

# Idaho Water Supply Outlook Report February 1, 2005



**We have surpassed the halfway point of winter and snowpacks across most of the state remain well below average. Typically, January weather conditions provide a source of significant snowfall for Idaho. However, unusually warm and dry conditions prevailed this month and instead, provided a greater source for concern regarding snowpack levels and future streamflows. With less than half of winter remaining and a rather large water deficit to overcome, a strong second half of winter is essential to replenish depleted snowpacks across the state. Unfortunately, weather models have forecast warmer and drier than average conditions over the next three months. However, the groundhog did see his shadow in Idaho on February 2, indicating that six more weeks of winter weather are to follow. Let's hope the groundhog proves the weather models wrong and we see increased precipitation for the rest of winter.**

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

---

*For more water supply and resource management information, or to subscribe to this publication*

**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  
(208) 378-5740**

**Internet Web Address**

**<http://www.id.nrcs.usda.gov/snow/>**

---

## *How forecasts are made*

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

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

---

The United States Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, or marital or familial status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotope, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, D.C., 20250-9410, or call (202) 720-5964 (voice and TDD). USDA is an equal employment opportunity provider and employer.

# ***IDAHO WATER SUPPLY OUTLOOK REPORT***

***February 1, 2005***

## **SUMMARY**

As a result of continued below average precipitation through January, the water supply outlook in Idaho is deteriorating. It does not appear that this will be the year that Idaho begins to pull out of the drought. Streamflow forecasts are in the 60-80% of average range and will hopefully allow water users to squeeze through another season. With more than half the winter behind us, most snowpacks across the state are significantly lower than this time last year. Snowpacks range from 50% of average in northern Idaho to 113% in the Camas-Beaver Creek basins (Mud Lake area) and are just above average in the Bear River. January brought record high air temperatures across the Pacific Northwest and drier than average conditions. The Weiser, Payette and Boise River basins received the least amount of January precipitation at 42% of average, whereas the Bear River basin received the highest at 112% of average. Consequently, the Bear River basin continues to host the highest water year to date precipitation at 114% of average while the Weiser, Payette and Boise River basins are the lowest at 63%. No change to report concerning reservoir storage as reservoirs across central and southern Idaho remain near minimum levels and northern Idaho reservoir levels are above average. Streamflow forecasts for most Idaho drainages have been reduced about 10% from last month to the 60-80% of average range with the exception of the headwaters of the Bear River basin, which are forecast at over 100% of average. However, because of the cumulative drought effects and hydrologic system not being primed, the Bear River near Bear Lake is only forecast at 58% of average. The long-term, 90-day weather forecasts are not favorable for Idaho and with less than half of winter remaining, chances of recovering from cumulative drought effects over the last five years are growing smaller. However, the groundhog did see his shadow in Idaho indicating that six weeks of winter are still to come. This is good news because there is a large water deficit for the current year and also since the drought began. Stay tuned to find out if the groundhog can prove the weather forecast models wrong and if a strong second half of winter can alleviate some of the pressures built by the drought that started in July 1999. Let's hope the groundhog is right!

## **SNOWPACK**

Another month of below average snowfall has left Idaho snowpacks well below average across the state as of February 1. The only exceptions are in southern Idaho where Bear River and Camas-Beaver Creek basins are at or above average. The Wood and Lost, Upper Snake and Southside Snake river basins fall in the 75-85% of average range. Whereas, the Salmon, Owyhee, Weiser, Boise, and Payette River basins all fall in the 60-70% of average range and have just over half the amount of snow water from a year ago. The largest deficit lies in northern Idaho where the Panhandle region and Clearwater basins are only at 50% of average, fourth lowest since 1961. The unusually warm temperatures experienced across the state in January caused some mid- and high-elevation snowpacks in northern Idaho to start melting prematurely, almost a full three months early. Hopefully, this trend will be reversed.

## **PRECIPITATION**

Below average precipitation was recorded everywhere in the state for the month of January except for in the Bear River basin which received 112% of average, 50% more than last January. Water year to date precipitation percentages are slightly better than snowpack percentages due to the wet October. Most percentages across the state are still below average, however, antecedent soil moisture conditions are the best since the drought started. Water year to date precipitation amounts range from a low of 63% of average in the Weiser, Payette and Boise basins to 114% in the Bear River basin. The Weiser, Payette and Boise river basins received the least amount of precipitation in January at only 42% of average, less than half of last January. Most of the state received amounts in the 60-70% of average range. The southern and eastern part of the state benefited the most from the southwest tracking storms with moisture coming into southern Idaho.

## **RESERVOIRS**

Reservoir storage does not change much this time of season and is below average across most of the state except for northern Idaho. Reservoir storage ranges from 13% of average in Bear Lake to 127% of average in Dworshak Reservoir. On a positive note, most reservoirs are storing slightly more water than last year at this time, but remain near minimal storage levels, similar to the past few years due to below normal streamflows since the summer of 2000. Storage in the Payette reservoir system is average while the Boise system is storing slightly less than last year at 71% of average. The cumulative drought effects are most evident in the southern part of the state. Magic Reservoir is the same as a year ago, nearly empty at 12% of capacity with only 23,000 acre-feet. Jackson and Palisades reservoirs have a combined storage of 31% of capacity, 46% of average. South of the Snake River, Salmon Falls only holds 17,600 acre-feet which is 32% of average; Brownlee Reservoir is 93% full and 112% of average. On the low end, Bear Lake storage increased from 95,700 acre-feet on December 31 to 122,100 acre-feet. It is still only 9% full and 13% of average but at an elevation of 5,904.00 feet which will allow for irrigation releases; allocations will be well below a full amount.

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 decreased from last month and now range from 55-75% of average for the April-September period for most of the state. Upper Snake River basin is in the 65-75% of average range, except for Willow, Blackfoot and Portneuf streams which are in the 35-65% of average range. The high desert streams south of the Snake River are forecast at 50-65% of average, with the lowest being Owyhee Reservoir inflow. The Clearwater, Salmon, Big Lost, Little Lost, Payette, Boise River basins are forecast in the 60-70% of average range. The Big Wood River at Hailey is forecast at 63% of average and decreases to 50% for Camas Creek and Magic Reservoir inflow. A similar trend exists in the Bear River basin where headwater streams are forecasted at 116% of average and decrease to 58% for the Bear River at Stewart Dam.

These forecast numbers are the volume under the 50% Chance of Exceeding, which means there is a 50% chance the volume will be greater or less than the given value. Due to the last five years of drought conditions, water users should consider using a lesser exceedance forecast to reduce the risk of coming up short on water. The streamflow forecasts are not looking promising with less than half of winter still to come. The chances of recovering to near average snow levels by April continue to decrease with each week of sunny blue skies. However, future winter/spring precipitation and timing of snow melt will play a significant role in determining summer water supplies and severity of drought conditions. On a positive note, antecedent soil moisture conditions are still better than last year and may provide improved spring runoff conditions to help streamflows.

## **RECREATION**

We have surpassed the halfway point of winter and January denied us of the much needed relief in terms of winter precipitation. Typically, January weather conditions provide a source of significant snowfall for Idaho. However, unusually warm and dry conditions prevailed this month and instead, provided a greater source for concern regarding snowpack levels and future streamflows to winter and summer outdoor enthusiasts. On a positive note, warm temperatures and lack of new snow has set up a relatively stable snowpack for backcountry users to enjoy. However, if the current weather trends continue, river runners can expect a shorter high water season which may allow putting on the rivers earlier than usual. Unfortunately, unregulated rivers and headwater streams will return to below normal levels earlier than normal. So get those boats, bikes, fishing poles and hiking boots ready, but keep the skis and snowmobiles by the front door.

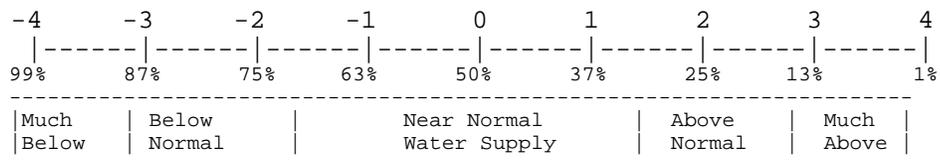
**IDAHO SURFACE WATER SUPPLY INDEX (SWSI) As of February 1, 2005**

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.

<i>BASIN or REGION</i>	<i>SWSI Value</i>	<i>Most Recent Year With Similar SWSI Value</i>	<i>Agricultural Water Supply Shortage May Occur When SWSI is Less Than</i>
PANHANDLE	-2.7	----	NA
CLEARWATER	-2.5	1995	NA
SALMON	-2.1	1990	NA
WEISER	-2.4	1991	NA
PAYETTE	-1.9	2002	NA
BOISE	-2.1	2004	-2.1
BIG WOOD	-1.4	2003	-1.0
LITTLE WOOD	-1.2	2000/03	-2.0
BIG LOST	-1.0	2003	-0.5
LITTLE LOST	-1.9	2000	0.0
HENRYS FORK	-2.1	2003/04	-3.3
SNAKE (HEISE)	-2.6	2003	-2.0
OAKLEY	-2.1	2001	-1.0
SALMON FALLS	-2.1	2004	-1.0
BRUNEAU	-1.0	2004	NA
BEAR RIVER	-3.8	2003/04	-3.8

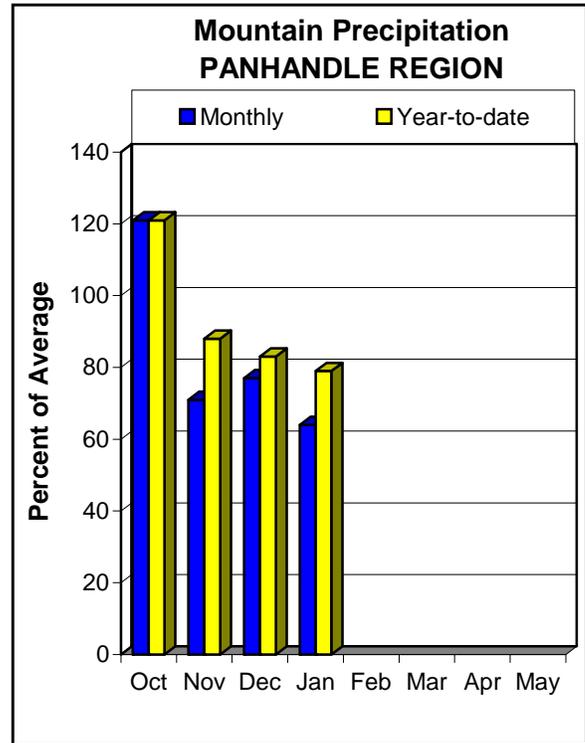
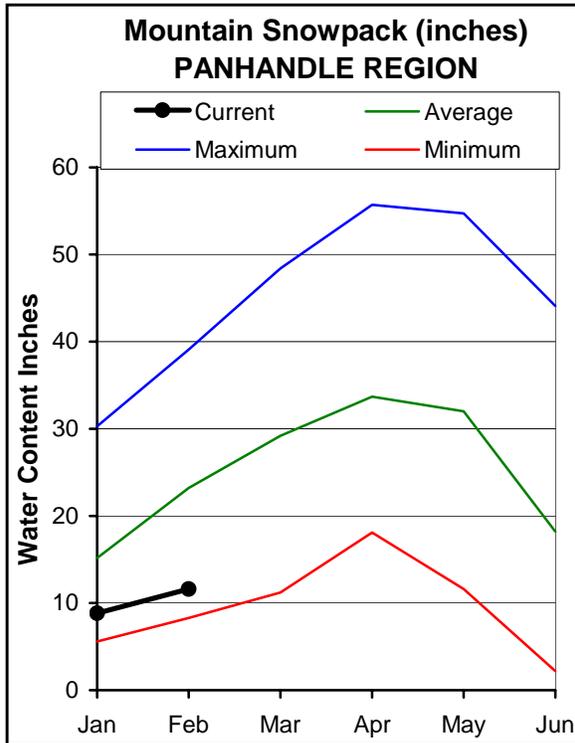
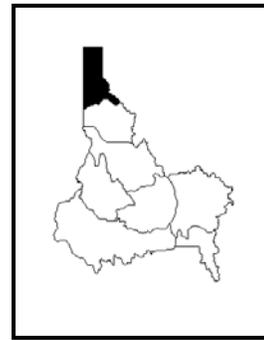
**SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION**



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 FEBRUARY 1, 2005



## WATER SUPPLY OUTLOOK

Winter is nearly non-existent across the Pacific Northwest. Snowpacks are only a third of average in north central Washington and increase to about half of average in Idaho's Panhandle. Snow measuring stations above Coeur d'Alene Lake reflect the snowpack throughout northern Idaho and are the 4<sup>th</sup> lowest since 1961. Only years 1977, 1981 and 2001 had less than this year. The record high air temperatures are noticeable in the low and mid-elevation snowpacks, as no snow was measured at Fourth of July Summit snow course on February 1st. This site is at 3,200 feet in elevation and this is the first time no snow was measured on February 1 since measurements start in 1960. Similarly, it is the first time the snowpack started melting in January at Lookout SNOTEL along the ID-MT border since NRCS started collecting daily data in 1981. Snowpack percentages range from 35-60% of average in these northern Idaho basins. Monthly mountain precipitation was only 64% of average in January, third consecutive month with precipitation less than 75% of average. Water year to date precipitation dropped to 79% of average. Reservoir storage remains the encouraging part of the water supply picture with the six major reservoirs and lakes in north Idaho and Montana reporting average storage or better. However, the outlook for summer streamflows deteriorated during January and now calls for 55-75% of average for most of these north Idaho streams. With better snow in Canada, the Kootenai River is forecast 85% of average. Pend Oreille Lake inflow is forecast at only 64%. With less than half the winter remaining, time is running out to build a snowpack in these northern Idaho mountains.

PANHANDLE REGION  
Streamflow Forecasts - February 1, 2005

Forecast Point	Forecast Period	<<==== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
				Chance Of Exceeding *				
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
KOOTENAI at Leonia (1,2)	APR-JUL	4740	5590	5980	85	6370	7220	7040
	APR-SEP	5470	6440	6900	85	7330	8310	8120
MOYIE RIVER at Eastport	APR-JUL	250	285	305	75	325	360	405
	APR-SEP	260	290	315	75	340	370	420
SMITH CREEK	APR-JUL	68	83	94	76	105	120	123
	APR-SEP	68	85	97	75	109	126	129
BOUNDARY CREEK	APR-JUL	72	87	97	79	107	122	123
	APR-SEP	76	91	101	78	111	126	129
CLARK FK at Whitehorse Rpds (1,2)	APR-JUL	3870	6240	7310	65	8380	10750	11300
	APR-SEP	4250	6850	8030	64	9210	11810	12500
PEND OREILLE Lake Inflow (2)	APR-JUL	5220	6980	8170	64	9360	11120	12700
	APR-SEP	5690	7610	8920	64	10230	12150	13900
PRIEST near Priest River (1,2)	APR-JUL	445	555	605	74	655	765	815
	APR-SEP	355	555	645	74	735	940	870
NF COEUR D'ALENE RIVER AT ENAVILLE	APR-JUL	252	365	440	60	515	630	740
	APR-SEP	270	385	465	60	545	660	780
ST. JOE at Calder	APR-JUL	480	615	705	62	795	930	1140
	APR-SEP	500	635	730	61	825	960	1200
SPOKANE near Post Falls (2)	APR-JUL	890	1230	1470	58	1710	2050	2550
	APR-SEP	935	1290	1530	58	1770	2130	2650
SPOKANE at Long Lake (2)	APR-JUL	1050	1450	1720	60	1990	2390	2850
	APR-SEP	1190	1610	1890	62	2170	2590	3070

PANHANDLE REGION Reservoir Storage (1000 AF) - End of January					PANHANDLE REGION Watershed Snowpack Analysis - February 1, 2005			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
HUNGRY HORSE	3451.0	3070.0	2551.0	2214.7	Kootenai ab Bonners Ferry	18	65	63
FLATHEAD LAKE	1791.0	1168.0	955.6	971.2	Moyie River	5	68	71
NOXON RAPIDS	335.0	319.9	129.1	310.9	Priest River	4	53	58
PEND OREILLE	1561.3	903.0	562.1	749.3	Pend Oreille River	70	55	56
COEUR D'ALENE	238.5	154.3	69.5	115.6	Rathdrum Creek	1	24	33
PRIEST LAKE	119.3	59.9	56.0	55.5	Hayden Lake	0	0	0
					Coeur d'Alene River	6	35	38
					St. Joe River	4	48	49
					Spokane River	9	37	41
					Palouse River	1	18	23

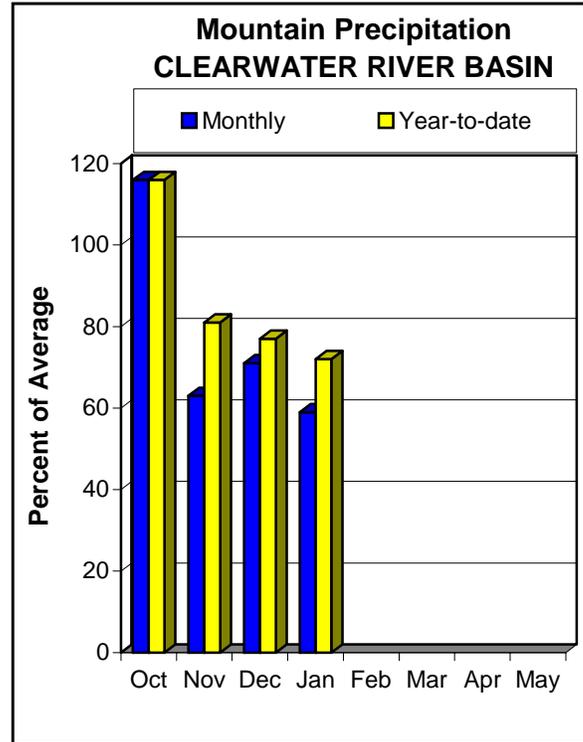
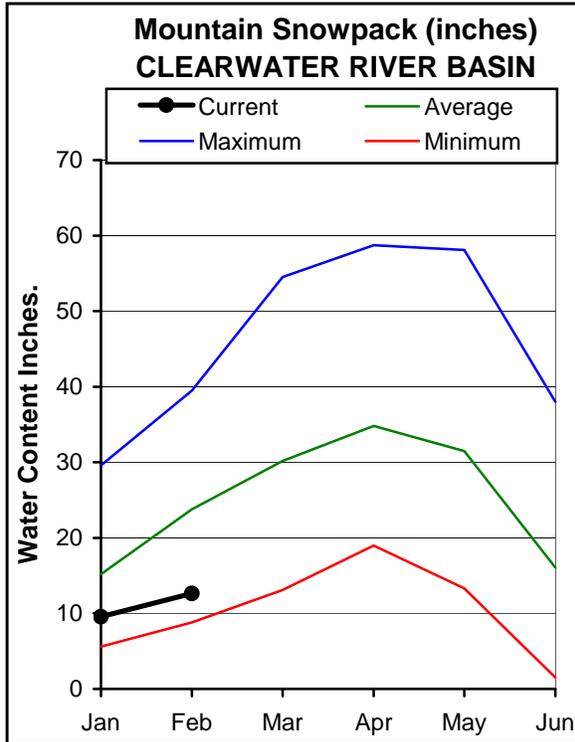
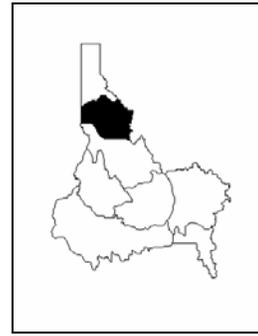
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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

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

# CLEARWATER RIVER BASIN

## FEBRUARY 1, 2005



## WATER SUPPLY OUTLOOK

Precipitation in January was only 59% of average and is 72% of average since the water year started. Snowpacks in the North Fork Clearwater, Lochsa and Selway basins are 45-55% of average, half of last year and are only a third of the seasonal peaks that occur around April 1. This year's snow is slightly better than February 2001, but the fourth lowest since 1961; only years 1977, 1981 and 2001 had less snow water than this year. There is still a chance to recover as April-July streamflow for these other low years ranged from 50% of average in 1977 to 90% in 1981. Current streamflow forecasts are for 67% of average for the Selway and Lochsa rivers. Dworshak Reservoir inflow is forecast at 66% of average and Clearwater River at Spalding is forecast at 67% of average. Reservoir storage remains above average at 127% of average as a result of the above average streamflows since August 2004. However, monthly streamflows had been below average from May 2003 to June 2004 and will fall below average again later this spring unless winter returns.

CLEARWATER RIVER BASIN  
Streamflow Forecasts - February 1, 2005

Forecast Point	Forecast Period	<<==== Drier ==== Future Conditions ==== Wetter =====>>						30-Yr Avg. (1000AF)				
		90%		70%		50%			30%		10%	
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)		(1000AF)	(1000AF)		
SELWAY near Lowell	APR-JUL	1070	1260	1380	67	1500	1690	2060				
	APR-SEP	1120	1320	1450	67	1580	1780	2170				
LOCHSA near Lowell	APR-JUL	800	930	1020	67	1110	1240	1530				
	APR-SEP	845	980	1070	67	1160	1300	1610				
DWORSHAK RESV INFLOW (1,2)	APR-JUL	1157	1510	1750	66	2110	2890	2640				
	APR-SEP	1320	1642	1860	66	2220	3000	2800				
CLEARWATER at Orofino (1)	APR-JUL	2189	2755	3140	68	3690	4900	4650				
	APR-SEP	2440	2958	3310	68	3860	5070	4900				
CLEARWATER at Spalding (1,2)	APR-JUL	3554	4403	4980	67	5910	7960	7430				
	APR-SEP	3834	4683	5260	67	6190	8240	7850				

CLEARWATER RIVER BASIN Reservoir Storage (1000 AF) - End of January					CLEARWATER RIVER BASIN Watershed Snowpack Analysis - February 1, 2005				
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of		
		This Year	Last Year	Avg			Last Yr	Average	
DWORSHAK	3468.0	2752.9	2116.5	2170.7	North Fork Clearwater	9	49	54	
					Lochsa River	4	44	47	
					Selway River	5	48	53	
					Clearwater Basin Total	18	48	52	

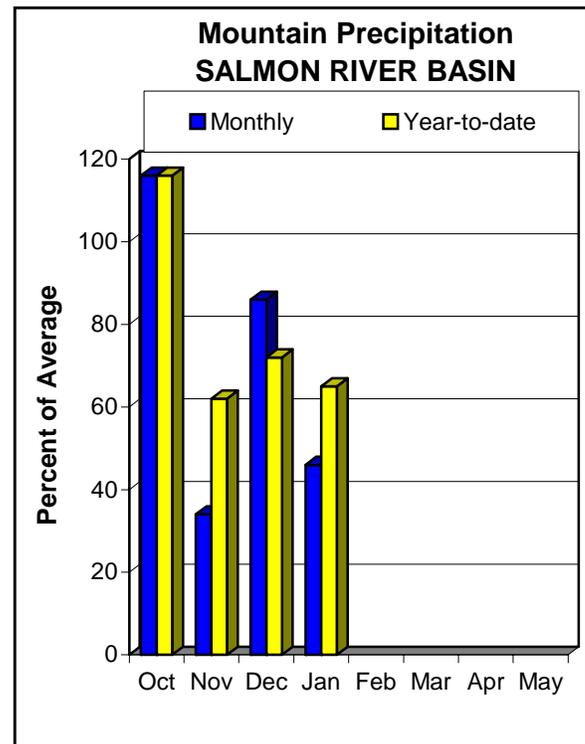
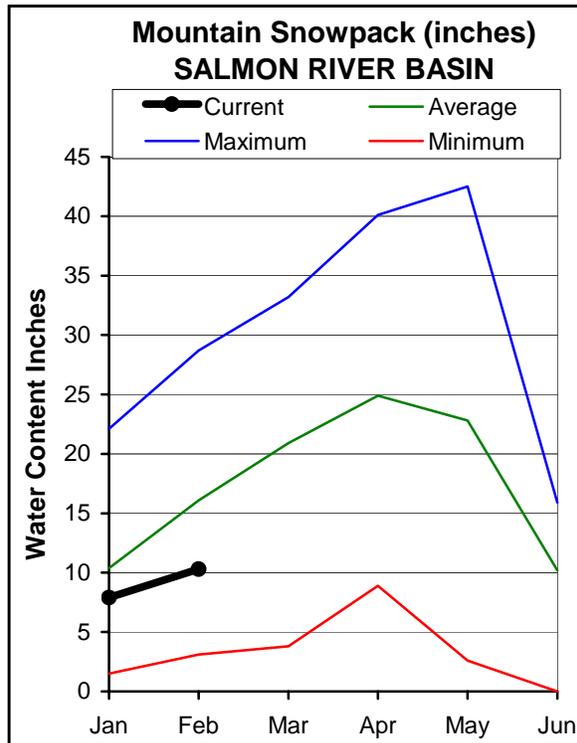
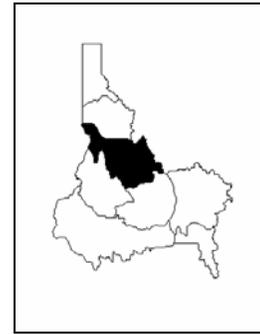
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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

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

# SALMON RIVER BASIN

## FEBRUARY 1, 2005



## WATER SUPPLY OUTLOOK

Mother Nature nearly forgot about winter in the central Idaho mountains as January precipitation was only 46% of average for the Salmon basin. January precipitation amounts ranged from less than an inch in the Lemhi basin to four inches at Deadwood Summit SNOTEL site; average January precipitation amounts range from 1.5 to 8.0 inches. Snowpacks are the highest in the Lemhi basin at 72% of average of average. The snowpack in the Middle Fork and South Fork Salmon River basins are 58% of average while the Little Salmon basin is 63%. Overall, the Salmon basin snowpack is 64% of average, two-thirds of last year's snowpack. The Salmon basin snowpack is the fifth lowest since 1981; only years 1987, 1991, 1994 and 2001 had less snow on February 1 than this year. April-September runoff for these years ranged from 45% of average in 2001 and 1987 to 67% in 1991. Current streamflow forecasts are for runoff volumes in the 65% of average range. The long-term drought is evident in the monthly streamflow volumes for the Salmon River at White Bird as only five months have had average or higher flows since the drought started in the summer of 1999. If Mother Nature gets back on track bringing moisture across the Pacific Northwest, water supply conditions can still improve; if not, runoff volumes may be less than the most recent years, but hopefully better than 2001.

SALMON RIVER BASIN  
Streamflow Forecasts - February 1, 2005

Forecast Point	Forecast Period	<<==== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90%		50%		30%		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
SALMON at Salmon (1)	APR-JUL	383	506	590	69	705	965	855
	APR-SEP	315	575	690	69	805	1070	1000
Lemhi River nr Lemhi	APR-JUL	32	47	59	69	73	95	86
	APR-SEP	38	56	70	67	86	112	105
MF Salmon at MF Lodge	APR-JUL	301	408	490	62	579	725	785
	APR-SEP	342	460	550	63	648	808	875
SALMON at White Bird (1)	APR-JUL	2814	3484	3940	67	4580	6000	5850
	APR-SEP	3371	3966	4370	67	5010	6430	6480

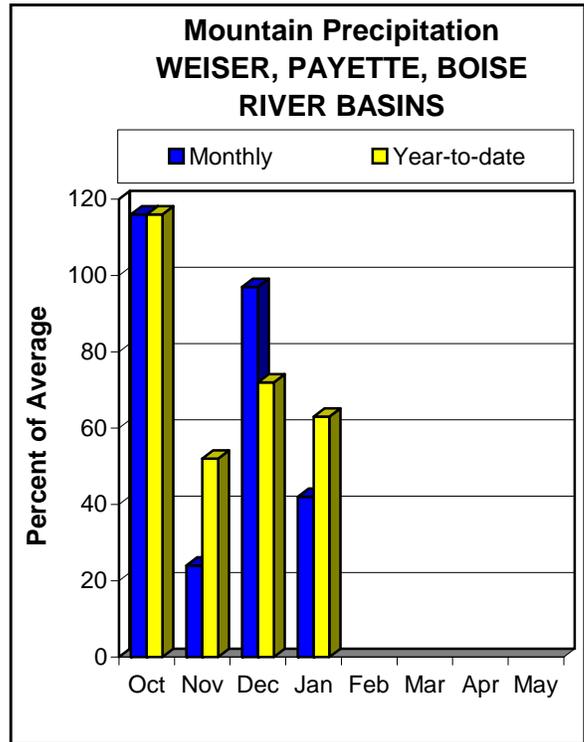
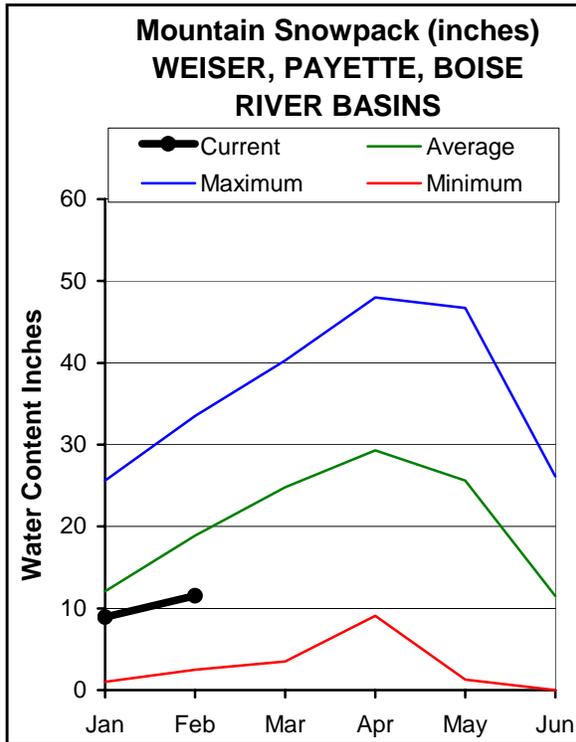
SALMON RIVER BASIN Reservoir Storage (1000 AF) - End of January				SALMON RIVER BASIN Watershed Snowpack Analysis - February 1, 2005				
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					Salmon River ab Salmon	9	75	66
					Lemhi River	6	81	72
					Middle Fork Salmon River	3	60	58
					South Fork Salmon River	3	56	59
					Little Salmon River	4	56	63
					Salmon Basin Total	24	65	64

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

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

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

# WEISER, PAYETTE, BOISE RIVER BASINS FEBRUARY 1, 2005



## WATER SUPPLY OUTLOOK

Mother Nature took the month off as January precipitation in these west-central mountains was only 42% of average, the lowest in the state. Water year to date precipitation is 63% of average, about two-thirds of last year. The snowpack is 70% of average in the Weiser, Mann and South Fork Boise basins. The snowpack is 59% of average in the South Fork Payette and 60% in the North Fork Payette basins. The Middle and North Fork Boise basin snowpack is 59% of average. Overall, the Boise basin snowpack is 63% of average. The snowpack in these basins is just slightly more than half of last year's. Reservoir storage in the Payette reservoir system is average while the Boise system is storing slightly less than last year at 71% of average. Streamflow forecasts decreased from a month ago and now call for 58% of average for the Payette River near Horseshoe Bend, 62% for the Boise River near Boise, and 51% for the Weiser River. Last year runoff volumes were 75% and 62% of average, respectively. With most streams forecasted at 60-65% of average in these basins, water supplies maybe marginal like last year, but can improve with a return to winter-like conditions.

WEISER, PAYETTE, BOISE RIVER BASINS  
Streamflow Forecasts - February 1, 2005

Forecast Point	Forecast Period	<<==== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)		
		90% (1000AF)		70% (1000AF)		Chance Of Exceeding * 50% (1000AF) (% AVG.)			30% (1000AF) 10% (1000AF)	
WEISER near Weiser (1)	APR-SEP	128	180	215	51	285	435	420		
SF PAYETTE at Lowman	APR-JUL	174	235	275	63	315	375	440		
	APR-SEP	196	260	305	62	350	415	495		
DEADWOOD RESERVOIR Inflow (1,2)	APR-JUL	45	72	84	63	96	123	134		
	APR-SEP	50	77	89	63	101	128	142		
LAKE FORK PAYETTE near McCall	APR-JUL	38	47	53	62	59	68	85		
	APR-SEP	39	49	55	62	61	71	89		
NF PAYETTE at Cascade (1,2)	APR-JUL	141	255	305	62	355	470	490		
	APR-SEP	165	280	330	62	380	495	530		
NF PAYETTE nr Banks (2)	APR-JUL	210	310	380	59	450	550	645		
	APR-SEP	225	335	410	59	485	595	690		
PAYETTE nr Horseshoe Bend (1,2)	APR-JUL	475	795	940	58	1090	1410	1610		
	APR-SEP	460	845	1020	58	1200	1580	1750		
BOISE near Twin Springs (1)	APR-JUL	250	365	415	65	465	580	635		
	APR-SEP	260	390	450	65	510	640	690		
SF BOISE at Anderson Ranch Dam (1,2)	APR-JUL	220	305	340	63	375	460	540		
	APR-SEP	165	305	365	63	425	565	580		
MORES CREEK near Arrowrock Dam	APR-JUL	39	63	80	61	97	121	131		
	APR-SEP	41	66	83	61	100	125	137		
BOISE near Boise (1,2)	APR-JUN	450	690	800	64	910	1145	1260		
	APR-JUL	385	725	880	62	1030	1370	1410		
	APR-SEP	460	800	955	62	1105	1445	1530		

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

WEISER, PAYETTE, BOISE RIVER BASINS  
Watershed Snowpack Analysis - February 1, 2005

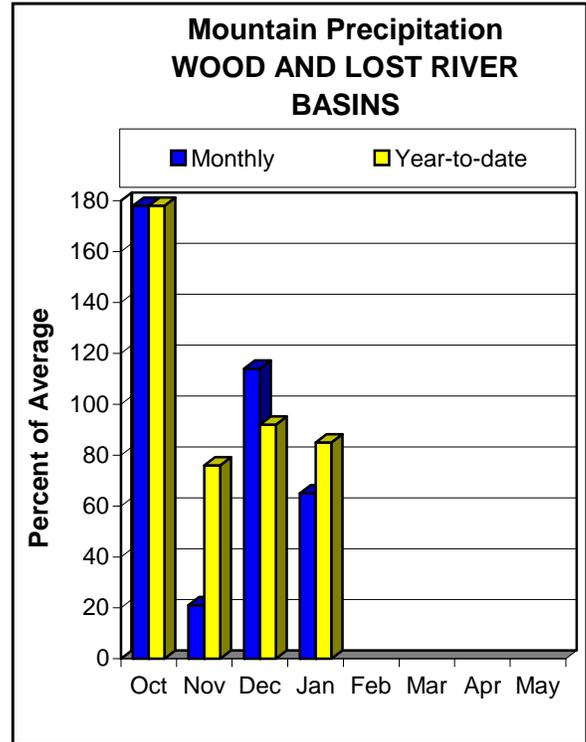
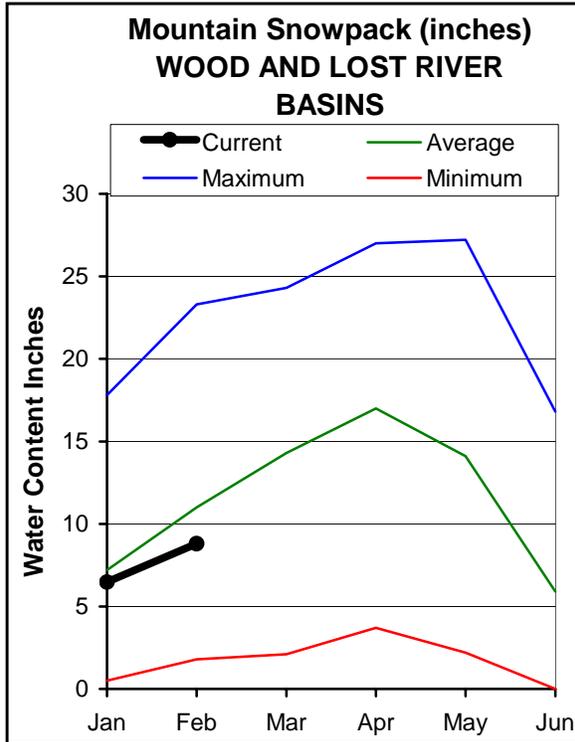
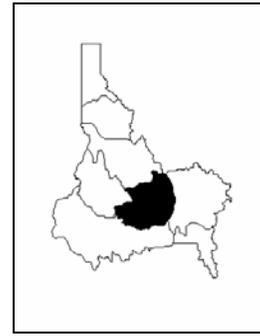
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
MANN CREEK	11.1	2.1	1.3	4.3	Mann Creek	1	67	72
CASCADE	693.2	470.4	417.9	448.4	Weiser River	3	57	69
DEADWOOD	161.9	74.0	82.9	86.3	North Fork Payette	8	52	60
ANDERSON RANCH	450.2	213.6	275.1	283.6	South Fork Payette	5	55	59
ARROWROCK	272.2	121.3	1.3	201.1	Payette Basin Total	14	53	60
LUCKY PEAK	293.2	85.1	169.3	106.6	Middle & North Fork Boise	5	56	59
LAKE LOWELL (DEER FLAT)	165.2	112.2	118.9	101.7	South Fork Boise River	9	71	71
					Mores Creek	5	39	53
					Boise Basin Total	16	56	63
					Canyon Creek	2	71	82

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

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

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

# WOOD and LOST RIVER BASINS FEBRUARY 1, 2005



## WATER SUPPLY OUTLOOK

January precipitation in these central mountain basins was spotty with nearly all the moisture falling the first half of the month. A couple of SNOTEL stations received average precipitation along the Montana border while others received only half of average in the Camas basin. Water year to date precipitation is 85% of average, slightly less than last year. Snowpacks range from near average in Little Wood and Fish Creek basins and decrease to 89% in the Big Lost basin and to 78% in Big Wood and Little Lost basins. Magic Reservoir storage remains the same as a year ago at 12% of capacity, 27% of average while Little Wood and Mackay reservoirs are 44% of capacity, 75% of average. Streamflow forecasts decreased from a month ago and call for 63% of average for Big Wood River at Hailey and decrease to only 51% for Magic Reservoir inflow. The Little Wood, Big Lost and Little Lost rivers are forecast at 65-70% of average. Water users should be prepared for shortages again as summer streamflows could be similar to recent years depending on future precipitation and how the snow melts.

WOOD AND LOST RIVER BASINS  
Streamflow Forecasts - February 1, 2005

Forecast Point	Forecast Period	<<==== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90%		50%		30%		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
BIG WOOD at Hailey (1)	APR-JUL	82	133	161	63	191	267	255
	APR-SEP	95	152	183	63	216	300	290
BIG WOOD ab Magic Reservoir	APR-JUL	39	69	95	50	127	187	190
	APR-SEP	49	60	104	51	148	211	204
CAMAS CREEK near Blaine	APR-JUL	19.0	35	49	49	65	93	100
	APR-SEP	20	36	50	50	66	94	101
BIG WOOD below Magic Dam (2)	APR-JUL	59	85	148	51	211	306	290
	APR-SEP	74	91	156	51	223	318	305
LITTLE WOOD R ab High Five Ck	MAR-JUL	31	46	58	68	71	93	85
	MAR-SEP	34	50	62	67	76	99	92
	APR-JUL	26	40	51	65	63	84	78
	APR-SEP	29	44	56	66	69	92	85
LITTLE WOOD near Carey (2)	MAR-JUL	29	49	63	66	77	97	96
	MAR-SEP	30	52	67	64	82	104	104
	APR-JUL	23	43	57	66	71	91	87
	APR-SEP	25	47	62	66	77	99	94
BIG LOST at Howell Ranch	APR-JUL	70	103	125	72	156	202	173
	APR-SEP	54	106	142	72	178	229	197
BIG LOST bl Mackay Reservoir	APR-JUL	33	70	96	68	122	159	141
	APR-SEP	40	86	117	68	148	194	172
LITTLE LOST bl Wet Creek	APR-JUL	11.2	17.0	21	68	25	31	31
	APR-SEP	13.6	21	26	67	31	38	39

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

WOOD AND LOST RIVER BASINS  
Watershed Snowpack Analysis - February 1, 2005

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
MAGIC	191.5	23.0	20.5	85.0	Big Wood ab Hailey	8	86	78
LITTLE WOOD	30.0	13.0	11.7	16.3	Camas Creek	5	72	79
MACKAY	44.4	19.7	17.4	27.7	Big Wood Basin Total	13	81	79
					Fish Creek	3	101	109
					Little Wood River	8	92	97
					Big Lost River	6	88	89
					Little Lost River	3	88	79
					Birch-Medicine Lodge Cree	2	80	72
Camas-Beaver Creeks	4	101	113					

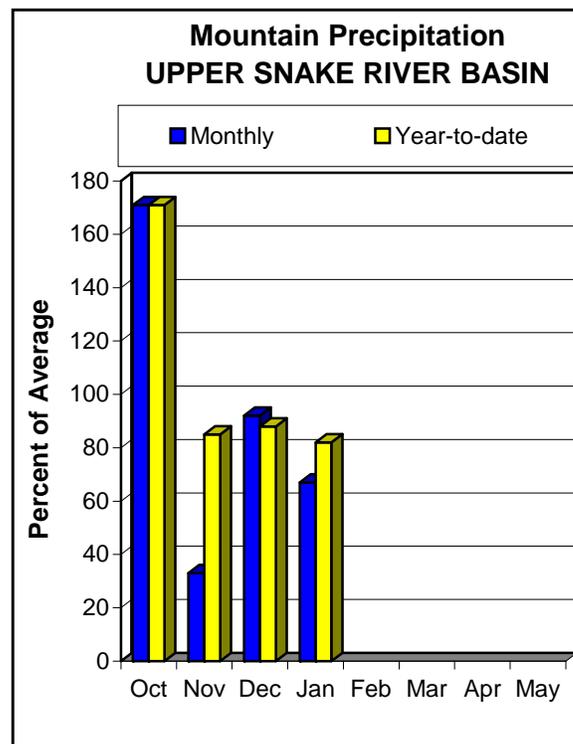
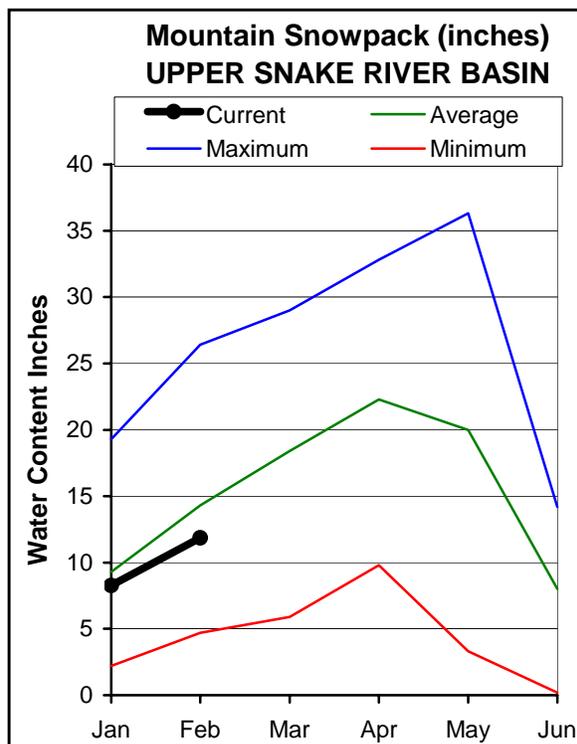
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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

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

# UPPER SNAKE RIVER BASIN

## FEBRUARY 1, 2005



## WATER SUPPLY OUTLOOK

Mountain precipitation was only 67% of average in January, third consecutive month with below average precipitation. Water year to date precipitation is 82% of average, less than last year. Snowpacks range from 69% of average in the Snake River above Jackson Lake to 83% for the Henrys Fork and Falls basins. The Snake River above Palisades snowpack is 73% of average while the Snake basin above American Falls is 78%. Jackson Lake and Palisades Reservoir have a combined storage of 31% of capacity, 46% of average which is slightly better than last year. American Falls is 59% of capacity, 87% of average and looking better than last year because of the slight increase in spring flows from the above average precipitation late last summer. Blackfoot Reservoir remains the lowest at only 10% of capacity, 15% of average. Streamflow forecasts decreased from a month ago and call for 76% of average for Henrys Fork, 68% for Teton River, 70% for Snake River near Heise and 45% for American Falls Reservoir inflow. Blackfoot Reservoir inflow is forecast at only 37% of average while Willow Creek near Ririe is not much better at 49%. The Portneuf River is forecast at 67% of average even with a snowpack at 97% of average. Water supplies will be tight without much extra water. Surface water supplies are looking similar to recent years, but future weather will determine the remaining snow accumulation season and snowmelt regime.

UPPER SNAKE RIVER BASIN  
Streamflow Forecasts - February 1, 2005

Forecast Point	Forecast Period	<<==== Drier ===== Future Conditions ===== Wetter =====>>					30-Yr Avg. (1000AF)	
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)		10% (1000AF)
HENRYS FORK near Ashton (2)	APR-JUL	345	400	435	76	470	525	570
	APR-SEP	475	535	580	76	625	685	765
HENRYS FORK near Rexburg (2)	APR-JUL	875	1040	1150	74	1260	1430	1560
	APR-SEP	1170	1350	1480	74	1610	1790	2010
FALLS RIVER nr Ashton (2)	APR-JUL	195	240	270	71	300	345	380
	APR-SEP	235	285	320	71	355	405	450
TETON RIVER NEAR DRIGGS	APR-JUL	64	93	112	68	131	160	165
	APR-SEP	84	119	143	68	167	204	210
TETON near St. Anthony	APR-JUL	175	235	275	68	315	375	405
	APR-SEP	210	280	325	68	370	440	480
SNAKE at Flag Ranch	APR-JUL	250	310	350	75	390	450	470
	APR-SEP	270	335	380	74	425	490	515
SNAKE nr Moran (1,2)	APR-JUL	400	515	570	70	625	740	815
	APR-SEP	440	570	630	70	690	820	905
PACIFIC CREEK at Moran	APR-JUL	78	98	111	65	124	144	171
	APR-SEP	82	102	116	65	130	150	178
SNAKE ab resv nr Alpine (1,2)	APR-JUL	1130	1480	1630	69	1780	2130	2370
	APR-SEP	1310	1690	1870	69	2050	2430	2730
GREYS above Palisades	APR-JUL	162	210	240	71	270	320	340
	APR-SEP	194	245	280	71	315	365	395
SALT near Etna	APR-JUL	143	200	240	71	280	335	340
	APR-SEP	180	250	295	70	340	410	420
SNAKE nr Irwin (1,2)	APR-JUL	1570	2100	2340	70	2580	3110	3330
	APR-SEP	1850	2450	2720	70	2990	3590	3870
SNAKE near Heise (2)	APR-JUL	1820	2210	2480	70	2750	3140	3560
	APR-SEP	2150	2600	2900	70	3200	3650	4160
WILLOW CREEK nr Ririe	MAR-JUL	22	34	43	49	54	71	88
BLACKFOOT RESV INFLOW	APR-JUN	26	37	44	37	64	92	120
SNAKE nr Blackfoot (1,2)	APR-JUL	2050	2740	3060	67	3380	4070	4600
	APR-SEP	2730	3420	3740	67	4060	4750	5620
PORTNEUF at Topaz	MAR-JUL	42	53	60	67	67	78	89
	MAR-SEP	53	65	74	68	83	95	109
AMERICAN FALLS RESV INFLOW (1,2)	APR-JUL	979	1266	1460	45	1890	2850	3240
	APR-SEP	1099	1386	1580	45	2010	2970	3510

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

UPPER SNAKE RIVER BASIN  
Watershed Snowpack Analysis - February 1, 2005

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
HENRYS LAKE	90.4	66.1	67.8	83.2	Henrys Fork-Falls River	10	70	83
ISLAND PARK	135.2	79.6	75.9	102.2	Teton River	8	63	71
GRASSY LAKE	15.2	8.7	9.7	11.8	Henrys Fork above Rexburg	18	67	78
JACKSON LAKE	847.0	133.5	160.5	490.1	Snake above Jackson Lake	9	61	69
PALISADES	1400.0	571.5	459.7	1040.3	Gros Ventre River	3	79	69
RIRIE	80.5	31.8	28.7	35.8	Hoback River	5	81	75
BLACKFOOT	348.7	34.1	---	220.1	Greys River	5	82	77
AMERICAN FALLS	1672.6	978.7	804.5	1125.4	Salt River	5	79	77
					Snake above Palisades	28	71	73
					Willow Creek	7	58	78
					Blackfoot River	4	66	71
					Portneuf River	6	84	97
					Snake abv American Falls	47	71	78

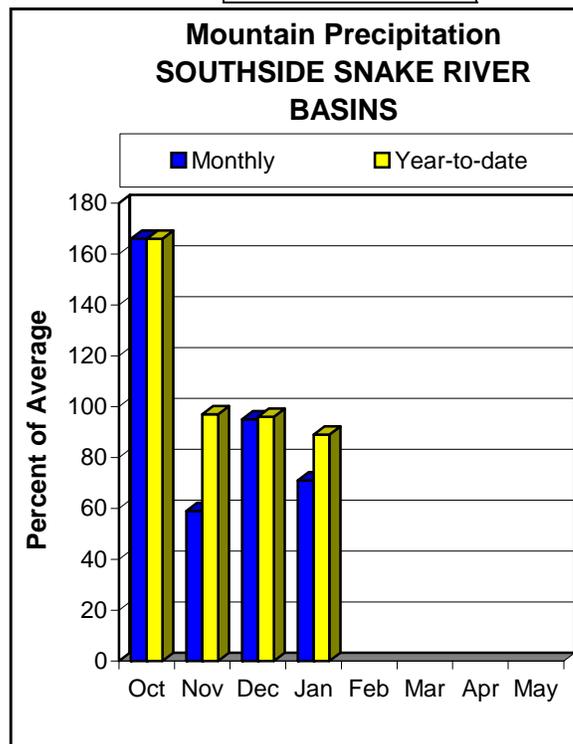
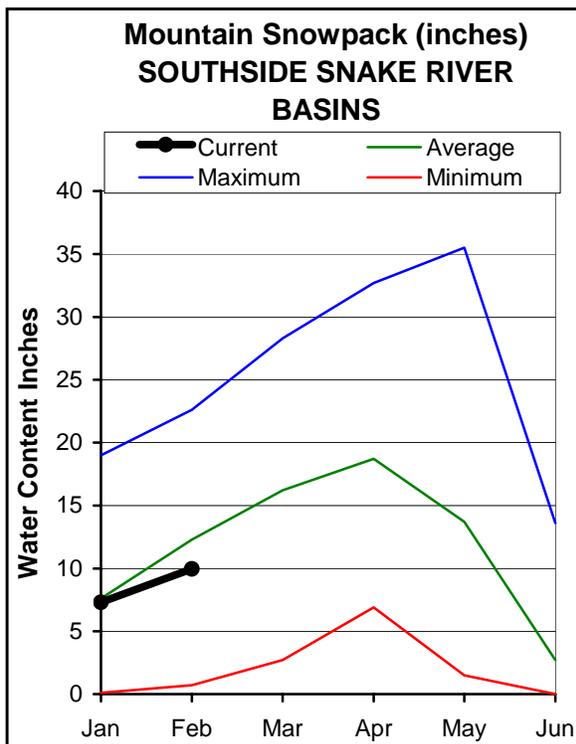
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

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

# SOUTHSIDE SNAKE RIVER BASINS FEBRUARY 1, 2005



## WATER SUPPLY OUTLOOK

Idaho's basins south of the Snake River benefited the most from the storms tracking across the Southwest and into northern Nevada and Utah. January precipitation was above average for a few SNOTEL sites in the headwaters of the Jarbidge and Owyhee rivers. The lowest were 35% of average at the South Mountain and Mud Flat SNOTEL sites. Overall, precipitation in January was 71% of average and is 89% for the water year. Snowpacks are 85% of average in Bruneau, Salmon Falls and Oakley basins. The snowpack decreases to 78% of average in the Raft River and to only 63% in the Owyhee basin. The snow water content in the Owyhee basin is less than half of last year. The snowpack is incredibly shallow at less than 10 inches deep across most of the basin. The streamflow forecasts reflect the patchy snow in the Owyhees with headwater streams forecast at 60% of average and decreasing to 50% for Owyhee Reservoir inflow. With a better snowpack in the Bruneau, Salmon Falls and Oakley basins, these streams are forecast around 65% of average. With the snow only about three-quarters of last year's amounts, water users should plan on supplies similar to recent years, unless the second half of winter brings much needed moisture.

SOUTHSIDE SNAKE RIVER BASINS  
Streamflow Forecasts - February 1, 2005

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)				
		90%		70%		50%			30%		10%	
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)		(1000AF)	(1000AF)	(1000AF)	(1000AF)
OAKLEY RESERVOIR INFLOW	MAR-JUL	12.1	17.7	22	65	27	35	34				
	MAR-SEP	13.5	19.4	24	65	29	38	37				
SALMON FALLS CREEK nr San Jacinto	MAR-JUN	28	44	55	62	66	82	89				
	MAR-JUL	29	46	58	62	70	87	93				
	MAR-SEP	32	49	61	62	73	90	98				
BRUNEAU near Hot Spring	MAR-JUL	93	129	156	66	186	235	235				
	MAR-SEP	100	137	166	66	197	249	250				
OWYHEE near Gold Creek (2)	MAR-JUL	17.1	18.0	18.6	58	19.2	20	32				
	MAR-SEP	16.4	17.3	18.0	58	18.7	19.6	31				
OWYHEE nr Owyhee (2)	APR-JUL	6.0	33	51	62	69	96	82				
OWYHEE near Rome	FEB-JUL	162	265	350	53	446	609	655				
	FEB-SEP	172	278	365	54	463	629	675				
OWYHEE RESV INFLOW (2)	FEB-JUL	161	265	350	50	447	612	700				
	FEB-SEP	172	278	365	50	463	630	730				
	APR-SEP	84	155	215	50	285	407	430				
SUCCOR CK nr Jordan Valley	FEB-JUL	4.2	8.4	11.2	58	16.0	23	19.3				
SNAKE RIVER at King Hill (1,2)	APR-JUL	1024	1295	1480	50	1850	2660	2940				
SNAKE RIVER near Murphy (1,2)	APR-JUL	1058	1345	1540	50	1930	2790	3090				
SNAKE RIVER at Weiser (1,2)	APR-JUL	1410	1934	2290	40	3180	5140	5770				
SNAKE RIVER at Hells Canyon Dam (1,2)	APR-JUL	1673	2249	2640	41	3595	5690	6490				
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	8458	10984	12700	59	15610	22010	21600				

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

SOUTHSIDE SNAKE RIVER BASINS  
Watershed Snowpack Analysis - February 1, 2005

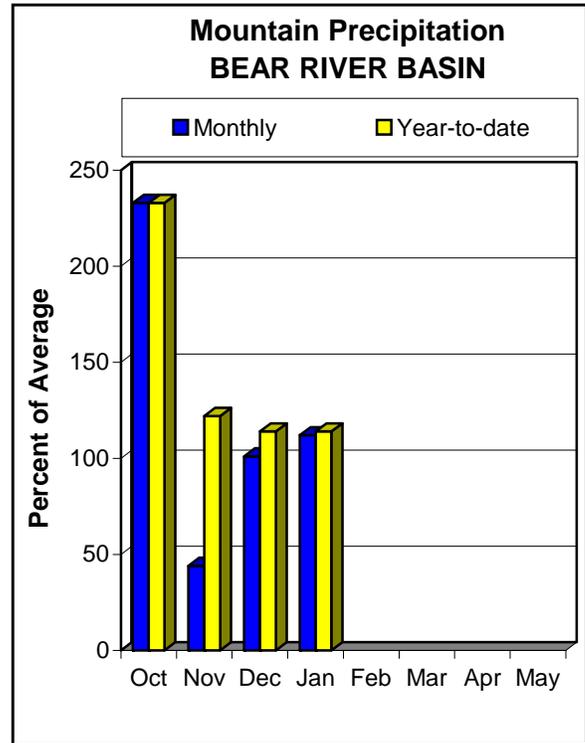
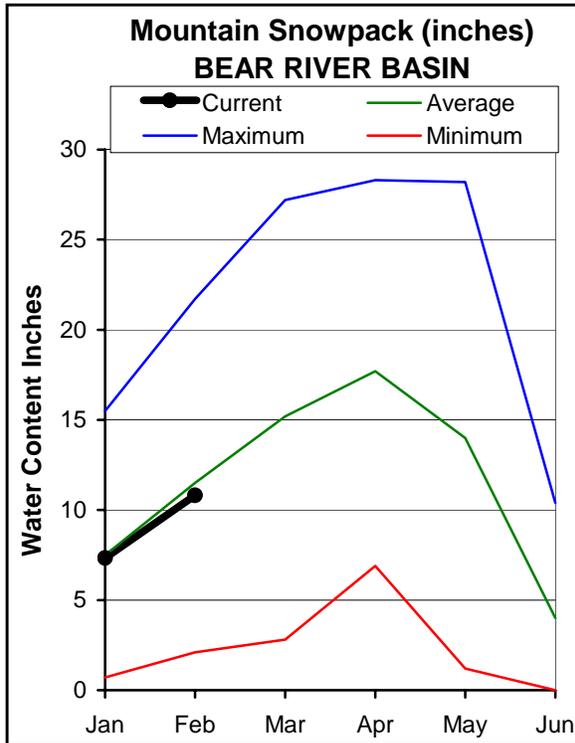
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
OAKLEY	75.6	12.1	8.7	28.2	Raft River	2	70	78
SALMON FALLS	182.6	17.6	14.1	55.7	Goose-Trapper Creeks	3	78	84
WILDHORSE RESERVOIR	71.5	14.0	14.0	38.9	Salmon Falls Creek	7	78	89
OWYHEE	715.0	173.3	77.6	438.3	Bruneau River	8	70	83
BROWNLEE	1420.0	1314.3	1129.6	1176.3	Owyhee Basin Total	20	43	63

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

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

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

# BEAR RIVER BASIN FEBRUARY 1, 2005



## WATER SUPPLY OUTLOOK

The Bear River continues to be the bright spot in the state with the snowpack at 111% of average which is 25% better than a year ago. January precipitation was 112% of average. The greatest amounts fell in the headwaters of Utah with amounts at 150% of average. Water year to date precipitation is 114% of average, 127% of last year at this time. The above average fall precipitation resulted in the best antecedent soil moisture conditions since the winter of 1998/99, which was the last season with above average snow and streamflow. The current snowpack for the Bear River basin is 63% of the seasonal peak that occurs around April 1. The previous three years snowpack only reached 70% of its' seasonal peak. This is more good news for these water users with the second half of winter still to come. Bear Lake increased 26,000 acre-feet during January to 122,100 acre-feet. The storage is still 18,000 acre-feet less than a year ago, but it has reached the critical elevation of 5,904.00 feet. This means with the projected inflow this spring, irrigation releases will be made from Bear Lake. However, water allocations will be well below the full allocation amounts. Streamflow forecasts increased slightly to 116% of average in the Bear River near UT-WY State Line, but remain well below average at 58% for the Bear River at Stewart Dam. The final two months of winter will help determine the outcome of the water supply picture this year; a cool, wet summer will reduce water demands and help stretch the limited supplies. The low elevation snow and improved soil moisture conditions are good news, however, it will take several wet years to overcome the deficits created by the drought.

BEAR RIVER BASIN  
Streamflow Forecasts - February 1, 2005

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<===== Drier =====>>		===== Wetter =====>				
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Bear River nr UT-WY State Line	APR-SEP	106	129	145	116	161	184	125
Bear River ab Reservoir nr Woodruff	APR-SEP	94	127	150	106	175	205	142
Smiths Fork nr Border	APR-JUL	65	83	95	92	107	125	103
	APR-SEP	76	96	110	91	124	144	121
Bear River at Stewart Dam	APR-JUL	69	105	135	58	168	224	234
	APR-SEP	77	118	150	57	186	246	262

BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of January					BEAR RIVER BASIN Watershed Snowpack Analysis - February 1, 2005			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BEAR LAKE	1421.0	122.1	140.8	906.1	Smiths & Thomas Forks	3	107	97
MONTPELIER CREEK	4.0	1.6	0.9	1.7	Bear River ab WY-ID line	10	125	111
					Montpelier Creek	2	102	97
					Mink Creek	1	89	90
					Cub River	1	122	108
					Bear River ab ID-UT line	17	113	106
					Malad River	1	74	101

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

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

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

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

# Interpreting Streamflow 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.

**Most Probable (50 Percent Chance of Exceeding) Forecast.** This forecast is the best estimate of streamflow volume that can be produced given current conditions and based on the outcome of similar past situations. There is a 50 percent chance that the streamflow volume will exceed this forecast value. There is a 50 percent chance that the streamflow volume will be less than this forecast value.

The most probable forecast will rarely be exactly right, due to errors resulting from future weather conditions and the forecast equation itself. This does not mean that users should not use the most probable forecast; it means that they need to evaluate existing circumstances and determine the amount of risk they are willing to take by accepting this forecast value.

## To Decrease the Chance of Having Too Little Water

If users want to make sure there is enough water available for their operations, they might determine that a 50 percent chance of the streamflow volume being lower than the most probable forecast is too much risk to take. To reduce the risk of not having enough water available during the forecast period, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded (or possibly some point in-between). These include:

**70 Percent Chance of Exceeding Forecast.** There is a 70 percent chance that the streamflow volume will exceed this forecast value.

There is a 30 percent chance the streamflow volume will be less than this forecast value.

**90 Percent Chance of Exceeding Forecast.** There is a 90 percent chance that the streamflow volume will exceed this forecast value.

There is a 10 percent chance the streamflow volume will be less than this forecast value.

## To Decrease the Chance of Having Too Much Water

If users want to make sure they don't have too much water, they might determine that a 50 percent chance of the streamflow being higher than the most probable forecast is too much of a risk to take. To reduce the risk of having

too much water available during the forecast period, users can base their operational decisions on one of the forecasts with a smaller chance of being exceeded. These include:

**30 Percent Chance of Exceeding Forecast.** There is a 30 percent chance that the streamflow volume will exceed this forecast value. There is a 70 percent chance the streamflow volume will be less than this forecast value.

**10 Percent Chance of Exceeding Forecast.** There is a 10 percent chance that the streamflow volume will exceed this forecast value. There is a 90 percent chance the streamflow volume will be less than this forecast value.

## Using the forecasts - an example

**Using the Most Probable Forecast.** Using the example forecasts shown below, users can reasonably expect 36,000 acre-feet to flow past the gaging station on the Mary's River near Death between March 1 and July 31.

**Using the Higher Exceedence Forecasts.** If users anticipate a somewhat drier trend in the future (monthly and seasonal weather outlooks are **available** from the **National** Weather Service every two weeks), or if **they are** operating **at a level** where an unexpected shortage of water could cause problems, they might want to plan on receiving only 20,000 acre-feet (from the 70 percent chance of exceeding forecast). In seven out of ten years with similar conditions, streamflow volumes will exceed the 20,000 acre-foot forecast.

If users anticipate extremely dry conditions for the remainder of the season, or if they determine the risk of using the 70 percent chance of exceeding forecast is too great, then they might plan on receiving only 5000 acre-feet (from the 90 percent chance of exceeding forecast). Nine out of ten years with similar conditions, streamflow volumes will exceed the 5000 acre-foot forecast.

**Using the Lower Exceedance Forecasts.** If users expect wetter future conditions, or if the chance that five out of every ten years with similar conditions would produce streamflow volumes greater than 36,000 acre-feet was more than they would like to risk, they might plan on receiving 52,000 acre-feet (from the 30 percent chance of exceeding forecast) to minimize potential flooding problems. Three Out of ten years with similar conditions, streamflows will exceed the 52,000 acre-foot forecast.

In years when users expect extremely wet conditions for the remainder of the season and the threat of severe flooding and downstream damage exists, they might choose to use the 76,000 acre-foot (10 percent chance of exceeding) forecast for their water management operations. Streamflow volumes will exceed this level only one year out of ten.

## WEISER, PAYETTE, BOISE RIVER BASINS Streamflow Forecasts

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>> Chance Of Exceeding *					30-Yr Avg. (1000AF)	
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)		10% (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	

For more information concerning streamflow forecasting ask your local NRCS field office for a copy of "A Field Office Guide for Interpreting Streamflow Forecasts" or visit our Web page.

OFFICIAL BUSINESS



*Issued by*  
Bruce I. Knight, Chief  
Natural Resources Conservation Service  
Washington, DC

*Released by*  
Richard Sims, State Conservationist  
Natural Resources Conservation Service  
Boise, Idaho

*Prepared by*  
Snow Survey Staff  
Ron Abramovich, Water Supply Specialist  
Philip Morrissey, Hydrologist  
James Montesi, Hydrologist  
Jeff Graham, Electronics Technician

Assistance provided by  
Tom Perkins, Senior Forecast Hydrologist,  
NRCS, National Water and Climate Center, Portland, Oregon

Cooperative funding for printing provided by  
Idaho Department of Water Resources

Numerous other agencies provide funding and/or  
cooperative support for the collection, operation  
and maintenance of the Snow Survey Program.  
Their cooperation is greatly appreciated.

