---	4.0	Dead+Active
Bear Lake	5.0 MAF	119.00	1302.00	---	1421.0	Active+Inactive: Includes 119 that can be released

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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