

# Idaho Water Supply Outlook Report June 1, 2002



Smiley Mountain SNOTEL site -- installed September 2002  
at an elevation of 9,520 feet in the Big Lost River Mountains.

Standard sensors include: snow water, precipitation, and air temperature  
Enhanced sensors include: soil moisture and temperature, wind, humidity, solar radiation, and snow depth

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

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## *How forecasts are made*

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

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

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

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

***June 1, 2002***

## **SUMMARY**

Too much water in northern Idaho and not enough in southern Idaho best describes the remainder of the snowmelt runoff season in Idaho. June 1 snowpack percentages range from 200% of average in the Coeur d'Alene and Lochsa basins to melted out in many southern Idaho basins. Overall, the snowpack in the Panhandle Region and Clearwater River basin is about 160% of its normal June 1 amounts. Residual streamflow flow forecasts for the June-September period parallel the snowpack ranging from 110-150% of average in northern Idaho to 30-50% in southern Idaho.

Streamflows will remain above average levels throughout most of the summer in northern Idaho, while central, southern and eastern Idaho streams will be below normal levels the rest of the summer. The Boise, Payette and lower Salmon rivers will see better flow than last year with volumes in the 60-75% of average range.

Irrigation water supply shortages are expected from the Big Wood basin to the Bear River, and Rexburg to Twin Falls County. Boise, Payette and Owyhee irrigators will have adequate irrigation water but reservoir storage will be low by summer's end.

## **SNOWPACK**

Snowpacks are twice normal in the Coeur d'Alene and Lochsa basins. Elsewhere, in northern Idaho, snowpacks range from near normal in the Moyie and Priest basins to about 170% of average in the St. Joe and North Fork Clearwater River basins. Across the southern two-thirds of Idaho, snowpacks are melted out or half of normal at the most. Following is a summary of percent of average for the June 1 snow water equivalent amounts for Idaho major basins:

Basin	June 1 Snow Water Content as Percent of Average
Kootenai ab Bonners Ferry	118%
Moyie River	107%
Priest River	148%
Pend Oreille River	139%
Coeur d'Alene River	199%
St. Joe River	167%
Spokane River	176%
Clearwater Basin Total	162%
Salmon Basin Total	52%
Payette Basin Total	38%
Boise Basin Total	42%
Big Wood Basin Total	32%
Little Wood River	0%
Big Lost River	0%
Little Lost River	23%
Henry's Fork above Rexburg	45%
Snake above Palisades	47%
Snake abv American Falls Resv	47%
Goose-Trapper Creeks	0%
Salmon Falls Creek	26%
Bruneau River	26%
Owyhee Basin Total	0%
Bear River Basin	36%

## PRECIPITATION

May precipitation was the highest and only above average in the Panhandle Region and Clearwater basin at 125% and 114% of average, respectively. The least amount fell in the west-central and central mountains, only 35-40% of average. Elsewhere, May precipitation was 60-80% of average. The only areas with above average water year to date precipitation are the Panhandle Region at 121% of average and Clearwater River basin at 115%. Elsewhere, water year to date precipitation is 80-90% of average with the lowest amounts in the central mountains and Bear River basin.

## RESERVOIRS

Reservoir storage continues to vary across the state and ranges from 183% and 130% of capacity for Coeur d'Alene and Priest lakes, respectively, to 23% of capacity for Salmon Falls Reservoir. Following is a quick summary of reservoirs and water supply situations across the state:

- **Dworshak Reservoir** is 79% full and will have plenty of water to pass.
- **Payette reservoir system** is 84% full and will have adequate irrigation water.
- **The Boise reservoir system** is 78% full and will have adequate supplies, but reservoirs will be at near minimum levels by summer's end.
- **Magic Reservoir** is 31% full, down from 42% full a month ago; water supplies will only last until around July 10, about 10 days longer than last year.
- **Little Wood Reservoir** is 89% full, will have adequate irrigation supplies and possible 5,000 acre-feet of carryover for next year.
- **Mackay Reservoir** had little inflow this season; storage was 27,400 acre-feet a month ago and is now 15,200 acre-feet. The Big Lost River peaked at about 1,700 cfs in early June, and was only above its long-term average flow for 12 days since early April. Irrigators will be out of water soon.
- **Combined reservoir storage for the 8 major reservoirs in the upper Snake** is 61% of capacity, the same as a month ago. There may still be one more flush of water to come but it won't last long with the snowpack for the Snake River above Palisades Reservoir at only 47% of its June 1 average.
- **Oakley Reservoir** is 35% full. The reservoir increased in storage about 2,000 acre-feet, half of its normal May increase. Irrigation shortages are still expected, even with more grains planted this year than last year.
- **Salmon Falls Reservoir** is only 23% full, less than half of average. Storage is up about 5,000 acre-feet from a month ago; but will start dropping soon leaving irrigators with a short irrigation season again.
- **Drafting is occurring at Owyhee Reservoir**, which is 54% full. Water supplies will be adequate for these irrigators, but carryover storage will be low for next year.
- **Bear Lake** has 631,000 acre-feet, up only 4,000 acre-feet from a month ago; normal increase during May is 81,000 acre-feet. This is the lowest May 31 storage since 1995. Montpelier Creek Reservoir has 2,200 acre-feet, the lowest May 31 storage value since 1992.

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**

Peak streamflows resulting from snowmelt have occurred in the Owyhee, Weiser, Camas (near Fairfield), Big Wood, Big Lost, Bear, Salmon Falls, Oakley and Middle Fork Salmon. Peak flows may be occurring in early June on the Payette, Boise and Bruneau basins. Additional peak flows are still possible on the Clearwater, St. Joe, Coeur d'Alene, and other northern Idaho streams due to the well above average snowpacks. Remaining streamflow peaks will depend upon extended hot spells and/or rain periods. Streamflows will be above normal levels for most of the summer in the northern third of Idaho and much below normal across southern Idaho.

## **RECREATION**

Enjoy the snowmelt runoff while it is here - southern Idaho streams have peaked for the year. The Bruneau River had one more flush in early June reaching about 1,000 cfs for several days. The Big Wood River also had enough remaining snow to generate its highest peak in early June. The Big Lost Rivers finally came up and peaked in early June and is dropping quickly due to lack of snow to sustain its flow. There is still the potential for one more flush in the Boise, Payette and upper Snake rivers, but it won't last long with the snow running out. The Middle Fork Salmon River had dual peaks with the higher at about 5.8 feet on June 1, a result of the near record warm temperatures bringing off the remaining snow. The Main Salmon River has probably peaked, only very hot temperatures or extended period of rain will bring the river back up and exceed its peak flow of about 53,000 cfs in early June. The Selway River had several days with flow around 20,000 cfs in early June; the peak snowmelt streamflow has probably occurred, but flows can still increase with the return of hot temperatures or rain. Likewise, with the soil being saturated in the Panhandle Region, additional rainfall for an extended duration period will send a rapid rise in the streams. Storage levels in reservoirs will start decreasing soon as irrigation demand increases and inflows subside.

**IDAHO SURFACE WATER SUPPLY INDEX (SWSI) As of May 1, 2002**  
*This index is currently not updated after May 1.*

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 +4.1 (abundant supply) to -4.1 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences.

SWSI values are published January through May and provide a more comprehensive outlook of water availability than either streamflow forecasts or reservoir storage figures alone. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been established for most basins to indicate the potential for agricultural water shortages.

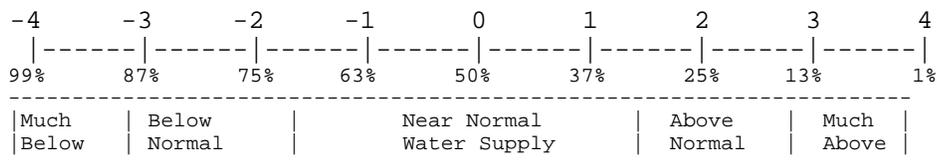
The following agencies and cooperators provide assistance in the preparation of the Surface Water Supply Index for Idaho:

US National Weather Service  
 US Bureau of Reclamation  
 Idaho Water Users Association

US Army Corps of Engineers  
 Idaho Dept. of Water Resources  
 PacifiCorp

<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	2.0	1982	NA
CLEARWATER	1.4	1993	NA
SALMON	-1.2	1985	NA
WEISER	0.1	1986	NA
PAYETTE	-1.2	1989	NA
BOISE	-1.5	2000	-2.6
BIG WOOD	-2.5	1987	-1.4
LITTLE WOOD	-0.9	1981	-2.6
BIG LOST	-1.7	1987	-0.8
LITTLE LOST	-0.6	1996	0.0
HENRYS FORK	-2.0	1990	-3.3
SNAKE (AMERICAN FALLS)	-2.5	1987/01	-2.0
OAKLEY	-1.6	1981	0.0
SALMON FALLS	-1.1	1988	0.0
BRUNEAU	-1.6	1986	NA
OWYHEE	0.1		NA
BEAR RIVER	-3.7	1986	-3.8

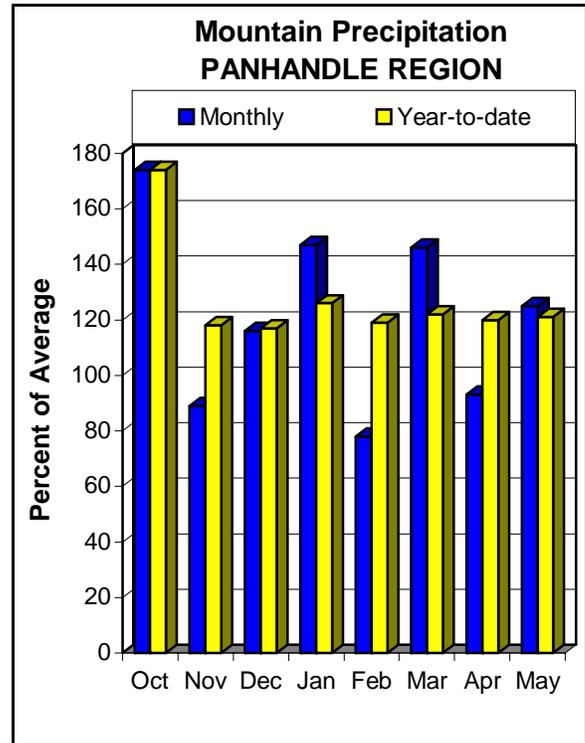
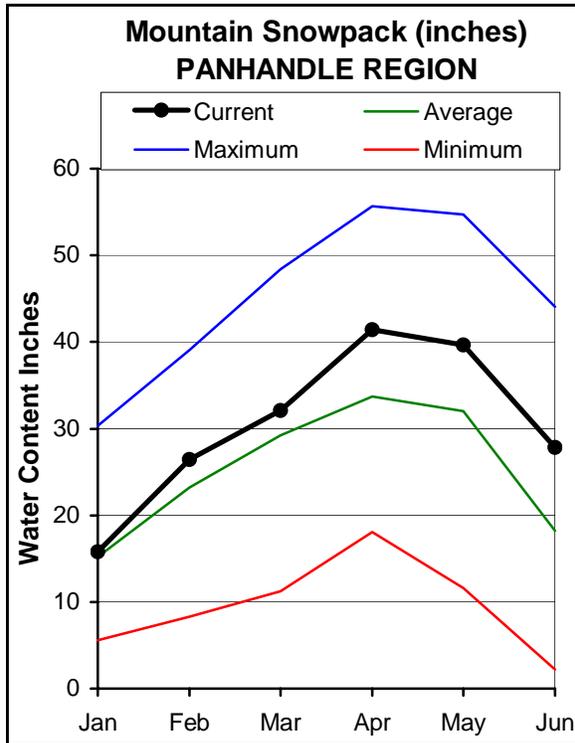
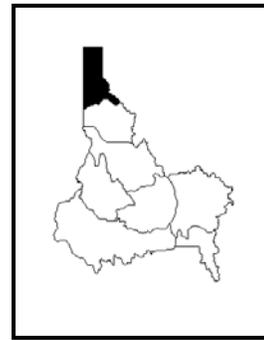
**SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION**



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

## JUNE 1, 2002



## WATER SUPPLY OUTLOOK

May brought cool wet weather with precipitation amounts ranging from 90-190% of average. Hawkins Lake SNOTEL site in northwest Montana received 5 inches of rain between May 19-23 sending the Moyie River 10 feet over its spillway. Snowmelt streamflow peaks have occurred on the Moyie River, but additional rain will send the river back up. Snowpacks remain high at 199% of average on the Coeur d'Alene basin, and 167% on the St. Joe basin. These snow water content amounts are the 3<sup>rd</sup> highest since June measurements start in 1982, only 1997 and 1999 had more snow water than this year. As a result, residual streamflow forecasts for the June-September period increased from a month ago. The Coeur d'Alene River is forecast at 145% of average, St Joe River at 149%, and Moyie River at 120%. The Pend Orielle River is forecast at 111% of average. There will be plenty of water to fill the natural lakes and reservoirs, as streams will remain above their normal levels throughout the summer. With the soil being saturated, additional rainfall for an extended duration period will send a rapid rise in the streams.

PANHANDLE REGION  
Streamflow Forecasts - June 1, 2002

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>				30-Yr Avg. (1000AF)						
		90% (1000AF)		70% (1000AF)			Chance Of Exceeding * 50% (Most Probable) (% AVG.)		30% (1000AF)		10% (1000AF)	
KOOTENAI at Leonia (1,2)	JUN-JUL	3720	4142	4334	114	4526	4948	3790				
	JUN-SEP	4780	5278	5505	113	5732	6230	4880				
MOYIE RIVER at Eastport	JUN-JUL	157	177	190	131	203	223	145				
	JUN-SEP	168	190	205	128	220	242	160				
SMITH CREEK	JUN-JUL	31	41	47	94	53	63	50				
	JUN-SEP	34	45	53	95	61	72	56				
BOUNDARY CREEK	JUN-JUL	51	58	62	135	66	73	46				
	JUN-SEP	59	65	70	135	75	81	52				
CLARK FK at Whitehorse Rpds (1,2)	JUN-JUL	4512	5471	6264	111	6373	7332	5640				
	JUN-SEP	5484	6635	7510	111	7582	8666	6770				
PEND OREILLE Lake Inflow (2)	JUN-JUL	5552	6300	6808	111	7316	8064	6120				
	JUN-SEP	6699	7529	8093	111	8657	9487	7290				
PRIEST near Priest River (1,2)	JUN-JUL	217	271	295	101	319	373	291				
	JUN-SEP	260	322	350	101	378	440	345				
COEUR D'ALENE at Enaville	JUN-JUL	176	216	243	153	270	310	159				
	JUN-SEP	218	261	291	147	321	364	198				
ST. JOE at Calder	JUN-JUL	508	558	591	156	624	674	380				
	JUN-SEP	582	634	669	149	704	756	448				
SPOKANE near Post Falls (2)	JUN-JUL	798	919	1002	148	1085	1206	676				
	JUN-SEP	906	1035	1122	145	1209	1338	773				
SPOKANE at Long Lake (2)	JUN-JUL	973	1106	1196	142	1286	1419	840				
	JUN-SEP	1221	1364	1461	138	1558	1701	1061				

PANHANDLE REGION Reservoir Storage (1000 AF) - End of May					PANHANDLE REGION Watershed Snowpack Analysis - June 1, 2002			
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	2786.0	2660.0	2588.0	Kootenai ab Bonners Ferry	8	1044	118
FLATHEAD LAKE	1791.0	1570.0	1508.0	1499.2	Moyie River	3	495	107
NOXON RAPIDS	335.0	327.4	306.8	313.6	Priest River	2	0	148
PEND OREILLE	1561.3	1271.5	1277.0	1333.1	Pend Oreille River	43	701	144
COEUR D'ALENE	238.5	437.0	228.5	270.4	Rathdrum Creek	1	0	0
PRIEST LAKE	119.3	155.0	120.2	138.5	Hayden Lake	0	0	0
					Coeur d'Alene River	4	0	199
					St. Joe River	3	582	167
					Spokane River	7	1163	176
					Palouse River	1	0	0

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

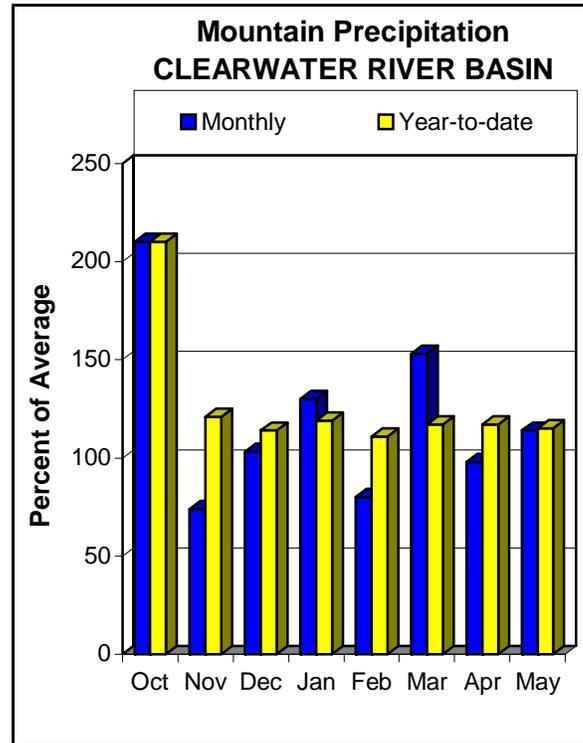
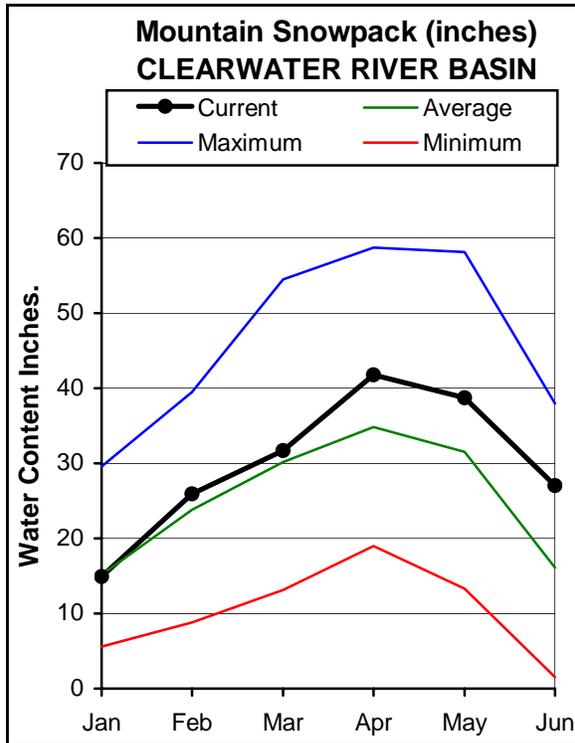
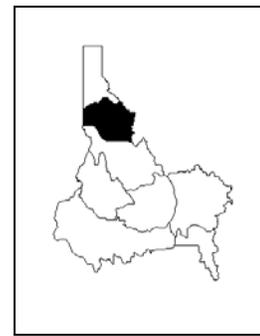
The average is computed for the 1971-2000 base period.

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

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

# CLEARWATER RIVER BASIN

## JUNE 1, 2002



## WATER SUPPLY OUTLOOK

May brought precipitation that was 114% of average with many snow measuring sites melting and then starting to accumulate again with colder temperatures and moisture falling as snow during May. The snowpacks in the Clearwater basin range from near normal in the Selway basin to twice normal in the Lochsa basin. Overall, the Clearwater River basin is 162% of average. Lost Lake SNOTEL site at 6,110 feet in the headwaters of the North Fork Clearwater River has 65 inches of snow water, normal June 1 amounts are 41 inches. This snow won't be all melted until early July. Dworshak Reservoir increased from 62% full last month to 79% full, 90% of average, and will continue passing excess water. Residual streamflow forecasts for the June-July period call for the Selway River at 116% of average, while the Lochsa River is forecast at 122% of average. The Clearwater River at Spalding is forecast at 122% of average. Streamflows levels will remain above normal throughout most if not all of the summer. The Selway River has had several days with flow around 20,000 cfs in early June; the peak snowmelt streamflow has probably occurred, but flows can still increase with the return of hot temperatures or rain.

CLEARWATER RIVER BASIN  
Streamflow Forecasts - June 1, 2002

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)		
		90% (1000AF)		70% (1000AF)		50% (Most Probable) (1000AF) (% AVG.)			30% (1000AF) 10% (1000AF)	
		Chance Of Exceeding *								
SELWAY near Lowell	JUN-JUL	934	1031	1096	116	1161	1258	943		
	JUN-SEP	1028	1135	1208	115	1281	1388	1051		
LOCHSA near Lowell	JUN-SEP	806	858	893	122	928	980	732		
	JUN-JUL	1133	1347	1444	150	1541	1755	960		
DWORSHAK RESV INFLOW (1,2)	JUN-SEP	1312	1538	1641	146	1744	1970	1124		
	JUN-JUL	1604	1966	2130	108	2294	2656	1967		
CLEARWATER at Orofino (1)	JUN-SEP	1820	2213	2392	108	2571	2964	2222		
	JUN-JUL	2459	3252	3613	122	3974	4767	2959		
CLEARWATER at Spalding (1,2)	JUN-SEP	2832	3681	4067	121	4453	5302	3374		

CLEARWATER RIVER BASIN Reservoir Storage (1000 AF) - End of May					CLEARWATER RIVER BASIN Watershed Snowpack Analysis - June 1, 2002			
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	2740.5	3014.2	3040.7	North Fork Clearwater	8	880	172
					Lochsa River	2	0	201
					Selway River	4	0	106
					Clearwater Basin Total	14	1034	162

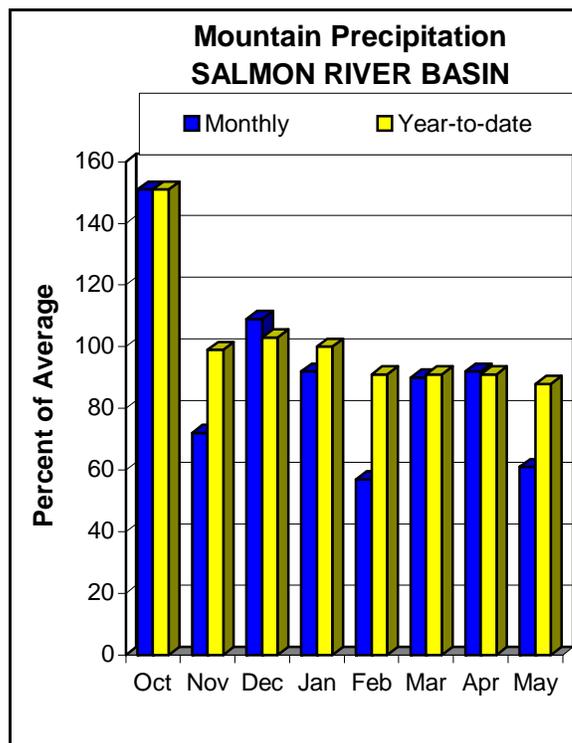
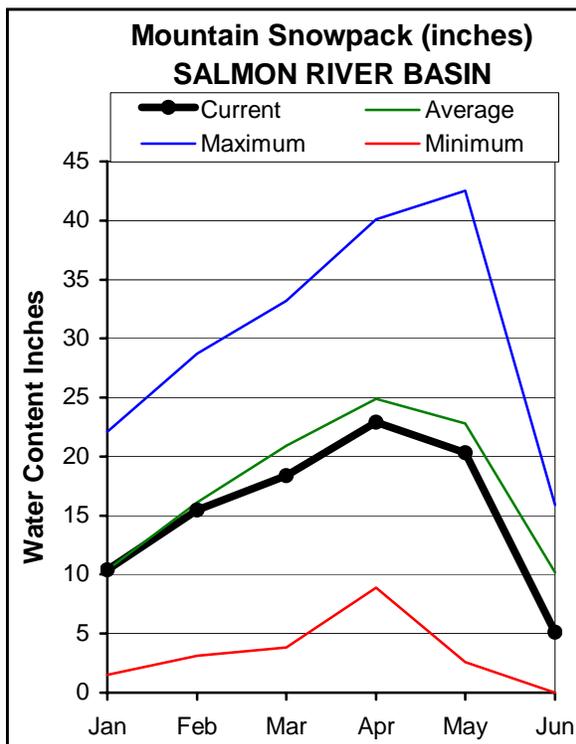
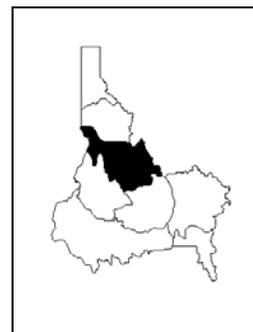
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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 flow - actual flow may be affected by upstream water management.

# SALMON RIVER BASIN

## JUNE 1, 2002



## WATER SUPPLY OUTLOOK

May precipitation was about 58% of average. Water year to date is 88% of average. The remaining snow is about half of normal. The Middle Fork Salmon River had dual peaks with the higher at about 5.8 feet on June 1, a result of the near record warm temperatures bringing off the remaining snow. Only the higher SNOTEL sites above about 7,000 feet still have snow. Residual streamflow forecasts for the June-September period calls for 63% of average for the Salmon River at Salmon, and 75% for the Salmon River at White Bird. The floating season on the Middle Fork Salmon River should be longer than last year, but river runners may want to fly into Indian Creek Ranger Station starting in mid-July or plan for a low water float on the upper section.

SALMON RIVER BASIN  
Streamflow Forecasts - June 1, 2002

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>					30-Yr Avg. (1000AF)	
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)		10% (1000AF)
SALMON at Salmon (1)	JUN-JUL	271	307	323	61	339	375	528
	JUN-SEP	341	396	421	63	446	501	671
SALMON at White Bird (1)	JUN-JUL	1786	2179	2358	73	2537	2930	3222
	JUN-SEP	2210	2674	2884	75	3094	3558	3853

SALMON RIVER BASIN Reservoir Storage (1000 AF) - End of May					SALMON RIVER BASIN Watershed Snowpack Analysis - June 1, 2002			
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	8	0	39
					Lemhi River	6	397	71
					Middle Fork Salmon River	3	0	48
					South Fork Salmon River	3	0	49
					Little Salmon River	4	0	61
					Salmon Basin Total	23	1504	52

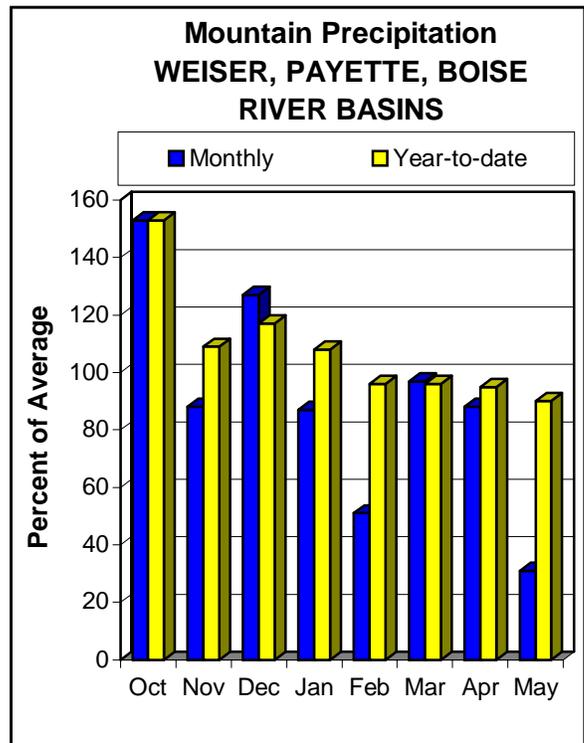
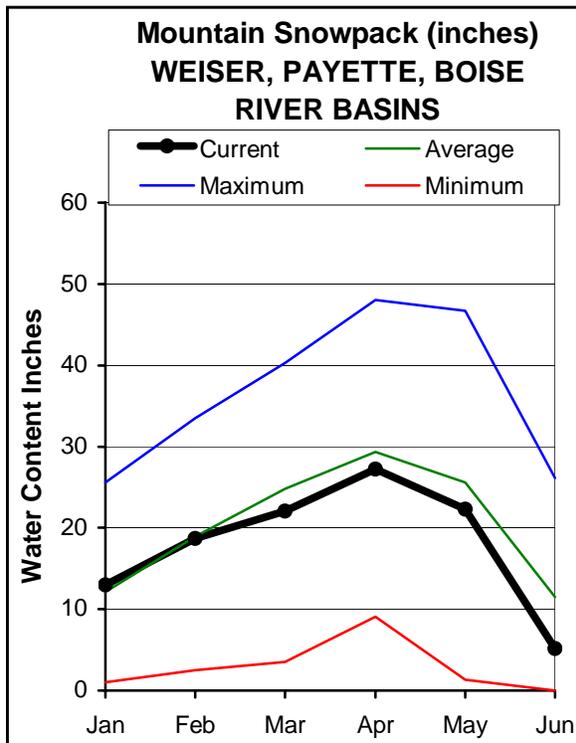
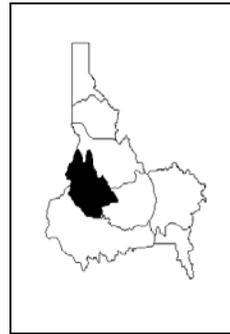
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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 flow - actual flow may be affected by upstream water management.

# WEISER, PAYETTE, BOISE RIVER BASINS JUNE 1, 2002



## WATER SUPPLY OUTLOOK

May precipitation was the lowest in the state at 34% of average for these basins as a whole. The Boise basin received the least at only about 20% of average; even the NWS station at the Boise Airport only received 0.01 inches. Temperatures near 90 degrees F in late May produced the peak snowmelt streamflows in early June. Hot temperatures or rain may increase flows again, but with the snow at only about 40% of its normal June 1 average, the higher flows won't last long. Deadwood Summit SNOTEL at 6,860 feet in elevation has the most snow at 15 inches of snow water, normal is 26.5 inches on June 1. Payette Reservoir System storage increased from 61% full a month ago to 84% full on May 31. Similarly, the Boise Reservoir System increased from 67% full a month ago to 78% full on May 31. The residual streamflow for the Boise River near Boise calls for 59% of average, while the Payette River near Horseshoe Bend is forecast at 76%. Water supplies will be adequate in these basins.

WEISER, PAYETTE, BOISE RIVER BASINS  
Streamflow Forecasts - June 1, 2002

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>				30-Yr Avg. (1000AF)						
		90% (1000AF)		70% (1000AF)			Chance Of Exceeding * 50% (Most Probable) (% AVG.)		30% (1000AF)		10% (1000AF)	
WEISER near Weiser (1)	JUN-JUL	65	95	109	99	123	153	110				
	JUN-SEP	89	122	137	99	152	185	139				
SF PAYETTE at Lowman	JUN-JUL	112	129	141	58	153	170	244				
	JUN-SEP	152	170	183	61	196	214	300				
DEADWOOD RESERVOIR Inflow (1,2)	JUN-JUL	34	44	49	74	54	64	66				
	JUN-SEP	40	51	56	76	61	73	74				
LAKE FORK PAYETTE near McCall	JUN-JUL	25	30	33	73	36	41	45				
	JUN-SEP	24	31	36	75	41	48	48				
NF PAYETTE at Cascade (1,2)	JUN-JUL	101	169	200	92	231	299	217				
	JUN-SEP	127	200	233	90	266	339	258				
NF PAYETTE nr Banks (2)	JUN-JUL	145	202	241	90	280	337	267				
	JUN-SEP	178	240	281	90	322	384	314				
PAYETTE nr Horseshoe Bend (1,2)	JUN-JUL	350	476	533	75	590	716	711				
	JUN-SEP	454	586	646	76	706	838	854				
BOISE near Twin Springs (1)	JUN-JUL	101	144	164	58	184	227	281				
	JUN-SEP	137	184	205	61	226	273	335				
SF BOISE at Anderson Ranch Dam (1,2)	JUN-JUL	80	111	125	56	139	170	223				
	JUN-SEP	97	135	152	59	169	207	260				
MORES CREEK near Arrowrock Dam	JUN-JUL	15.3	18.7	21	66	23	27	32				
	JUN-SEP	18.5	22	25	68	28	32	37				
BOISE near Boise (1,2)	JUN-JUL	215	284	315	56	346	415	567				
	JUN-SEP	285	365	401	59	437	517	679				

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

WEISER, PAYETTE, BOISE RIVER BASINS  
Watershed Snowpack Analysis - June 1, 2002

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	11.0	7.0	10.5	Mann Creek	1	0	0
CASCADE	693.2	609.3	533.3	588.6	Weiser River	3	0	0
DEADWOOD	164.0	107.7	121.3	139.0	North Fork Payette	7	0	36
ANDERSON RANCH	450.2	276.8	227.6	388.7	South Fork Payette	4	0	43
ARROWROCK	272.2	224.9	175.9	191.9	Payette Basin Total	12	0	38
LUCKY PEAK	293.2	287.2	293.0	242.3	Middle & North Fork Boise	6	0	46
LAKE LOWELL (DEER FLAT)	165.2	102.8	75.1	133.5	South Fork Boise River	6	0	50
					Mores Creek	2	0	0
					Boise Basin Total	10	0	42
					Canyon Creek	1	0	0

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

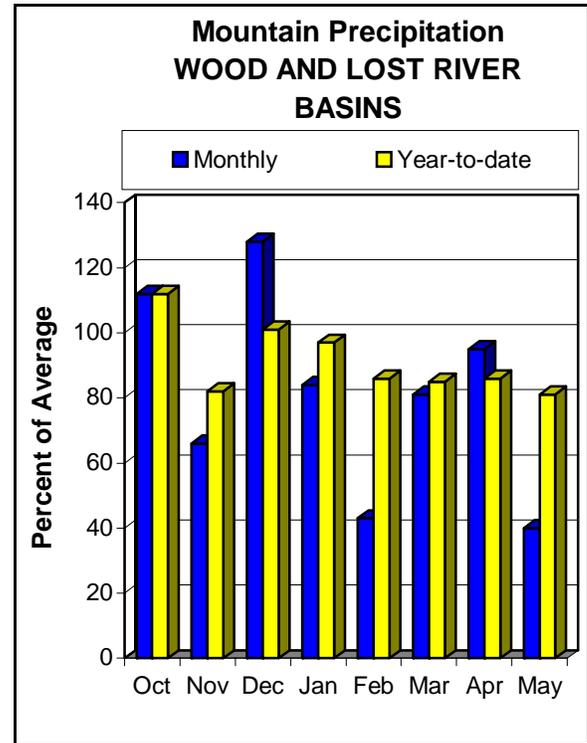
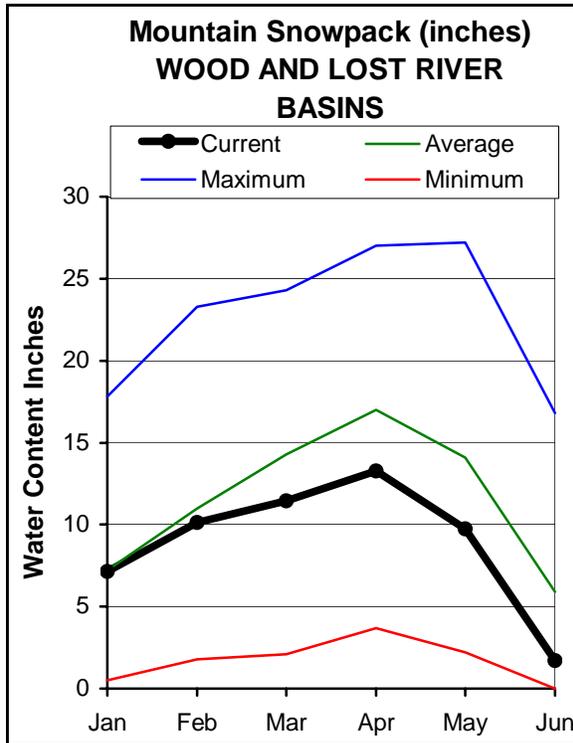
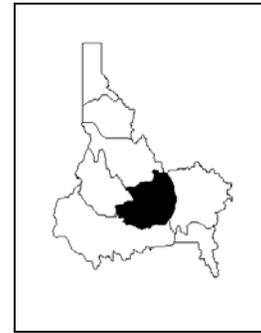
The average is computed for the 1971-2000 base period.

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

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

# WOOD and LOST RIVER BASINS

## JUNE 1, 2002



## WATER SUPPLY OUTLOOK

May brought precipitation at only 40% of normal. Cool weather in May with nighttime temperatures below freezing, kept the higher elevation snow from melting rapidly in the mountains. Hot weather at the end of May boosted the melting of the remaining snowpack, resulting in one more flush on the Big Wood River. The Big Lost River, which had been low most of the spring due to the cool higher elevation temperatures, finally started increasing in late May and peaked at 1,700 cfs in early June. The remaining snow in these basins is about 25% of average. Only five SNOTEL sites have snow, normally 12 sites still have snow on June 1. Vienna Mine has the most with 14 inches of snow water, normal June 1 water is 26 inches of snow water. Magic Reservoir decreased from 80,700 acre-feet a month ago to 59,700 acre-feet on May 31; irrigation water will only last until early July. Mackay Reservoir had 27,400 acre-feet last month and now has 15,200 acre-feet, also water shortages for its irrigators. Little Wood Reservoir is 89% full and will have an adequate water supply for its irrigators with a little extra. Streamflows are dropping quickly in early June and will remain low for the rest of the summer due to lack of snow.

WOOD AND LOST RIVER BASINS  
Streamflow Forecasts - June 1, 2002

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>					30-Yr Avg. (1000AF)	
		===== Chance Of Exceeding * =====						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)		10% (1000AF)
BIG WOOD at Hailey (1)	JUN-JUL	50	63	70	49	77	93	144
	JUN-SEP	64	81	90	51	99	121	177
BIG WOOD near Bellevue	JUN-JUL	14.0	23	31	31	40	54	101
	JUN-SEP	19.0	30	38	33	47	63	114
CAMAS CREEK near Blaine	JUN-JUL	3.3	5.1	6.6	50	8.3	11.1	13.2
	JUN-SEP	3.8	5.8	7.3	52	9.0	11.8	14.0
BIG WOOD below Magic Dam (2)	JUN-JUL	16.0	27	42	37	57	80	114
	JUN-SEP	20	35	51	39	67	90	130
LITTLE WOOD near Carey (2)	JUN-JUL	9.1	16.2	21	66	26	33	32
	JUN-SEP	12.8	21	26	67	31	39	39
BIG LOST at Howell Ranch	JUN-JUL	35	52	63	55	74	91	114
	JUN-SEP	57	76	89	64	102	121	139
BIG LOST below Mackay Reservoir (2)	JUN-JUL	37	52	63	65	74	89	97
	JUN-SEP	58	76	89	70	102	120	128

WOOD AND LOST RIVER BASINS Reservoir Storage (1000 AF) - End of May					WOOD AND LOST RIVER BASINS Watershed Snowpack Analysis - June 1, 2002			
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	59.7	50.6	154.1	Big Wood ab Hailey	6	0	32
LITTLE WOOD	30.0	26.7	23.9	27.4	Camas Creek	2	0	0
MACKAY	44.4	15.2	24.3	34.9	Big Wood Basin Total	8	0	32
					Little Wood River	3	0	0
					Fish Creek	0	0	0
					Big Lost River	4	0	0
					Little Lost River	3	0	23
					Birch-Medicine Lodge Cree	2	0	28
					Camas-Beaver Creeks	2	0	0

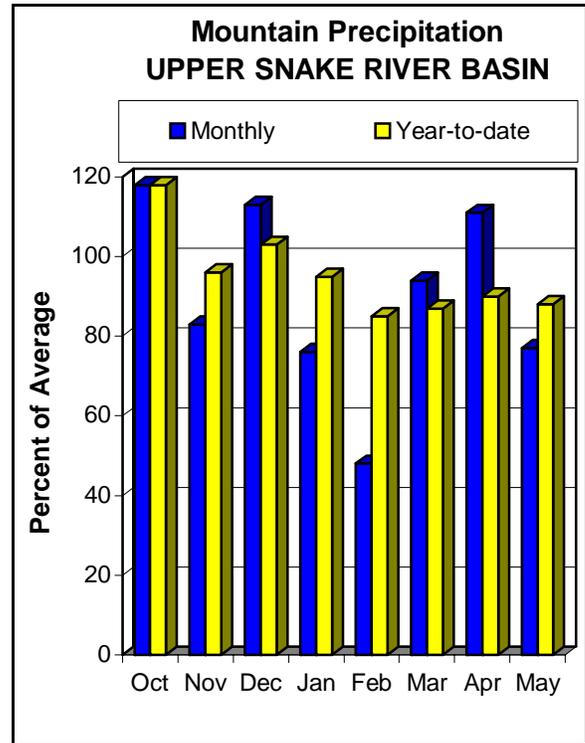
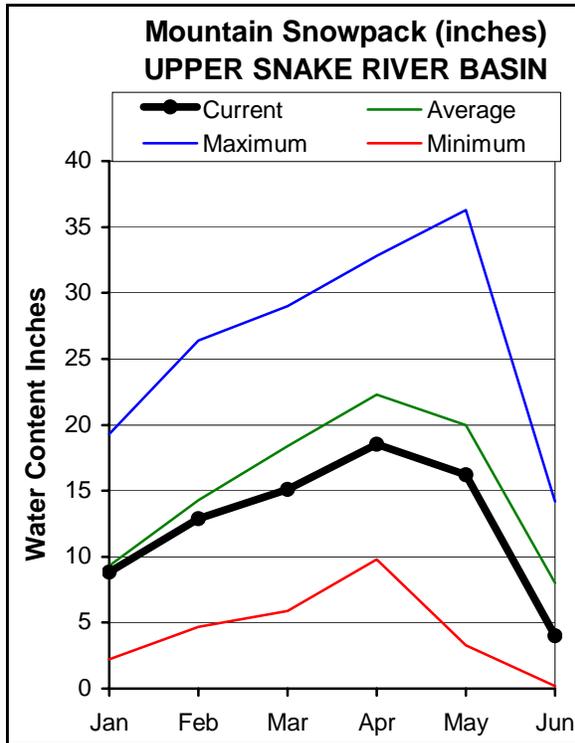
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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 flow - actual flow may be affected by upstream water management.

# UPPER SNAKE RIVER BASIN

## JUNE 1, 2002



## WATER SUPPLY OUTLOOK

May precipitation in the upper Snake basin was 77% of average and helped some but not enough to change the water supply situation. The cool weather delayed melting this year's higher elevation snowpack that ended the season below normal. Currently, the remaining is about half of normal. Combined reservoir storage for the 8 major reservoirs remained the same as a month ago at 61% of capacity. Blackfoot Reservoir is the lowest at 39% of capacity. Palisades is also low at 56% of capacity. Drafting of the reservoirs will increase as irrigation demands exceed the limited inflow volumes this year. Streamflow forecasts range from 60-80% of average. Water supply shortages will occur; how severe depends upon when the water right was filed and its source.

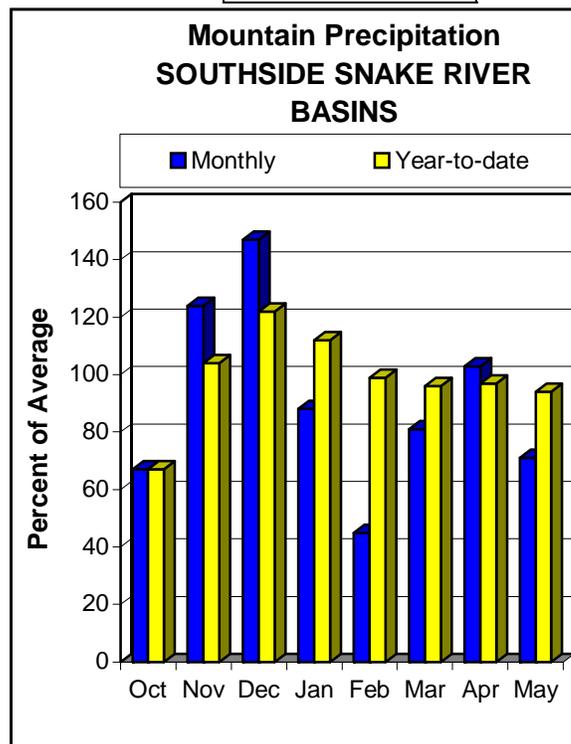
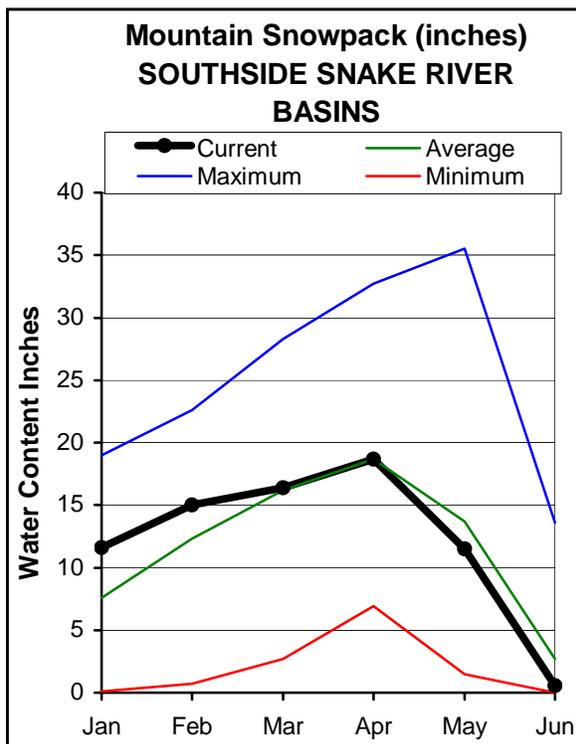
UPPER SNAKE RIVER BASIN  
Streamflow Forecasts - June 1, 2002

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>				30-Yr Avg. (1000AF)		
		Chance Of Exceeding *		Chance Of Exceeding *				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)		30% (1000AF)	10% (1000AF)
HENRYS FORK near Ashton (2)	JUN-JUL	109	134	151	61	168	193	247
	JUN-SEP	233	266	289	66	312	345	438
HENRYS FORK near Rexburg (2)	JUN-JUL	202	266	309	37	352	416	830
	JUN-SEP	383	465	520	41	575	657	1284
FALLS near Squirrel (1,2)	JUN-JUL	56	95	113	55	131	170	204
	JUN-SEP	97	140	160	58	180	223	276
TETON near Driggs	JUN-JUL	45	59	68	63	77	91	108
	JUN-SEP	65	82	94	61	106	123	153
TETON near St. Anthony	JUN-JUL	80	109	129	54	149	178	240
	JUN-SEP	123	158	181	57	204	239	319
SNAKE near Moran (1,2)	JUN-SEP	284	391	440	76	489	596	578
PACIFIC CREEK at Moran	JUN-SEP	59	73	83	78	93	107	106
SNAKE above Palisades (2)	JUN-JUL	1003	1133	1221	83	1309	1439	1470
	JUN-SEP	1307	1449	1546	84	1643	1785	1835
GREYS above Palisades	JUN-JUL	80	100	114	61	128	148	188
	JUN-SEP	117	140	155	64	170	193	244
SALT near Etna	JUN-JUL	36	60	76	47	92	116	162
	JUN-SEP	83	110	129	54	148	175	239
PALISADES RESERVOIR INFLOW (1,2)	JUN-JUL	1155	1422	1543	79	1664	1931	1952
	JUN-SEP	1561	1862	1998	80	2134	2435	2496
SNAKE near Heise (2)	JUN-JUL	1309	1501	1632	80	1763	1955	2054
	JUN-SEP	1756	1981	2133	80	2285	2510	2652
BLACKFOOT RESV INFLOW	JUN-JUN	4.3	7.2	11.0	36	14.8	21	31
SNAKE nr Blackfoot (1,2)	JUN-JUL	1105	1941	2321	75	2701	3537	3083
	JUN-SEP	1917	2972	3451	79	3930	4985	4359
PORTNEUF at Topaz	JUN-JUL	8.7	14.1	17.8	48	22	27	37
	JUN-SEP	17.2	23	27	49	31	36	55
AMERICAN FALLS RESV INFLOW (1,2)	JUN-JUL	515	1069	1320	89	1571	2125	1479
	JUN-SEP	636	1385	1725	99	2065	2814	1742

UPPER SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of May					UPPER SNAKE RIVER BASIN Watershed Snowpack Analysis - June 1, 2002			
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	62.0	89.5	89.2	Henry Fork-Falls River	7	0	50
ISLAND PARK	135.2	128.9	130.9	132.8	Teton River	2	0	18
GRASSY LAKE	15.2	13.3	14.7	14.4	Henry Fork above Rexburg	9	0	45
JACKSON LAKE	847.0	462.6	758.2	572.6	Snake above Jackson Lake	5	1307	60
PALISADES	1400.0	777.1	842.5	1033.6	Gros Ventre River	2	0	64
RIRIE	80.5	45.0	52.2	70.3	Hoback River	5	0	39
BLACKFOOT	348.7	134.5	217.0	287.8	Greys River	4	0	36
AMERICAN FALLS	1672.6	1165.2	1211.5	1476.1	Salt River	3	0	0
					Snake above Palisades	17	2707	47
					Willow Creek	2	0	0
					Blackfoot River	2	0	0
					Portneuf River	2	0	0
Snake abv American Falls	22	2707	47					

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table. The average is computed for the 1971-2000 base period.  
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(2) - The value is natural flow - actual flow may be affected by upstream water management.

# SOUTHSIDE SNAKE RIVER BASINS JUNE 1, 2002



## WATER SUPPLY OUTLOOK

May precipitation was 71% of average and helped some but not nearly enough. Water year to date precipitation is 94% of average. All the snow is melted at NRCS snow measuring sites except at Pole Creek Ranger Station SNOTEL site located at 8,330 feet in northern Nevada in the Jarbidge Mountains. Salmon Falls Reservoir has 42,700 acre-feet of storage, more than the 28,400 acre-feet that was in the reservoir a year ago, but still less than half of average. Oakley Reservoir is 35% full, 58% of average, up slightly from a month ago. Owyhee Reservoir is 54% full, 63% of average, down from 61% full a month ago. Brownlee Reservoir is full. The Bruneau River finally peaked at slightly above 1,000 cfs for several days in early June. Streams are receding and will remain below normal the rest of summer. Residual streamflow forecasts for these high desert streams range from 45-70% of average and will result in minimal reservoir storage by summer's end.

SOUTHSIDE SNAKE RIVER BASINS  
Streamflow Forecasts - June 1, 2002

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>					30-Yr Avg. (1000AF)	
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)		10% (1000AF)
OAKLEY RESV INFLOW	JUN-JUL	2.76	4.17	5.30	65	6.56	8.66	8.20
	JUN-SEP	4.8	6.5	7.8	69	9.2	11.5	11.3
OAKLEY RESV STORAGE	JUN-30	18.1	21	23	58	25	29	40
SALMON FALLS CREEK nr San Jacinto	JUN-JUL	5.6	7.5	9.0	38	10.6	13.2	24
	JUN-SEP	8.3	10.7	12.5	45	14.4	17.5	28
SALMON FALLS RESV STORAGE	JUL-31	5.8	13.9	19.4	28	25	33	70
	JUN-30	26	34	39	41	44	52	95
BRUNEAU near Hot Spring	JUN-JUL	21	31	40	49	50	66	82
	JUN-SEP	26	38	47	51	57	75	92
OWYHEE near Rome	JUN-JUL	14.0	21	27	38	34	44	71
OWYHEE RESV INFLOW (2)	JUN-JUL	12.6	25	35	49	47	69	71
	JUN-SEP	39	48	54	56	61	72	96

SOUTHSIDE SNAKE RIVER BASINS Reservoir Storage (1000 AF) - End of May					SOUTHSIDE SNAKE RIVER BASINS Watershed Snowpack Analysis - June 1, 2002			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
OAKLEY	74.5	25.9	27.0	45.0	Raft River	1	0	0
SALMON FALLS	182.6	42.7	28.4	101.2	Goose-Trapper Creeks	1	0	0
WILDHORSE RESERVOIR	71.5	42.9	40.6	58.4	Salmon Falls Creek	3	0	26
OWYHEE	715.0	384.7	412.1	614.6	Bruneau River	5	0	26
BROWNLEE	1419.3	1406.4	1402.5	1263.0	Owyhee Basin Total	7	0	0

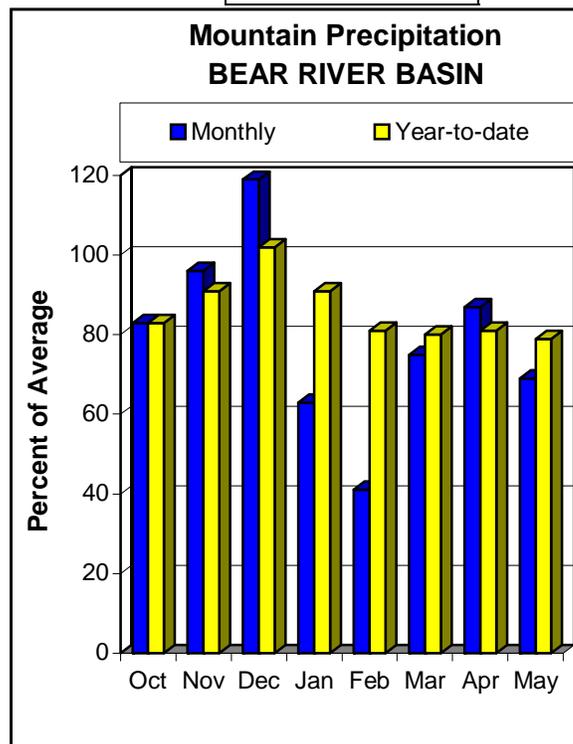
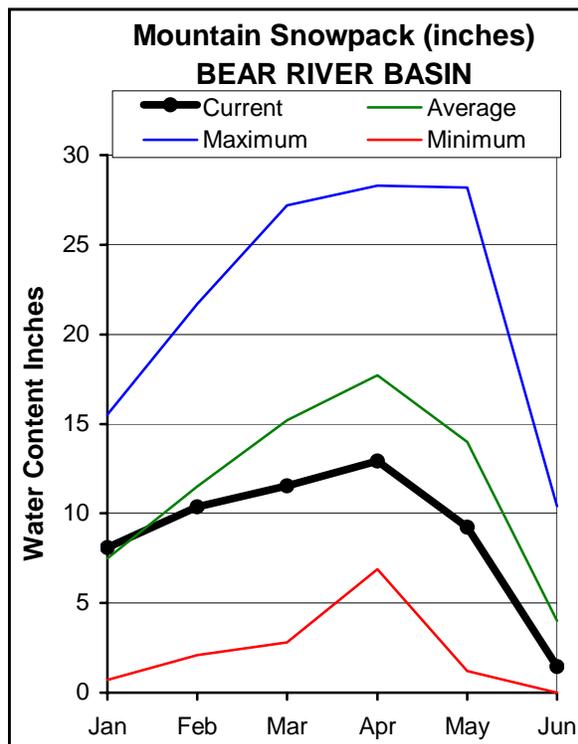
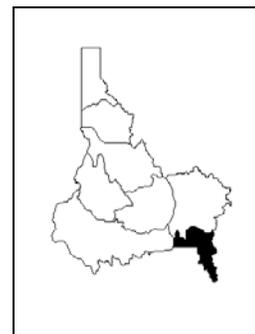
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# BEAR RIVER BASIN

## JUNE 1, 2002



## WATER SUPPLY OUTLOOK

May precipitation was only 69% of average; water year to date is 79% of average. All the snow is melted at NRCS snow measuring stations in the Bear River basin. Only Spring Creek Divide SNOTEL site at 9,000 feet in elevation which sits in the Green River along the tri-basin divide of the Green, Bear and Snake basins has any snow. Streamflow runoff volumes and peak flows were low as a result of lack of winter snow and spring rains, dry soils and accumulative effects of the drought. Bear River at Stewart Dam is forecast at only 20% of average. Bear Lake has 631,000 acre-feet, up only 4,000 acre-feet from a month ago; normal increase during May is 81,000 acre-feet. This is the lowest May 31 storage since 1995. Montpelier Creek Reservoir has 2,200 acre-feet, the lowest May 31 storage values since 1992.

BEAR RIVER BASIN  
Streamflow Forecasts - June 1, 2002

Forecast Point	Forecast Period	Future Conditions					Wetter		30-Yr Avg. (1000AF)
		<<===== Drier =====>>		=====		=====			
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)		
Bear R nr UT-WY State Line	APR-SEP	44	48	50	40	52	56	125	
	JUN-SEP	21	24	27	33	30	36	82	
BEAR R nr Woodruff, UT	APR-SEP	43	53	62	40	72	90	154	
	JUN-SEP	14.1	19.8	25	33	32	44	77	
BEAR R nr Randolph, UT	MAY-JUL	2.8	14.7	33	35	51	78	95	
	MAY-SEP	1.0	15.0	36	35	57	88	104	
SMITHS FK nr Border, WY	MAY-JUL	30	35	39	42	43	51	92	
	MAY-SEP	36	41	45	41	50	57	109	
THOMAS FK nr WY-ID State Line (Disc.	MAY-JUL	4.9	6.6	8.0	30	9.7	13.0	27	
BEAR R blw Stewart Dam nr Montpelier	MAY-JUL	7.0	29	45	20	74	118	225	
	MAY-SEP	3.0	24	45	17	79	130	264	
MONTPELIER CK nr Montpelier (Disc)(2	APR-JUL	4.2	5.2	6.0	49	6.9	8.5	12.2	
CUB R nr Preston	APR-JUL	6.2	10.8	14.0	30	17.2	22	47	

BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of May					BEAR RIVER BASIN Watershed Snowpack Analysis - June 1, 2002			
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	631.0	899.5	1052.3	Smiths & Thomas Forks	3	0	53
MONTPELIER CREEK	4.0	2.2	2.2	3.3	Bear River ab WY-ID line	10	0	17
					Montpelier Creek	1	0	0
					Mink Creek	1	0	0
					Cub River	1	0	0
					Bear River ab ID-UT line	15	0	12
					Malad River	1	0	0

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow 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 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 Dec. 2005).**

#### **Panhandle River Basins**

Kootenai R at Leonia, ID  
+ Lake Koocanusa (Storage Change)  
Boundary Ck nr Porthill, ID – No Corrections  
Moyie R at Eastport, ID – No Corrections  
Smith Creek nr Porthill, ID – No Corrections  
Clark Fork R at Whitehorse Rapids, ID  
+ Hungry Horse (Storage Change)  
+ Flathead Lake (Storage Change)  
+ Noxon Rapids Resv (Storage Change)  
Pend Oreille Lake Inflow, ID  
+ Pend Oreille R at Newport, WA  
+ Hungry Horse (Storage Change)  
+ Flathead Lake (Storage Change)  
+ Noxon Rapids (Storage Change)  
+ Pend Oreille Lake (Storage Change)  
+ Priest Lake (Storage Change)  
Priest R nr Priest R, ID  
+ Priest Lake (Storage Change)  
NF Coeur d'Alene R at Enaville, ID - No Corrections  
St. Joe R at Calder, ID - No Corrections  
Spokane R nr Post Falls, ID  
+ Coeur d'Alene Lake (Storage Change)  
Spokane R at Long Lake, WA  
+ Coeur d'Alene Lake (Storage Change)  
+ Long Lake, WA (Storage Change)

#### **Clearwater River Basin**

Selway R nr Lowell - No Corrections  
Lochsa R nr Lowell - No Corrections  
Dworshak Resv Inflow, ID  
+ Clearwater R nr Peck, ID  
- Clearwater R at Orofino, ID  
+ Dworshak Resv (Storage Change)  
Clearwater R at Orofino, ID - No Corrections  
Clearwater R at Spalding, ID  
+ Dworshak Resv (Storage Change)

#### **Salmon River Basin**

Salmon R at Salmon, ID - No Corrections  
Lemhi R nr Lemhi, ID – No Corrections  
MF Salmon R at MF Lodge, ID – No Corrections  
Salmon R at White Bird, ID - No Corrections

#### **Weiser, Payette, Boise River Basins**

Weiser R nr Weiser, ID - No Corrections  
SF Payette R at Lowman, ID - No Corrections  
Deadwood Resv Inflow, ID  
+ Deadwood R blw Deadwood Resv nr Lowman  
+ Deadwood Resv (Storage Change)  
Lake Fork Payette R nr Mccall, ID – No Corrections  
NF Payette R at Cascade, ID  
+ Cascade Resv (Storage Change)  
+ Payette Lake (Storage Change)

NF Payette R nr Banks, ID  
+ Cascade Resv (Storage Change)  
+ Payette Lake (Storage Change)  
Payette R nr Horseshoe Bend, ID  
+ Cascade Resv (Storage Change)  
+ Deadwood Resv (Storage Change)  
+ Payette Lake (Storage Change)  
Boise R nr Twin Springs, ID - No Corrections  
SF Boise R at Anderson Ranch Dam, ID  
+ Anderson Ranch Resv (Storage Change)  
Boise R nr Boise, ID  
+ Anderson Ranch Resv (Storage Change)  
+ Arrowrock Resv (Storage Change)  
+ Lucky Peak Resv (Storage Change)

#### **Wood and Lost River Basins**

Big Wood R at Hailey, ID - No Corrections  
Big Wood R abv Magic Resv, ID  
+ Big Wood R nr Bellevue, ID  
+ Willow Ck  
Camas Ck nr Blaine – No Corrections  
Big Wood R blw Magic Dam nr Richfield, ID  
+ Magic Resv (Storage Change)  
Little Wood R abv High Five Ck, ID – No Corrections  
Little Wood R nr Carey, ID  
+ Little Wood Resv (Storage Change)  
Big Lost R at Howell Ranch, ID - No Corrections  
Big Lost R blw Mackay Resv nr Mackay, ID  
+ Mackay Resv (Storage Change)  
Little Lost R blw Wet Ck nr Howe, ID - No Corrections

#### **Upper Snake River Basin**

Henrys Fork nr Ashton, ID  
+ Henrys Lake (Storage Change)  
+ Island Park Resv (Storage Change)  
Henrys Fork nr Rexburg, ID  
+ Henrys Lake (Storage Change)  
+ Island Park Resv (Storage Change)  
+ Grassy Lake (Storage Change)  
+ Diversions from Henrys Fk btw Ashton to St. Anthony, ID  
+ Diversions from Henrys Fk btw St. Anthony to Rexburg, ID  
+ Diversions from Falls R abv nr Ashton, ID  
+ Diversions from Falls R nr Ashton to Chester, ID  
Falls R nr Ashton, ID  
+ Grassy Lake (Storage Change)  
+ Diversions from Falls R abv nr Ashton, ID  
Teton R nr Driggs, ID - No Corrections  
Teton R nr St. Anthony, ID  
- Cross Cut Canal into Teton R  
+ Sum of Diversions for Teton R abv St. Anthony, ID  
Snake R nr Moran, WY  
+ Jackson Lake (Storage Change)  
Pacific Ck at Moran, WY – No Corrections  
Snake R abv Palisades, WY  
+ Jackson Lake (Storage Change)

Greys R abv Palisades, WY – No Corrections  
Salt R abv Palisades, WY – No Corrections  
Snake R nr Irwin, ID  
+ Jackson Lake (Storage Change)  
+ Palisades Resv (Storage Change)  
Snake R nr Heise, ID  
+ Jackson Lake (Storage Change)  
+ Palisades Resv (Storage Change)  
Willow Ck nr Ririe, ID  
+ Ririe Resv (Storage Change)  
Blackfoot Reservoir Inflow, ID  
+ Blackfoot Reservoir releases  
+ Blackfoot Resv (Storage Change)  
Snake R nr Blackfoot, ID  
+ Palisades Resv (Storage Change)  
+ Jackson Lake (Storage Change)  
+ Diversions from Snake R btw Heise and Shelly  
+ Diversions from Snake R btw Shelly and Blackfoot  
Portneuf R at Topaz, ID - No Corrections  
American Falls Resv Inflow, ID  
+ Snake River at Neeley  
+ All Corrections made for Henrys Fk nr Rexburg, ID  
+ Jackson Lake (Storage Change)  
+ Palisades Resv (Storage Change)  
+ Diversions from Snake R btw Heise and Shelly  
+ Diversions from Snake R btw Shelly and Blackfoot  
**Southside Snake River Basins**  
Oakley Resv Inflow, ID  
+ Goose Ck abv Trapper Ck  
+ Trapper Ck nr Oakley  
Salmon Falls Ck nr San Jacinto, NV - No Corrections  
Bruneau R nr Hot Springs, ID - No Corrections  
Owyhee R nr Gold Ck, NV  
+ Wildhorse Resv (Storage Change)  
Owyhee R nr Owyhee, NV  
+ Wildhorse Resv (Storage Change)  
Owyhee R nr Rome, OR – No Corrections  
Owyhee Resv Inflow, OR  
+ Owyhee R blw Owyhee Dam, OR  
+ Owyhee Resv (Storage Change)  
+ Diversions to North and South Canals  
Succor Ck nr Jordan Valley, OR - No Corrections  
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)**

<b><u>Basin/ Reservoir</u></b>	<b><u>Dead Storage</u></b>	<b><u>Inactive Storage</u></b>	<b><u>Active Storage</u></b>	<b><u>Surcharge Storage</u></b>	<b><u>NRCS Capacity</u></b>	<b><u>NRCS Capacity Includes</u></b>
<b><u>Panhandle Region</u></b>						
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
<b><u>Clearwater Basin</u></b>						
Dworshak	---	1452.00	2016.00	---	3468.0	Inactive+Active
<b><u>Weiser/Boise/Pavette Basins</u></b>						
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
<b><u>Wood/Lost Basins</u></b>						
Magic	Unknown	---	191.50	---	191.5	Active
Little Wood	---	---	30.00	---	30.0	Active
Mackay	0.13	---	44.37	---	44.4	Active
<b><u>Upper Snake Basin</u></b>						
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
<b><u>Southside Snake Basins</u></b>						
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
<b><u>Bear River Basin</u></b>						
Bear Lake	5.0 MAF	119.00	1302.00	---	1421.0	Active+Inactive: includes 119 that can be released
Montpelier Creek	0.21	---	3.84	---	4.0	Dead+Active

## Interpreting Water Supply Forecasts

### Introduction

Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflow forecasts are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

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

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

**50 Percent Chance of Exceedance Forecast.** There is a 50 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 50 percent chance that the actual streamflow volume will be less than this forecast value. Generally, this forecast is the middle of the range of possible streamflow volumes that can be produced given current conditions.

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

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

\*Note: There is still a 20 percent chance that actual streamflow volumes will fall either below the 90 percent exceedance forecast or above the 10 percent exceedance forecast.

These forecasts represent the uncertainty inherent in making streamflow predictions. This uncertainty may include sources such as: unknown future weather conditions, uncertainties associated with the various prediction methodologies, and the spatial coverage of the data network in a given basin.

**30-Year Average.** The 30-year average streamflow for each forecast period is provided for comparison. The average is based on data from 1971-2000. The % AVG. column compares the 50% chance of exceedance forecast to the 30-year average streamflow; values above 100% denote when the 50% chance of exceedance forecast would be greater than the 30-year average streamflow.

AF - Acre-feet, forecasted volume of water are typically in thousands of acre-feet.

These forecasts are given to users to help make risk-based decisions. Users can select the forecast corresponding to the level of risk they are willing to accept in order to minimize the negative impacts of having more or less water than planned for.

### To Decrease the Chance of Having Less Water than Planned for

A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive less than this amount). To reduce the risk of having less water than planned for, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded such as the 90 or 70 percent exceedance forecasts.

### To Decrease the Chance of Having More Water than Planned for

A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive more than this amount). To reduce the risk of having more water than planned for, users can base their operational decisions on one of the forecasts with a lesser chance of being exceeded such as the 30 or 10 percent exceedance forecasts.

### Using the forecasts - an Example

**Using the 50 Percent Exceedance Forecast.** Using the example forecasts shown below, there is a 50% chance that actual streamflow volume at the Boise River near Twin Springs will be less than 685 KAF between April 1 and July 31. There is also a 50% chance that actual streamflow volume will be greater than 685 KAF.

**Using the 90 and 70 Percent Exceedance Forecasts.** If an unexpected shortage of water could cause problems (such as irrigated agriculture), users might want to plan on receiving 610 KAF (from the 70 percent exceedance forecast). There is a 30% chance of receiving *less* than 610 KAF.

Alternatively, if users determine the risk of using the 70 percent exceedance forecast is too great, then they might plan on receiving 443 KAF (from the **90** percent exceedance forecast). There is 10% chance of receiving less than 443 KAF.

**Using the 30 or 10 Percent Exceedance Forecasts.** If an unexpected excess of water could cause problems (such as operating a flood control reservoir), users might plan on receiving 760 KAF (from the 30 percent exceedance forecast). There is a 30% chance of receiving *more* than 760 KAF.

Alternatively, if users determine the risk of using the 30 percent exceedance forecast is too great, then they might plan on receiving 927 KAF (from the 10 percent exceedance forecast). There is a 10% chance of receiving more than 927 KAF.

Users could also choose a volume in between any of these values to reflect their desired risk level.

Weiser, Payette, Boise River Basins Streamflow Forecasts – January 2006								
Forecast Point	Forecast Period	Chance of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000 AF)	(% 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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