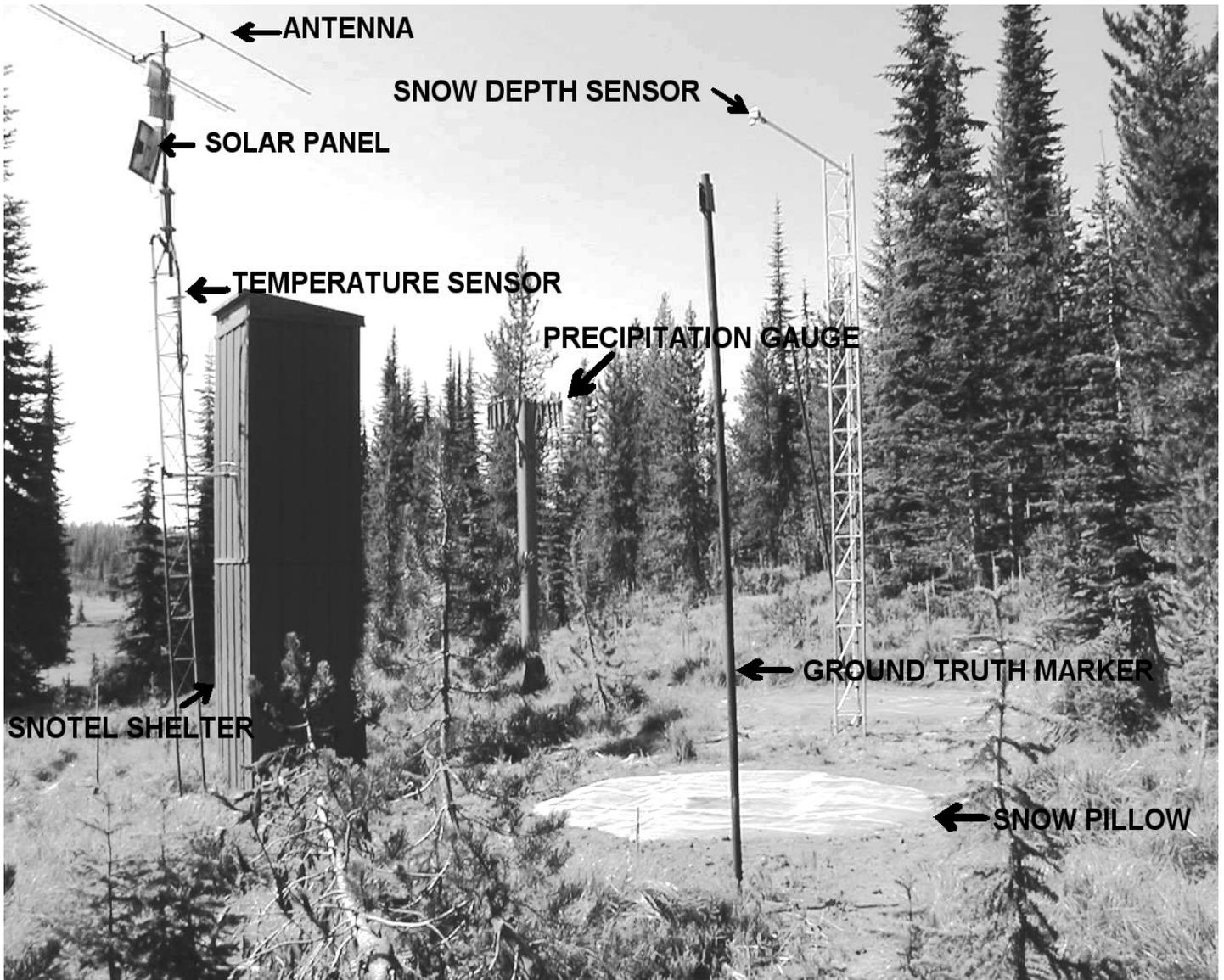


Idaho Water Supply Outlook Report January 1, 2003



Crater Meadows SNOTEL Site, North Fork Clearwater River Basin, Idaho

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>

**Water supply forecasts are produced in cooperation and coordination
with the National Weather Service, NOAA**

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

January 1, 2003

SUMMARY

Storms during the last week of December brought much needed snow and valley rains, but we have a long way to go to recover from the cumulative drought effects and provide adequate water supplies for irrigation, river runners, reservoir recreation, fish, hydropower and all those other uses. If it were not for the "big snow dump" the last week of December, we would be telling a different water supply story. Deadwood Summit SNOTEL in the middle of Idaho had its biggest dump since February 1999! The rest of the state, however, did not capitalize on the snowfall like the central mountains. As of January 8, snowpacks ranged from 65% of average in the Clearwater and Oakley basins to 135% in the central mountains; this is only a third to half of the seasonal snow water content peaks that occur around April 1. Combined storage for the state's 21 reservoirs and lakes is the 4th lowest since 1958. Only December 1992, 1994 and last year had less in storage. The dry summer and fall has left a soil moisture deficit across most of the state. Some rivers were at or near record low levels in early November. With more than half the winter still to come, the water supply picture can change for the better or worse. Now that winter has started, let's hope those storms keep coming!

SNOWPACK

Snowfall was slow in coming to Idaho this year, but storms during the last week of December nearly doubled the snow across central Idaho from the Little Salmon basin to the Big Lost basin. However, other basins in the state did not receive as much snow and are still below normal. The following report shows current conditions as of January 8 from the automated SNOTEL network. It shows snow water equivalent as a percent of average for the given day and also compares today's snow water equivalent to the seasonal snow water equivalent peaks that occur around April 1. The second column provides additional information in comparing current snowpacks to their seasonal peak. If the snowpack were normal throughout the winter, the first column would be 100% every day; the second column would be approximately 20% on December 1, 40% on January 1, 60% on February 1, 80% on March 1, and 100% on April 1. This report is available at: <http://www.id.nrcs.usda.gov/snow/snotel.htm>

Snow Water Content as Percent of Average and Percent of Seasonal Peak
As of TUESDAY: JANUARY 8, 2003

Basin	Snow Water Equivalent Percent of Average For Jan. 8, 2003	Snow Water Equivalent Percent of April 1 Seasonal Peak
Idaho Panhandle Region	68	33
Clearwater Basin	65	31
Salmon Basin	88	40
Weiser Basin	97	45
Payette Basin	101	45
Boise Basin	93	43
Big Wood Basin	108	49
Little Wood Basin	135	59
Big Lost Basin	118	51
Little Lost, Birch Basins	75	35
Medicine Lodge, Beaver, Camas Basins	71	32

Henrys Fork, Teton Basins	72	33
Snake Basin Above Palisades	73	34
Willow, Blackfoot, Portneuf Basins	80	37
Oakley Basin	63	28
Salmon Falls Basin	73	33
Bruneau Basin	84	38
Owyhee Basin	87	40
Bear River Basin	69	30

PRECIPITATION

Water year 2002 ended with yearly precipitation amounts ranging from 110% of average in northern Idaho to 75% in central and southeastern Idaho. The 2003 water year started with precipitation ranging from 25% of average in the west-central mountains and Panhandle region to 87% in the Bear River basin. November amounts ranged from a low of 46% of average again in the west-central mountains to 72% in the Bear. Abundant moisture the last week of December, 140% of average for the month, helped tremendously across west-central and central Idaho, but precipitation in northern and southeastern Idaho was only 72% of average. As a result of the dry fall and late start for winter, water year to date precipitation is below normal across the state ranging from 62% of average in the Clearwater basin to 94% in the Wood and Lost basins.

RESERVOIRS

Reservoir storage remains low and similar to last year's storage. Priest Lake and Dworshak Reservoir are storing the most at near normal levels. The Payette reservoir system is 89% of average, while the Boise reservoir system is 59% of average. Magic Reservoir remains nearly empty for the second December in a row at only 8% of capacity. Mackay Reservoir is 23% of capacity, 42% of average; 5th lowest December 31 storage out of 78 years, only the mid-1930s Dust Bowl years had less storage than this year. The low storage is a sign of the dry summer and fall, soils and springs. Little Wood Reservoir is 24% of capacity. Combined reservoir storage in Palisades Reservoir and Jackson Lake is about 100,000 acre-feet more than a year ago but is the 4th lowest December 31 combined storage since 1957. Overall, the combined reservoir storage for the 7 major reservoirs in the upper Snake is 36% of capacity, 57% of average, just slightly better than a year ago. Salmon Falls, Oakley, Wildhorse and Owyhee reservoirs are storing about the same as a year ago, ranging from 5-25% of capacity or 20-50% of average. Bear Lake has 352,000 acre-feet; last year it had 574,300 acre-feet. This is the 9th lowest December storage since 1922.

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

Dry soils and lack of fall precipitation kept streams low this fall with some at or near record low levels in early November. The Bruneau River October - December total flow was the 4th lowest since 1944; only 1990, 1992 and 2002 had less flow than this year. Soil under the snowpack as monitored by soil moisture sensors at Jackson Peak SNOTEL site in the Boise basin at 4, 8 and 20 inches deep are almost as dry now as they were at the end of summer.

Based on previous years of monitoring soil moisture, the dry soils under the snow may absorb 3-5 inches of water when the snow melts. Current streamflow forecasts range from 45% of average in the Bear River basin to normal volumes in the central mountains. Water managers should consider using the 90% or 70% chance of exceedance probability forecasts because of the extreme dry soils and the inefficiency of the snowpack to produce a 1:1 correlation with streamflow following dry years. For example: the April 1, 1989, snowpack in the Big Lost basin was 96% of average but only yielded a summer streamflow of 40% of average; April 1, 2002, Big Wood basin snowpack was 81%, yielded a streamflow of 55%; and April 1, 2002, upper Snake snowpack was 80%, yielded 65% of average streamflow. Spring precipitation also influences the efficiency of the melting snowpack. With more than half the winter still to come, let's hope Mother Nature turns around and brings the much needed moisture across the entire state of Idaho!

RECREATION

Skiers and snowmobilers are rejoicing after the recent snowfalls, but river runners and farmers are still nervous knowing we have a long way to go to reach normal snow levels by April 1. The series of storms in late December nearly doubled the snow depth and water content from the Little Salmon to the Big Wood. Deadwood Summit SNOTEL in the middle of Idaho had its biggest dump since February 1999! It increased from 11.5 inches of snow water on December 26 to 19.4 inches on January 1; snow depths increased from 50 inches to 88 inches! However, because of the long dry spell between storms, a weak snow layer has increased avalanche danger across most of southern Idaho. Be careful in the backcountry.

River runners submitting applications for next year's lottery to run Idaho's river should once again think about requesting early to mid-summer dates as opposed to late summer. When El Nino is battling against us, like it is this year, only 5 out of 21 El Nino years since 1934 resulted in above normal April-July streamflow on the North Fork Clearwater River. For the Salmon River at White Bird, 11 out of 12 El Nino years since 1934 were above average; the average streamflow for these 12 years for the Salmon River is 88% of average. With 60% of winter still to come, Mother Nature could turn around and bring the much needed snow across all of Idaho!

IDAHO SURFACE WATER SUPPLY INDEX (SWSI) As of January 1, 2003

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.

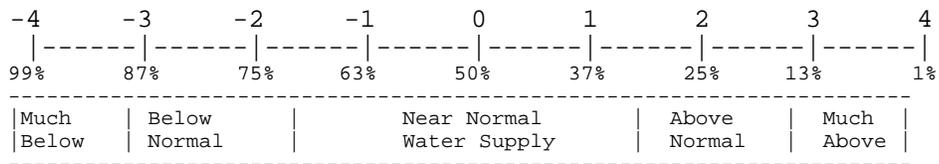
The following agencies and cooperators provide assistance in the preparation of the Surface Water Supply Index for Idaho:

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

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

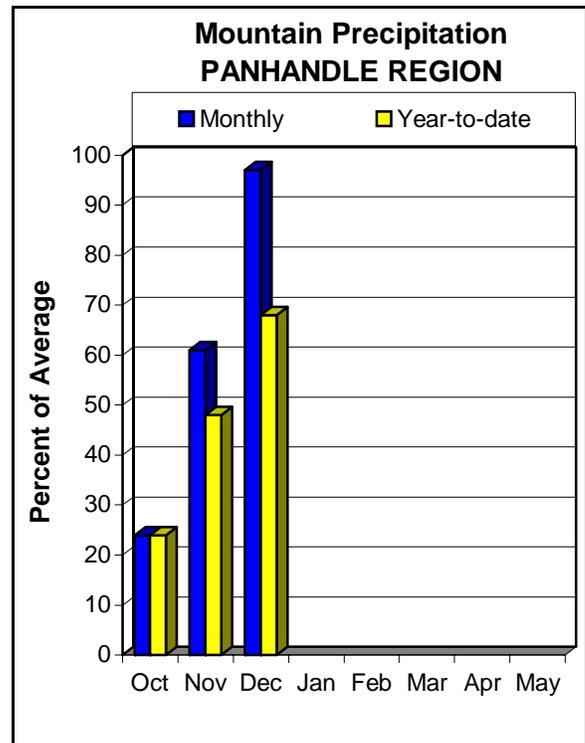
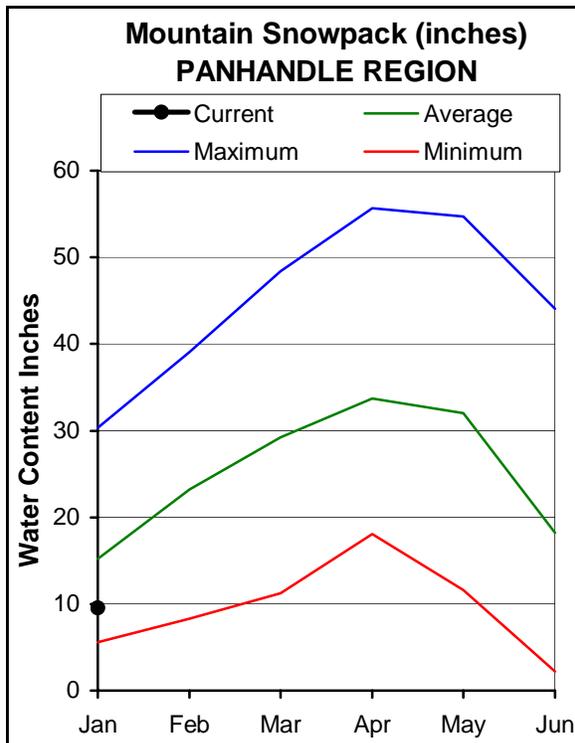
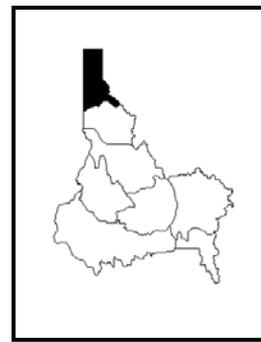
<i>BASIN or REGION</i>	<i>SWSI Value</i>	<i>Most Recent Year With Similar SWSI Value</i>	<i>Agricultural Water Supply Shortage May Occur When SWSI is Less Than</i>
PANHANDLE	-2.5	1998	NA
CLEARWATER	-2.2	1983	NA
SALMON	-0.6	1995	NA
WEISER	0.1	1986	NA
PAYETTE	-0.1	1981	NA
BOISE	-1.3	1985	-2.6
BIG WOOD	-0.4	1985	-1.4
LITTLE WOOD	0.7	1996	-2.6
BIG LOST	-0.2	1993	-0.8
LITTLE LOST	-0.8	1985	0.0
HENRYS FORK	-2.0	1990	-3.3
SNAKE (HEISE)	-2.7	1987	-2.3
OAKLEY	-1.6	1989	0.0
SALMON FALLS	-1.9	1994	0.0
BRUNEAU	-1.3	1991	NA
BEAR RIVER	-3.9	2002	-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 JANUARY 1, 2003



WATER SUPPLY OUTLOOK

The new water year got off to a slow start with monthly SNOTEL precipitation for October at only 24% of average, November was 61% and December was 97%. As a result, water year to date precipitation is only 68% of average, 2nd lowest in the state behind the Clearwater River basin. Let's hope the precipitation keeps improving each month. Snowpacks are only 50-60% of average in the Coeur d'Alene, St. Joe and Spokane basins; 84% in the Moyie basin; and 100% in the Priest basin. However, the snowpack is only a third of its seasonal peak snow water content amounts that occur around April 1, so we still have a long ways to go to have a normal snowpack by April 1. In addition, El Nino type years like this year usually favor below normal snowfall in northern Idaho, resulting in low spring/summer streamflows. A below normal snowpack in the Panhandle and Clearwater basin may be the norm this winter. Storage in Priest Lake is normal, while Coeur d'Alene Lake is 72% of average. Streamflow forecasts reflect the low snow and range from 60-85% of average. With more than half the winter still to come, let's hope the second half brings much more snow!

PANHANDLE REGION
Streamflow Forecasts - January 1, 2003

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)	APR-JUL	3664	4961	5550	79	6139	7436	7035				
	APR-SEP	3678	5550	6400	79	7250	9122	8125				
MOYIE RIVER at Eastport	APR-JUL	230	290	331	82	372	432	403				
	APR-SEP	240	303	345	83	387	450	418				
SMITH CREEK	APR-JUL	72	90	102	83	114	132	123				
	APR-SEP	73	93	106	82	119	139	129				
BOUNDARY CREEK	APR-JUL	79	96	107	87	118	135	123				
	APR-SEP	83	100	112	87	124	141	129				
CLARK FK at Whitehorse Rpds (1,2)	APR-JUL	2459	5850	7390	66	8930	12321	11280				
	APR-SEP	2693	6425	8120	65	9815	13547	12460				
PEND OREILLE Lake Inflow (2)	APR-JUL	4285	6759	8440	67	10121	12595	12700				
	APR-SEP	4676	7381	9220	66	11059	13764	13900				
PRIEST near Priest River (1,2)	APR-JUL	444	586	650	80	714	856	814				
	APR-SEP	365	592	695	80	798	1025	868				
COEUR D'ALENE at Enaville	APR-JUL	313	439	525	71	611	737	739				
	APR-SEP	334	465	555	71	645	776	778				
ST. JOE at Calder	APR-JUL	501	685	810	71	935	1119	1136				
	APR-SEP	545	733	860	71	987	1175	1205				
SPOKANE near Post Falls (2)	APR-JUL	1217	1404	1740	68	2076	2570	2552				
	APR-SEP	1250	1464	1810	68	2156	2664	2650				
SPOKANE at Long Lake (2)	APR-JUL	1226	1537	1970	69	2403	3041	2851				
	APR-SEP	1321	1643	2100	68	2557	3229	3072				

PANHANDLE REGION Reservoir Storage (1000 AF) - End of December					PANHANDLE REGION Watershed Snowpack Analysis - January 1, 2003			
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	2551.0	2560.0	2420.9	Kootenai ab Bonners Ferry	7	71	71
FLATHEAD LAKE	1791.0	1192.0	1437.0	1192.7	Moyie River	1	85	84
NOXON RAPIDS	335.0	323.4	317.5	315.8	Priest River	3	75	97
PEND OREILLE		NO REPORT			Pend Oreille River	63	71	61
COEUR D'ALENE	238.5	79.5	64.6	110.1	Rathdrum Creek	3	43	74
PRIEST LAKE	119.3	58.0	57.5	55.7	Hayden Lake	0	0	0
					Coeur d'Alene River	6	49	54
					St. Joe River	3	50	51
					Spokane River	11	46	56
					Palouse River	1	27	33

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

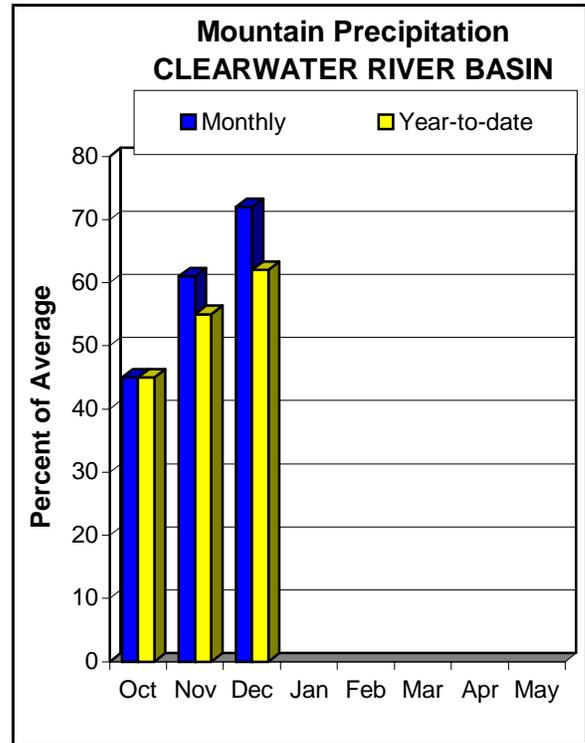
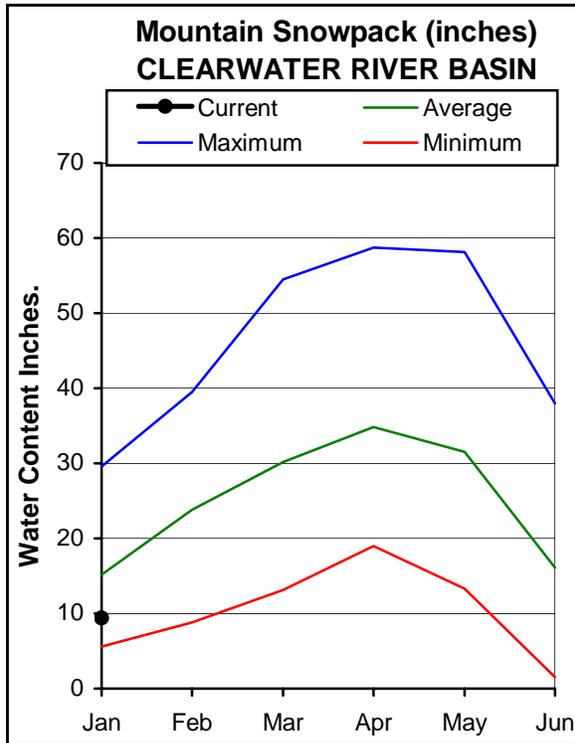
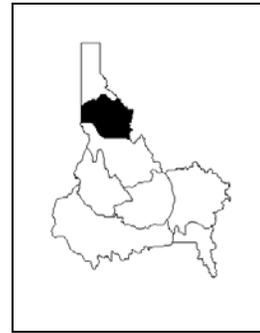
The average is computed for the 1971-2000 base period.

(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

JANUARY 1, 2003



WATER SUPPLY OUTLOOK

The new water year started off with October precipitation at 45% of average, November at 61% and December at 72%. Precipitation for the water year is 62% of average, the lowest in the state. Snowpack percentages are nearly the lowest in the state ranging from 59% of average in the North Fork Clearwater basin to 75% of average in the Selway basin. Overall, the Clearwater basin snowpack is 61% of average. Above normal moisture the next few months is needed to reach normal snow levels by April 1. However, with El Nino batting against us, this may be difficult as only 5 out of 21 El Nino years since 1934 resulted in above normal April-July streamflow on the North Fork Clearwater River. A below normal snowpack in the Panhandle and Clearwater basin may be the norm again during this El Nino type winter. Dworshak Reservoir is near normal at 63% full for this time of year. Spring and summer streamflow forecasts mirror the snowpack with the Selway River forecast at 71% of average, Lochsa River at 66%, and Dworshak Reservoir inflow at 71%. With more than half the winter still to come, lets hope that this El Nino type year brings another anomaly to the El Nino statistics with above normal snow and summer streamflow this year!

CLEARWATER RIVER BASIN
Streamflow Forecasts - January 1, 2003

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)
SELWAY near Lowell	APR-JUL	1083	1245	1460	71	1675	1991	2062
	APR-SEP	1144	1314	1540	71	1766	2098	2170
LOCHSA near Lowell	APR-JUL	749	850	1010	66	1170	1405	1530
	APR-SEP	807	913	1075	67	1237	1476	1609
DWORSHAK RESV INFLOW (1,2)	APR-JUL	929	1404	1870	71	2352	2800	2635
	APR-SEP	976	1480	1980	71	2487	2963	2799
CLEARWATER at Orofino (1)	APR-JUL	2230	2921	3390	73	4080	5599	4645
	APR-SEP	2420	3111	3580	73	4270	5789	4900
CLEARWATER at Spalding (1,2)	APR-JUL	3305	4013	5180	70	6347	8918	7435
	APR-SEP	3624	4723	5470	70	6637	9208	7850

CLEARWATER RIVER BASIN Reservoir Storage (1000 AF) - End of December					CLEARWATER RIVER BASIN Watershed Snowpack Analysis - January 1, 2003			
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	2194.6	2285.8	2228.2	North Fork Clearwater	9	59	59
					Lochsa River	3	87	65
					Selway River	4	83	75
					Clearwater Basin Total	17	63	61

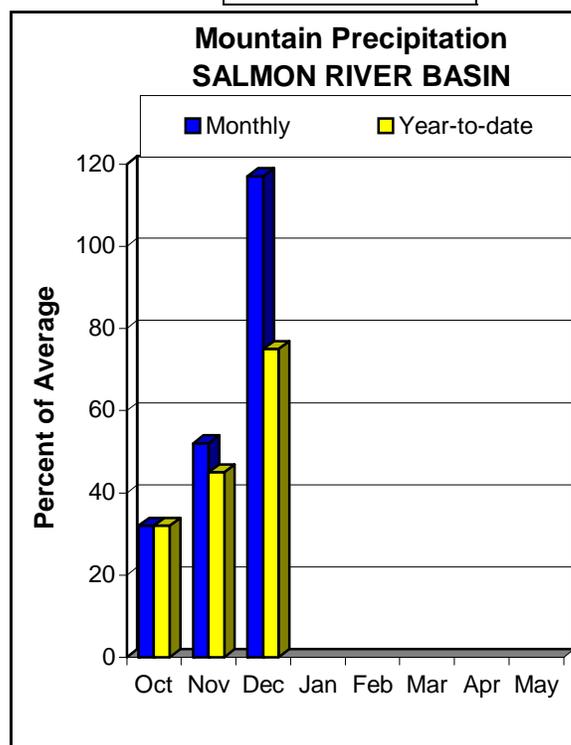
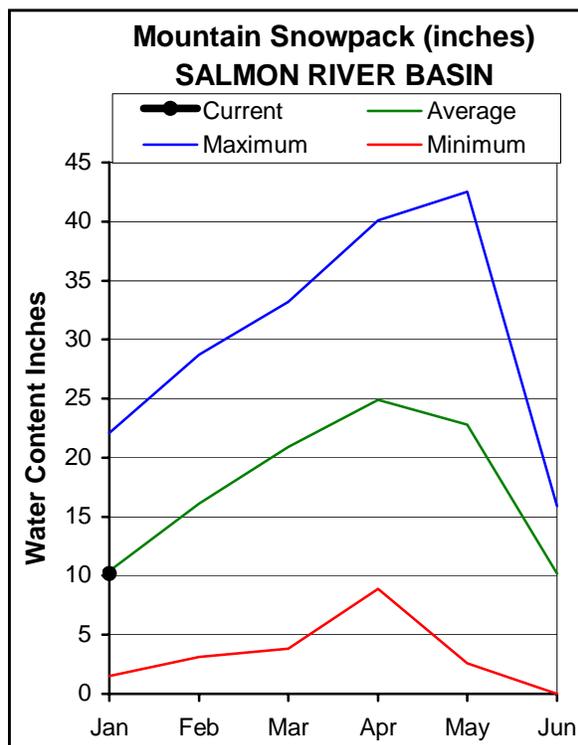
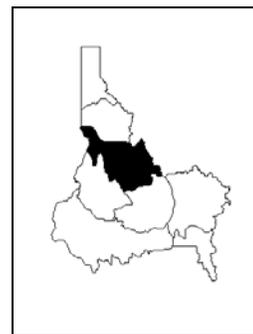
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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

JANUARY 1, 2003



WATER SUPPLY OUTLOOK

Fall precipitation amounts in the Salmon basin summarize how dry it was: October precipitation was 32% of average, with mountainous SNOTEL sites ranging from 0.2 to 1.8 inches. Normal October amounts are 2-7 inches. November precipitation was half of normal. December precipitation was 117% of average, first time since December 2001 that the Salmon basin has received above normal monthly precipitation. Water year to date precipitation is only 75% of average. The last week of December brought much needed moisture to the central mountains from the Little Salmon to the Big Wood basin allowing some SNOTEL sites to double in snow depth and water content. Deadwood SNOTEL site at 6,680 feet in elevation between Warm Lake and Deadwood Reservoir increased from 11.5 inches of snow water on December 26 to 19.4 inches on January 1; likewise, snow depths increased from 50 inches to 88 inches! The snowpack is the highest in the Little Salmon and South Fork Salmon basins at 110% of average and decreases from west to east. Middle Fork Salmon River snowpack is 91% of average; Salmon River above Salmon is 90%; and the Lemhi River is 65%. April-September streamflow forecasts reflect the snowpack in the mountainous headwaters calling for 88% of average for the Salmon River above Salmon and 89% for the Salmon River at White Bird. When El Nino conditions are active in the south Pacific Ocean like it is this year, the following summer streamflow for the April-September period at Salmon River near White Bird has been above average 11 out of 21 El Nino years since 1934. However, the average during these El Nino years is 88%. Lets hope the storms keep the central mountains white and make it 12 out of 22 years with above average streamflow during El Nino type years!

SALMON RIVER BASIN
Streamflow Forecasts - January 1, 2003

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 *										
SALMON at Salmon (1)	APR-JUL	308	612	750	88	888	1192	857				
	APR-SEP	433	737	875	88	1013	1317	1000				
SALMON at White Bird (1)	APR-JUL	2851	4466	5200	89	5934	7549	5851				
	APR-SEP	3411	5026	5760	89	6494	8109	6482				

SALMON RIVER BASIN Reservoir Storage (1000 AF) - End of December					SALMON RIVER BASIN Watershed Snowpack Analysis - January 1, 2003			
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	98	90
					Lemhi River	6	83	65
					Middle Fork Salmon River	4	97	91
					South Fork Salmon River	3	108	109
					Little Salmon River	4	95	110
					Salmon Basin Total	24	97	92

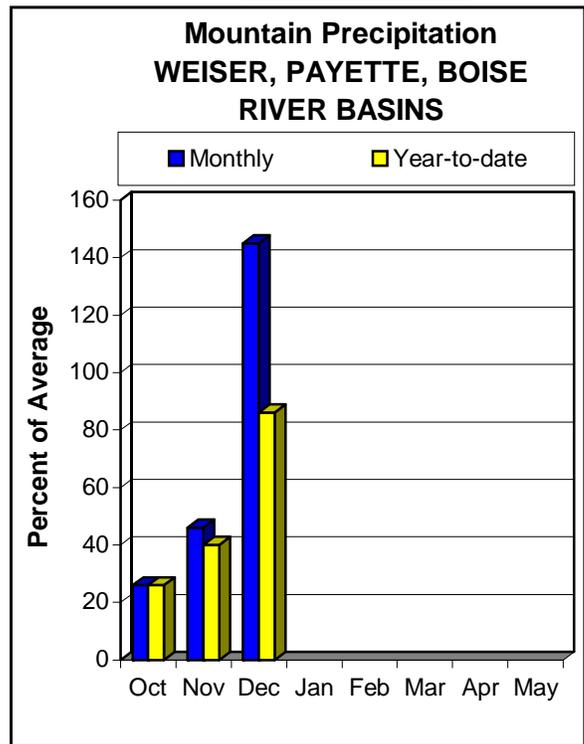
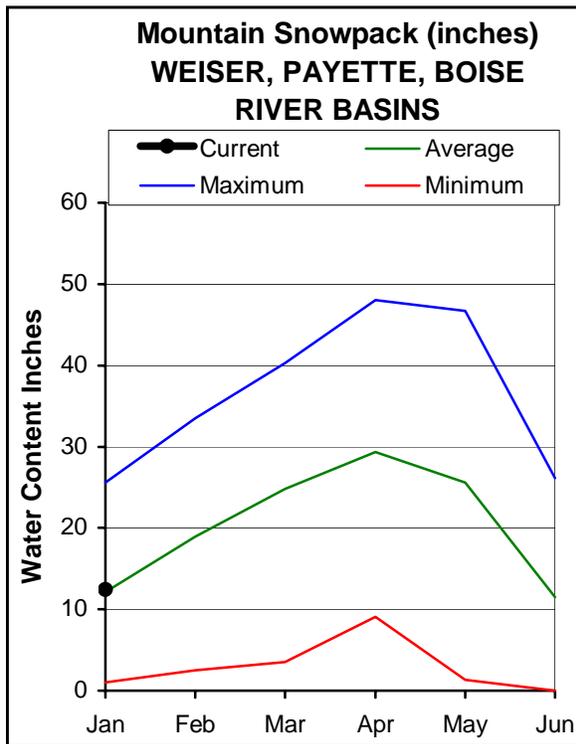
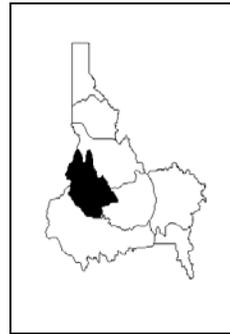
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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 JANUARY 1, 2003



WATER SUPPLY OUTLOOK

October precipitation in these west-central mountains was the lowest in the state at 26% of average. November was only a little better at 46% of average. December precipitation was 145% of average, first time in a year with above normal precipitation. Late December's moisture nearly doubled the snow water and depth at many automated measuring stations. Water year to date precipitation remains below normal at 86% of average. As a result of the dry fall, soils under the snowpack as monitored at Jackson Peak SNOTEL site at 4, 8 and 20 inches deep, are nearly as dry now as they were at the end of summer. Snowpacks are currently near normal in these basins, but based on previous years of monitoring soil moisture, the dry soils under the snow will absorb 3-5 inches of water when the snow melts. Payette reservoir system storage is 89% of average, better than last year. The Boise reservoir system is 59% of average, about the same as a year ago. Streamflow forecasts range from 85-100% of average runoff. Streamflow runoff greater than 65% of average is needed to provide adequate irrigation in the Boise basin. With more than half the winter still to come and only 40% of the April 1 seasonal snow water amounts currently on the ground, the water supply picture can still change for the better or worse.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - January 1, 2003

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)	APR-SEP	154	316	390	93	464	626	420		
SF PAYETTE at Lowman	APR-JUL	238	323	380	87	437	522	438		
	APR-SEP	278	368	430	87	492	582	494		
DEADWOOD RESERVOIR Inflow (1,2)	APR-JUL	78	114	130	97	146	182	134		
	APR-SEP	83	119	135	95	151	187	142		
LAKE FORK PAYETTE near McCall	APR-JUL	65	77	85	100	93	105	85		
	APR-SEP	69	81	89	100	97	109	89		
NF PAYETTE at Cascade (1,2)	APR-JUL	294	432	495	101	558	696	488		
	APR-SEP	329	467	530	100	593	731	530		
NF PAYETTE nr Banks (2)	APR-JUL	418	553	645	100	737	872	643		
	APR-SEP	447	589	685	99	781	923	690		
PAYETTE nr Horseshoe Bend (1,2)	APR-JUL	879	1347	1560	97	1773	2241	1610		
	APR-SEP	1004	1483	1700	97	1917	2396	1755		
BOISE near Twin Springs (1)	APR-JUL	400	531	590	93	649	780	636		
	APR-SEP	385	560	640	93	720	895	691		
SF BOISE at Anderson Ranch Dam (1,2)	APR-JUL	361	460	505	93	550	649	542		
	APR-SEP	312	479	555	96	631	798	579		
MORES CREEK near Arrowrock Dam	APR-JUL	61	90	109	83	128	157	131		
	APR-SEP	64	93	113	83	133	162	137		
BOISE near Boise (1,2)	APR-JUN	687	1023	1175	93	1327	1663	1258		
	APR-JUL	717	1132	1320	93	1508	1923	1414		
	APR-SEP	790	1210	1400	92	1590	2010	1526		

WEISER, PAYETTE, BOISE RIVER BASINS Reservoir Storage (1000 AF) - End of December					WEISER, PAYETTE, BOISE RIVER BASINS Watershed Snowpack Analysis - January 1, 2003			
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	1.2	1.0	3.3	Mann Creek	1	69	91
CASCADE	693.2	423.7	326.5	456.4	Weiser River	3	82	104
DEADWOOD	164.0	55.7	53.1	82.5	North Fork Payette	8	100	111
ANDERSON RANCH	450.2	142.5	78.9	296.8	South Fork Payette	5	90	101
ARROWROCK	272.2	79.2	168.4	173.1	Payette Basin Total	14	90	105
LUCKY PEAK	293.2	110.0	100.5	95.5	Middle & North Fork Boise	6	88	97
LAKE LOWELL (DEER FLAT)	165.2	59.3	28.2	98.4	South Fork Boise River	9	82	108
					Mores Creek	5	58	95
					Boise Basin Total	16	75	102
					Canyon Creek	2	53	134

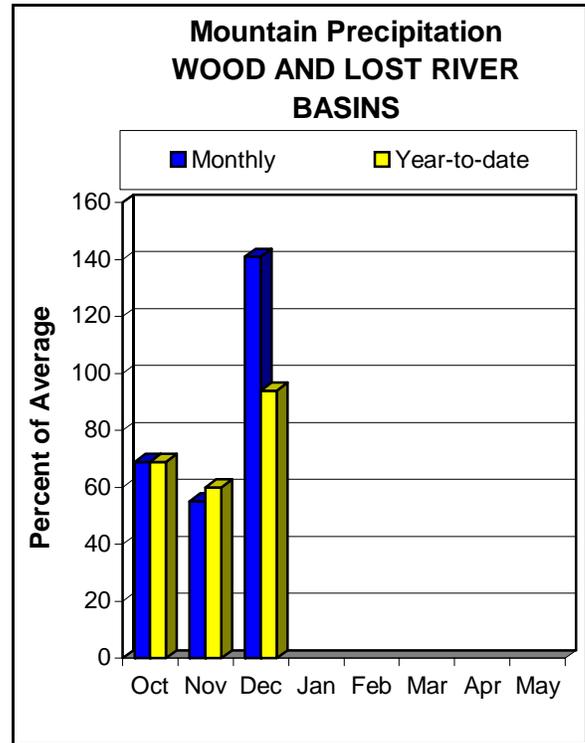
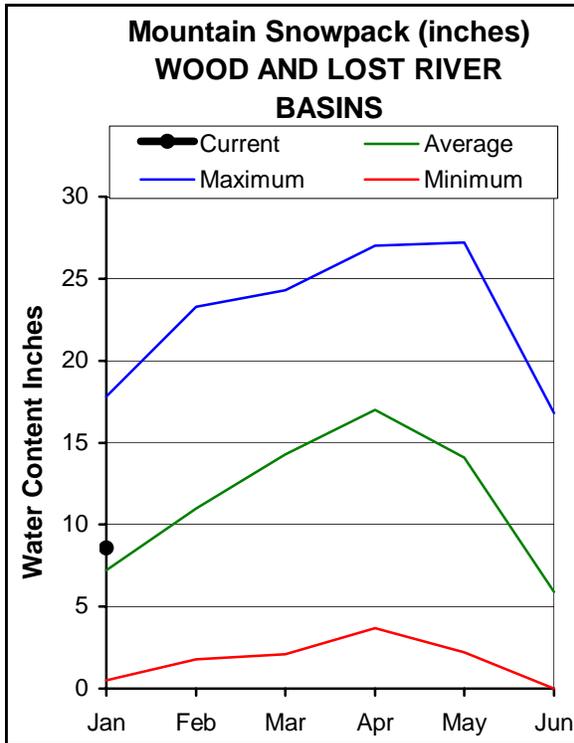
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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 JANUARY 1, 2003



WATER SUPPLY OUTLOOK

The best snowpacks in the state are in these central Idaho mountains ranging from 115-150% of average. The snow drops off abruptly to 65-85% of average in the Little Lost, Birch, Medicine Lodge, Camas and Beaver basins. Monthly precipitation was below normal in October and November, but December brought 141% of average precipitation. Magic Reservoir remains nearly empty for the second December in a row at only 8% of capacity, 19% of average. Mackay Reservoir is 23% of capacity, 42% of average; 5th lowest December 31 out of 78 years. Only the mid-1930s Dust Bowl years had less water than this year. The low storage is a sign of the dry summer and fall, soils and springs. Little Wood Reservoir is 24% of capacity, half-normal and just slightly better than a year ago. Streamflow forecasts look promising, ranging from 105-110% of average with the exception of the Little Lost River at 80%. Water managers should consider using the 90% or 70% Chance Exceedance Probability Forecasts because of the extreme dry soils and the inefficiency of the snowpack to produce a 1:1 correlation with streamflow following dry years and/or dry springs. For example, the April 1, 1989, snowpack in the Big Lost basin was 96% of average, but only yielded a summer streamflow of 40% of average; April 1, 2002, Big Wood basin snowpack was 81%, yielded a streamflow of 55%. Let's hope the second half of winter brings even more snow to these drought-ridden basins of central Idaho.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - January 1, 2003

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)	
BIG WOOD at Hailey (1)	APR-JUL	148	231	275	107	323	441	256		
	APR-SEP	167	257	305	106	357	485	289		
BIG WOOD near Bellevue	APR-JUL	96	153	200	106	253	342	188		
	APR-SEP	103	162	210	105	264	354	201		
CAMAS CREEK near Blaine	APR-JUL	47	79	105	105	135	187	100		
	APR-SEP	47	79	106	105	136	188	101		
BIG WOOD below Magic Dam (2)	APR-JUL	120	233	310	107	387	500	291		
	APR-SEP	129	246	325	106	404	521	307		
LITTLE WOOD near Carey (2)	MAR-JUL	47	80	102	106	124	157	96		
	MAR-SEP	52	87	110	106	133	168	104		
BIG LOST at Howell Ranch	APR-JUN	97	127	147	110	167	197	134		
	APR-JUL	118	160	189	110	218	260	172		
	APR-SEP	137	183	215	109	247	293	197		
BIG LOST below Mackay Reservoir (2)	APR-JUL	81	122	150	106	178	219	142		
	APR-SEP	109	154	184	106	214	259	173		
LITTLE LOST blw Wet Creek	APR-JUL	16.1	21	25	81	29	34	31		
	APR-SEP	19.9	27	31	80	36	42	39		

WOOD AND LOST RIVER BASINS Reservoir Storage (1000 AF) - End of December					WOOD AND LOST RIVER BASINS Watershed Snowpack Analysis - January 1, 2003			
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	14.8	13.7	79.7	Big Wood ab Hailey	8	111	113
LITTLE WOOD	30.0	7.3	6.5	14.1	Camas Creek	5	77	131
MACKAY	44.4	10.0	15.0	23.7	Big Wood Basin Total	12	96	117
					Little Wood River	4	153	159
					Fish Creek	0	0	0
					Big Lost River	5	143	133
					Little Lost River	3	97	80
					Birch-Medicine Lodge Cree	2	84	65
					Camas-Beaver Creeks	4	65	84

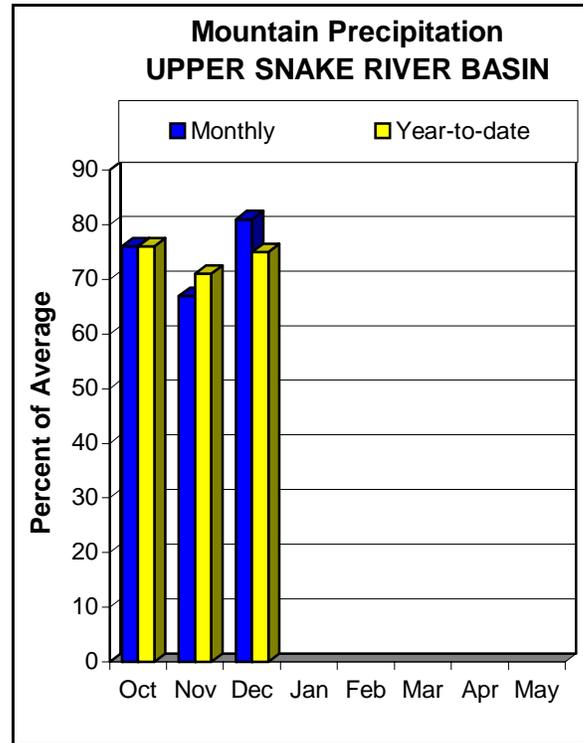
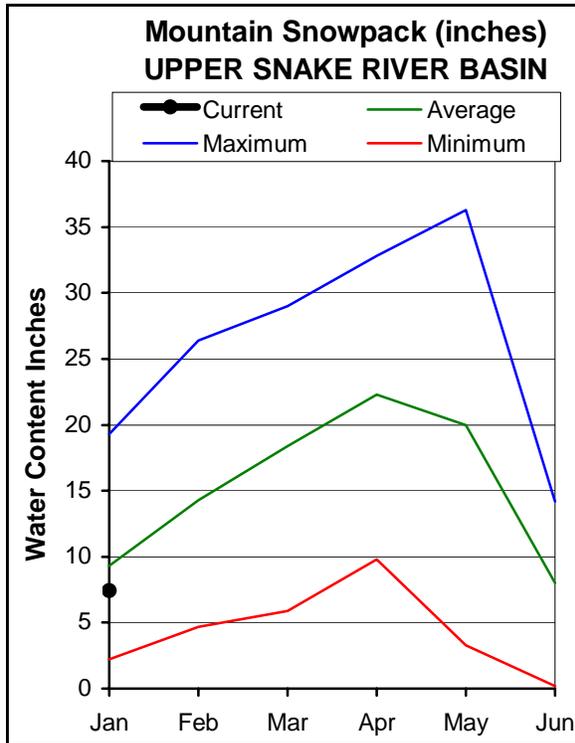
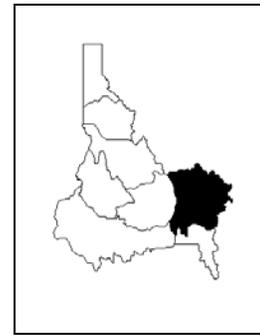
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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

JANUARY 1, 2003



WATER SUPPLY OUTLOOK

Precipitation the first three months of the new water year ranged from 67% to 81% of average. Water year to date precipitation is 75% of average. Snowpacks are similar, ranging from 70-85% of average. Combined reservoir storage in Palisades Reservoir and Jackson Lake is about 100,000 acre-feet more than a year ago but is the 4th lowest December 31 combined storage since 1957. Only December 1988, 1992 and 2002 had less storage than this year. Overall, the combined reservoir storage for the 7 major reservoirs in the upper Snake is 36% of capacity, 57% of average, slightly better than a year ago. Streamflow forecasts for next summer range from 63-83% of average. Snake River near Heise is forecast at 81% of average. Streamflow in the 80-90% of average range at Snake River near Heise is needed to provide adequate irrigation water supplies. Unless the spring is unusually wet, the snowpack is not as efficient at producing a 1:1 relationship with streamflow following drought years due to dry soils and springs. For example: in 2002, the April 1 snowpack was 80% of average but yielded just 65% of average summer streamflow. In 1989, the snowpack was 113% of average on April 1 and yielded 70% of average streamflow. Spring precipitation is also important in improving the efficiency of the snowmelt. Water managers should consider using a lesser forecast such as the 70% Chance Exceedance Probability Forecasts to reduce risk of not having enough water. Keep your fingers crossed for a lot more snow!

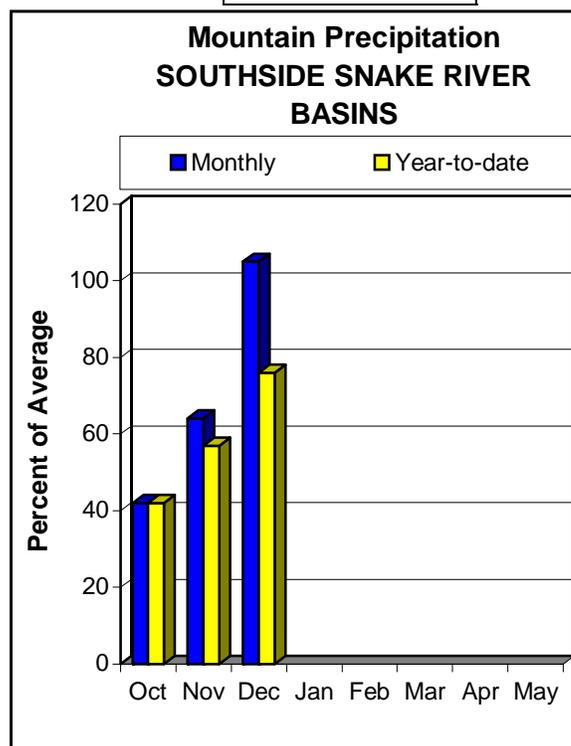
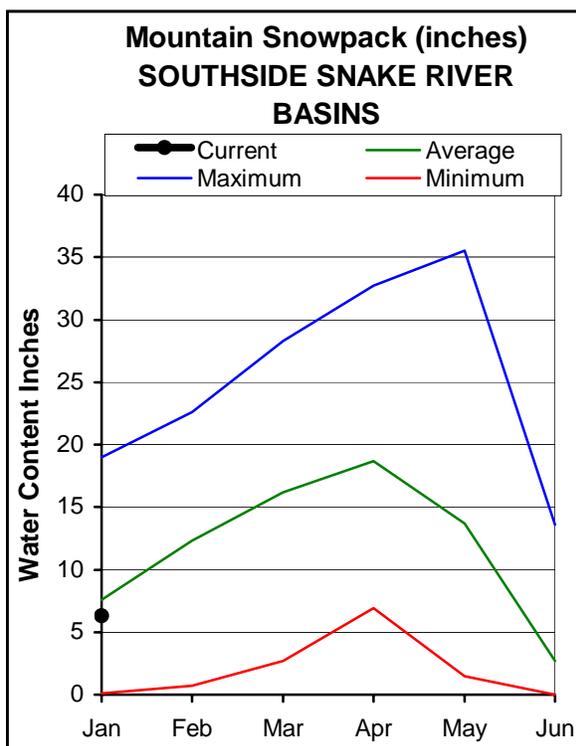
UPPER SNAKE RIVER BASIN
Streamflow Forecasts - January 1, 2003

Forecast Point	Forecast Period	<<===== Drier =====>>		Future Conditions		===== Wetter =====>>		30-Yr Avg. (1000AF)
		90%	70%	Chance Of Exceeding *		30%	10%	
		(1000AF)	(1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	(1000AF)	(1000AF)	
HENRYS FORK near Ashton (2)	APR-JUL	342	397	435	76	473	528	571
	APR-SEP	508	546	590	77	634	700	763
HENRYS FORK near Rexburg (2)	APR-JUL	699	869	985	63	1101	1271	1559
	APR-SEP	917	1109	1240	62	1371	1563	2013
FALLS near Squirrel (1,2)	APR-JUL	214	273	300	78	327	386	386
	APR-SEP	252	320	350	77	380	448	456
TETON near Driggs	APR-JUL	82	112	133	81	154	184	165
	APR-SEP	113	150	175	83	200	237	210
TETON near St. Anthony	APR-JUL	212	276	320	79	364	428	403
	APR-SEP	252	325	375	78	425	498	482
SNAKE near Moran (1,2)	APR-SEP	474	636	710	79	784	946	904
PACIFIC CREEK at Moran	APR-SEP	88	114	132	74	150	176	178
SNAKE above Palisades (2)	APR-JUL	1400	1704	1910	81	2116	2420	2370
	APR-SEP	1637	1978	2210	81	2442	2783	2735
GREYS above Palisades	APR-JUL	166	225	266	79	307	366	338
	APR-SEP	205	270	315	80	360	425	394
SALT near Etna	APR-JUL	158	228	275	80	322	392	342
	APR-SEP	201	281	335	80	389	469	419
PALISADES RESERVOIR INFLOW (1,2)	APR-JUL	1742	2401	2700	81	2999	3658	3331
	APR-SEP	2072	2813	3150	81	3487	4228	3875
SNAKE near Heise (2)	APR-JUL	2100	2576	2900	81	3224	3700	3561
	APR-SEP	2437	2981	3350	81	3719	4263	4159
Willow Creek nr Ririe	MAR-JUL	26	46	68	77	101	179	88
BLACKFOOT RESV INFLOW	APR-JUN	35	68	91	76	114	147	120
SNAKE nr Blackfoot (1,2)	APR-JUL	2295	3268	3710	71	4152	5125	5262
	APR-SEP	3185	4158	4600	70	5042	6015	6538
PORINEUF at Topaz	MAR-JUL	41	54	63	71	72	85	89
	MAR-SEP	54	70	80	73	90	106	109
AMERICAN FALLS RESV INFLOW (1,2)	APR-JUL	675	1861	2400	74	2939	4125	3242
	APR-SEP	875	2061	2600	74	3139	4325	3505

UPPER SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of December					UPPER SNAKE RIVER BASIN Watershed Snowpack Analysis - January 1, 2003			
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	53.1	82.5	Henrys Fork-Falls River	10	79	76
ISLAND PARK	135.2	56.4	68.8	96.1	Teton River	7	97	80
GRASSY LAKE	15.2	12.3	9.2	11.6	Henrys Fork above Rexburg	17	85	78
JACKSON LAKE	847.0	245.7	137.4	481.7	Snake above Jackson Lake	9	97	82
PALISADES	1400.0	443.2	439.3	1036.5	Gros Ventre River	2	83	74
RIRIE	80.5	31.5	27.9	34.5	Hoback River	5	81	73
BLACKFOOT		NO REPORT			Greys River	4	80	69
AMERICAN FALLS	1672.6	688.0	697.9	986.6	Salt River	3	102	83
					Snake above Palisades	21	91	79
					Willow Creek	7	73	82
					Blackfoot River	3	81	86
					Portneuf River	2	69	80
Snake abv American Falls	31	86	79					

* 90%, 70%, 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 JANUARY 1, 2003



WATER SUPPLY OUTLOOK

The new water year started where the old one left off--dry. October precipitation was only 42% of average, increased to 64% in November, and was near normal in December. Water year to date precipitation is only 76% of average. The lack of summer and fall precipitation also produced low fall stream levels. The Bruneau River October-December total flow was the 4th lowest since 1944. Only 1990, 1992 and last year had less flow than this year. Similarly, Salmon Falls Creek October-December flow was the 10th lowest since 1911. As a result, soils are dry and a lot more snow is needed! Snowpacks increase from east to west with the Raft and Oakley basins at 72% of average, Salmon Falls at 79%, Bruneau basin at 91% and Owyhee basin at 98%. Salmon Falls, Oakley, Wildhorse and Owyhee reservoirs are storing about the same as a year ago, ranging from 5-25% of capacity or 20-50% of average. Streamflow forecasts are low, ranging from 55-75% of average. Water users will be watching this year closely and hoping for much more snow.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - January 1, 2003

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)	
OAKLEY RESV INFLOW	MAR-JUL	11.2	17.2	22	65	27	36	34				
	MAR-SEP	12.6	18.9	24	65	30	39	37				
OAKLEY RESV STORAGE	FEB-28	12.4	14.7	16.2	52	17.7	20	31				
	MAR-31	16.1	19.0	21	58	23	26	36				
	APR-30	18.4	22	25	61	28	32	41				
SALMON FALLS CREEK nr San Jacinto	MAR-JUN	31	46	58	65	71	93	89				
	MAR-JUL	33	49	61	66	75	98	93				
	MAR-SEP	35	51	64	65	78	102	98				
SALMON FALLS RESV STORAGE	FEB-28	13.0	16.7	19.2	32	22	25	60				
	MAR-31	20	27	32	46	37	44	70				
	APR-30	23	33	39	44	46	55	89				
BRUNEAU near Hot Spring	MAR-JUL	106	148	180	76	215	273	237				
	MAR-SEP	114	157	191	77	228	288	248				
OWYHEE nr Owyhee (2)	APR-JUL	23	42	63	77	84	115	82				
OWYHEE near Rome	FEB-JUL	135	264	375	57	506	734	655				
OWYHEE RESV INFLOW (2)	FEB-JUL	186	330	450	64	589	828	700				
	FEB-SEP	206	353	475	65	616	855	730				
	APR-SEP	112	203	280	65	369	523	428				
SUCCOR CK nr Jordan Valley	FEB-JUL	5.7	10.2	15.0	78	19.8	27	19.3				
SNAKE RIVER at King Hill (1,2)	APR-JUL	549	1499	1930	63	2361	3311	3045				
SNAKE RIVER near Murphy (1,2)	APR-JUL	650	1613	2050	66	2487	3450	3092				
SNAKE RIVER at Weiser (1,2)	APR-JUL	415	2557	3530	61	4503	6645	5765				
SNAKE RIVER at Hells Canyon Dam (1,2)	APR-JUL	575	2923	3990	62	5057	7405	6493				
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	4927	12404	15800	73	19196	26673	21550				

SOUTHSIDE SNAKE RIVER BASINS Reservoir Storage (1000 AF) - End of December					SOUTHSIDE SNAKE RIVER BASINS Watershed Snowpack Analysis - January 1, 2003			
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	11.1	9.8	25.7	Raft River	1	40	71
SALMON FALLS	182.6	11.1	9.8	52.6	Goose-Trapper Creeks	3	45	73
BROWNLEE		NO REPORT			Salmon Falls Creek	4	47	70
					Bruneau River	1	58	78
					Owyhee Basin Total	3	54	94

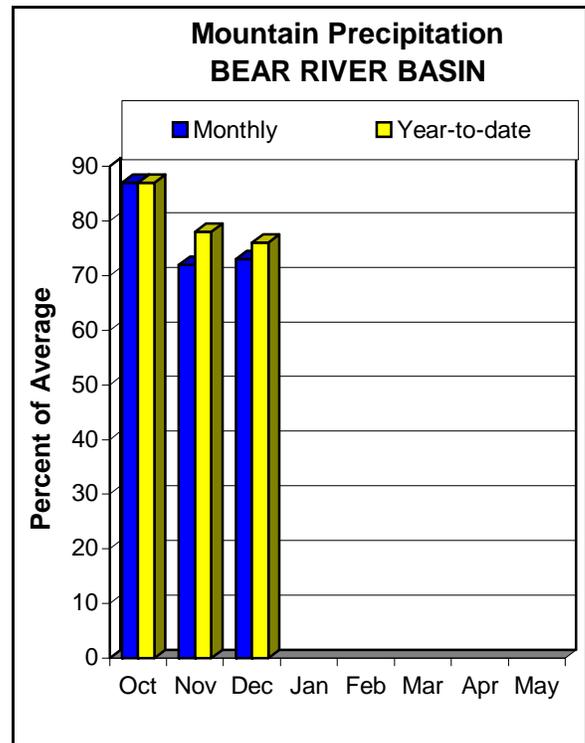
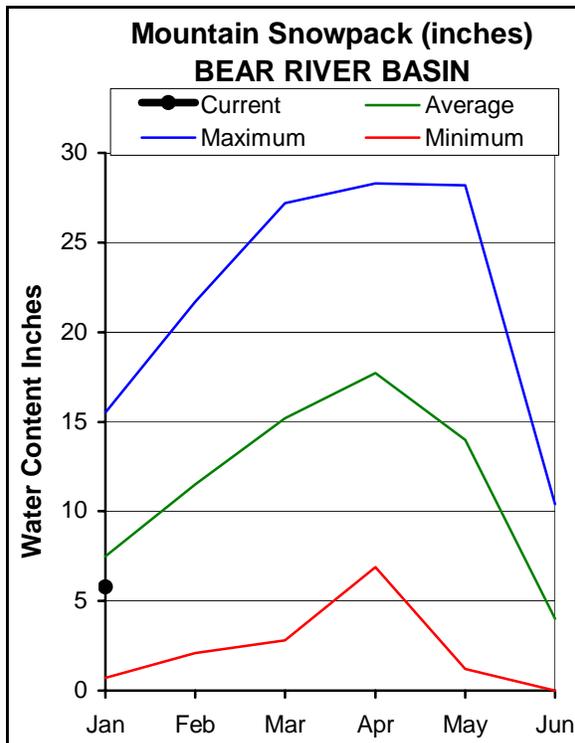
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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

JANUARY 1, 2003



WATER SUPPLY OUTLOOK

The new water year started where the last three have ended--with below normal precipitation. Monthly precipitation this water year was 87% in October, 72% in November and December, and stands at 76% for the water year to date. 1999 was the last water year with above normal precipitation. Snowpack percentages range from 65-85% of average. Overall, the Bear River snowpack is 75% of average. Bear Lake has 352,000 acre-feet; last year it had 574,300 acre-feet. This is the 9th lowest December storage since 1922. Streamflow forecasts reflect the cumulative drought impacts and call for spring and summer streamflows at only 40-70% of average. Last year's spring/summer regulated streamflow at Bear River at Stewart Dam was about 20% of average. This year's streamflow forecast is for 42% average. If Mother Nature doesn't provide the much needed snow, water supplies will be tight this summer.

BEAR RIVER BASIN
Streamflow Forecasts - January 1, 2003

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 *										
Bear R nr UT-WY State Line	APR-SEP	59	73	85	68	98	122	125				
Woodruff Narrows Res inflow	APR-SEP	29	48	63	44	80	110	142				
Smiths Fork nr Border	APR-JUL	40	55	69	67	86	119	103				
	APR-SEP	50	68	83	70	102	138	118				
Bear River blw Stewart Dam	APR-JUL	73	102	122	42	169	237	288				
	APR-SEP	86	119	141	43	193	268	327				

BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of December					BEAR RIVER BASIN Watershed Snowpack Analysis - January 1, 2003			
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	352.0	574.3	907.5	Smiths & Thomas Forks	3	73	73
MONTPELIER CREEK		NO REPORT			Bear River ab WY-ID line	10	81	75
					Montpelier Creek	1	91	87
					Mink Creek	1	71	80
					Cub River	1	56	66
					Bear River ab ID-UT line	15	75	75
					Malad River	1	52	78

* 90%, 70%, 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.

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)**

<u>Basin/ Reservoir</u>	<u>Dead Storage</u>	<u>Inactive Storage</u>	<u>Active Storage</u>	<u>Surcharge Storage</u>	<u>NRCS Capacity</u>	<u>NRCS Capacity Includes</u>
<u>Panhandle Region</u>						
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
<u>Clearwater Basin</u>						
Dworshak	---	1452.00	2016.00	---	3468.0	Inactive+Active
<u>Weiser/Boise/Pavette Basins</u>						
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
<u>Wood/Lost Basins</u>						
Magic	Unknown	---	191.50	---	191.5	Active
Little Wood	---	---	30.00	---	30.0	Active
Mackay	0.13	---	44.37	---	44.4	Active
<u>Upper Snake Basin</u>						
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
<u>Southside Snake Basins</u>						
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
<u>Bear River Basin</u>						
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

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
Kelly Vick, Data Analyst
Bill Patterson, Electronics Technician
Jeff Graham, Electronics Technician

Cooperative funding for printing provided by
Idaho Department of Water Resources

Numerous other agencies provide funding
and/or cooperative support. Their cooperation
is greatly appreciated.

