United States Department of Agriculture
Natural Resources Conservation Service

Idaho Water Supply Outlook Report
April 1, 2008

Measuring winter precipitation can be a challenge. On March 11th NRCS technicians John Wirt (left) and Chad Gipson (right) visited Bear Basin SNOTEL near McCall; part of their mission was to clear this capped over precipitation gage. Normally the gage looks more like a stove pipe that is open on the top. When working correctly it catches precipitation as it falls inside the gage. In the winter frozen precipitation is melted by the propylene glycol antifreeze solution inside the gage, however when the falling snow is sticky it can begin to build up around the opening and on the fins of the wind screen that circles the top of the gage; eventually this covers the opening of the gage. The Bear Basin gage, shown here, started plugging in early February. While the gage is capped NRCS hydrologists edit the daily precipitation values using the snow pillow data. Clearing the cap can be done by trimming the sides of the cap with a shovel as the filmstrip below illustrates. As the cap is trimmed it slides down and the sides of the gage act as a "cookie cutter" capturing much of the lost precipitation inside the gage.

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

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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 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

April 1, 2008

SUMMARY

Mother Nature finally delivered the much needed punch of above average precipitation where it was needed the most – the Upper Snake River basin. The Upper Snake basin above Palisades Reservoir in western Wyoming led the region in March precipitation with 140% of average. Above average precipitation, totaling 120-135%, fell in the Panhandle Region and Clearwater basins and was enough moisture to increase snow water equivalent amounts to record high amounts at a handful of sites. The Henrys Fork and Teton basins received 116% of average precipitation while the rest of the state received 60-100%.

Warm temperatures in early March allowed the snow in the lowest elevations to begin melting across the state producing slight increases in streamflow, but no major runoff events have occurred yet this year; not even in northern Idaho where a warm Chinook usually occurs that removes some of the low snow. Temperatures across the Pacific Northwest and Northern Rockies in Idaho and Wyoming in the second half of March were 6-10 degrees F below normal. Temperatures the last week of March across the Pacific Northwest were the coldest since 1975. The return to below normal temperatures in the second half of March halted the melting and allowed precipitation to continue falling as snow across the state, thus adding to the already high snow levels in northern Idaho. Mid-elevation snow sites along Idaho's western border are well above average, ripe and ready to melt with the onset of warmer temperatures in April. Higher elevation snowpacks are several weeks to a month away from melting. Snowpack percentages vary across the state with the highest percentages in the lower drainages of Rathdrum and Palouse basins at 165% of average. Snowpacks in the major basins are: 130-145% of average in Coeur d'Alene, Spokane, Lochsa, Camas and Owyhee basins. Basins that are 120-125% are: St. Joe, North Fork Clearwater, Selway, Little Salmon, North Fork Payette, Mores, Pacific (WY) and Willow basins. The lowest snowpacks are 90-99% of average in the Middle and North Fork Boise, Big Wood above Hailey, Little Wood, Big Lost, Hoback (WY), and most of Bear River tributaries.

The highest streamflow forecasts are in the Panhandle, Clearwater and Weiser basins at 115-125% of average. The rest of the region is forecast at 90-115% of average with the lowest forecasts in the Bear River at 58% of average. Reservoir storage varies depending on use, and carryover storage ranging from 70-110% of average for the ones in better shape to 30-60% of average for Magic, Little Wood, Blackfoot, Salmon Falls, Owyhee and Bear Lake. This year's runoff should fill most reservoirs or provide adequate water supplies.

The wild card in this year's water supply picture that has already caused roof failures, sore backs, broken shovels and spent snow removal budgets is the abundant and record high low elevation snow. Colder than normal temperatures in March preserved the snowpack but with the arrival of warm temperatures in early April, expect a much bigger jump in streamflows. We are all waiting to see how and when this card gets played; the later it comes off the greater the potential for warm or even hot temperatures to melt the abundant shallow snowpack. Record high temperatures in Boise in early April are near 80 degrees F and would rapidly melt the mid-elevation snow and produce rapid increases on unregulated streams. In recent years, we have seen greater climatic variability such as record high daytime temperatures in May, extended periods of non-freezing temperatures in early June, which allows the snow to melt through the night and abundant precipitation in May 2005 that changed the water supply outlook overnight. Normal climatic conditions are easy to manage and plan for, but extreme swings in temperature and precipitation during the melt season makes it difficult and challenging to manage water supplies.

SNOWPACK

Near average or better April 1 snowpacks were needed this year to provide adequate streamflow for Idaho's numerous water users and we got them! Cold temperatures allowed precipitation to fall as snow all winter with very little, if any rain falling. Overall, Idaho's snowpacks range from 90% of average in a few basins in central and southern Idaho to 165% in Hayden Lake and Palouse basins. The last time all of Idaho had a near average snowpack or better was April 2006. However, in 2006 the snow levels were exactly opposite from this year with snowpacks ranging from average in the Panhandle and Clearwater basin to 150% in Oakley basin. This year, there is a lot more snow in the lower elevation but higher elevation snowpacks from the Salmon basin south have not exceeded the April 2006 snow levels. It is the higher elevation snow that provides and sustains the river's flow; the low snow will melt quickly and not last long. Some of the April 1 record high snow levels are: Humboldt SNOTEL in the Coeur d'Alene basin at 4250 feet is the highest since records start in 1961 along with Fourth of July Summit which broke the previous record high amount of 16.4 inches by 3.2 inches; Moscow Mountain, 4410 feet, 4th highest since 1957; Lake Fork, near McCall at 5290 feet, 29th highest since 1936; and Bogus Basin Road, 5540 feet, 2nd highest since 1955.

PRECIPITATION

This winter's storm track brought much needed moisture to every western state except in the southern half of Arizona and New Mexico. The snowpack will help ease the accumulated drought deficit across the West. March brought 135% of average precipitation into the Clearwater basin but the Big Lost and Little Wood basins missed out again and only received 60% of the normal March allotment. Panhandle Region precipitation was 122% of average in March providing enough moisture to set new record high snow water equivalent amounts. Water year to date precipitation amounts range from average in the Bear River basin to 117% in the Weiser basin.

RESERVOIRS

Reservoir storage levels vary across the state depending on the type of facility and carryover storage from last year. Below normal streamflow this winter meant little change in reservoir storage levels during the winter and as a result, outflows have been minimal. Most reservoirs are following their storage and release operating curves. Reservoirs that are 85-110% of average are: Pend Oreille Lake, Dworshak, the Payette and Boise reservoir systems, Mackay, Henrys Lake, Grassy Lake, Island Park, Bronwlee, Oakley and Montpelier. Palisades and Jackson Lake have a combined storage of 69% of average; Salmon Falls is 51% of average; Little Wood and Owyhee are 55% of average. Bear Lake is 43% of average and Magic is 27% of average and waiting for Camas Creek runoff to start. Water managers will be watching the April temperatures and snow melt rates as inflows pick up to monitor storage levels and if releases are required to reduce flood risks while ensuring refill.

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

No Chinooks occurred in this winter. Instead, cool temperatures in February and March kept Idaho's winter precipitation frozen. As a result of all the water being locked up in the snowpack, winter streamflows have been below normal with minimal inflows to reservoirs. A slight warming in early March produced small rises in the Weiser and Owyhee rivers, but much more is ready to come. With temperatures inching their way warmer and warmer, the low snow is ready to melt while the higher snow still needs a few weeks to finish ripening. Reports from snow surveyors are coming in that some streams are still frozen over in the Owyhee basin and Big Lost basin. One surveyor said, "it looks more like January out there." Another surveyor's snowmobile got stuck in an iced over stream in the Lemhi basin. The stream had thawed in early March and then refroze. The new snow and ice collapsed under

the weight of the snow machine and then they had to pull the sled from the three foot deep stream and up the eight foot high snow bank. They made it home wet, damp and cold and returned a few days later to get the sled. Unlike last year, no ATVs were used to measure this year's snow, and many had to park and unload in April where they typically park in the middle of winter.

Even the Wall Street Journal called to learn more about Idaho's record low elevation snowpack, near average higher elevation snowpack and impacts of this moisture on the short and long term drought the state has been in. The average snowpack and projected water supply in the Upper Snake basin has reduced the potential irrigation curtailment concerns with near normal runoff projected in the Upper Snake, but long term solutions are still in the works. With streams forecast at near average or better, water supplies should be adequate for irrigators, provide excellent boating and river running opportunities, good hydropower and water for fish and wildlife. Hopefully, the snow will put a damper or at least delay wildfires this summer after last year's extreme fire season and provide better reservoir carryover storage next year.

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

After one of the best powder skiing and winter recreation seasons in years due to cold temperatures and abundant storms, river runners and water users are also set for an excellent runoff year. The near average or better snowpacks across the state will provide excellent whitewater this year. Get ready as the ripe snowpacks are 135% of average in the lower elevation drainages of Owyhee River and Camas Creek and should start flowing with the warm temperatures that are forecast in early April. The Bruneau River, forecast at near average will also have a good season. The Middle Fork Salmon River is forecast at 115% of average while the main Salmon River is forecast at 106%. Projected volumes are less than in 2006 when the high elevation snowpack was better, but flows could exceed 6 feet on the Middle Fork gage and 70,000 cfs at White Bird. The Lochsa and Selway basins are packed with snow at 128% of average and will provide high flows and good streamflow levels into mid-summer. River watchers and water managers can expect multiple streamflow peaks this year due to the abundant low elevation snow. Caution should also be used during high flows and when the streams are on the rising limb of the hydrograph; this is when the streams may erode banks and carry logs and debris down the river. There is concern about additional debris and logs in the river due to the extreme fires of 2007 in Idaho. Have fun, but be careful and play it safe. Hikers and mountain bikers will have to start a little later than last year due to much better snow, but the additional moisture will produce a crop of wildflowers worth the wait.

2008 WESTERN SNOW CONFERENCE

The 76th annual Western Snow Conference will be in Hood River, Oregon April 14-17. The theme of this year’s conference is “Working Across Boundaries”. A short course workshop titled “Understanding/Using Mountain Soil Moisture Data” will be held on Monday, April 14, and will provide a forum of continued education for the relationship between soil and water. Additional information on conference is available on the Western Snow Conference web page: http://www.westernsnowconference.org/

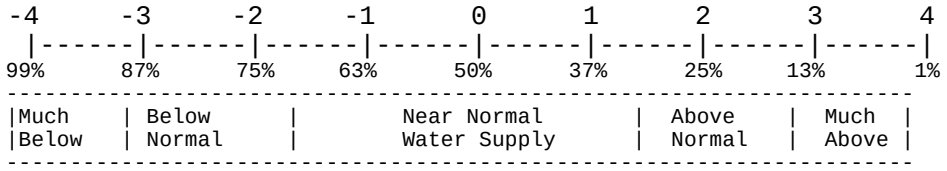
IDAHO SURFACE WATER SUPPLY INDEX (SWSI) As of April 1, 2008

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	1.6	2000	NA
CLEARWATER	2.3	2002	NA
SALMON	0.8	1993	NA
WEISER	0.8	1997	NA
PAYETTE	0.8	1993	NA
BOISE	0.3	2000	-2.1
BIG WOOD	-1.4	2005	-0.7
LITTLE WOOD	0.3	2005	-2.0
BIG LOST	-0.1	1993/1985	-0.2
LITTLE LOST	-1.0	2005	0.3
HENRYS FORK	-0.8	2000	-3.5
SNAKE (HEISE)	0.3	2006	-1.4
OAKLEY	-0.3	2007	-1.2
SALMON FALLS	-1.0	2007	-1.6
BRUNEAU	0.5	1999	NA
BEAR RIVER	-2.9	1993/1994	-3.4

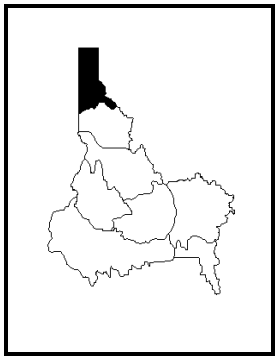
SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

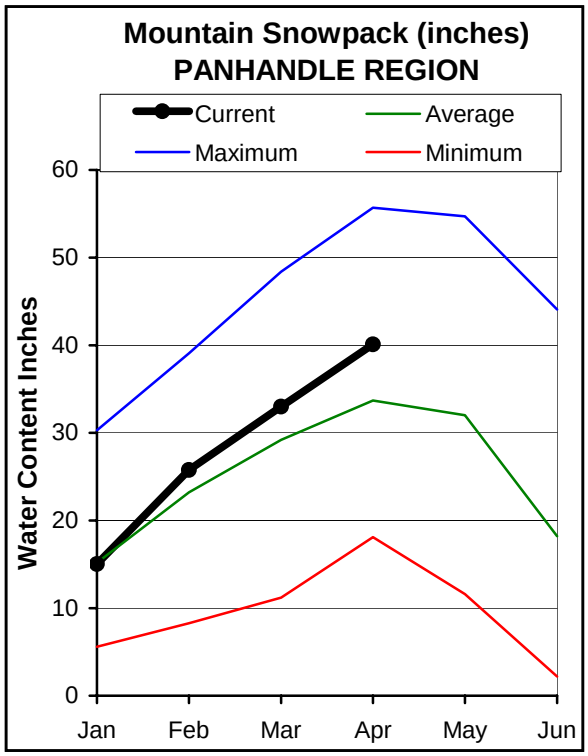


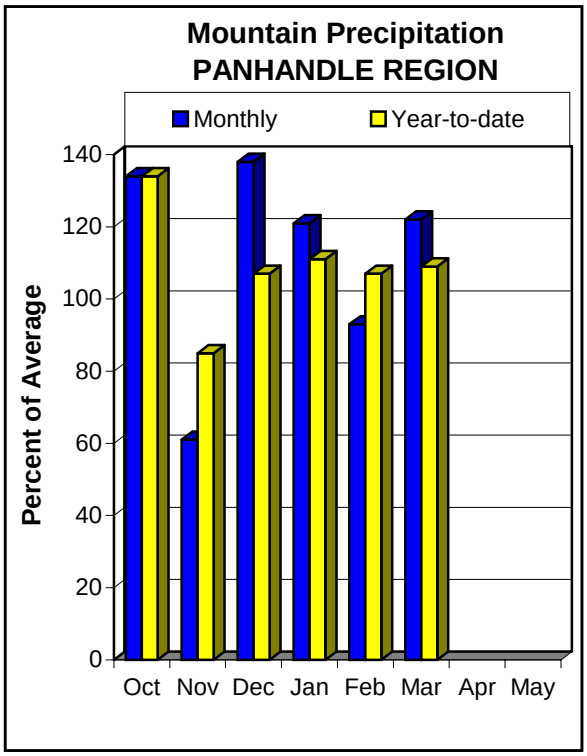
NA = Not Applicable

Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply," represents three SWSI units and would be expected to occur about one-third (36%) of the time.

PANHANDLE REGION
APRIL 1, 2008







WATER SUPPLY OUTLOOK

Call Guinness! The Panhandle region has record breaking low and mid-elevation snow. Although it is spring on the calendar, winter weather continues. Unlike most years the Panhandle saw no Chinook or rain storm this year to drive mid-elevation melt. The region experienced 122% of its normal March precipitation and that precipitation fell mainly as snow at all our snow measuring sites. Humboldt Gulch SNOTEL (4,200 ft) near Wallace still has over two feet of snow water content; it's the greatest snowpack in the 48 years of measurement and more than twice its average amount. Fourth of July Summit snow course (3,200 ft), located 1,000 feet lower than Humboldt Gulch, is also at an all-time record amount for its 49 year period; it has almost 20 inches of snow water, greater than three times the average amount and more than 3 inches greater than its previous maximum in 1964. Bumper lower elevation snow is not limited to the Coeur d'Alene Basin, it also exists to the north and east. Near Priest Lake, Benton Meadow snow course (2,300 ft) with 10.6 inches of snow water has its second greatest amount in 72 years of measurement, 1997 was a hair higher. Across the border in Montana, Baree Trail snow course (3,800 ft) in the Kootenai basin also scores a record out of 44 years of measurement. Combining sites in all elevations zones, the April 1 snowpack ranges from 104% of average in the Moyie, 121% in the Priest River basin, 159% in Rathdrum Creek to 169% in the Palouse basin. Region-wide these snowpacks are 114% of the average seasonal peak amount. Coeur d'Alene and Priest lakes are both storing below average amounts as they wait for snowmelt; once runoff starts any deficits will be erased by above average streamflow volumes across the region. Forecasts range from about 102% of average for the Kootenai and Moyie rivers to 126% for the St. Joe River. The Spokane near Post Falls is forecast at 119% of average, while the Priest River will flow at 115%. Pend Oreille Lake storage is above average at 55% of capacity, and inflow is forecast at 108%. With record amounts of low to mid-elevation snow surviving into April, so too does the risk of streams overtopping their banks this spring; especially if the weather warms to above average temperatures and nighttime low temperatures fail to reach the freezing point. April or May showers could also produce rapid melting from these snow laden zones.

PANHANDLE REGION
Streamflow Forecasts - April 1, 2008

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	6361	6986	7270	103	7554	8179	7040
	APR-SEP	7428	8090	8390	103	8690	9352	8120
MOYIE RIVER at Eastport	APR-JUL	325	380	415	103	450	505	405
	APR-SEP	340	395	430	102	465	520	420
SMITH CREEK	APR-JUL	109	121	130	106	139	151	123
	APR-SEP	113	127	137	106	147	161	129
BOUNDARY CREEK	APR-JUL	108	118	125	102	132	142	123
	APR-SEP	114	125	132	102	139	150	129
CLARK FK at Whitehorse Rpds (1,2)	APR-JUL	11620	11950	12100	107	12250	12580	11300
	APR-SEP	12797	13212	13400	107	13588	14003	12500
PEND OREILLE Lake Inflow (2)	APR-JUL	13000	13300	13500	106	13700	14000	12700
	APR-SEP	14200	14600	14800	107	15000	15400	13900
PRIEST near Priest River (1,2)	APR-JUL	665	823	895	110	967	1125	815
	APR-SEP	725	885	955	110	1030	1180	870
NF COEUR D'ALENE RIVER at Enaville	APR-JUL	697	788	850	115	912	1003	740
	APR-SEP	738	831	895	115	959	1052	780
ST. JOE at Calder	APR-JUL	1262	1356	1420	125	1484	1578	1140
	APR-SEP	1340	1430	1500	125	1570	1660	1200
SPOKANE near Post Falls (2)	APR-JUL	2555	2826	3010	118	3194	3465	2550
	APR-SEP	2660	2940	3130	118	3320	3600	2650
SPOKANE at Long Lake (2)	APR-JUL	2754	3091	3320	117	3549	3886	2850
	APR-SEP	2971	3328	3570	116	3812	4169	3070

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNGRY HORSE	3451.0	2311.0	2885.0	1886.7
FLATHEAD LAKE	1791.0	604.3	897.8	738.5
NOXON RAPIDS	335.0	300.7	322.0	272.9
PEND OREILLE	1561.3	853.7	800.3	763.6
COEUR D'ALENE	238.5	104.4	300.6	169.5
PRIEST LAKE	119.3	49.4	108.6	65.5

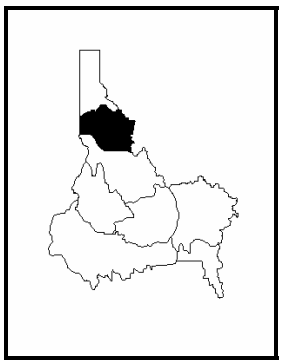
PANHANDLE REGION
Watershed Snowpack Analysis - April 1, 2008

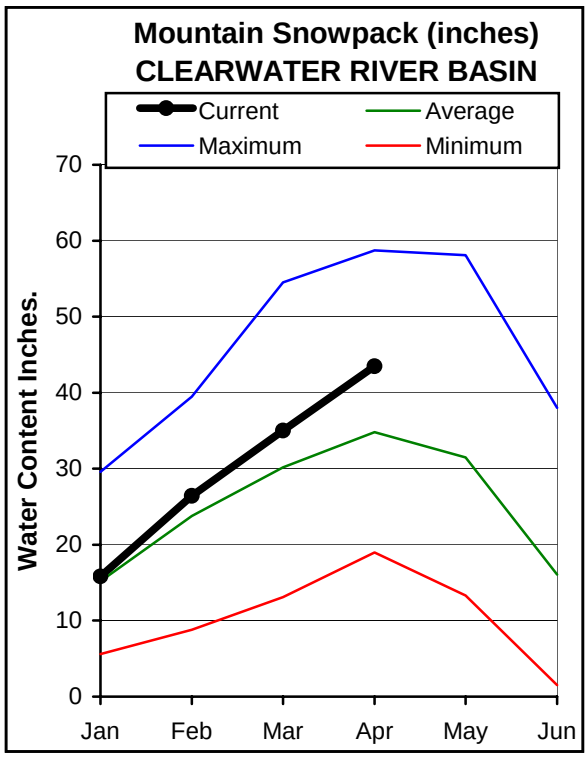
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	32	120	111
Moyie River	10	94	104
Priest River	5	145	121
Pend Oreille River	99	152	112
Rathdrum Creek	2	211	159
Hayden Lake	0	0	0
Coeur d'Alene River	10	173	138
St. Joe River	6	159	124
Spokane River	14	175	136
Palouse River	2	402	169

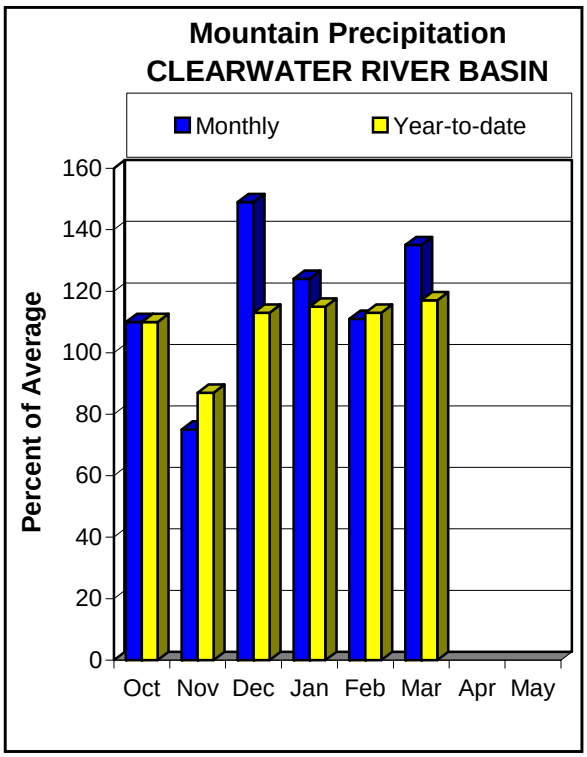
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

(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
APRIL 1, 2008







WATER SUPPLY OUTLOOK

March precipitation at 135% of normal was the fourth consecutive month of above average precipitation in the mountains of the Clearwater basin. Since October 1 the basin has seen 117% of average precipitation. This type of winter weather without many breaks is notorious for producing plugged precipitation gages like the one on this month's cover. Three SNOTEL sites including Cool Creek, Crater Meadows and Hemlock Butte have been plugged since late January. In winter these sites can only be accessed by helicopter, but our safety policies require clear skies to fly. Stormy weather prevented the February flight; this month we'll make another effort to unplug the gages and manually measure the snowpack to ground truth the snow pillow data. The snowpack is 125-130% of average across the Clearwater basin, far above its normal seasonal peak. As described last month the mid-elevation snow measuring sites between 3,000-4,600 feet continue to hold plentiful snow at 150-175% of average, this isn't a record though as 8 out of the last 48 years had had more. The most recent year with more snow was 1997. The snowpack across all elevation bands resembles 2002, which had a good runoff and average spring precipitation; that year the Selway River peaked at 25,900 cfs, the Lochsa River topped at 20,900 cfs and the North fork Clearwater River hit 23,600 cfs. This year's good snow is sure to provide above average summer streamflow. Forecasts are for about 119% for all points across the region. Dworshak Reservoir is currently storing an average amount at 62% of capacity. Although it's impossible to predict the magnitude of peak flows since they depend not only on snowmelt but also spring precipitation and temperatures, it is certain that they will be big and summer volumes will provide an extended whitewater season.

CLEARWATER RIVER BASIN
Streamflow Forecasts - April 1, 2008

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	2200	2350	2460	119	2570	2720	2060
	APR-SEP	2290	2450	2570	118	2690	2850	2170
Lochsa R nr Lowell	APR-JUL	1610	1740	1820	119	1900	2030	1530
	APR-SEP	1670	1810	1900	118	1990	2130	1610
Dworshak Reservoir Inflow	APR-JUL	2540	2950	3140	119	3330	3740	2640
	APR-SEP	2670	3110	3310	118	3510	3950	2800
Clearwater R at Orofino	APR-JUL	4610	5230	5510	119	5790	6410	4650
	APR-SEP	4820	5470	5770	118	6070	6720	4900
Clearwater R at Spalding	APR-JUL	7410	8400	8850	119	9300	10300	7430
	APR-SEP	7760	8810	9290	118	9770	10800	7850

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DWORSHAK	3468.0	2143.2	2803.4	2205.4

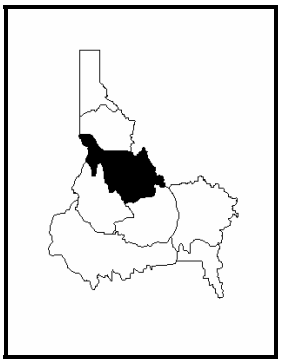
CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - April 1, 2008

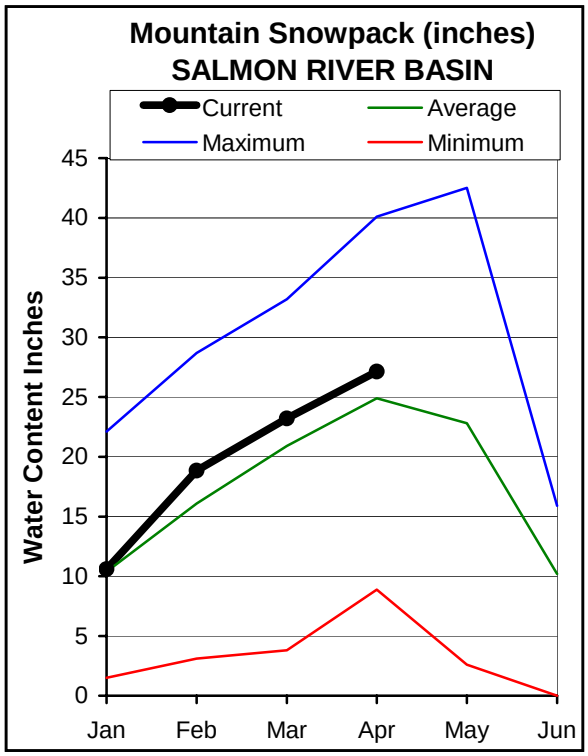
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	9	158	123
Lochsa River	4	172	129
Selway River	6	175	125
Clearwater Basin Total	18	169	125

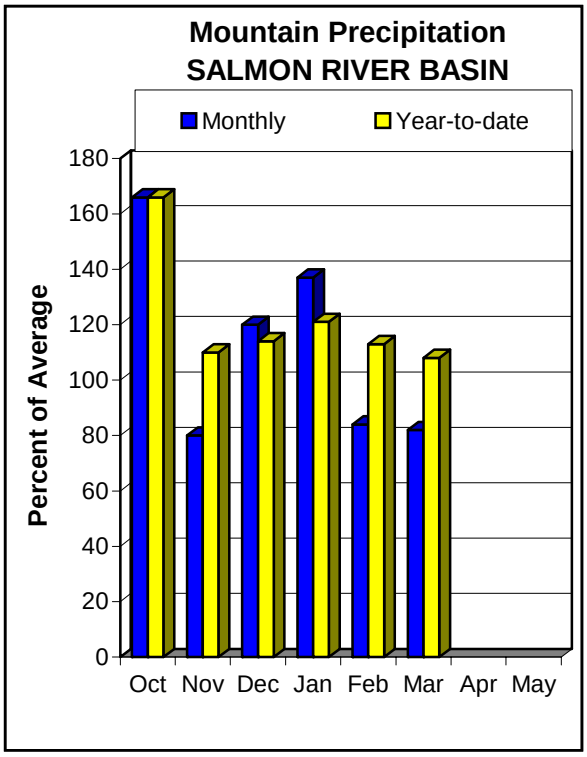
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

(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
APRIL 1, 2008







WATER SUPPLY OUTLOOK

March brought only 82% of average precipitation to the Salmon Basin, but as winter winds down the basin's snowpack is in ideal shape at 108% of average. This snow puts the basin over its average seasonal peak amount for the winter. The Little Salmon basin has the best snowpack at 120% of average, while snowpacks in the Salmon River above Salmon, Middle Fork Salmon, South Fork Salmon and Lemhi basins are 102-104% of average. Snowpacks are one and a half times that of last year which should forestall this summer's wildfire season; good news for communities that battled smoke and flames last year. Summer streamflow volumes are forecast at 100% of average for the Lemhi River; 103% for the Salmon River at Salmon; 106% for the Salmon River at White Bird; 116% for the Middle Fork Salmon River. At the end of February, the snowpack looked similar to 2006, but after 82% of average precipitation in March, snowpacks are now more similar to 1995. Peak flows in 1995 were less than 2006. For example, the 1995 peak on the main stem Salmon River at Whitebird reached 70,500 cfs and 93,000 cfs in 2006. It's impossible to predict the magnitude of peak flows since they depend on the combination of snowmelt, precipitation and temperatures but with this much snow they will be high! River runners can expect a good floating season thanks to above average snow.

SALMON RIVER BASIN
Streamflow Forecasts - April 1, 2008

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)
Salmon R at Salmon	APR-JUL	650	810	880	103	950	1110	855
	APR-SEP	750	935	1020	102	1100	1290	1000
Lemhi R nr Lemhi	APR-JUL	63	76	86	100	97	113	86
	APR-SEP	78	94	105	100	117	136	105
MF Salmon R at MF Lodge	APR-JUL	725	835	910	116	985	1100	785
	APR-SEP	800	925	1010	115	1100	1220	875
Salmon R at White Bird	APR-JUL	4820	5770	6200	106	6630	7580	5850
	APR-SEP	5350	6420	6900	107	7380	8450	6480

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

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

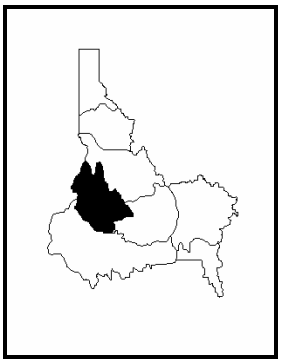
SALMON RIVER BASIN
Watershed Snowpack Analysis - April 1, 2008

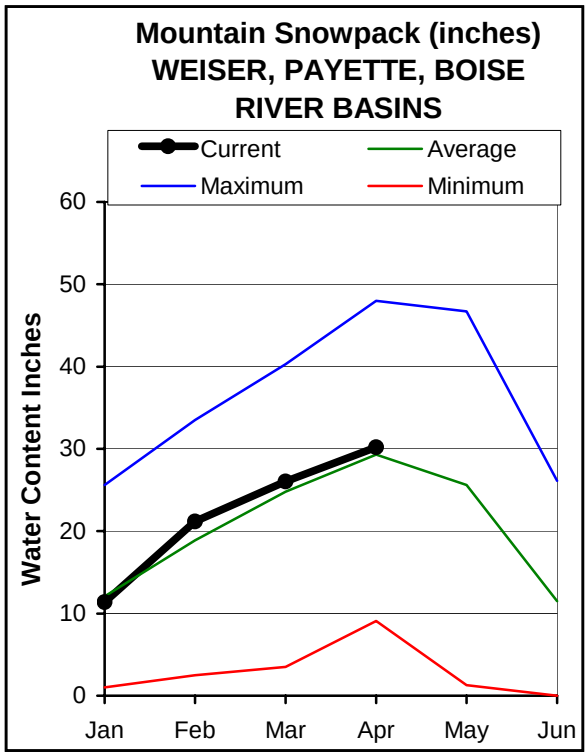
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	11	143	104
Lemhi River	11	151	104
Middle Fork Salmon River	3	152	102
South Fork Salmon River	3	147	103
Little Salmon River	4	181	120
Salmon Basin Total	32	154	108

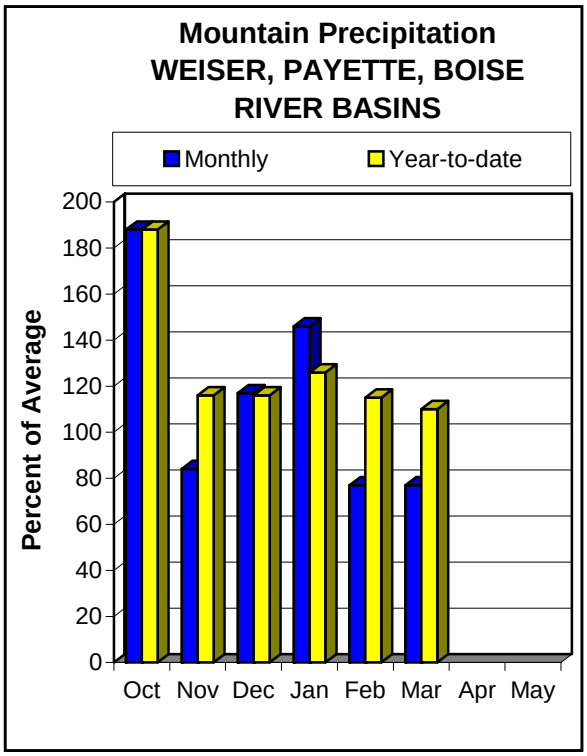
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

(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
APRIL 1, 2008







WATER SUPPLY OUTLOOK

As of April 1, the Weiser, Payette and Boise basin snowpacks are all near 115% of average. March may have seemed wet, but the precipitation for the month was below average: 64% in the Weiser; 85% in the Boise Basin and 74% in the Payette. The good news is that the mountain snowpacks have exceeded or at their normal seasonal peak amounts and the lower elevations needed a break. Last year, the mountain snowpacks began melting unusually early in March and were only near 60% average by April 1. Low snow last year combined with a hot and dry summer put a lot of pressure on receiving ample snow this year. Now the streamflow peaks will depend on how the mountain snow melts off; rapid warming temperatures will accelerate runoff, while gradual warming temperatures will regulate the streamflow. The low elevation snow is melting and reducing the amount of snow in the basin, but warm air temperatures and precipitation could bring the remaining snow off quickly. The streamflow forecasts, which do not include the anomalous low-elevation snow, call for above average April through July volumes; 122% for the Weiser River, 110% for the main stem Payette River and 103% for the Boise River near Boise. Currently, the Boise reservoir system is 57% of capacity and the Payette system is 63% full. As for seasonal water supplies, the above average streamflow will provide adequate irrigation supplies and a prolonged boating and river recreation season.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - April 1, 2008

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	APR-SEP	315	445	510	121	580	755	420
SF Payette R at Lowman	APR-JUL	390	430	460	105	490	535	440
	APR-SEP	440	490	520	105	555	605	495
Deadwood Reservoir Inflow	APR-JUL	119	138	147	110	156	175	134
	APR-SEP	126	148	158	111	168	190	142
Lake Fork Payette R nr McCall	APR-JUL	80	89	95	112	101	111	85
	APR-SEP	83	92	99	111	106	116	89
NF Payette R at Cascade	APR-JUL	460	550	590	114	630	720	520
	APR-SEP	470	565	610	113	655	750	540
NF Payette R nr Banks	APR-JUL	615	690	740	110	790	865	675
	APR-SEP	640	725	780	111	835	920	700
Payette R nr Horseshoe Bend	APR-JUL	1500	1710	1800	110	1890	2100	1640
	APR-SEP	1580	1830	1950	111	2070	2320	1760
Boise R nr Twin Springs	APR-JUL	545	635	680	107	725	815	635
	APR-SEP	590	690	735	107	780	880	690
SF Boise R at Anderson Ranch Dam	APR-JUL	450	530	565	105	600	680	540
	APR-SEP	475	560	600	103	640	725	580
Mores Ck nr Arrowrock Dam	APR-JUL	96	118	135	103	153	181	131
	APR-SEP	99	123	140	102	159	188	137
Boise R nr Boise	APR-JUN	1130	1250	1300	103	1350	1470	1260
	APR-JUL	1150	1360	1450	103	1540	1750	1410
	APR-SEP	1240	1460	1560	102	1660	1880	1530

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MANN CREEK	11.1	5.7	8.1	8.8
CASCADE	693.2	472.1	555.6	428.8
DEADWOOD	161.9	68.0	111.3	91.6
ANDERSON RANCH	450.2	156.1	344.8	262.8
ARROWROCK	272.2	238.8	257.1	204.5
LUCKY PEAK	293.2	183.1	258.0	162.6
LAKE LOWELL (DEER FLAT)	165.2	78.9	93.7	126.9

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - April 1, 2008

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Mann Creek	2	179	105
Weiser River	5	217	113
North Fork Payette	8	185	121
South Fork Payette	5	156	104
Payette Basin Total	14	168	115
Middle & North Fork Boise	5	155	96
South Fork Boise River	9	201	110
Mores Creek	5	199	128
Boise Basin Total	16	199	113
Canyon Creek	2	428	170

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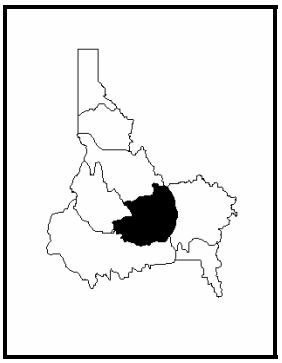
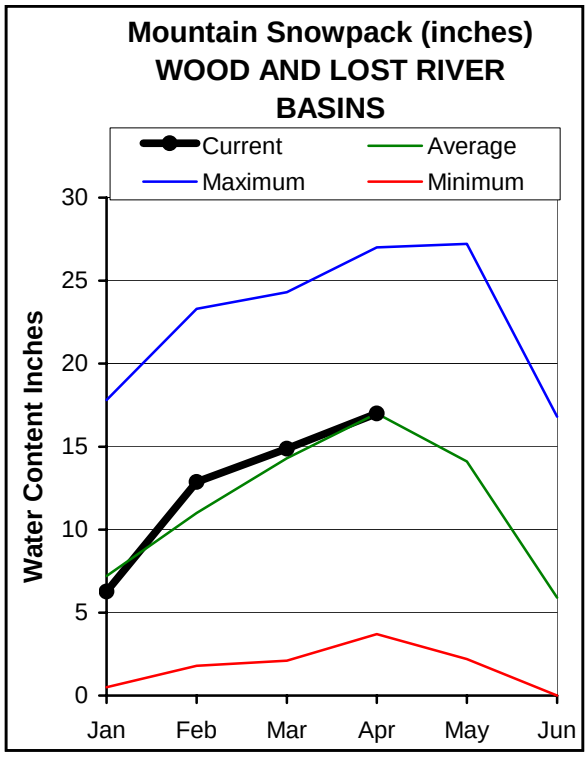
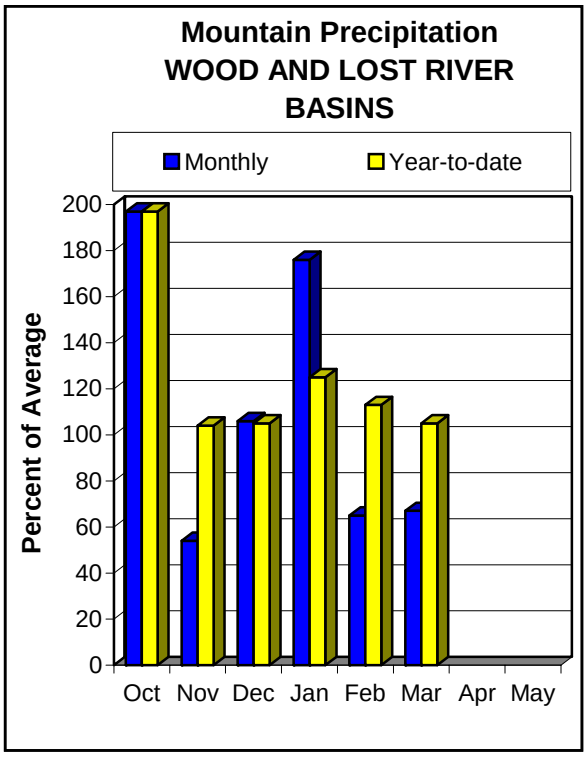
(2) - The value is natural flow - actual flow may be affected by upstream water management.

WOOD and LOST RIVER BASINS
APRIL 1, 2008







WATER SUPPLY OUTLOOK

The Wood and Lost River basins snowpack are 100% of average overall. The best snowpack is found in the Canyon Creek drainage at 170% of normal and the lowest snow is in the Big Lost drainage at 93% of average. Despite the storms that brought moisture early to these mountains, some of the SNOTEL sites are still below their seasonal peak snow water content. The streamflow forecasts reflect this pattern. The projected April through July streamflow volumes call for 85-95% of average for these central Idaho streams. The reservoirs are still storing low volumes. Magic is 15% full, 27% of average; Little Wood is 36% full, 56% of average and Mackay is the best at 62% of capacity and 85% of average. The Surface Water Supply Index (SWSI), which combines reservoir storage and forecasted streamflow volumes, indicates marginally adequate water supplies in the Little Wood and Big Lost basins while supplies may be limited in the Little Lost and Big Wood basins.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - April 1, 2008

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 River at Hailey	APR-JUL	154	210	235	92	265	335	255
	APR-SEP	173	235	265	91	300	375	290
Big Wood R ab Magic Reservoir	APR-JUL	130	163	186	98	210	240	190
	APR-SEP	140	176	200	98	225	260	205
Camas Ck nr Blaine	APR-JUL	55	74	89	89	105	131	100
	APR-SEP	56	75	90	89	106	132	101
Big Wood R bl Magic Dam	APR-JUL	189	240	275	95	310	360	290
	APR-SEP	200	255	290	95	325	380	305
Little Wood R ab High Five Creek	APR-JUL	44	58	69	89	81	100	78
	APR-SEP	48	63	75	88	88	108	85
Little Wood R nr Carey	APR-JUL	58	71	79	91	87	100	87
	APR-SEP	62	75	84	89	93	106	94
Big Lost R at Howell Ranch	APR-JUL	113	140	160	93	181	215	173
	APR-SEP	127	157	180	91	205	240	197
Big Lost R bl Mackay Res	APR-JUL	100	118	131	93	144	162	141
	APR-SEP	124	147	163	95	179	200	172
Little Lost R nr Howe	APR-JUL	20	25	29	94	33	40	31
	APR-SEP	23	29	34	87	39	47	39

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MAGIC	191.5	28.4	153.3	107.1
LITTLE WOOD	30.0	10.9	29.4	19.4
MACKAY	44.4	27.7	35.2	32.7

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - April 1, 2008

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Hailey	8	162	97
Camas Creek	5	521	134
Big Wood Basin Total	13	206	106
Fish Creek	3	395	98
Little Wood River	9	279	97
Big Lost River	7	204	93
Little Lost River	4	170	105
Birch-Medicine Lodge Cree	4	168	109
Camas-Beaver Creeks	4	219	106

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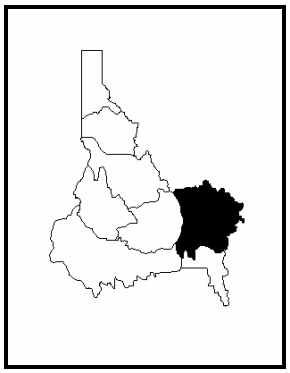
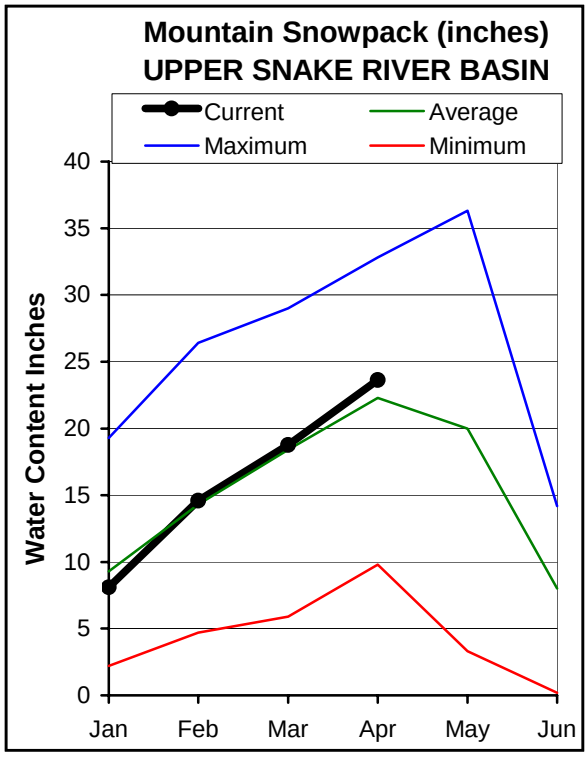
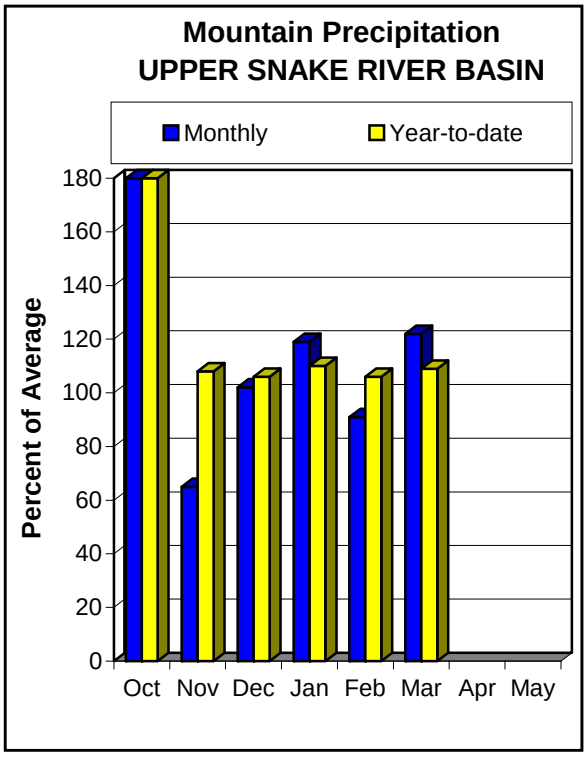
(2) - The value is natural flow - actual flow may be affected by upstream water management.

UPPER SNAKE BASINS
APRIL 1, 2008







WATER SUPPLY OUTLOOK

The Upper Snake region rebounded since last month and relieved many water users. Precipitation above Palisades Reservoir in March was 140% of average but only 116% in the Henrys Fork and Teton basins. The welcomed precipitation helped build the overall snowpack in the region to 106% of average. The snowpack ranges from 93% in the Hoback River to 126% in the Pacific Creek headwaters. The region as a whole has achieved the normal seasonal snow water content peak for early April. The thirsty reservoirs desperately needed an average snow year after last year's hot and dry summer. Currently Jackson Lake and Palisades Reservoir are less than half full at 44% of capacity; 69% of average. On the main stem Snake River, the Blackfoot Reservoir is the least full at 27% of capacity and Grassy Lake and Henrys Lake are near full. The focus has shifted from mountain snowpack accumulation to the snow melt phase and associated peak streamflows. The seasonal streamflow volumes are forecast at near normal levels for most rivers in the Upper Snake Watershed. From now through July, the lowest flow will occur in the Portneuf River at 91% of average while the Teton River, Snake River near Flagg Ranch, Pacific Creek will have the most water and will flow near 110% of average. Calculations for the Snake River above Heise indicate that seasonal water supplies should be adequate (similar to 2006) to fulfill irrigation demands based on the Surface Water Supply Index (SWSI), which combines reservoir storage and projected streamflow volumes. The cooler this summer is the lower the irrigation demands will be, resulting in better reservoir carryover storage next year.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - April 1, 2008

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	APR-JUL	470	535	580	102	630	700	570
	APR-SEP	630	710	765	100	825	910	765
Henrys Fork nr Rexburg	APR-JUL	1320	1460	1550	99	1640	1780	1560
	APR-SEP	1730	1880	1990	99	2100	2250	2010
Falls R nr Ashton	APR-JUL	310	350	380	100	410	455	380
	APR-SEP	380	425	460	102	495	550	450
Teton R nr Driggs	APR-JUL	139	166	185	112	205	235	165
	APR-SEP	171	205	230	110	255	295	210
Teton R nr St. Anthony	APR-JUL	350	400	440	109	480	545	405
	APR-SEP	405	465	510	106	555	630	480
Snake River At Flagg Ranch	APR-JUL	470	510	535	108	560	600	495
	APR-SEP	520	560	590	108	620	660	545
Snake R Nr Moran	APR-JUL	750	845	890	109	935	1030	815
	APR-SEP	815	930	980	108	1030	1140	905
Pacific Ck At Moran	APR-JUL	149	173	190	111	205	230	171
	APR-SEP	158	183	200	112	215	240	178
Snake R Nr Alpine	APR-JUL	2180	2400	2500	106	2600	2820	2370
	APR-SEP	2450	2730	2860	105	2990	3270	2730
Greys R Nr Alpine	APR-JUL	300	330	350	103	370	400	340
	APR-SEP	340	375	400	101	425	460	395
Salt R Nr Etna	APR-JUL	260	320	360	106	400	460	340
	APR-SEP	325	400	455	108	510	585	420
Snake R nr Irwin	APR-JUL	3030	3350	3500	105	3650	3970	3330
	APR-SEP	3460	3830	4000	103	4170	4540	3870
Snake R nr Heise	APR-JUL	3300	3540	3700	104	3860	4100	3560
	APR-SEP	3830	4110	4300	103	4490	4770	4160
Willow Ck nr Ririe	APR-JUL	50	65	77	95	90	110	81
Blackfoot R ab Res nr Henry	APR-JUN	43	60	72	99	86	108	73
Portneuf R at Topaz	APR-JUL	56	67	74	91	82	94	81
	APR-SEP	72	84	92	92	101	114	100
Snake River at Neeley	APR-JUL	2230	2970	3300	102	3630	4370	3240
	APR-SEP	2360	3150	3510	100	3870	4660	3510

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HENRYS LAKE	90.4	81.3	83.7	85.5
ISLAND PARK	135.2	104.3	119.0	114.6
GRASSY LAKE	15.2	13.7	12.7	12.3
JACKSON LAKE	847.0	349.0	636.4	486.6
PALISADES	1400.0	640.0	1178.6	941.5
RIRIE	80.5	42.1	53.5	41.6
BLACKFOOT	348.7	95.5	182.9	229.8
AMERICAN FALLS	1672.6	1321.2	1643.0	1443.2

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - April 1, 2008

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Henrys Fork-Falls River	12	174	109
Teton River	8	188	112
Henrys Fork above Rexburg	20	179	110
Snake above Jackson Lake	9	170	110
Gros Ventre River	3	163	106
Hoback River	5	156	93
Greys River	5	146	100
Salt River	5	160	105
Snake above Palisades	28	169	107
Willow Creek	7	283	125
Blackfoot River	5	236	107
Portneuf River	7	225	105
Snake abv American Falls	49	182	109

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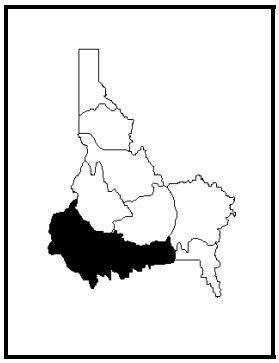
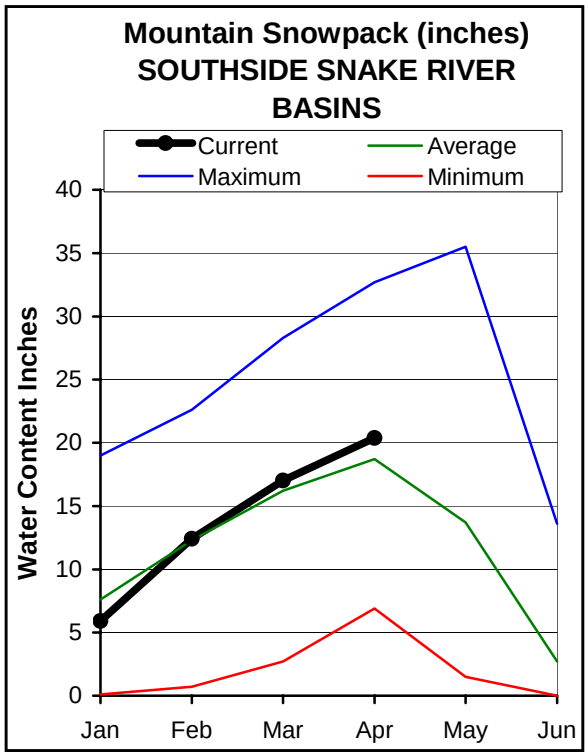
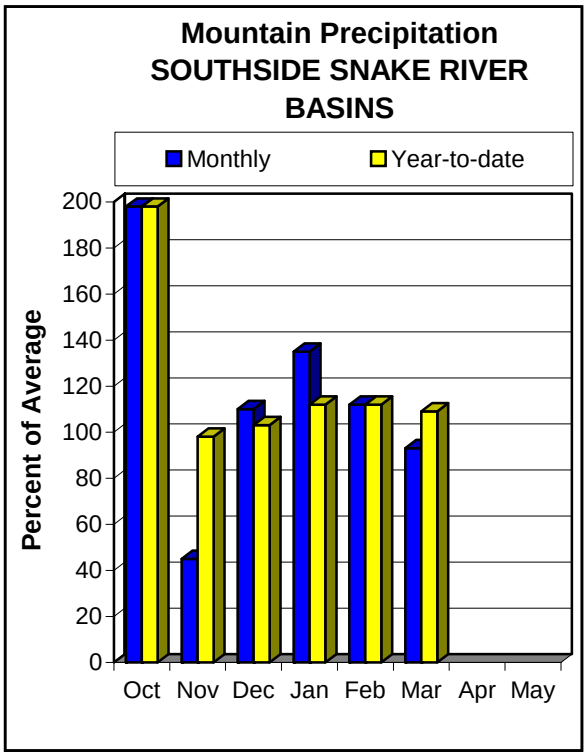
SOUTHSIDE SNAKE RIVER BASINS
APRIL 1, 2008







WATER SUPPLY OUTLOOK

March brought precipitation that was 93% of normal; the first month since November where the precipitation was below normal south of the Snake River. The best snowpack is in the Owyhee basin at 144% of average. The rest of the basin's snowpacks are about 110% of average; this is a blessing compared to last year when the snowpack was 69%. Most of March remained cold and preserved the mountain snowpack. However, some of the lower elevation sites, such as Mud Flat in the Owyhee Basin, started to melt in late March when the air temperatures were above freezing overnight. These warmer temperatures and ripe low-elevation snowpacks caused a few tributaries to flow along with the Owyhee River. Observations from SNOTEL sites, snow surveyors and measurements from the Owyhee aerial marker flight reveal that there is still a lot of snow left in the low elevations and some streams are still frozen. For instance on April 1, even though the snow was melting at Mud Flat (5730 feet), there was 9.0 inches of snow water content; more than double its normal amount. By comparison, in 2006 Mud Flat had 10.9 inches of snow water content on April 1 and last year the snow was melted by March 21st. Current streamflow forecasts call for near normal amounts from April through July. The lowest forecast is at 93% for Oakley Reservoir Inflow. The Owyhee River, Bruneau River and Salmon Falls Creek are predicated to flow at average levels. Reservoir storage is 85% of average in Oakley and Brownlee reservoirs, 52% of average in Salmon Falls and Owyhee reservoirs, and 67% of average in Wildhorse Reservoir. The SWSI, which combines current reservoir storage and projected seasonal streamflow, indicates water supplies should be adequate and similar to 2007 in the Salmon Falls and Oakley basins.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - April 1, 2008

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	APR-JUL	14.9	22	27	93	33	43	29
	APR-SEP	16.8	24	30	94	36	47	32
OAKLEY RESV STORAGE	APR-30	32	34	35	85	36	38	41
	MAY-31	32	35	38	84	41	44	45
Salmon Falls Ck nr San Jacinto	APR-JUN	49	63	74	99	86	104	75
	APR-JUL	51	66	78	98	91	111	80
	APR-SEP	54	71	83	99	96	118	84
SALMON FALLS RESV STORAGE	APR-30	43	47	50	57	53	57	88
	MAY-31	59	67	73	72	79	87	101
Bruneau R nr Hot Springs	APR-JUL	132	176	210	102	245	305	205
	APR-SEP	138	185	220	102	260	320	215
Owyhee R nr Gold Creek	APR-JUL	14.0	21	26	104	32	43	25
	APR-SEP	10.7	18.3	25	104	33	48	24
Owyhee R nr Rome	APR-JUL	210	315	395	104	485	640	380
Owyhee R blw Owyhee Dam	APR-JUL	81	270	395	99	520	710	400
	APR-SEP	113	300	425	99	550	735	430
Reynolds Ck at Tollgate	APR-JUL	6.4	7.8	8.9	109	10.0	11.8	8.2

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
OAKLEY	75.6	30.3	47.8	36.0
SALMON FALLS	182.6	36.0	84.9	70.2
WILDHORSE RESERVOIR	71.5	31.1	55.0	46.2
OWYHEE	715.0	316.6	577.0	593.0
BROWNLEE	1420.0	907.1	1175.8	1029.5

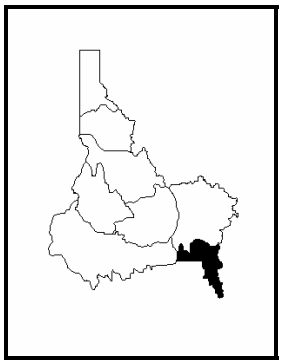
SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - April 1, 2008

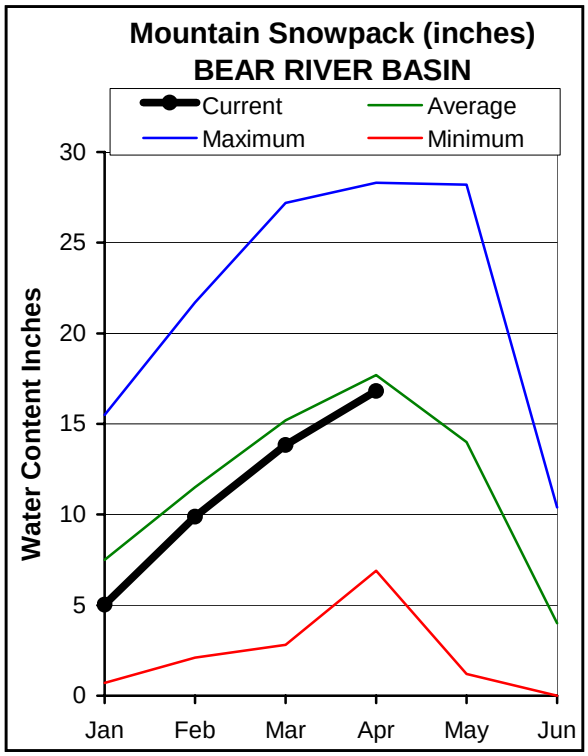
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Raft River	6	180	111
Goose-Trapper Creeks	7	174	110
Salmon Falls Creek	8	185	109
Bruneau River	8	222	116
Reynolds Creek	0	0	0
Owyhee Basin Total	20	436	144

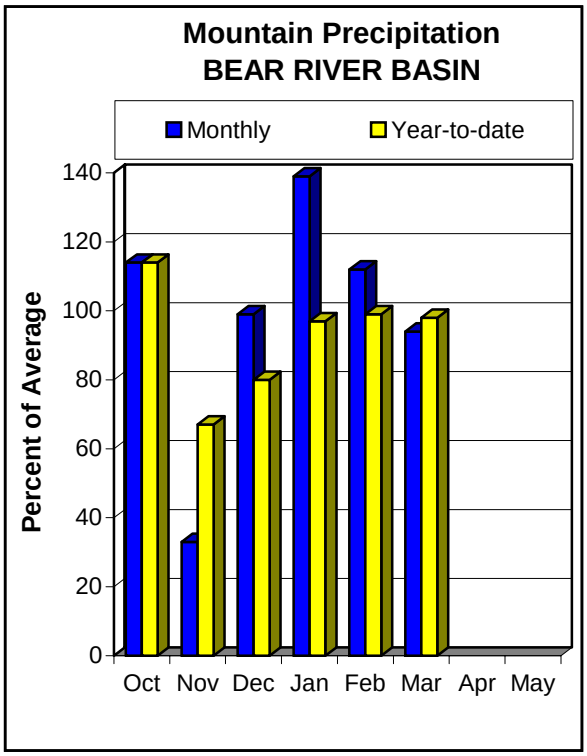
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

(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
APRIL 1, 2008







WATER SUPPLY OUTLOOK

Cool temperatures and near average precipitation in March not only preserved the Bear River's existing snow but also added to it; this brings the snowpack to near average seasonal peak amounts as of April 1. The greatest amounts of snow exist in the Cub basin at 110% of average, while the Smith and Thomas Forks have the least at 91%. The Malad basin, at 108% of average, has almost seven times as much snow as this time last year. The Giveout SNOTEL, upstream of Montpelier Creek Reservoir, has 91% of its average peak snow water; the reservoir is storing 82% of its average amount, 35% of capacity. Current storage in Bear Lake is 396,700 acre-feet which equates to 28% of capacity and 43% of average. This amount is down sharply from a year ago when storage equaled 609,400 acre-feet. Streamflow in the headwaters of the Bear River is forecast for slightly above the average volume. The Bear River at Stewart Dam streamflow forecast decreased this month to 58% of average. The Little Bear River at Paradise is forecast for 107% of average, while the rest of the streams in the area are forecast between 80-92% of average. The surface water supply index which combines current reservoir storage and forecasted streamflow indicates that surface water supplies should be marginally adequate in the Bear Basin. Using this index, expect water supplies better than 2005, and similar to 1993 or 1994. Hopefully good precipitation will continue through the next couple of months decreasing irrigation demand and increasing Bear Lake storage.

BEAR RIVER BASIN
Streamflow Forecasts - April 1, 2008

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	97	111	120	106	129	143	113
	APR-SEP	108	124	135	108	146	162	125
Bear River ab Reservoir nr Woodruff	APR-JUL	98	123	140	103	157	182	136
	APR-SEP	105	131	148	104	165	191	142
Big Creek nr Randolph	APR-JUL	3.0	3.9	4.5	92	5.1	6.0	4.9
Smiths Fork nr Border	APR-JUL	63	74	82	80	90	101	103
	APR-SEP	75	88	97	80	106	119	121
Bear River at Stewart Dam	APR-JUL	89	115	135	58	156	191	234
	APR-SEP	103	133	155	59	179	220	262
Little Bear River at Paradise	APR-JUL	35	43	49	107	55	65	46
Logan R Abv State Dam Nr Logan	APR-JUL	90	105	115	91	126	142	126
Blacksmith Fk Abv Up&L Dam Nr Hyrum	APR-JUL	28	37	44	92	51	63	48

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEAR LAKE	1421.0	396.7	609.4	923.8
MONTPELIER CREEK	4.0	1.4	2.6	1.7

BEAR RIVER BASIN
Watershed Snowpack Analysis - April 1, 2008

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Smiths & Thomas Forks	4	124	91
Bear River ab WY-ID line	12	162	99
Montpelier Creek	2	155	95
Mink Creek	4	223	110
Cub River	3	217	110
Bear River ab ID-UT line	26	182	103
Malad River	3	690	108

* 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

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 R at Neeley, ID
+ Snake R 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
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 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 Nov. 2007)**

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	0	--	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						
Bear Lake	5.0 MAF	119.0	1302.00	--	1421.0	Active+Inactive: includes 119 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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