United States Department of Agriculture
Natural Resources Conservation Service

Idaho Water Supply Outlook Report
March 1, 2010

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Snow appropriations are stuck on Capitol Hill this winter. The National Weather Service reported on February 11th that Washington DC's seasonal snowfall total stood at 55.9 inches, breaking the previous all-time seasonal snowfall record of 54.4 inches, set in the winter of 1898-99 when William McKinley was president. Official snowfall records for Washington DC date back 126 years to 1884. By contrast it is minimum snow records that are making news in this report. The Upper Snake River basin, critical to many Idaho water users, is having one it's most dismal snow seasons ever. Records that extend back to 1919 indicate that Yellowstone National Park has its third lowest snowpack in 91 years. If this winter's El Nino pattern does not relent, there are a number of basins in the state that could see water shortages this summer.

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

For more water supply and resource management information contact:

Your local Natural Resources Conservation Service Office
or
Natural Resources Conservation Service
Snow Surveys
9173 West Barnes Drive, Suite C
Boise, Idaho 83709-1574

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

Phone: (208) 378-5740

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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

March 1, 2010

SUMMARY

Lack of major winter storms and snowfall, best sums up this winter and puts a damper on Idaho's water supply. Idaho has been on the fringe, receiving some snow, but the major storms have avoided the state. Current snowpacks range from 55-75% of average for most of the state. The Owyhee basin stands out with a near normal snowpack, but don't expect much runoff from the snow without rain. Snow measuring sites in the lower elevations of the Weiser, Payette, Boise, Camas and Owyhee basins have better snow with respect to normal than the upper elevations. For example, Boise Airport precipitation is near normal for the water year, while Mores Creek Summit stands at 76% of normal for the same time. While it sounds good that valley regions have normal precipitation, keep in mind that the Idaho water supply comes from the mountains above 6,000 feet in southern Idaho and above 4,500 feet in northern Idaho. February mountain precipitation was the lowest in the state in the Little Wood and Big Lost basins at 20% of average. Most of the state received only 30-55% of average. Out of 100 SNOTEL sites in our region with 20 to 40 years of record, 22 sites set new record low precipitation amounts for the November-February period. 23 other sites received the second lowest amount during these critical months that provide half of our annual precipitation. As a result, streamflow forecasts decreased from a month ago and now range from a low of 15% of average in the Bear River, to 47% for the Snake River near Heise, to 58% for the Salmon and Clearwater rivers, to 75% in a few streams in Idaho's northern Panhandle Region. Reservoirs are in good shape, but will not make up for the lack of streamflow this summer. Surface irrigation supplies should be marginally adequate in Boise, Owyhee, Little Wood and Bear basins, while shortages are more likely in other central, southern and eastern Idaho basins. Irrigators should remain in contact with their irrigation district for more specific information. A cool spring and good precipitation would help reduce impacts from the lack of snow this winter.

SNOWPACK

This winter, the snowpack in the entire western United States can be explained by a weather pattern that is typical of the El Nino conditions in the Pacific Ocean. The snow is as low as 50% of normal in the Pacific Northwest increasing to 200% of average in Arizona. The highest snowpacks in Idaho are along the western and southern fringes of the state in the Weiser, Boise, Camas, Bruneau, Salmon Falls, Oakley, Raft and Malad basins where amounts range from 70-85% of average. The exception is the lower elevations of the vast Owyhee basin. This high desert has a near normal snowpack when you include the combination of 19 aerial markers and snow measuring stations. On the other end of the spectrum, the Hoback drainage snowpack in Wyoming is 47% of average. The snowpack for the Snake River above Palisades Reservoir is about the same as 2001, and is the 2nd lowest since 1961; only 1977 had less snow on March 1. Two long-term snow measuring stations, Lewis Lake Divide and Aster Creek in the Upper Snake in Wyoming are the 3rd lowest since records start in 1919; only 1931 and 1977 had less snow. Elsewhere in central and northern Idaho, snowpacks range from 55-65% of average. Even the Clearwater basin snowpack is the 3rd lowest since 1961; only 2005 and 1977 had less snow.

PRECIPITATION

For those hoping for a February precipitation bailout, Idaho missed its share of moisture. As this month's cover shows, it appears the snow may have all piled up on the east coast in our nation's capital. February continued the trend established the previous three months with below normal precipitation falling across the state since October. Many SNOTEL sites in eastern Idaho and western Wyoming are reporting the first or second lowest November through February precipitation totals since records started in the early 1980s. Typically, once this type of winter weather pattern is established, March and April tend to follow suit, failing to produce of precipitation. One way to salvage this year's water supply would be to receive a cool and wet spring. Cool weather in the second half of April and May would delay snow melt, keeping the snowpack in the high country longer. In contrast, a warm, dry spring means the irrigation season would kick in sooner and require an earlier drafting of reservoirs. Idaho had a similar low snowpack across most of the state in 2005, but that spring was saved by 150-250% of average moisture falling in mid-May during the prime snowmelt season; this reduced irrigation demand and extended the limited water supply. Similar precipitation occurred again last year when abundant moisture fell in June and benefited Idaho's numerous water users and helped to provide good reservoir carryover storage for this year. Will it happen again? This year's weather pattern appears more active than the dry years in the early start of this decade.

Let's hope Mother Nature remembers us, by providing an ideal snowmelt with cool spring temperatures and above normal precipitation.

RESERVOIRS

Most reservoirs across the state are in good shape storing above average amounts for March 1. Idaho's water users can count on this stored water since it is already in the bank. However, with well below average streamflow predicted for this summer, irrigation demand will draw down reservoirs with the onset of warm weather. The lack of inflows means many reservoirs will be drafted to their minimal storage levels by summer's end and greatly increase the need for good snow next winter. Owyhee Reservoir hosts the lowest storage in the state at 44% of average, but should provide marginally adequate irrigation supplies. The next lowest storage amount is Bear Lake at 61% of average, 553,600 acre-feet. 500,000 acre-feet is needed for a marginally adequate irrigation supply; users may just squeeze by because the streamflow forecast dropped to only 14% of average, 36,000 acre-feet. Salmon Falls and Oakley reservoirs are about 80% of average, and water supplies will be tight if runoff volumes are less than 67% of average; current forecasts are for 40-55% of average. Mackay Reservoir is 126% of average and shortages can be expected if runoff volumes are below 87% of average; the current forecast is for 56% of average. Magic Reservoir is storing 82,500 acre-feet, near average and much better than last year. Inflows to Magic are only forecast at 40% of average, 122,000 acre-feet. Combining the inflow and current storage equates to an irrigation storage of about 75,000 acre-feet. Of the eight major reservoirs in the Upper Snake, only Blackfoot is storing below normal levels at 90% of average. Combined storage in Jackson Lake and Palisades Reservoir is 1,802,700 acre-feet, which means 2,700,000 acre-feet of streamflow is needed at the Snake River near Heise gage for marginally adequate surface irrigation supplies. The current forecast is for 2,000,000 acre-feet; 48% of average. Water users should plan accordingly based on their water right and water source. The Boise reservoir system storage is near average and should have adequate irrigation supplies if the streamflow is 60% of average or better. Current forecast for the Boise River near Boise is for 59% of average. Storage in the Payette reservoir system and Dworshak Reservoir is near average. Shortages are not typical in these basins but water will not be in abundance with forecasts ranging from only 55-65% of average in these basins. Northern Idaho's lakes: Priest, Coeur d'Alene and Pend Oreille, are 45-85% of average. Coeur d'Alene Lake is still waiting for its first significant increase in inflow for the year from either rain or snowmelt. These natural lakes typically fill even in the lowest runoff years.

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

Streamflow forecasts dropped 10-20 percentage points from the February 1st forecasts, and 3-10 percentage points from the February 12th forecasts. Streamflow forecasts assume average future precipitation and are based on year-to-date snow and precipitation conditions. The lowest forecasts are in the Bear River basin with Stewart Dam forecast at only 14% of average. American Falls and Ririe inflows are at about 30% of average. The Snake River near Heise is forecast at 48% of average; similar to observed flow in 2001 that also had a very similar snowpack to this year. The rivers south of the Snake are only forecast at 40-55% of average, and improve to 55-65% in parts of central and northern Idaho. The highest stream flow forecasts are in northern Idaho where the Kootenai, Smith Creek and Priest River are forecast at about 75% of average.

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

The lack of a mid-winter thaw is helping to keep Idaho's snow in the mountains for winter recreation. Epic powder days may be limited this year with the lack of storms, but recreation opportunities are still abundant. A few low elevation SNOTEL sites in the Clearwater basin and near Bonners Ferry just started melting at the beginning of March. It won't be long for more low elevation snow to start melting, providing that first jolt of runoff. River runners should get their boats ready as the duration of high flows will be short this year without much snow in the

mountains. For example once snow melt starts, snow sites will often lose 1.5 inches of snow water per day; if a site contains 10-20 inches less snow water this year, it will melt out one to two weeks earlier this spring. Be ready, high peak flows from snowmelt can still occur in low snow years, but they won't last long. As always, the magnitude and timing of peak flows depends on spring temperatures and precipitation. More difficult than predicting streamflows is the potential for spring rains which can greatly change conditions.

2010 WESTERN SNOW CONFERENCE

The 78th annual Western Snow Conference (WSC) meeting will be held in conjunction with the Utah State University spring runoff conference at the USU Conference Center in Logan, Utah, April 19-22, 2010. There will be joint plenary sessions with breakout sessions designed by each respective conference. A short course on Monday titled 'Products, Tools and Resources for Water Management' will be an interesting morning discussion by government agencies of products available followed by an afternoon session with water managers to discuss ways to make current and future water management more efficient, productive and to reduce risk. The WSC Thursday technical tour will include a visit to the Utah State Water Laboratory where scientists divert the Logan River through the lab to perform scale modeling, the Bear River Bay Migratory Bird Refuge, the Golden Spike and more. Additional information on conference and registration is available on the WSC web page at: http://www.westernsnowconference.org/

FEDERAL CROP INSURANCE – ADEQUACY OF IRRIGATION FACILITIES AND WATER

The Federal Crop Insurance program stipulates that only acreage, for which there exists adequate facilities and water at the time insurance attaches, or the reasonable expectation of receiving adequate water, is insurable under an irrigated practice. An insured producer has some choices to make if they suspect issues with adequate irrigation water. These include planting fewer acres; planting and insuring acreage for which adequate water is not available under a non-irrigated practice, or reporting acreage as prevented planting (if available), provided all prevented planting policy provisions are met. Reasonable expectation is the key: Producers who know prior to the time insurance attaches that the water supply may be reduced before coverage begins or will be reduced or cut off during the irrigation season may have no reasonable expectation of adequate irrigation water. Reasonable expectation is a determination that is fair, proper, and suitable to conclude that there is more evidence for than against receiving adequate water to carry out a good irrigation practice. Good irrigation practice is the application of adequate water in an acceptable manner, at the proper times necessary to produce at least the yield used to establish the irrigated insurance production guarantee. Adequacy of water based on the water available at the time insurance attaches from the irrigation water supply, soil moisture levels, and snowpack storage levels; and supplementary precipitation which would normally be received, after insurance attaches, during the period that a good irrigation practice is normally carried out. The Risk Management Agency encourages insured producers who suspect problems with irrigation facilities or water to contact their local insurance provider as soon as possible to fully understand the potential impact on their Federal crop insurance. For more information contact Dave Paul at USDA Risk Management Agency, Spokane Regional Office, Office 509-228-6320, dave.paul@rma.usda.gov.

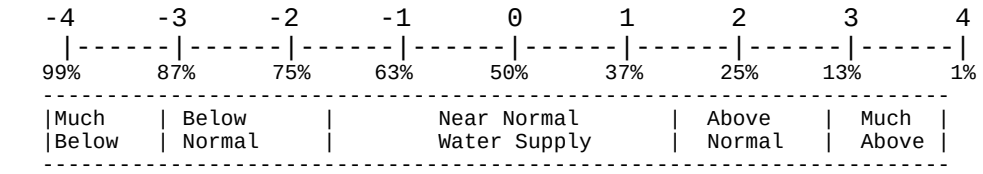
IDAHO SURFACE WATER SUPPLY INDEX (SWSI) As of March 1, 2010

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	-3.2	----	NA
CLEARWATER	-3.4	1973, 1992	NA
SALMON	-2.8	2007	NA
WEISER	-2.0	2005	NA
PAYETTE	-2.2	2007	NA
BOISE	-1.8	2004	-1.8
BIG WOOD	-1.4	2009	-0.3
LITTLE WOOD	-1.6	2008	-2.0
BIG LOST	-1.1	2008	-0.1
LITTLE LOST	-2.4	2000	0.4
HENRYS FORK	-3.4	2001,2002	-3.3
TETON	-3.2	2007	NA
SNAKE (HEISE)	-2.6	2003,2007	-1.7
OWYHEE	-3.4	2001,2003	-3.5
OAKLEY	-1.4	2008	-1.2
SALMON FALLS	-2.4	2002,2004	-1.6
BRUNEAU	-2.0	2001	NA
BEAR RIVER	-2.0	2007	-2.9

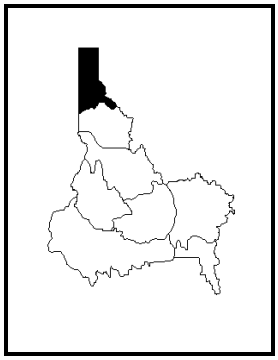
SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

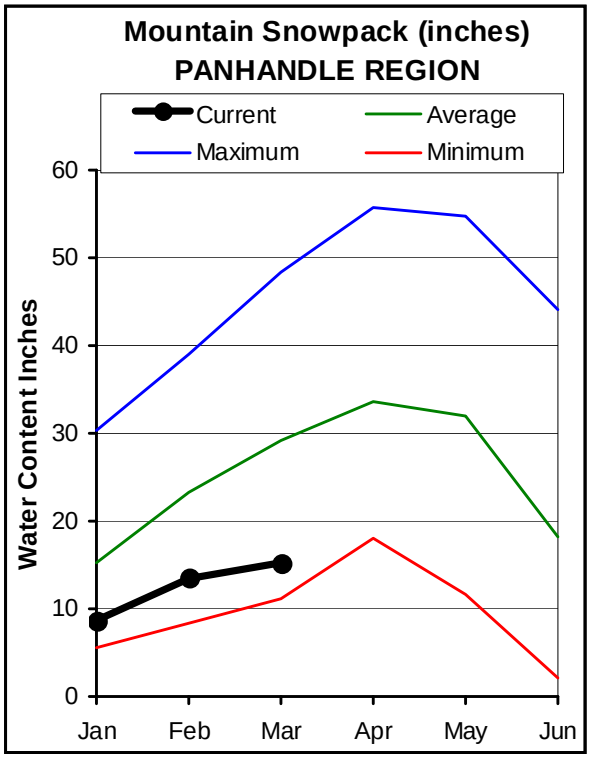


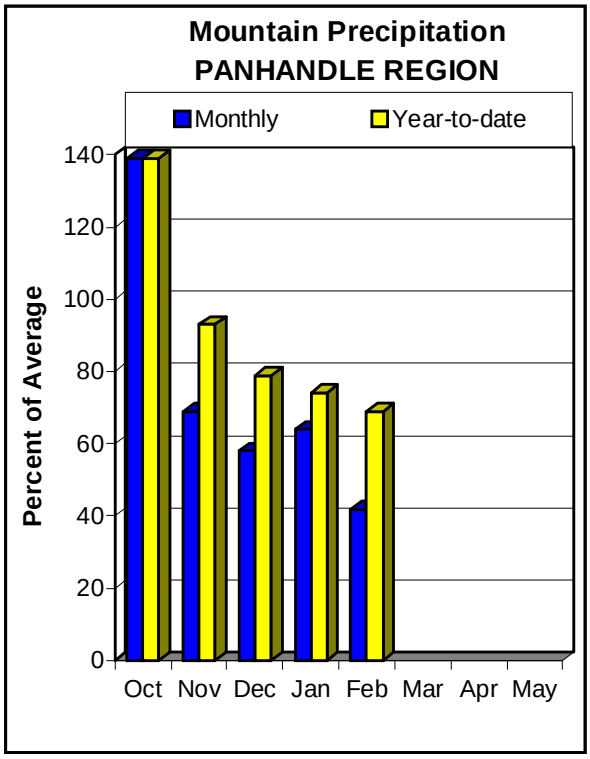
NA = Not Applicable

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
MARCH 1, 2010







WATER SUPPLY OUTLOOK

This year's El Nino storm track has resulted in a meager snowpack for the entire Pacific Northwest. As of March 1, the snow water content is near 65% of normal for the northern Panhandle drainages including the Kootenai, Moyie, Priest and Pend Oreille. The mountains further south have snowpacks only half of normal in the Spokane, St. Joe and Coeur d'Alene drainages. As coincidence would have it, a handful of snow sites have a similar snow as last year along the Idaho-Montana border. This is despite the fact that the past two winters have had wildly different weather patterns. Last year, December and January brought average precipitation and bone-chilling temperatures that caused the valleys to fill up with snow followed by a dry February. The only month with above average precipitation for this water year has been October. The month of February only had 42% of average precipitation for the Panhandle's SNOTEL sites. The seasonal streamflow volume forecasts mirror the low snowpacks. The Kootenai, Moyie, Priest rivers and Boundary Creek are forecast for 70-75% of average; while the southern waters including the St. Joe, Spokane and North Fork Coeur d'Alene rivers are forecast near half-of-normal. Water lovers may wish for above average March precipitation such as last year, but it doesn't look hopeful given the current storm track. Late spring rainfall can help buffer the impacts of a low snowpack for water supply and river recreation.

PANHANDLE REGION
Streamflow Forecasts - March 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	3890	4690	5060	72	5430	6230	7040
	APR-SEP	4700	5490	5850	72	6210	7000	8120
MOYIE RIVER at Eastport	APR-JUL	154	205	240	59	275	325	405
	APR-SEP	163	215	250	60	285	335	420
SMITH CREEK	APR-JUL	58	77	90	73	103	122	123
	APR-SEP	58	80	94	73	108	130	129
BOUNDARY CREEK	APR-JUL	69	81	90	73	99	111	123
	APR-SEP	71	85	94	73	103	117	129
PEND OREILLE Lake Inflow (2)	APR-JUL	5260	6740	7750	61	8760	10200	12700
	APR-SEP	5780	7390	8480	61	9570	11200	13900
ST. JOE at Calder	APR-JUL	370	505	595	52	685	820	1140
	APR-SEP	395	530	625	52	720	855	1200
SPOKANE near Post Falls (2)	APR-JUL	540	955	1240	49	1520	1940	2550

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNGRY HORSE	3451.0	2608.0	2444.0	2047.6
FLATHEAD LAKE	1791.0	789.8	724.1	802.7
NOXON RAPIDS	335.0	317.2	325.7	306.0
PEND OREILLE	1561.3	551.7	457.8	778.8
COEUR D'ALENE	238.5	58.9	90.3	144.9
PRIEST LAKE	119.3	49.9	50.4	56.8

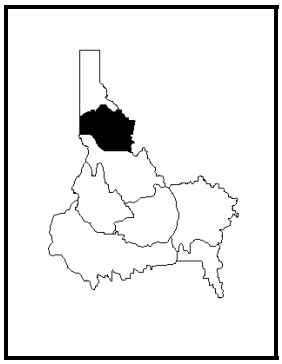
PANHANDLE REGION
Watershed Snowpack Analysis - March 1, 2010

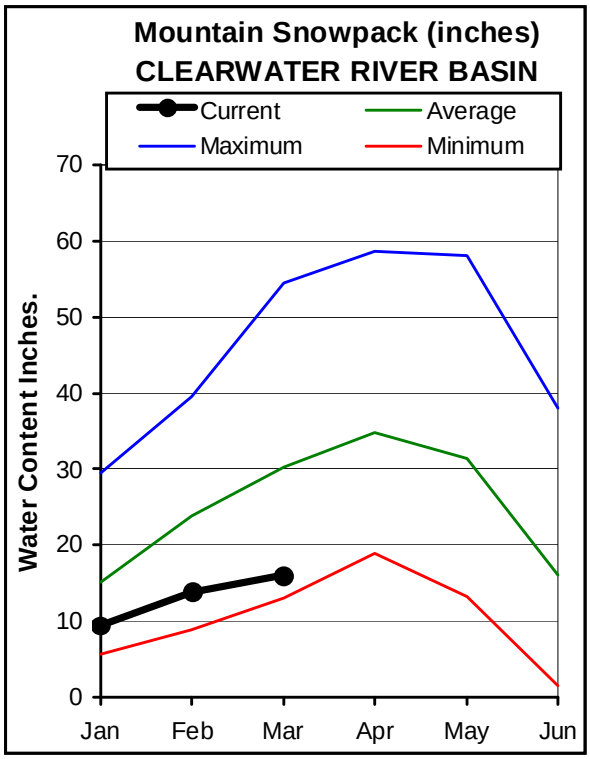
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	24	90	68
Moyie River	6	99	70
Priest River	4	84	67
Pend Oreille River	91	76	65
Rathdrum Creek	4	68	54
Hayden Lake	2	57	56
Coeur d'Alene River	7	66	52
St. Joe River	5	62	50
Spokane River	17	64	51
Palouse River	2	40	38

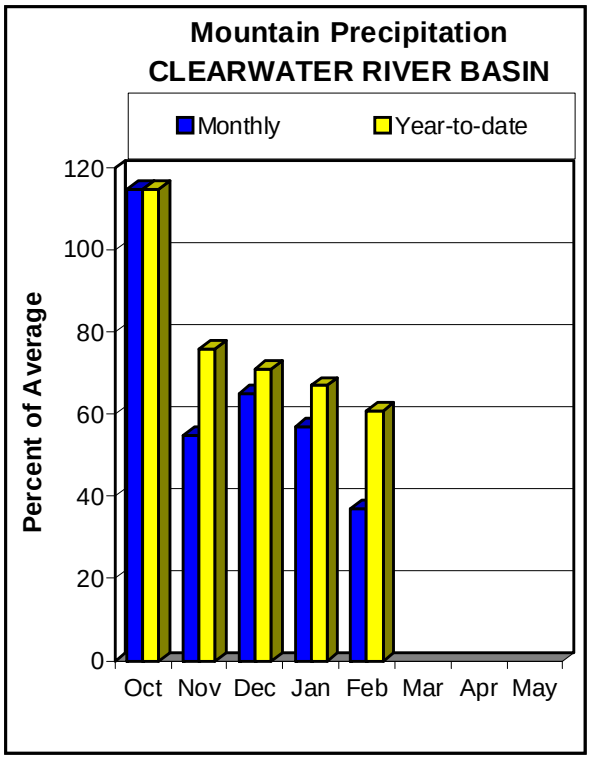
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

(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
MARCH 1, 2010







WATER SUPPLY OUTLOOK

While places on the east coast received one of the snowiest seasons on record, the Clearwater had one of the least. Wolf Ridge ski area in North Carolina boasts a snow depth of 61-77 inches; this is as much snow depth as some of the SNOTEL sites in the Clearwater. A snow index, which combines the total snow water content from 13 SNOTEL sites in the Clearwater basin, indicates that this March 1 is the third driest since records began in 1961. 1977 was the driest, followed by 2005 as the second driest. With over 80% of the snow season now behind, all eyes will be focused on March's behavior for bringing precipitation. If March does not deliver, then there is still a chance for spring rains that can greatly improve the dry conditions. Looking on the bright side again, Dworshak Reservoir is 97% of average and 64% full. The March 1 seasonal streamflow forecasts range from 52-63% of average; the lowest is for Dworshak Reservoir Inflow and the highest for the Lochsa River. If you are a whitewater fan, the Lochsa and Selway rivers will still provide great river running opportunities. The peaks may be earlier than normal and will be short-lived especially compared to the last two years.

CLEARWATER RIVER BASIN
Streamflow Forecasts - March 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	890	1100	1240	60	1380	1590	2060
	APR-SEP	945	1160	1310	60	1460	1680	2170
Lochsa R nr Lowell	APR-JUL	670	840	955	62	1070	1240	1530
	APR-SEP	715	890	1010	63	1130	1310	1610
DWORSHAK Resv. Inflow (1,2)	APR-JUL	600	1140	1380	52	1620	2160	2640
	APR-SEP	625	1200	1460	52	1720	2290	2800
CLEARWATER R at Orofino (1)	APR-JUL	1680	2460	2820	61	3180	3960	4650
	APR-SEP	1800	2620	3000	61	3380	4200	4900
CLEARWATER R at Spalding (1,2)	APR-JUL	2420	3680	4250	57	4820	6080	7430
	APR-SEP	2570	3900	4500	57	5100	6430	7850

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DWORSHAK	3468.0	2210.6	2296.2	2281.7

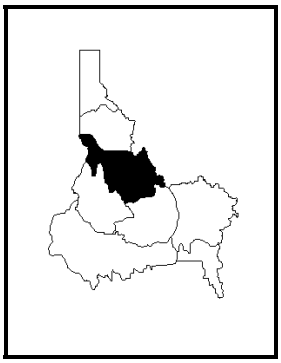
CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - March 1, 2010

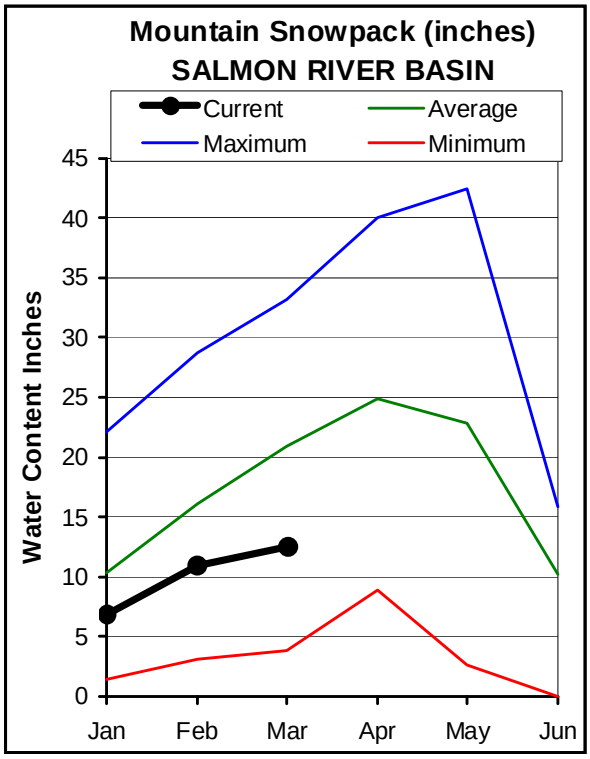
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	9	67	54
Lochsa River	3	62	52
Selway River	5	56	54
Clearwater Basin Total	18	63	53

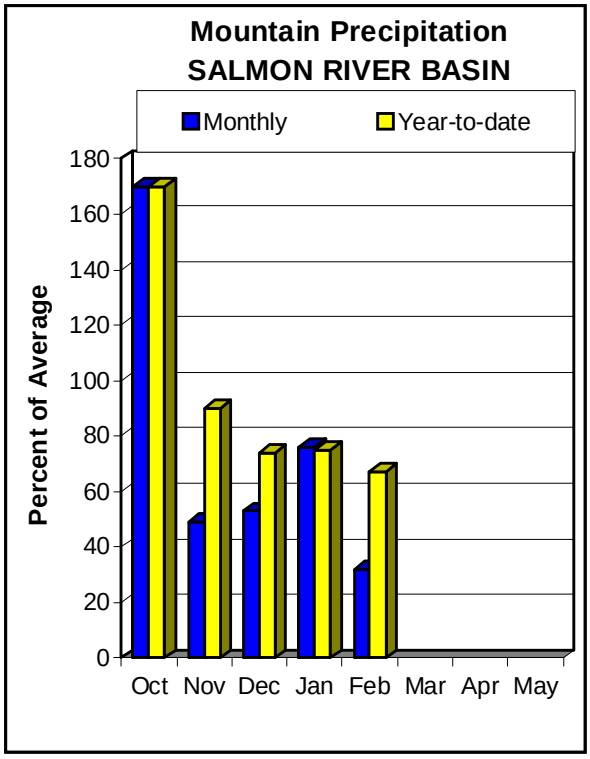
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

(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
MARCH 1, 2010







WATER SUPPLY OUTLOOK

Hopes for a stormy February did not pan out. The Salmon River basin's mountains only received 32% of normal precipitation for the month. The overall March 1 snowpack for the Salmon is 61% of normal and is the 6th lowest snow water content since 1963. SNOTEL sites near the Montana border that are above 8000 feet are near average, while the rest of the mountains sit at near half of average. The Lemhi drainage has a snowpack that is 73% of normal overall; 64% for the Little Salmon headwaters and near 55% for the South Fork and Middle Fork of the Salmon rivers. The seasonal streamflow forecasts range from about 50% of normal for the Salmon River at Salmon and the Middle Fork, to 56-58% for the Lemhi River and Salmon River at White Bird. River recreation opportunities will still be plentiful, but peak streamflows may be earlier and will be of short duration. Spring precipitation can be a key element to improving conditions and influencing peaks flows as we saw in 2005 and 2007. In low snow years, rain generated peaks may even exceed the typical snow melt streamflow peak.

SALMON RIVER BASIN
Streamflow Forecasts - March 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)
SALMON at Salmon (1)	APR-JUL	152	340	425	50	510	700	855
	APR-SEP	184	405	505	51	605	825	1000
Lemhi R nr Lemhi	APR-JUL	22	36	48	56	61	83	86
	APR-SEP	30	46	59	56	74	99	105
MF Salmon at MF Lodge	APR-JUL	141	285	385	49	485	630	785
	APR-SEP	175	335	445	51	555	715	875
Salmon at White Bird (1)	APR-JUL	1650	2830	3370	58	3910	5090	5850
	APR-SEP	1870	3190	3790	59	4390	5710	6480

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

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

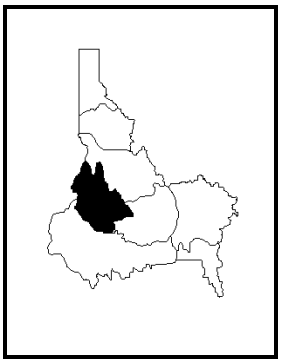
SALMON RIVER BASIN
Watershed Snowpack Analysis - March 1, 2010

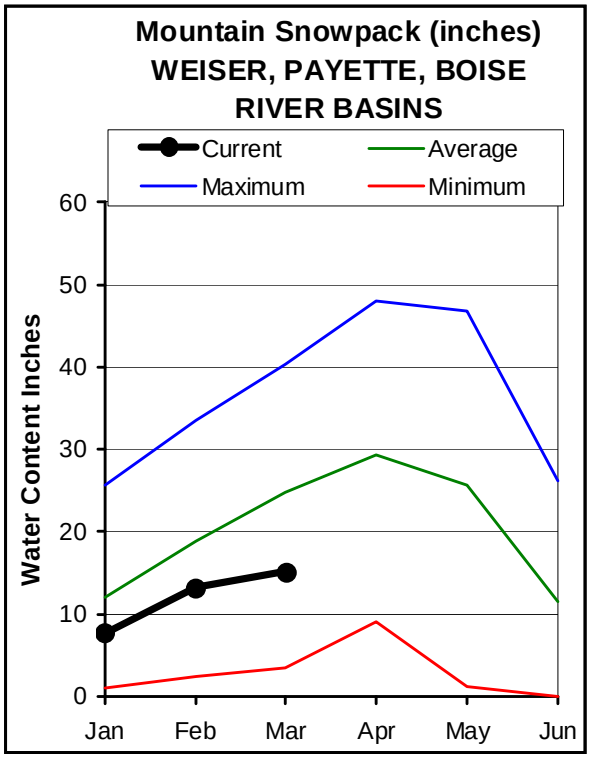
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	10	71	61
Lemhi River	12	78	73
Middle Fork Salmon River	3	72	53
South Fork Salmon River	3	79	55
Little Salmon River	4	86	64
Salmon Basin Total	32	75	62

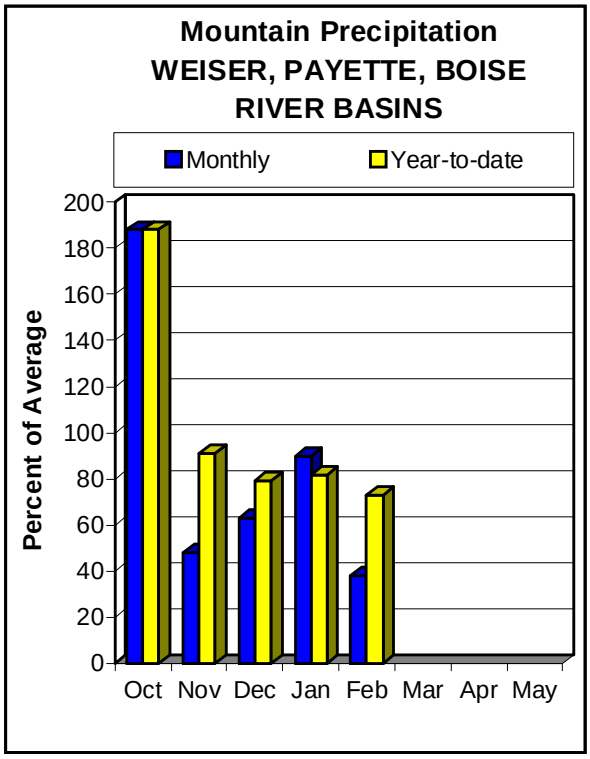
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

(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
MARCH 1, 2010







WATER SUPPLY OUTLOOK

February precipitation was only 32% of normal in the Payette Basin and about 40% of average in the Weiser and Boise basins. This made February the fourth consecutive month of below average precipitation and led to one of the driest November-February periods on record since daily mountain precipitation records began in 1981. Water year-to-date precipitation since October 1st stands at 73% of normal for the region. Snowpacks are leanest in the Payette at 60% of average, while the Boise and Weiser basins have about 73% of their average amounts. This winter's snowpack percentages are similar to last year which surprisingly ended up having adequate surface water supplies. The difference between 2009 and 2010 may lie in the Pacific Ocean. Last winter La Nina conditions brought 90-120% of normal April-June precipitation, delaying irrigation demand and preserving the limited snowmelt in reservoirs. This winter has been dominated by El Nino conditions in the Pacific; this suggests that dry conditions will persist through the spring. Despite current reservoir storage at 104% of average (61% of capacity) in the Boise reservoir system; this year's snowmelt runoff may not be large enough to ensure adequate irrigation water without normal or above average precipitation this spring. Streamflow forecasts range from 53% of average for Mores Creek, to near 60% of average for the Payette River near Horseshoe Bend and the Boise River near Boise, to 65% of average for the Boise River near Twin Springs. Streamflow forecasts are based on current conditions; users may wish to choose different exceedance forecast based on future precipitation.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - March 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)	MAR-JUL	157	290	365	66	445	660	555
	APR-JUL	101	199	255	65	315	480	390
	APR-SEP	114	215	275	66	340	505	420
SF Payette R at Lowman	APR-JUL	205	245	275	63	305	355	440
	APR-SEP	235	280	315	64	350	405	495
Deadwood Resv Inflow (1,2)	APR-JUL	36	63	75	56	87	114	134
	APR-SEP	39	68	81	57	94	123	142
Lake Fork Payette R nr McCall	APR-JUL	42	51	57	67	64	74	85
	APR-SEP	44	53	60	67	67	78	89
NF Payette R at Cascade (1,2)	APR-JUL	137	255	305	59	355	475	520
	APR-SEP	137	255	310	57	365	485	540
NF Payette R nr Banks (2)	APR-JUL	220	310	375	56	440	530	675
	APR-SEP	215	315	380	54	445	545	700
Payette R nr Horseshoe Bend (1,2)	APR-JUL	540	820	945	58	1070	1350	1640
	APR-SEP	530	865	1020	58	1170	1510	1760
Boise R nr Twin Springs (1)	APR-JUL	235	355	410	65	465	585	635
	APR-SEP	260	390	450	65	510	640	690
SF BOISE at Anderson Ranch Dam (1,2)	APR-JUL	122	240	290	54	340	460	540
	APR-SEP	139	260	315	54	370	490	580
MORES CK nr Arrowrock Dam	APR-JUL	35	54	69	53	86	114	131
	APR-SEP	37	56	72	53	90	119	137
Boise R nr Boise (1,2)	APR-JUN	475	665	750	60	835	1030	1260
	APR-JUL	405	690	820	58	950	1230	1410
	APR-SEP	450	760	900	59	1040	1350	1530

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MANN CREEK	11.1	2.7	3.8	6.1
CASCADE	693.2	442.6	471.2	438.3
DEADWOOD	161.9	94.0	78.9	88.5
ANDERSON RANCH	450.2	303.0	261.8	268.0
ARROWROCK	272.2	221.8	244.4	210.4
LUCKY PEAK	293.2	96.3	108.7	120.4
LAKE LOWELL (DEER FLAT)	165.2	113.3	89.3	109.1

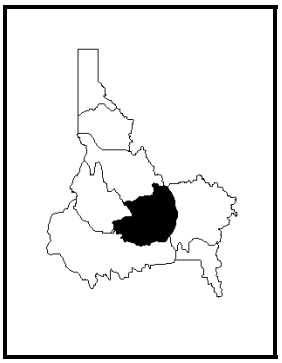
WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - March 1, 2010

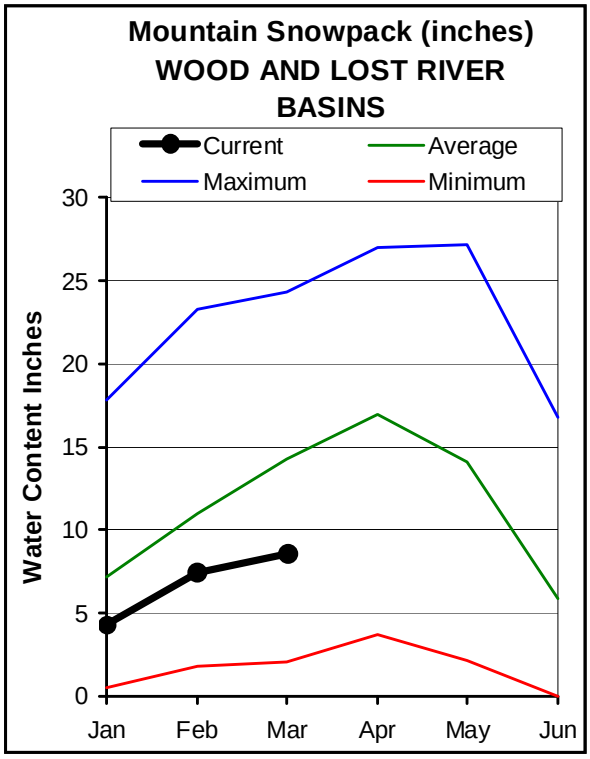
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Mann Creek	2	127	83
Weiser River	5	117	71
North Fork Payette	8	83	57
South Fork Payette	5	85	60
Payette Basin Total	14	85	60
Middle & North Fork Boise	5	91	66
South Fork Boise River	9	94	74
Mores Creek	5	124	84
Boise Basin Total	16	102	75
Canyon Creek	2	131	126

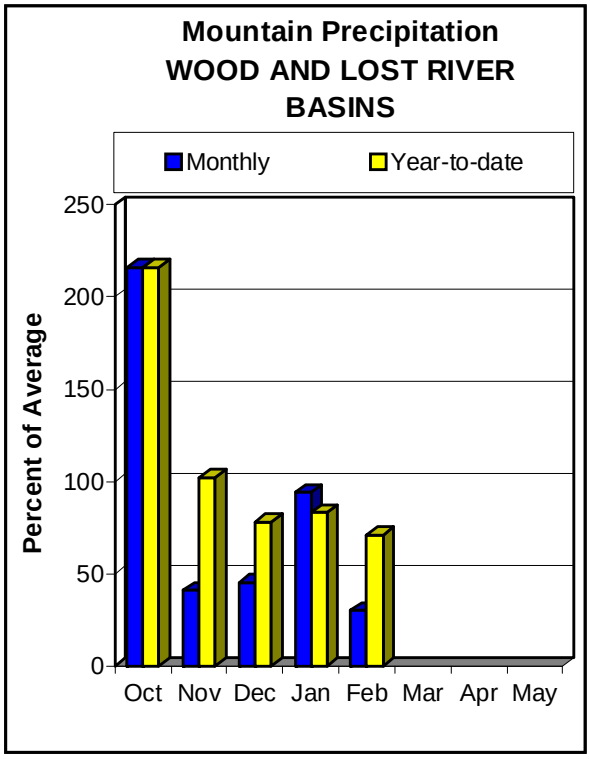
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

(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
MARCH 1, 2010







WATER SUPPLY OUTLOOK

Only one-third of normal precipitation fell in the Wood and Lost basins in February. The Little Wood and Big Lost basins received just over 20% of normal precipitation making them the driest part of the state for the month. Water year-to-date precipitation since October 1st is 71% of normal for the region. October, November and February all had less than half of normal precipitation, producing the third to sixth least November-February precipitation since SNOTEL sites were installed in 1981. Snowpacks are 56% of average in the Big Lost, 57% in the Little Lost, 65% in the Little Wood and 68% in the Big Wood. Depending on the basin, the current snowpack is the fourth to sixth lowest March 1st snowpack since 1961. This winter is very similar to 2001 and worse than every other winter in the past decade. Winters with less snow include 1977, 1987 and 1991. Storage is near average in Magic Reservoir and about 130% of average in Little Wood and Mackay. Streamflow forecasts range from 35-65% of average. The lowest forecast is for the Camas Creek, next are the Little Wood near Carey and Big Wood below Magic Dam at about 40% of average, followed by the Big Lost below Mackay Reservoir at 53%. The best forecast is for the Little Lost near Howe. The Surface Water Supply Index, which combines current reservoir storage with streamflow forecasts, predicts that supplies should be adequate in the Little Wood, but less than adequate in the Big Wood, Big Lost and Little Lost.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - March 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	18.0	105	144	57	183	270	255
	APR-SEP	22	119	163	56	205	305	290
Big Wood R ab Magic Reservoir	APR-JUL	6.0	48	80	42	112	160	190
	APR-SEP	10.0	51	86	42	121	172	205
Camas Ck nr Blaine	APR-JUL	9.0	23	35	35	50	77	100
	APR-SEP	10.0	24	36	36	51	78	101
BIG WOOD below Magic Dam (2)	APR-JUL	6.0	65	115	40	165	240	290
	APR-SEP	9.0	70	122	40	174	250	305
LITTLE WOOD R abv High Five Ck	MAR-JUL	14.6	28	39	46	52	75	85
	MAR-SEP	15.7	30	42	46	56	81	92
LITTLE WOOD near Carey (2)	MAR-JUL	8.2	28	41	43	54	74	96
	MAR-SEP	9.0	30	44	42	58	79	104
BIG LOST at Howell Ranch	APR-JUL	53	80	102	59	126	166	173
	APR-SEP	60	91	116	59	144	190	197
BIG LOST blw Mackay Resv	APR-JUL	15.0	51	75	53	99	135	141
	APR-SEP	24	67	97	56	127	170	172
Little Lost R nr Howe	APR-JUL	11.2	16.1	20	65	24	31	31
	APR-SEP	13.9	20	25	64	30	39	39

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MAGIC	191.5	82.5	29.8	89.7
LITTLE WOOD	30.0	24.2	13.3	17.7
MACKAY	44.4	38.8	26.5	30.8

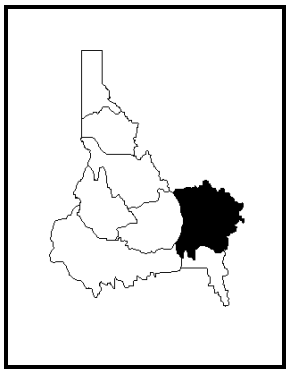
WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - March 1, 2010

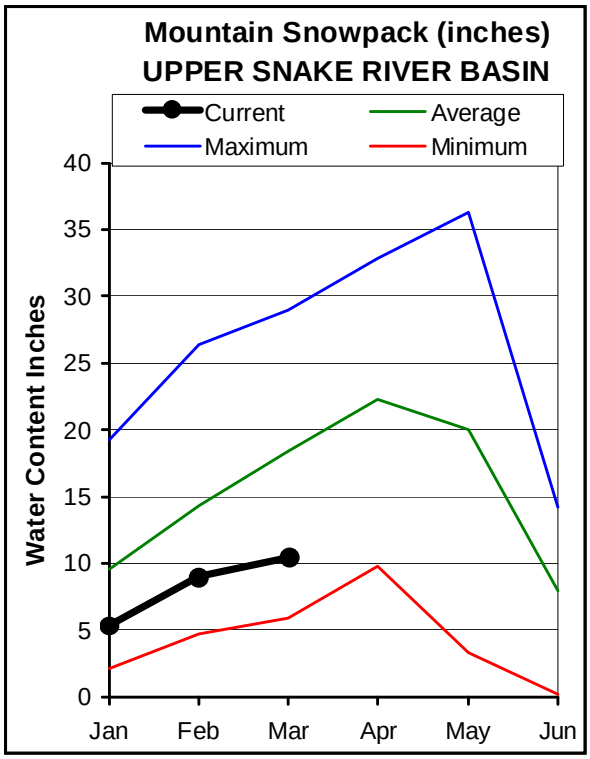
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Hailey	8	82	60
Camas Creek	5	101	85
Big Wood Basin Total	13	88	68
Fish Creek	3	85	74
Little Wood River	8	77	65
Big Lost River	6	69	56
Little Lost River	4	70	57
Birch-Medicine Lodge Cree	4	100	75
Camas-Beaver Creeks	4	77	60

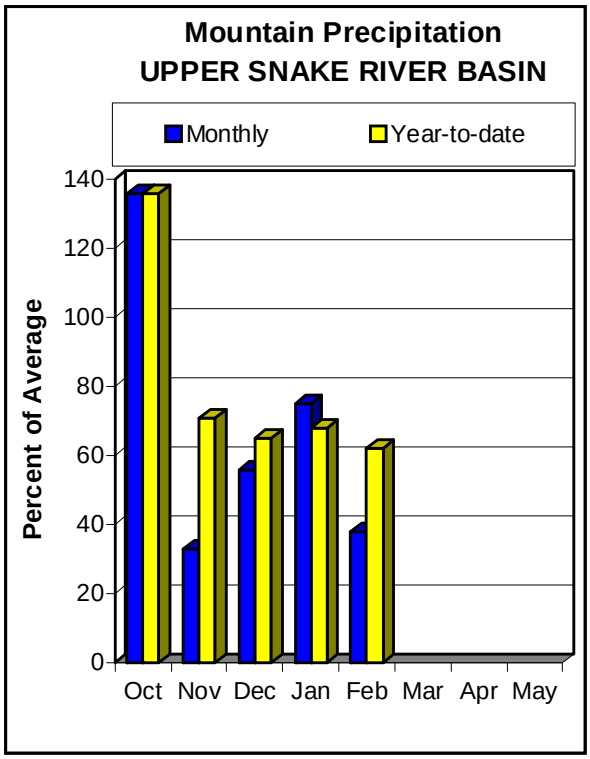
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

(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.

UPPER SNAKE BASINS
MARCH 1, 2010







WATER SUPPLY OUTLOOK

The downward water supply spiral continues in the Upper Snake river basin. The snowpack above American Falls is 58% of average; the second lowest on record out of the last 50 years. Only 1977 had less snow. The Hoback basin continues to have the lowest snowpack at 47% of average. Snowpacks are 51% of normal for the Snake above Jackson Lake and 56% of average for the Henrys Fork above Rexburg. The best snowpack is 68% of average in the Portneuf basin. The oldest snow measuring sites in the basin are Lewis Lake Divide and Aster Creek. Both sites are in Yellowstone National Park and have records dating back to 1919. This year's snow at these sites is the third lowest in the last 91 years. Only 1977 and 1931 had lower amounts. February precipitation was 38% of average for the basin, dropping water year to date precipitation to 62% of average. Based on 20 to 50 years of data, the November-February precipitation totals at the 14 SNOTEL sites in the basin range from the lowest to third lowest on record. Lewis Lake Divide saw only 1.3 inches of precipitation in February, the lowest amount since records began in 1964; normal February precipitation is 6.6 inches. The only thing above normal in the Upper Snake is the reservoir storage at 115% of average, 82% of capacity. Streamflow forecasts have dropped significantly from February and now range from 31-66% of average. The Snake River near Heise is forecast at 47% of average. The Surface Water Supply Index, which combines reservoir storage and streamflow forecasts, indicates that only the 10% chance of exceedance forecast will meet the irrigation demand for the Snake River near Heise gage. If El Nino conditions persist and March brings below average precipitation, expect water supplies similar to 2002 or 2004 and in the worst case scenario 1977 or 2001. Expect reservoirs to be drafted earlier than normal with the limited inflows this summer.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - March 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	255	315	355	62	400	470	570
	APR-SEP	390	460	510	67	565	650	765
HENRYS FORK near Rexburg (2)	APR-JUL	670	830	940	60	1050	1210	1560
	APR-SEP	925	1110	1230	61	1350	1530	2010
Falls R nr Ashton (2)	APR-JUL	192	225	250	66	275	315	380
	APR-SEP	225	265	295	66	325	370	450
Teton R nr Driggs	APR-JUL	47	64	76	46	89	111	165
	APR-SEP	62	84	100	48	118	147	210
Teton R nr St. Anthony	APR-JUL	126	165	195	48	225	280	405
	APR-SEP	158	205	240	50	280	340	480
Snake River At Flagg Ranch	APR-JUL	194	250	285	58	320	375	495
	APR-SEP	210	270	310	57	350	410	545
SNAKE nr Moran (1,2)	APR-JUL	255	380	435	53	490	615	815
	APR-SEP	275	420	485	54	550	695	905
Pacific Ck At Moran	APR-JUL	35	62	80	47	98	125	171
	APR-SEP	40	68	87	49	106	134	178
Buffalo Fork ab Lava nr Moran, WY	APR-JUL	118	152	175	58	198	230	301
	APR-SEP	129	168	195	57	220	260	344
Gros Ventre R at Kelly, WY	APR-JUL	22	56	80	40	104	138	200
	APR-JUL	22	56	80	40	104	138	200
SNAKE abv Resv nr Alpine (1,2)	APR-JUL	600	945	1100	46	1260	1600	2370
	APR-SEP	710	1120	1300	48	1480	1890	2730
Greys R Nr Alpine	APR-JUL	137	174	200	59	225	265	340
	APR-SEP	164	210	240	61	270	315	395
Salt R Nr Etna	APR-JUL	34	103	150	44	197	265	340
	APR-SEP	60	143	200	48	255	340	420
SNAKE nr Irwin (1,2)	APR-JUL	905	1350	1550	47	1750	2190	3330
	APR-SEP	1140	1630	1850	48	2070	2560	3870
SNAKE near Heise (2)	APR-JUL	1110	1440	1660	47	1880	2210	3560
	APR-SEP	1380	1750	2000	48	2250	2620	4160
WILLOW CREEK nr Ririe (2)	MAR-JUL	1.8	10.9	25	28	39	60	88
Blackfoot R ab Res nr Henry	APR-JUN	8.0	16.5	24	33	33	49	73
Portneuf R at Topaz	MAR-JUL	27	35	41	46	47	58	89
	MAR-SEP	35	44	51	47	59	71	109
Snake River at Neeley (1,2)	APR-JUL	97	630	1000	31	1370	2190	3240
	APR-SEP	140	700	1100	31	1500	2390	3510

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HENRYS LAKE	90.4	86.0	87.0	84.4
ISLAND PARK	135.2	113.4	115.3	107.1
GRASSY LAKE	15.2	12.8	13.0	12.0
JACKSON LAKE	847.0	628.7	644.8	494.0
PALISADES	1400.0	1174.0	1004.0	1033.1
RIRIE	80.5	42.2	41.7	38.5
BLACKFOOT	348.7	203.1	97.3	224.7
AMERICAN FALLS	1672.6	1509.0	1408.7	1271.1

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

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Henrys Fork-Falls River	9	68	55
Teton River	8	74	57
Henrys Fork above Rexburg	17	70	56
Snake above Jackson Lake	9	58	51
Pacific Creek	3	56	56
Gros Ventre River	3	57	57
Hoback River	5	54	47
Greys River	4	61	63
Salt River	5	60	66
Snake above Palisades	27	58	54
Willow Creek	7	70	64
Blackfoot River	5	73	64
Snake abv American Falls	47	64	58

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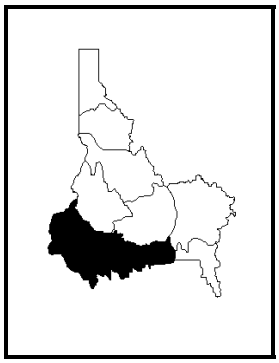
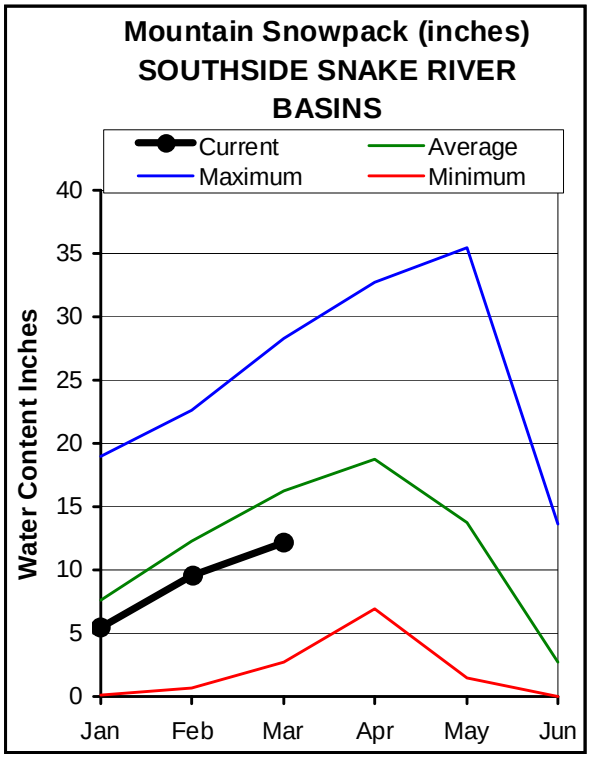
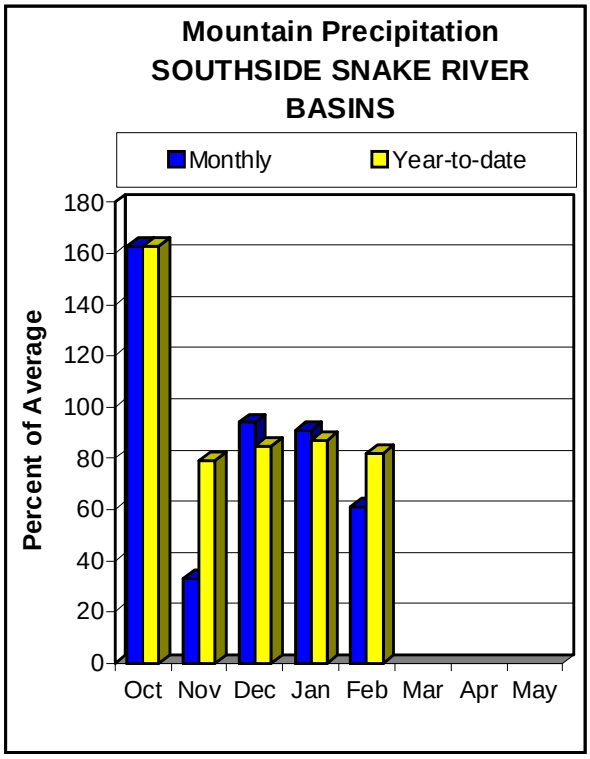
(2) - The value is natural flow - actual flow may be affected by upstream water management.

SOUTHSIDE SNAKE RIVER BASINS
MARCH 1, 2010







WATER SUPPLY OUTLOOK

February precipitation varied widely, from 42-94% of average, at SNOTEL sites across the Southside Snake basins. The Oakley basin had the best monthly precipitation at 78% of average, while the Bruneau had the least with 55%. Water-year precipitation since October 1st is 77% of average for the Bruneau, 80% for Salmon Falls, 83% for the Owyhee and 85% for Oakley. The Owyhee snowpack, at 104% of average, represents the only basin in the state with above average snow on March 1st. The value of measuring the 11 aerial markers in the basin was illustrated this month since the eight SNOTEL sites were only measuring 84% of average snow. A detailed look at the data reveals an above average snowpack at most sites in the 5,500-6,500 feet elevation band. In the elevation band from 6,000 feet to 8,000 feet, there is much more spatial variability with snow ranging from 82% of average at South Mountain SNOTEL (6,500 feet) to 142% of average at the Oregon Canyon aerial marker (6,950 feet). Snow in the other basins ranges from 89% of average for the Raft, 82% for Oakley, 77% for the Bruneau and 71% for Salmon Falls. Reservoir storage ranges from 44% of average in Owyhee Reservoir to about 70-80% of average in Oakley, Salmon Falls and Wildhorse reservoirs. Streamflow forecasts call for 38-68% of average streamflow volumes this summer. Based on the Surface Water Supply Index, which combines reservoir storage and projected streamflow, Salmon Falls water users are most likely to experience shortages as only the 10% chance of exceedance forecast will provide adequate supplies. If observed flows match the 50% chance of exceedance forecast, then the basin will come up 25,000 acre-feet short. In the Oakley basin, the 50% chance of exceedance forecast will provide all but 4,000 acre-feet of water needed to meet irrigation demands. If conditions turn dry, it is likely this shortfall will increase. For Owyhee irrigators, current conditions should provide marginally adequate water supplies. This winter has provided better precipitation for the Southside Snake basins in comparison to much of the rest of Idaho. Hopefully, March will provide enough precipitation for a recovery.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - March 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	7.7	13.3	18.0	53	23	33	34
	MAR-SEP	8.8	14.9	20	54	26	36	37
OAKLEY RESV STORAGE	MARCH	32	33	34	94	35	36	36
	APRIL	31	33	35	85	37	39	41
	MAY	29	33	36	80	39	43	45
Salmon Falls Ck nr San Jacinto	MAR-JUN	17.9	28	36	40	45	60	89
	MAR-JUL	18.4	29	38	41	48	65	93
	MAR-SEP	19.6	31	40	41	50	68	98
SALMON FALLS RESV STORAGE	MARCH	45	49	52	74	55	59	70
	APRIL	49	55	59	67	63	69	88
	MAY	56	65	72	71	79	88	101
Bruneau R nr Hot Springs	MAR-JUL	60	93	120	51	150	200	235
	MAR-SEP	62	97	125	50	156	210	250
Owyhee R nr Gold Creek (2)	MAR-JUL	5.4	8.9	12.0	38	15.7	22	32
	MAR-SEP	5.0	8.0	10.5	34	13.5	19.0	31
Owyhee R nr Rome	MAR-JUL	135	215	280	48	355	475	580
	MAR-SEP	142	225	290	48	365	490	600
Owyhee R blw Owyhee Dam (2)	MAR-JUL	12.0	84	280	46	475	765	615
	MAR-SEP	13.0	92	295	46	500	795	645
	APR-SEP	17.0	79	215	50	350	550	430
Reynolds Ck at Tollgate	MAR-JUL	4.0	5.5	6.6	68	7.8	9.8	9.7

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
OAKLEY	75.6	25.9	20.7	31.4
SALMON FALLS	182.6	46.4	23.7	59.8
WILDHORSE RESERVOIR	71.5	28.3	26.0	40.1
OWYHEE	715.0	213.0	232.6	489.1
BROWNLEE	1420.0	1176.3	1123.3	1090.5

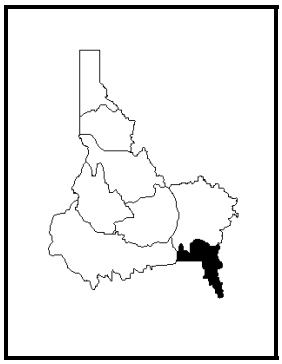
SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - March 1, 2010

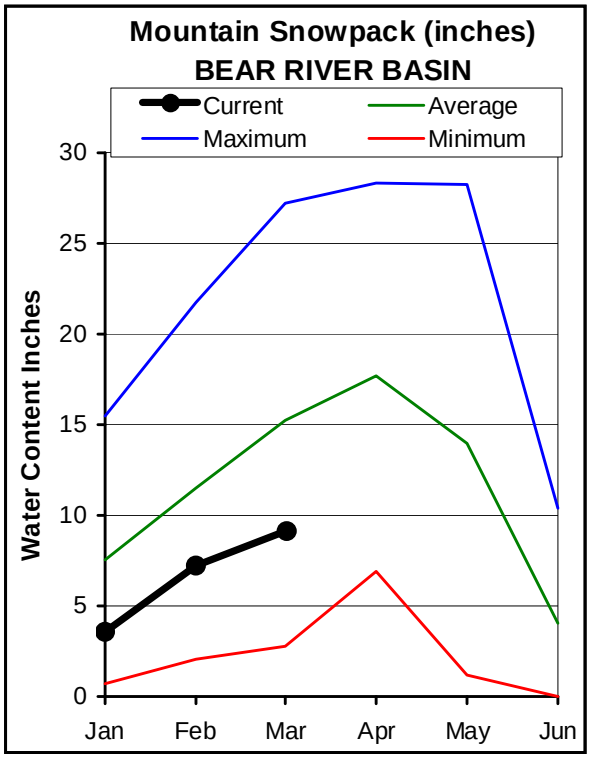
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Raft River	6	89	89
Goose-Trapper Creeks	7	89	82
Salmon Falls Creek	8	74	71
Bruneau River	8	77	77
Reynolds Creek	6	123	88
Owyhee Basin Total	19	107	104

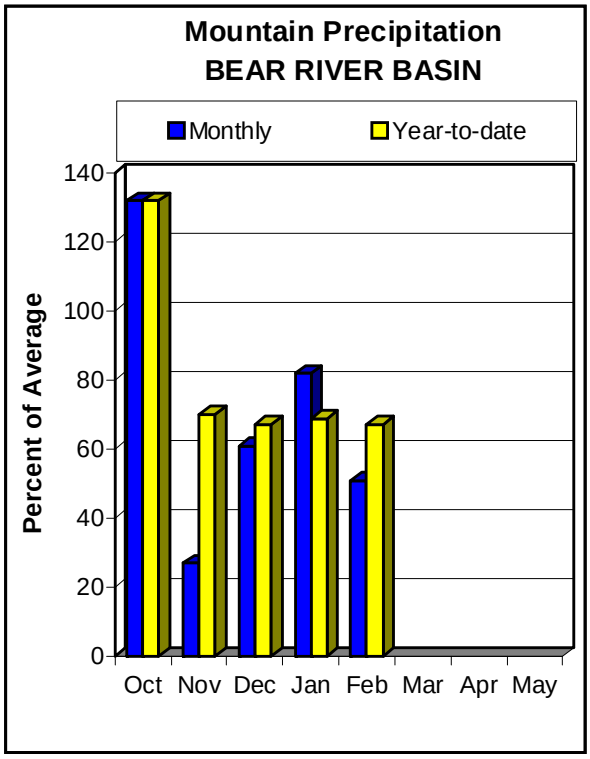
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

(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
MARCH 1, 2010







WATER SUPPLY OUTLOOK

It is probably not a surprise that this snow year has set up to be a dry one. A snow index, which sums up snow water content from 15 mountain SNOTEL sites on March 1, indicates the current snowpack is the 3rd lowest since records began in 1975. The Bear River's Mountains as a whole have 60% of average snow. The best snow can be found in the Malad River drainage at 74% of normal, while the lowest snow is 57% of average at the Bear River above the Wyoming-Idaho line. Bear Lake remains low at only 64% of average; 39% full. The streamflow forecasts are some of the lowest in the region. Bear River at Stewart Dam is forecast for 14% of normal for the April through September period. The Little Bear and Blacksmith Fork rivers forecasts are near 20% of normal and near 50% for the headwater streams. According to the Surface Water Supply Index (SWSI), which combines current reservoir storage and forecasted streamflow volumes, the water supply conditions will be marginally adequate and similar to 2007, but should be better than 2008. More difficult than predicting streamflows is the potential for spring rains, which can greatly improve the water supply situation.

BEAR RIVER BASIN
Streamflow Forecasts - March 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	33	52	65	58	78	97	113
	APR-SEP	30	52	67	54	82	104	125
Bear River ab Reservoir nr Woodruff	APR-JUL	21	49	68	50	87	115	136
	APR-SEP	22	50	70	49	90	118	142
Big Creek nr Randolph	APR-JUL	0.7	1.8	2.5	51	3.2	4.3	4.9
Smiths Fork nr Border	APR-JUL	26	43	55	53	67	84	103
	APR-SEP	26	46	60	50	74	94	121
Bear River at Stewart Dam	APR-JUL	2.0	14.0	35	15	70	154	234
	APR-SEP	5.0	16.0	36	14	102	173	262
Little Bear at Paradise, UT	APR-JUL	1.8	11.2	20	44	29	42	46
Logan R nr Logan, UT	APR-JUL	28	47	60	48	73	92	126
Blacksmith Fk Abv Up&L Dam Nr Hyrum	APR-JUL	1.9	13.3	23	48	33	47	48

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

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEAR LAKE	1421.0	553.6	385.3	910.7
MONTPELIER CREEK	4.0	2.6	2.6	1.7

BEAR RIVER BASIN
Watershed Snowpack Analysis - March 1, 2010

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Smiths & Thomas Forks	4	68	63
Bear River ab WY-ID line	12	64	57
Montpelier Creek	2	75	62
Mink Creek	4	67	64
Cub River	3	69	69
Bear River ab ID-UT line	26	67	62
Malad River	3	83	74

* 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 Reservoir 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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