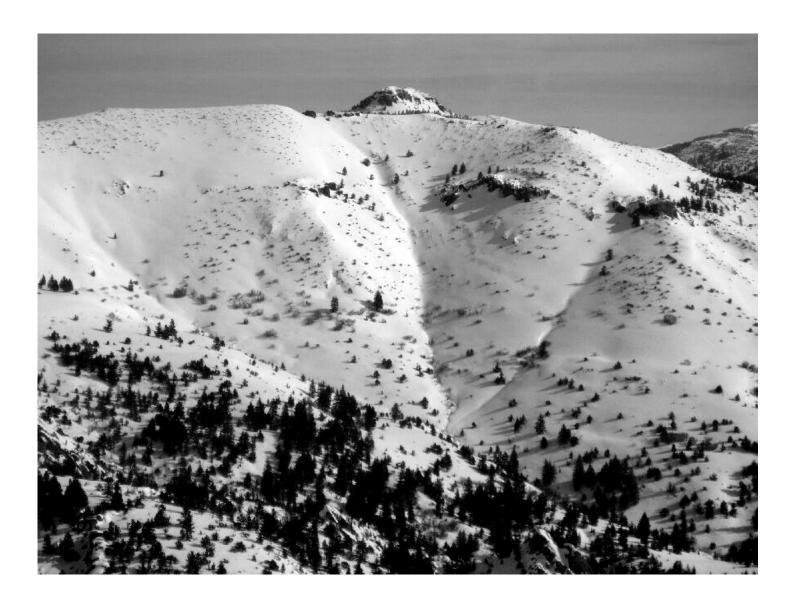


# Idaho Water Supply Outlook Report March 1, 2004



Owyhee River Basin near Silver City, Idaho with War Eagle Peak in background Taken March 3, 2004 on the Owyhee Basin Aerial Marker fixed-wing airplane flight Photograph taken by Ted Day

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

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Snow Surveys 9173 West Barnes Drive, Suite C Boise, Idaho 83709-1574 (208) 378-5740 Internet Web Address http://www.id.nrcs.usda.gov/snow/

### How forecasts are made

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

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

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

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### IDAHO WATER SUPPLY OUTLOOK REPORT

### March 1, 2004

#### SUMMARY

February precipitation across Idaho was a mixed blessing. February precipitation was above average and more than twice average across parts of the Snake River Valley while mountain precipitation was only above average south of the Snake River and in the Wood and Lost basins, and was half of average in northern Idaho and headwaters of the Snake in Wyoming. As a result, snowpack percentages changed based on the mountain precipitation. Highest snowpacks remain in the Owyhee basin at 155% of average, three times the amount of snow as last year. Elsewhere, most basins are 90-105% of average with the lowest at 85% of average in parts of the Bear, upper Salmon and upper Snake. Reservoir storage remains low in central, eastern and southern Idaho while reservoirs in western and northern Idaho are reporting near average storage levels. Streamflow forecasts look encouraging and call for 90-105% of average runoff volumes for most basins. The highest forecasts remain in the Owyhee basin at 125% of average and lowest is 12% for Bear River. Irrigation shortages will occur for Bear Lake water users with supplies running out by mid-July. Water supplies should be better than the past few years in Salmon Falls, Oakley, Big Wood, Big Lost, Little Lost and parts of upper Snake with average future precipitation. Below average future precipitation and warm temperatures may prompt additional shortages and make supplies marginally adequate in these basins. Snowpacks and streamflow forecasts continue to look encouraging and will provide some shortterm relief to make it through another season, but long-term dryness will remain across central, southern and eastern Idaho until several wet years occur that get moisture back into the ground, springs, seeps, wetlands and aquifers.

#### **SNOWPACK**

Changes in snowpack percentages from a month ago varied across the state depending on February precipitation. The highest snowpacks remain in southern Idaho with the Owyhee basin at 155% of average, and Oakley, Salmon Falls and Bruneau at 123%. The lowest snowpacks are 85-90% of average in the Bear, Smith, Thomas, Montpelier, Gros Ventre, Hoback, Greys, upper Salmon, and Lemhi basins. Elsewhere, snowpacks are near average at 95-110% of average. Only the Owyhee basin snowpack has exceeded its seasonal peak for the season. The basins with the lowest March 1 snowpacks when compared to their seasonal peaks are the Bear and Little Lost at only 71% of their seasonal peaks.

### PRECIPITATION

February precipitation varied across the state like summer thunderstorms. February mountain precipitation was only half of average in the Panhandle Region and Clearwater basin, thus decreasing Dworshak Reservoir Inflow forecast from 113% of average last month to 100%. Precipitation was 120% of average in the mountains south of the Snake River and 107% in the Wood and Lost basins. Other mountainous areas in the state generally received 75-85% of average February precipitation. However, some Snake River valley weather stations received over 200% of their average February amounts. Precipitation is always good when you are in a drought like eastern Idaho, but having above average precipitation amounts in the mountains is more important than in the lower elevations. For example, February average precipitation values range from 2.2 to 6.6 inches for SNOTEL sites in the Upper Snake basin. Actual amounts measured at these higher elevation sites were 1.7 to 4.6 inches. Valley weather stations received amounts ranging from 0.5 to 2.4 inches while their average amounts range from 0.6 to 2.8 inches. With only another month of winter to go, much more snow is needed across southern, central and eastern Idaho to put a dent in the accumulative drought impacts. A wet spring or delayed melt of the snowpack can also improve the efficiency of the snow to produce streamflow.

### RESERVOIRS

Reservoirs in the best shape and storing near average amounts are Cascade, Deadwood, Brownlee, Dworshak and Idaho Panhandle. The Boise Reservoir system, Little Wood, Henrys Fork and Island Park reservoirs are around 80% of average. Elsewhere in the state, the reservoirs are just waiting for this year's snowmelt runoff to start filling them. Blackfoot and Bear Lake are the lowest at only 15% of average. Salmon Falls and Magic reservoirs are 27% of capacity. Palisades and Jackson Lake have of combined storage of 31% of capacity, 45% of average. Mackay Reservoir is 68% of average and American Falls Reservoir is 81% of average, but is not projected to fill because of record low springs that provide the majority of inflow.

Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive and, in some cases, dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in this report.

### STREAMFLOW

Streamflow forecasts decreased in areas that had below average precipitation while others remained the same or increased slightly with the above average precipitation. Most streams are forecast in the 90-105% of average range. The exception is the Bear River at Stewart Dam forecast at 12% of average because of the accumulative drought effects and lack of significant snow to forecast greater amounts than were observed the past three seasons. Water users that rely on Bear Lake should be planning and planting for irrigation shortages. However, water users who get their water supply from headwater streams or higher tributaries in the Bear River basin can expect water supplies similar to last year. Irrigation shortages are possible in the Oakley, Salmon Falls, parts of the upper Snake, Big Wood, Big Lost and Little Lost basins, especially if future precipitation is below average.

### RECREATION

Idaho's whitewater boating season is looking better. The stage remains set in the Owyhee basin with some low elevation snow sites at 2-3 times their March 1 average. Overall, the snowpack is 155% of average and the best since 1997. The Bruneau River basin got a boost from the early March storms and is now 127% of average and should have a longer boating season then the past few seasons. The Middle Fork Salmon and main Salmon rivers have a snowpack at 94% of average, the best since 2000 and should see total summer volumes the best since then as well. The Lochsa and Selway rivers forecast dropped from a month ago to 90% of average because of the below average precipitation, but will still see good flows. Timing and magnitude of snowmelt streamflow peaks depend on spring precipitation and temperatures, but the low elevation Owyhee basin will be the first to melt with warming temperatures in March, so have those boats ready.

### **OTHER INFORMATION**

NRCS will post provisional streamflow forecasts by the second working day of each month, under "Quick Glance Idaho Forecast Listing (current year)" on this web page: <a href="http://www.id.nrcs.usda.gov/snow/watersupply/">http://www.id.nrcs.usda.gov/snow/watersupply/</a> This link will be updated with the most current forecasts until they are finalized. The complete, monthly Water Supply Outlook Report is also available on this page.

NRCS has posted a Drought and Surface Water Supply Index web page at: <u>http://www.id.nrcs.usda.gov/snow/watersupply/swsi-main.html</u> Numerous graphs are available for users to access for their basin of interest.

#### IDAHO SURFACE WATER SUPPLY INDEX (SWSI) As of March 1, 2004

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:

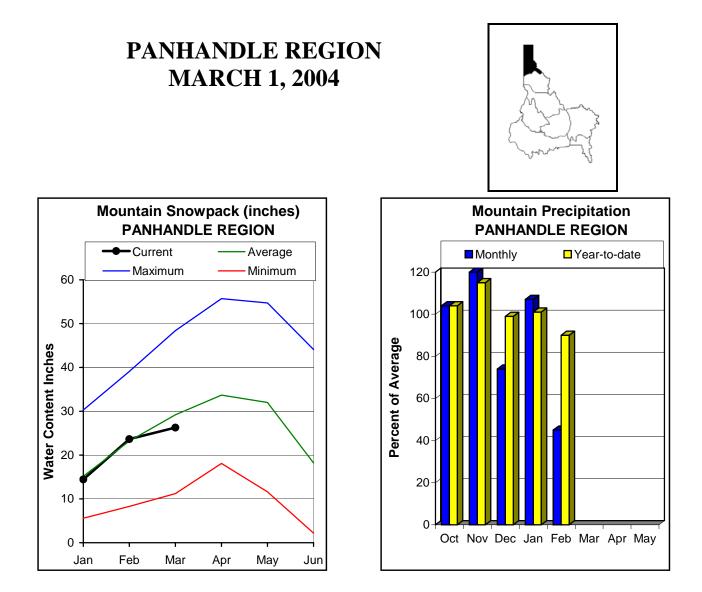
US National Weather Service US Bureau of Reclamation Idaho Water Users Association US Army Corps of Engineers Idaho Dept. of Water Resources PacifiCorp

	SWSI	Most Recent Year With Similar SWSI Value	Agricultural Water Supply Shortage May Occur When SWSI is
<b>BASIN or REGION</b>	Value		Less Than
PANHANDLE	-0.9	1981	NA
CLEARWATER	0.6	2003	NA
SALMON	-0.2	2003	NA
WEISER	-0.5	2003	NA
PAYETTE	-0.2	2003	NA
BOISE	-0.2	1993	-2.1
BIG WOOD	-0.2	2000	-1.0
LITTLE WOOD	0.5	1996	-2.0
BIG LOST	-0.2	1993	-0.5
LITTLE LOST	-0.5	1990	0.0
HENRYS FORK	0.4	1989	-3.3
SNAKE (HEISE)	-2.0	1994	-2.0
OAKLEY	-1.0	1993	-1.0
SALMON FALLS	-1.5	2000	-1.0
BRUNEAU	1.2	1996	NA
BEAR RIVER	-3.9	2003	-3.8

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

-4	-3	-2	-1	0	1	2	3	4
 99%	 87%	 75%	 63%	 50%	 37%	 25%	 13%	 1%
Much  Below	Below   Normal		!	ear Norma ater Supp		Above Normal	Much   Above	

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.



February precipitation was the lowest in the state at only 45% of average. The lowest amounts were 24% of average at Bear Mountain SNOTEL site. Bear Mountain received only 2.8 inches of precipitation in February, average monthly February amount is 11.6 inches. The highest amounts that fell last month were 50-65% of average in lower elevations and eastern Washington. Water year to date precipitation decreased to 90% of average. As a result, snowpack percentages also decreased from 105% of average a month ago for the Panhandle Region as a whole to 90% of average on March 1. SNOTEL sites with the lowest percentages are along the Montana border at 75-80% of average. Overall, the snowpack is 90-100% of average for most basins. With the lack of significant winter rains that produce low elevation runoff, the low snow is still present and waiting to melt. Pend Oreille and Coeur d'Alene lakes are about 70% of their February 29 average levels while Priest Lake is at 94% of average. Streamflow forecasts decreased from above average a month ago to below average and call for 90% of average for most streams. Water supplies should be adequate for the numerous users, unless future precipitation remains much below average like it was in February.

PANHANDLE REGION

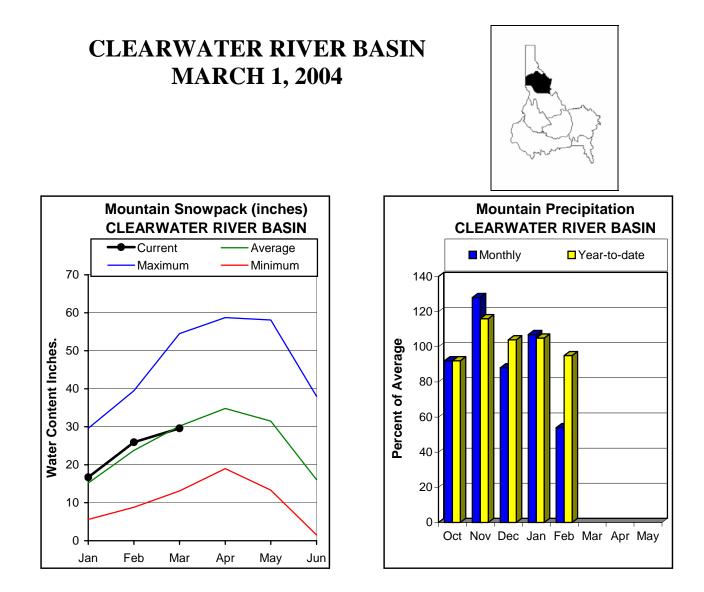
Streamflow Forecasts - March 1, 2004

							====== Wetter		
Forecast Point	Forecast Period	90% (1000AF)	70%	)   5	0% (Most (1000AF)	Probable)   (% AVG.)	30% (1000AF)	10% (1000AF)	   30-Yr Avg.   (1000AF)
KOOTENAI at Leonia (1,2)	APR-JUL APR-SEP	5440 7510	6170 7530	=== ====	6500 7540	92   93	6830 7550	7560 7570	7040 8120
MOYIE RIVER at Eastport	APR-JUL APR-SEP	320 325	350 360		370 380	91   91	390 400	420 435	405 420
SMITH CREEK	APR-JUL APR-SEP	90 92	104 108		114 119	93   92	124 130	138 146	123 129
BOUNDARY CREEK	APR-JUL APR-SEP	88 93	102 108		112 118	91   92	122 128	136 143	123 129
CLARK FK at Whitehorse Rpds $(1,2)$	APR-JUL APR-SEP	7060 7850	9030 10020		9920 11000	88   88	10810 11980	12780 14150	11300 12500
PEND OREILLE Lake Inflow (2)	APR-JUL APR-SEP	8630 9400	10040 10950		11000 12000	87   86	11960 13050	13370 14600	12700 13900
PRIEST near Priest River (1,2)	APR-JUL APR-SEP	560 515	655 675		700 745	86   86	745 815	840 970	815 870
COEUR D'ALENE at Enaville	APR-JUL APR-SEP	550 585	655 690		725 765	98   98	795 840	900 945	740 780
ST. JOE at Calder	APR-JUL APR-SEP	830 875	955 1005		1040 1090	91   91	1120 1180	1250 1310	1140 1200
SPOKANE near Post Falls (2)	APR-JUL APR-SEP	1770 1840	2100 2190		2330 2420	91   91	2560 2650	2890 3000	2550 2650
SPOKANE at Long Lake (2)	APR-JUL APR-SEP	2030 2200	2420 2610		2680 2890	94   94	2940 3170	3330 3580	2850 3070
Reservoir Storage (100	DLE REGION	l of Februa				Watershed Sn	PANHANDLE REG owpack Analys	SION sis - March	n 1, 2004
Reservoir	Usable   Capacity  		le Storage Last Year	e *** Avg	========     Water 		Numbe of Data Si	er This	Year as % of
======================================	3451.0	2441.0	2362.0 2	====== 2047.6	=======   Koote		======================================	133	90
FLATHEAD LAKE	1791.0	776.7	1145.0	802.7	   Moyie	e River	12	121	86
NOXON RAPIDS	335.0	326.6	307.0	297.5	   Pries	t River	4	113	98
PEND OREILLE	1561.3	570.8	907.5	778.8	   Pend	Oreille Rive	r 94	124	93
COEUR D'ALENE	238.5	99.5	101.7	144.9	   Rathd	lrum Creek	2	178	104
PRIEST LAKE	119.3	53.2	62.0	56.8	   Hayde	n Lake	2	300	122
					   Coeur	d'Alene Riv	er 9	187	101
					   St.J	oe River	5	166	96
					Spoka	ne River	15	190	100
					Palou	se River	2	275	101

\* 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.



Precipitation in February was only 54% of average, second lowest in the state, only the Panhandle Region had less. Amounts ranged from 35-80% of average at the SNOTEL sites across the basin. Water year to date precipitation is 95% of average. Snowpacks are fairly consistent across the basin ranging from 93% of average in the Lochsa basin to 99% in the Selway and North Fork Clearwater basins. Overall, the Clearwater basin snowpack is 97% of average and is much better than a year ago when the snowpack was 74%. Dworshak Reservoir is 60% of capacity, 93% of average. The Selway River forecast decreased 10 percentage points from last month and is now forecast at 90% of average, the lowest in the basin. The Lochsa River is forecast at 91% of average, while the Clearwater River at Orofino is forecast at 95%. Dworshak Reservoir inflow is forecast at 100% of average, down from 113% a month ago. With the current snowpack at 80% of its seasonal peak, water supplies should be adequate this year unless the February dry spell continues for the next few months.

\_\_\_\_\_ CLEARWATER RIVER BASIN

Str

reamflow Forecasts - March 1, 20	04
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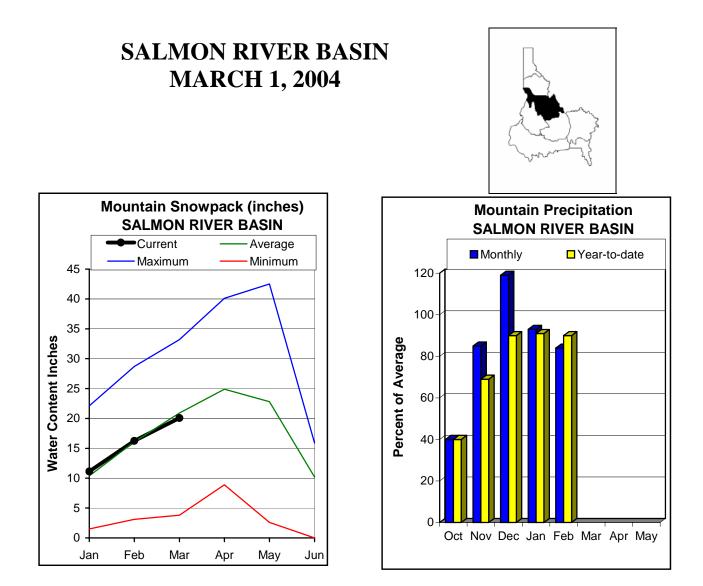
		<<====== 	Drier ====	== Future Co	onditions ==	===== Wetter	: =====>>	
Forecast Point	Forecast	   =======		= Chance Of F	xceeding * =			
	Period	90%	70% (1000AF)	50% (Most   (1000AF)	5	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SELWAY near Lowell	APR-JUL	1570	1740	1860	90	1980	2150	2060
	APR-SEP	1650	1840	1960	90	2080	2270	2170
LOCHSA near Lowell	APR-JUL	1200	1310	1390	91	1470	1580	1530
	APR-SEP	1270	1390	1470	91	1550	1670	1610
DWORSHAK RESV INFLOW (1,2)	APR-JUL	1710	2350	2640	100	2930	3570	2640
	APR-SEP	1900	2540	2830	101	3120	3760	2800
CLEARWATER at Orofino (1)	APR-JUL	2860	3930	4420	95	4910	5980	4650
	APR-SEP	3100	4170	4660	95	5150	6220	4900
CLEARWATER at Spalding (1,2)	APR-JUL	4930	6580	7330	99	8080	9730	7430
	APR-SEP	5340	6990	7740 	99	8490	10140	7850

		uary					2004
Usable   Capacity  	*** Us This Year	able Stora Last Year	age *** Avg	Watershed	Number of Data Sites	This Yea ======= Last Yr	r as % of ====== Average
3468.0	2093.3	2680.0	2247.3	North Fork Clearwater	9	139	98
				Lochsa River	3	111	93
				Selway River	5	112	99
				Clearwater Basin Total	18	131	97
	age (1000 AF) - End 	Usable   *** Us Capacity  This   Year	age (1000 AF) - End of February Usable   *** Usable Stora Capacity   This Last   Year Year	age (1000 AF) - End of February Usable   *** Usable Storage *** Capacity  This Last   Year Year Avg	age (1000 AF) - End of February Watershed Snowpac Usable   *** Usable Storage ***   Capacity   This Last Watershed   Year Year Avg   	age (1000 AF) - End of February Watershed Snowpack Analysis - Usable   *** Usable Storage ***   Number Capacity   This Last Watershed of Year Year Avg Data Sites 3468.0 2093.3 2680.0 2247.3 North Fork Clearwater 9 Lochsa River 3 Selway River 5	age (1000 AF) - End of February Watershed Snowpack Analysis - March 1, Usable *** Usable Storage *** Capacity This Last Watershed of

\* 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.



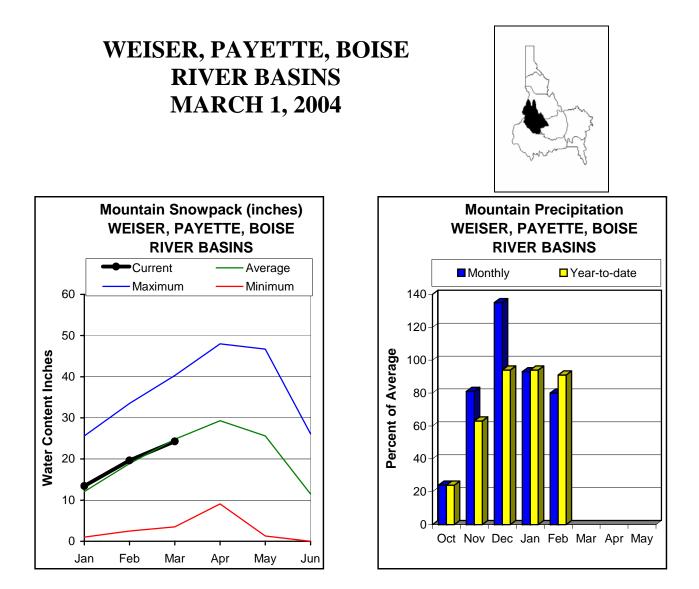
February precipitation varied across the basin with the lowest amounts in the Lehmi basin at 55% of average. A few isolated SNOTEL sites along the Montana border received above average precipitation at 150%. Overall, precipitation was 84% of average for the basin as a whole. Water year to date precipitation is 90% of average. Snowpack percentages are similar to those reported last month, and the month before that with the highest percentages in the Little Salmon basin at 107% of average and lowest amounts in the Lemhi and Salmon basin above Salmon at 88%. The snowpack in the South Fork Salmon is 98% of average and is 93% in the Middle Fork Salmon basin. Overall, the Salmon basin snowpack is 96% of average, slightly better than a year ago. Streamflow forecasts mirror the snowpack with the lowest forecasts in the Lemhi River at 76% of average. The Middle Fork Salmon River is forecast at 83% of average, while the Salmon River above Salmon is forecast at 84%. The Salmon River at White Bird is forecast at 93% of average. Snowpacks are the best since 2000, another similar snow year. Streamflow runoff volumes and river running opportunities should be similar or even better than the past two years. Additional moisture, snow or spring rains, is needed in the Lemhi basin, but this can still occur in eastern Idaho and along the Montana border.

			ALMON RIVER Forecasts			004				
Forecast Point	Forecast					onditions == Exceeding * =			i	
	Period	90% (1000AF)	70% (1000AF)	50   (	)% (Most	Probable)   (% AVG.)	3 (10	0% 00AF) (	10%   1000AF)	30-Yr Avg. (1000AF)
SALMON at Salmon (1)	APR-JUL APR-SEP	375 495	610 730		715 835	84 84		820 945	1060 1175	855 1000
Lemhi River nr Lemhi	APR-JUL APR-SEP	40 49	54 66		65 80	76   76		77 95	96 119	86 105
MF Salmon at MF Lodge	APR-JUL APR-SEP	463 518	573 640		655 730	83   83		742 826	881 979	785 875
SALMON at White Bird (1)	APR-JUL APR-SEP	3700 4290	4910 5500		5460 6050	93   93		010 600	7220 7810	5850 6480
Reservoir Storage (			-	   		Watershed Sn	owpack .	-	s - March 1	•
Reservoir	Usable   Capacity		e Storage * Last		Water		======	======= Number of	This Y	/ear as % of
		Year		vg   			D	ata Site		
					Salmo	on River ab S	almon	10	102	88
					Lemhi	River		10	100	89
					Middl	le Fork Salmo	n River	3	111	93
					South	ı Fork Salmon	River	3	112	98
					Litt]	le Salmon Riv	er	4	121	107
					Salmo	on Basin Tota	1	29	108	96

\_\_\_\_\_ \* 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.

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



February mountain precipitation was only 80% of average in these west-central basins while valley precipitation stations was even better. The valley precipitation has improved or eliminated any soil moisture deficit in the lower elevations and the remaining low elevation snow has reduced evaporation losses from the bare soil. However, soil moisture monitored at Jackson Peak SNOTEL site at 7,070 feet, indicates that the December rains helped improve soil moisture but did not reach the deeper depths of 20 inches, and that 2-3 inches of rain or snowmelt water is needed to fill this void. Current snowpacks range from 95-115% of average for these west-central basins and are 80-85% of their seasonal peaks. Reservoir storage is 97% of average flow for the April-September period for the Weiser River, Payette River near Horseshoe Bend, and Boise River near Boise. The highest streamflow forecast is for Mores Creek at 124% of average and lowest is the South Fork Payette River at 89%. Water supplies should be adequate in these basins even if the minimum streamflow forecast occurs.

WEISER, PAYETTE, BOISE RIVER BASINS

#### Streamflow Forecasts - March 1, 2004

		<<====== 	= Drier ===	=== I	Future Co	onditions ==	===== V	Vetter	====>>	
Forecast Point	Forecast Period	90% (1000AF)	70% (1000AF)	50	0% (Most (1000AF)	Exceeding * = Probable)   (% AVG.)	30 (100	)% )0AF)	10%   (1000AF)	30-Yr Avg. (1000AF)
======================================	APR-SEP	========= 195	======================================	= ====	390	93		====== 150	585	420 <u>4</u> 20
SF PAYETTE at Lowman	APR-JUL APR-SEP	315 355	360 405		390 440	89 89		120 175	465 525	440 495
DEADWOOD RESERVOIR Inflow (1,2)	APR-JUL APR-SEP	94 101	116 123		126 133	94 94		L36 L43	158 165	134 142
LAKE FORK PAYETTE near McCall	APR-JUL APR-SEP	68 70	76 79		82 85	97   96		88 91	96 100	85 89
NF PAYETTE at Cascade (1,2)	APR-JUL APR-SEP	340 380	435 475		475 515	97   97		515 555	610 650	490 530
NF PAYETTE nr Banks (2)	APR-JUL APR-SEP	460 500	550 595		615 665	95   96		580 735	770 830	645 690
PAYETTE nr Horseshoe Bend (1,2)	APR-JUL APR-SEP	1120 1170	1400 1510		1530 1660	95   95		560 310	1940 2150	1610 1750
BOISE near Twin Springs (1)	APR-JUL APR-SEP	455 480	550 590		590 640	93   93		530 590	725 800	635 690
SF BOISE at Anderson Ranch Dam (1,2)	APR-JUL APR-SEP	380 365	455 475		490 525	91   91		525 575	600 685	540 580
MORES CREEK near Arrowrock Dam	APR-JUL APR-SEP	124 129	147 152		162 168	124   123		L77 L84	201 206	131 137
BOISE near Boise (1,2)	APR-JUN APR-JUL APR-SEP	885 885 1000	1070 1170 1280		1160 1300 1410	92   92   92	14	250 130 540	1440 1710 1820	1260 1410 1530
WEISER, PAYETTE, Reservoir Storage (1000	BOISE RIVE AF) – End	R BASINS of Februar	ry			WEISER, P. Watershed Sn	AYETTE, owpack <i>I</i>	BOISE Analysi	RIVER BASI s — March 1	NS 1, 2004
Reservoir	Usable   Capacity		============ le Storage Last		ļ	rshed		Number of	This T	/ear as % of
	 ==========	Year =========		Avg	  ========			ata Sit		Yr Average
MANN CREEK	11.1	2.6	5.8	6.1	Mann	Creek		2	153	112
CASCADE	693.2	426.9	466.3 4	138.3	Weise	er River		5	154	102
DEADWOOD	164.0	83.3	60.7	88.5	   North	n Fork Payett	e	8	135	114
ANDERSON RANCH	450.2	274.7	146.4 2	268.0	   South	n Fork Payett	e	5	127	101
ARROWROCK	272.2	1.4	180.6 2	210.4	   Payet	te Basin Tot	al	14	132	109
LUCKY PEAK	293.2	183.2	107.7 1	120.4	   Middl	le & North Fo	rk Boise	e 5	128	96
LAKE LOWELL (DEER FLAT)	165.2	140.7	73.6 1	109.1	   South	n Fork Boise	River	9	128	99
					   Mores	s Creek		5	195	121
					Boise	e Basin Total		16	146	105

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

Canyon Creek

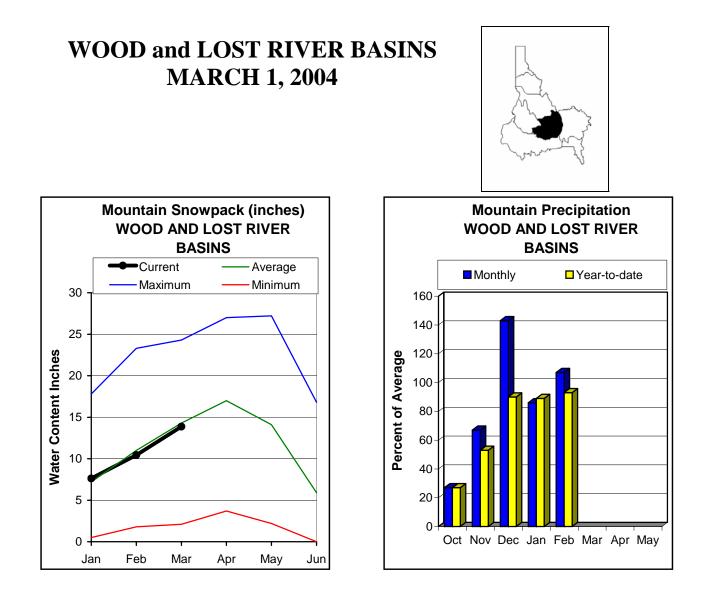
2

212

121

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.



February precipitation varied across these central basins ranging from 70% of average at Camas Creek SNOTEL site in the headwaters of Camas Creek to 167% at Beagle Springs SNOTEL in Montana near the Lemhi River and Birch Creek headwaters. Overall, February precipitation was 107% of average in these central Idaho basins, second highest in the state. Water year to date precipitation is 93% of average. Snowpack percentages in the Big Wood basin above Hailey decreased slightly from a month ago to 96% of average while other basins increased 2 to 11 percentage points. Overall, snowpacks are greater than last year and range from 94% of average in the Little Lost basin to 112% in Camas and Big Lost basins. Storage in Magic Reservoir is the same as a year ago at 12% full, 26% of average. Little Wood and Mackay reservoirs are both slightly better than a year ago at 47% full, and about 75% of average. Streamflow forecasts are similar to last month and call for about 92% of average for most streams except the Little Lost River at 84% of average. Water users may wish to use a lesser exceedance forecast to reduce their chance of not having enough water. The accumulative drought effects, dry soils, springs, wetlands, may take its toll on the amount of snowmelt water that will reach the streams. Based upon the Surface Water Supply Index, irrigation water shortages are still expected in the Big Wood, Big Lost and Little Lost basins especially with below average future precipitation. Precipitation in the next few months and timing of runoff will determine the final outcome this year's water supply.

WOOD AND LOST RIVER BASINS

#### Streamflow Forecasts - March 1, 2004

		<<=====	= Drier ===	=== ]		onditions ==		Wetter	====>>		
Forecast Point	Forecast	=======		== Cha	ance Of H	Exceeding * :					
	Period	90%	70%	50	0% (Most	Probable)		30%	10%	30	-Yr Avg.
		(1000AF)				(% AVG.)			(1000AF)		(1000AF)
BIG WOOD at Hailey (1)	APR-JUL	======================================	======================================	= ====	======= 235	92	=====	======== 268	======== 347	=====	======================================
big wood at mariey (1)	APR-SEP	145	205	-	265	91		301	389		290
		105	251		205	71		501	505		250
BIG WOOD near Bellevue	APR-JUL	87	127	i	158	84	ĺ	193	250		188
	APR-SEP	96	138		171	86		207	267		200
CAMAS CREEK near Blaine	APR-JUL	52	75		92	92		111	143		100
CAMAS CREEK HEAT BIAIHE	APR-00L APR-SEP	52	75		92	92		112	143		100
	ALIC DEL	55	15		25	52		112	111		101
BIG WOOD below Magic Dam (2)	APR-JUL	137	210	i i	260	90		310	385		290
	APR-SEP	147	225		275	90		325	405		305
		= 0				0.5					
LITTLE WOOD R ab High Five Ck	MAR-JUL	50	65		77	91		90	110		85
	MAR-SEP	54	71		84	91		98	120		92
	APR-JUL APR-SEP	44	59	-	70	90		82	103		78
	APR-SEP	48	65		77	91		91	113		85
LITTLE WOOD near Carey (2)	MAR-JUL	56	76		89	93		102	122		96
	MAR-SEP	61	82	i	96	92		110	131		104
	APR-JUL	47	67	i	80	92	i	93	113		87
	APR-SEP	52	73		87	93		101	122		94
		07	100		104	0.2		100	1.61		104
BIG LOST at Howell Ranch	APR-JUN APR-JUL	87 104	109 137		124 160	93 93		139 181	161 216		134 172
	APR-JUL APR-SEP	104	159		184	93		209	210		197
	AFIC ODF	121	100		101	25		209	21)		101
BIG LOST below Mackay Reservoir (2)	APR-JUL	77	108	i i	130	92		152	185		142
	APR-SEP	98	134		158	91		182	217		173
LITTLE LOST blw Wet Creek	APR-JUL	18.3	23		26	84		29	34		31
	APR-SEP	22	28		32	82		36	42		39
WOOD AND LOST				=====	======== 			======= OST RIVEF	BASTNS	=====	
Reservoir Storage (1000	AF) - End	of Februa	ry =======	:	 =========	Watershed Si				1, 2	2004 ===================================
	Usable		le Storage	***	ļ			Number			as % of
Reservoir	Capacity	This	Last	_	Water	rshed		of			
	 	Year		Avg 	 			Data Sit	es Last:====================================		Average
MAGIC	191.5	23.5		89.7	Big V	Nood ab Haile		8	109		96
LITTLE WOOD	30.0	14.2	12.4	17.7	   Camas	s Creek		5	150		112
MACKAY	44.4	21.0	18.4	30.8	   Big V	Nood Basin To	otal	13	120		100
					   Fish	Creek		3	143		109
					   Litt]	le Wood Rive	2	9	122		111
					İ						
					Big I 	Lost River		7	119		112

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

Little Lost River

Camas-Beaver Creeks

Birch-Medicine Lodge Cree

4

4

4

122

142

155

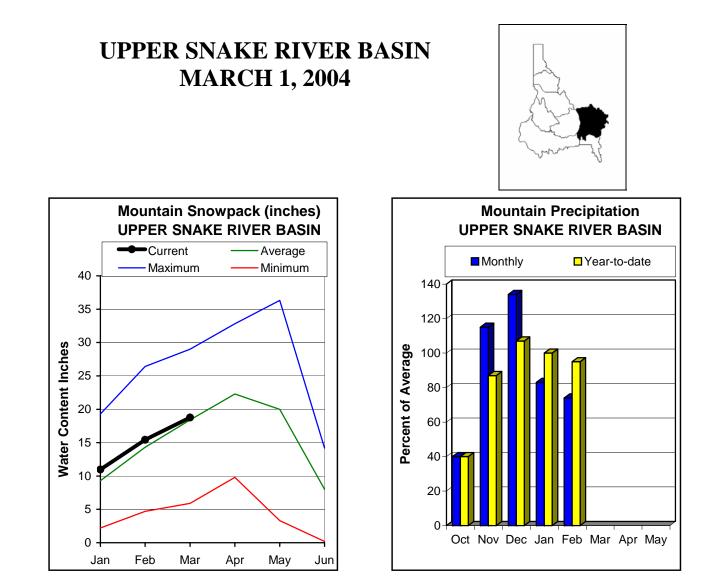
94

102

114

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.



February precipitation varied across the Upper Snake River basin with mountainous SNOTEL sites receiving only 74% of average while valley weather stations recorded up to 230% of average precipitation. The lowest amounts were half of average at SNOTEL sites in the headwaters of the Snake River in Wyoming. Two SNOTEL sites in the mountains around Pocatello received about 125% of average. Precipitation is good when you are in a drought, like eastern Idaho, but having above average precipitation amounts in the mountains is more important than in the lower elevations. It is the annual accumulation of this mountainous snowpack that provides over 75% of the annual streamflow each year and also helps to recharge groundwater levels. As a result of the below average mountainous precipitation, snowpack percentages deceased 2-20 percentage points from a month ago. Snowpacks are 122% of average in the Portneuf and Willow basins, 110% in the Henrys Fork, and 85-100% for most other basins. The Snake above Palisades snowpack is 94% of average while the Snake above American Falls is 103%. Streamflow forecasts decreased from last month and now range from 80% of average in the Greys and Salt tributaries in Wyoming to 105% for the Teton River. Snake River at Heise is forecast at 89% of average. Surface irrigation water supplies should be better than the past three seasons but some shortages are possible and depend upon your water right.

UPPER SNAKE RIVER BASIN Streamflow Forecasts - March 1, 2004

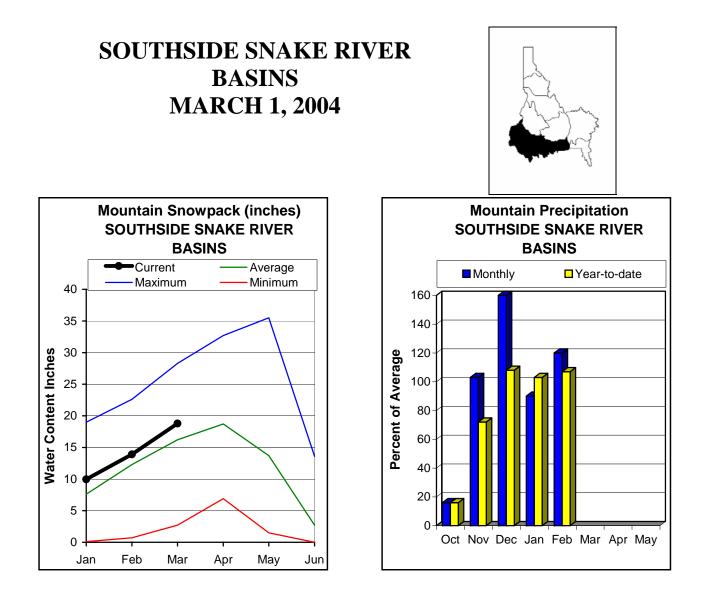
Streaminow	Forecasts	- March I,	2004		

			ow Foreca: 							
							===== Wette:			
Forecast Point	Forecast	======	=========	==== Ch	ance Of H	Exceeding * =			:==	
	Period	90%	70%	5	0% (Most	Probable)	30%	10%	:	30-Yr Avg.
		(1000AF	) (1000A)	· · · ·		(% AVG.)	(1000AF)	(1000	· · ·	(1000AF)
HENRYS FORK near Ashton (2)	APR-JUL	======= 460	======== 510	==== ===	======= 545	 96	======================================	====== 63		======================================
	APR-SEP	630	690		730	95	770	83		765
HENRYS FORK near Rexburg (2)	APR-JUL	1270	1430		1540	99	1650	181		1560
mentils Foldt meat Rexburg (2)	APR-SEP	1680	1450		1980	99	2100	228		2010
FALLS near Squirrel (1,2)		290	345		370	96	395	45		385
FALLS HEAT SQUITTET (1,2)	APR-JUL	350	405		430	96	455	40 51		450
TETON near Driggs	APR-SEP	130	155		173	105	191	21		165
TETON HEAT DE1995	APR-JUL	168	200		220	105	240	21		210
	APR-SEP									
TETON near St. Anthony	APR-JUL	305	360		400	99	440	49		405
	APR-SEP	365	430		475	99	520	58		480
SNAKE near Moran (1,2)	APR-SEP	675	800		855	95	910	103		905
PACIFIC CREEK at Moran	APR-SEP	127	148		162	91	176	19		178
SNAKE above Palisades (2)	APR-JUL	1880	2070		2200	93	2330	252		2370
	APR-SEP	2170	2380		2530	93	2680	289		2730
GREYS above Palisades	APR-JUL	205	245		270	79	295	33		340
	APR-SEP	240	285		315	80	345	39	0	395
SALT near Etna	APR-JUL	175	230		265	78	300	35	5	340
	APR-SEP	220	280		325	77	370	43	0	420
PALISADES RESERVOIR INFLOW (1,2)	APR-JUL	2330	2770	i	2970	89	3170	361	.0	3330
	APR-SEP	2740	3230	i	3450	89	3670	416	0	3870
SNAKE near Heise (2)	APR-JUL	2610	2940	i	3160	89	3380	371	.0	3560
	APR-SEP	3070	3440	i	3690	89	3940	431	.0	4160
WILLOW CREEK nr Ririe	MAR-JUL	56	72	i	83	94	95	11	.5	88
BLACKFOOT RESV INFLOW	APR-JUN	86	109	i	124	103	139	16		120
SNAKE nr Blackfoot (1,2)	APR-JUL	3420	4030		4300	94	4570	518		4600
	APR-SEP	4370	4980		5250	93	5520	613		5620
PORTNEUF at Topaz	MAR-JUL	73	83		90	101	97	10		89
	MAR-SEP	90	102		110	101	118	13		109
AMERICAN FALLS RESV INFLOW (1,2)	APR-JUL	1600	2420		2790	86	3160	398		3240
	APR-SEP	1830	2650		3020	86	3390	421		3510
	======================================				======================================	 TIPE	PER SNAKE RIV			
Reservoir Storage (10	00 AF) - End	of Febru	-			Watershed Sr	nowpack Analy:	sis - M	March 1,	
	Usable		ble Stora				Numb			ear as % of
Reservoir	Capacity	This	Last		Water	rshed	of			
				-					Last Yr	5
		Year	Year	Avg			Data S			
HENRYS LAKE			========		1			======		
HENRYS LAKE	90.4	======= 69.8	======= 69.5	====== 84.4	Henry	ys Fork-Falls	s River 10		140	111
HENRYS LAKE ISLAND PARK	90.4 135.2	69.8 84.3	69.5 84.4	84.4 107.1	Henry Tetor	ys Fork-Falls n River	s River 10 8		140 121	111 100
HENRYS LAKE ISLAND PARK GRASSY LAKE	90.4 135.2 15.2	69.8 84.3 9.9	69.5 84.4 12.7	84.4 107.1 12.0	Henry   Tetor   Henry	ys Fork-Falls n River ys Fork above	s River 10 8 9 Rexburg 18		140 121 132	111 100 106
HENRYS LAKE ISLAND PARK GRASSY LAKE JACKSON LAKE	90.4 135.2 15.2 847.0	69.8 84.3 9.9 171.6	69.5 84.4 12.7 276.3	84.4 107.1 12.0 494.0	Henry Tetor Henry Snake	ys Fork-Falls n River ys Fork above e above Jacks	River 10 8 Rexburg 18 Son Lake 9		140 121 132 119	111 100 106 102
HENRYS LAKE ISLAND PARK GRASSY LAKE JACKSON LAKE PALISADES	90.4 135.2 15.2 847.0 1400.0	69.8 84.3 9.9 171.6 514.0	69.5 84.4 12.7 276.3 553.2	84.4 107.1 12.0 494.0 1033.1	Henry Tetor Henry Snake	ys Fork-Falls n River ys Fork above above Jacks Ventre River	s River 10 8 e Rexburg 18 son Lake 9 c 4		140 121 132 119 107	111 100 106 102 86
HENRYS LAKE ISLAND PARK GRASSY LAKE JACKSON LAKE PALISADES RIRIE	90.4 135.2 15.2 847.0 1400.0 80.5	69.8 84.3 9.9 171.6 514.0 30.0	69.5 84.4 12.7 276.3 553.2 34.9	84.4 107.1 12.0 494.0 1033.1 38.5	Henry Tetor Henry Snake Gros Hobao	ys Fork-Falls n River ys Fork above above Jacks Ventre River ck River	s River 10 8 8 Rexburg 18 500 Lake 9 7 4 5		140 121 132 119 107 117	111 100 106 102 86 88
HENRYS LAKE ISLAND PARK GRASSY LAKE JACKSON LAKE PALISADES RIRIE BLACKFOOT	90.4 135.2 15.2 847.0 1400.0 80.5 348.7	69.8 84.3 9.9 171.6 514.0 30.0 31.0	69.5 84.4 12.7 276.3 553.2 34.9 66.7	84.4 107.1 12.0 494.0 1033.1 38.5 224.7	Henry Henry Henry Snake Gros Hobao	ys Fork-Falls n River ys Fork above above Jacks Ventre River ck River s River	s River 10 8 Rexburg 18 50n Lake 9 7 4 5 5		140 121 132 119 107 117 112	111 100 106 102 86 88 88 89
HENRYS LAKE ISLAND PARK GRASSY LAKE JACKSON LAKE PALISADES RIRIE	90.4 135.2 15.2 847.0 1400.0 80.5	69.8 84.3 9.9 171.6 514.0 30.0	69.5 84.4 12.7 276.3 553.2 34.9	84.4 107.1 12.0 494.0 1033.1 38.5	Henry Henry Henry Snake Gros Hobac Greys Salt	ys Fork-Falls n River ys Fork above above Jacks Ventre River ck River s River River	River 10 8 Rexburg 18 5 Rexburg 18 5 A 5 S 5 S 5 S		140 121 132 119 107 117 112 108	111 100 106 102 86 88 89 93
HENRYS LAKE ISLAND PARK GRASSY LAKE JACKSON LAKE PALISADES RIRIE BLACKFOOT	90.4 135.2 15.2 847.0 1400.0 80.5 348.7	69.8 84.3 9.9 171.6 514.0 30.0 31.0	69.5 84.4 12.7 276.3 553.2 34.9 66.7	84.4 107.1 12.0 494.0 1033.1 38.5 224.7	Henry Tetor Henry Snake Gros Hobac Greys Salt Snake	ys Fork-Falls n River ys Fork above above Jacks Ventre River ck River s River River above Palis	s River 10 8 Rexburg 18 5 on Lake 9 7 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5		140 121 132 119 107 117 112 108 112	111 100 106 102 86 88 89 93 93 94
HENRYS LAKE ISLAND PARK GRASSY LAKE JACKSON LAKE PALISADES RIRIE BLACKFOOT	90.4 135.2 15.2 847.0 1400.0 80.5 348.7	69.8 84.3 9.9 171.6 514.0 30.0 31.0	69.5 84.4 12.7 276.3 553.2 34.9 66.7	84.4 107.1 12.0 494.0 1033.1 38.5 224.7	Henry Tetor Henry Snake Gros Hobac Greys Salt Snake	ys Fork-Falls n River ys Fork above a above Jacks Ventre River ck River River e above Palls ow Creek	s River 10 8 Rexburg 18 5 on Lake 9 7 4 5 5 5 5 5 5 5 5 5 5 7		140 121 132 119 107 117 112 108 112 164	111 100 106 102 86 88 89 93 93 94 124
HENRYS LAKE ISLAND PARK GRASSY LAKE JACKSON LAKE PALISADES RIRIE BLACKFOOT	90.4 135.2 15.2 847.0 1400.0 80.5 348.7	69.8 84.3 9.9 171.6 514.0 30.0 31.0	69.5 84.4 12.7 276.3 553.2 34.9 66.7	84.4 107.1 12.0 494.0 1033.1 38.5 224.7	Henry Tetor Henry Snake Gros Hobac Greys Salt Snake Willo Black	ys Fork-Falls n River ys Fork above above Jacks Ventre River ck River s River River above Palis ow Creek kfoot River	s River 10 8 Rexburg 18 5 on Lake 9 7 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		140 121 132 119 107 117 112 108 112 164 124	111 100 106 102 86 88 89 93 93 94 124 99
HENRYS LAKE ISLAND PARK GRASSY LAKE JACKSON LAKE PALISADES RIRIE BLACKFOOT	90.4 135.2 15.2 847.0 1400.0 80.5 348.7	69.8 84.3 9.9 171.6 514.0 30.0 31.0	69.5 84.4 12.7 276.3 553.2 34.9 66.7	84.4 107.1 12.0 494.0 1033.1 38.5 224.7	Henry Tetor Henry Snake Gross Hobac Greys Salt Snake Willo Black Portr	ys Fork-Falls n River ys Fork above a above Jacks Ventre River ck River River e above Palls ow Creek	s River 10 8 Rexburg 18 50n Lake 9 7 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		140 121 132 119 107 117 112 108 112 164	111 100 106 102 86 88 89 93 93 94 124

\* 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.



February mountain precipitation was 120% of average, highest in the state. Magic Mountain SNOTEL received the greatest February precipitation at 151% of average; the lowest was 90-100% in northern Nevada. Even the valleys received 175% of average precipitation for February in Twin Falls and Burley. Mountainous SNOTEL sites received 1.6 to 6.1 inches in February, average is 1.5 to 4.5 inches. Twin Falls and Burley received about 1.5 inches and average is about 0.9 inches for February. Snowpack percentages increased from last month and are now 121% of average in Raft and Oakley basins and 126% in Salmon Falls basin. The Bruneau basin snowpack is 123% of average, while the Owyhee basin is the highest in the state at 155% of average. The Owyhee snowpack is 116% of its seasonal peak, while Oakley, Salmon Falls and Bruneau basins, irrigation shortages are still possible. The stage remains set in the Owyhee basin with the reservoir at 17% full, snow at 155% of average, and streamflow forecasts at 125% of average. March weather will determine how the snow melts – rapidly with warmer temperatures and rain, or gradually with moderate temperatures. River runners will see a longer season on the Owyhee and Bruneau rivers this year.

SOUTHSIDE SNAKE RIVER BASINS

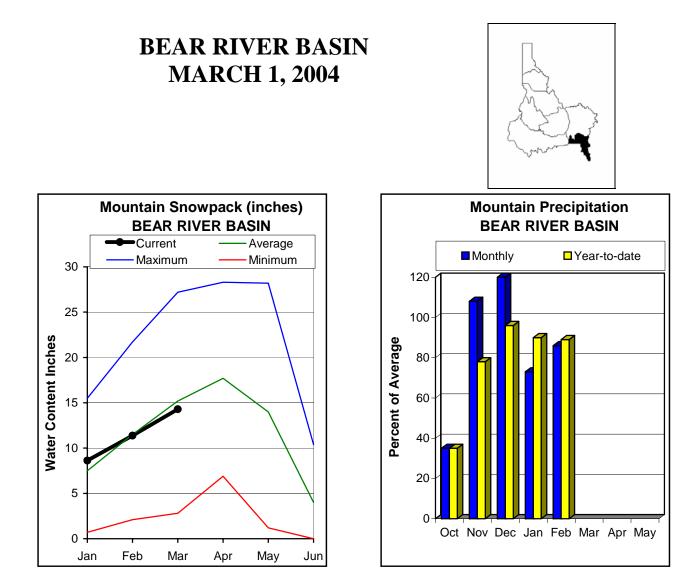
#### Streamflow Forecasts - March 1, 2004

						onditions =====			
Forecast Point	Forecast Period	90%	70% (1000A) (	F)	50% (Most (1000AF)	Exceeding * ===== Probable)   (% AVG.)	30% (1000AF)	10%   (1000AF)	30-Yr Avg. (1000AF)
OAKLEY RESV INFLOW	MAR-JUL	22	29		33	97	38	46	34
	MAR-SEP	25	31	.	36	97	41	49	37
OAKLEY RESV STORAGE	MAR-31	13.1	14.3		15.1	42	15.9	17.1 25	36
	APR-30 MAY-31	16.9 16.8	19.3 21		21 24	51   53	23 27	25 31	41 45
SALMON FALLS CREEK nr San Jacinto	MAR-JUN	66	79		87	98	95	108	89
	MAR-JUL	65	79		88	95	97	111	93
	MAR-SEP	68	82		91	93	100	114	98
SALMON FALLS RESV STORAGE	MAR-31	19.8	24		27	39	30	34	70
	APR-30	34 51	40		44	50	48	54	88
	MAY-31	51	60		67	66   	74	83	101
BRUNEAU near Hot Spring	MAR-JUL MAR-SEP	171 182	216 230		250 265	106   106	286 303	345 364	235 250
OWYHEE near Gold Creek (2)	MAR-JUL	38	39		39	122	40	40	32
OWYHEE nr Owyhee (2)	APR-JUL	59	83		100	122	117	141	82
OWYHEE near Rome	MAR-JUL	542	642		715	123	792	912	580
OWYHEE RESV INFLOW (2)	MAR-JUL	557	657	,	730	119	807	927	615
	MAR-SEP	590	692		765	119	842	962	645
	APR-SEP	372	474	:   	550	128	632	763	430
SUCCOR CK nr Jordan Valley	MAR-JUL	11.2	17.0		21	124	25	31	16.9
SNAKE RIVER at King Hill (1,2)	APR-JUL	800	1522		1850	63	2180	2900	2940
SNAKE RIVER near Murphy (1,2)	APR-JUL	945	1719		2070	67	2420	3190	3090
SNAKE RIVER at Weiser (1,2)	APR-JUL	1527	3179		3930	68	4680	6330	5770
SNAKE RIVER at Hells Canyon Dam (1,	2 APR-JUL	2215	3896		4660	72	5425	7110	6490
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	12730	17729		20000	93	22270	27270	21600
				 =======				===================	
SOUTHSIDE SNA Reservoir Storage (100	0 AF) - End	of Februa				SOUTHSIDE Watershed Snowpa	ack Analys	sis - March	
	Usable						Numbe		=============================== Year as % of
Reservoir	Capacity	This Year	Last Year	Avg	Water	rshed	of Data Si		Yr Average
OAKLEY	 74.5	10.7	15.2	31.4	1	River	 6	203	121
SALMON FALLS	182.6	16.6	16.1	59.8	Goose	e-Trapper Creeks	7	225	121
WILDHORSE RESERVOIR	71.5	14.6	20.5	40.1	   Salmo	on Falls Creek	8	236	121
					1				
OWYHEE	715.0	121.8	176.3	489.1	Brune	eau River	8	198	117

\* 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.



February precipitation was below normal for the basin as a whole at only 86% of average. Only a few stations received above average precipitation: these include the Malad area and Oxford Springs SNOTEL site at 150% of average, and Sedgwick Peak SNOTEL site at 188%. The least amounts fell in the areas that needed the precipitation the most, the headwaters of the Bear River. Trial Lake SNOTEL site, located at 9,960 feet in these headwaters, received only 64% of average in February. The snow water at this site is only 82% of average, but contains 6 inches more water than a year ago. Snowpack percentages are 85% of average in Smith, Thomas, Montpelier and Bear River headwaters. Mink and Cub river basins are near average while Malad basin is 126% of average. Overall, the Bear River basin snowpack is 92% of average, compared to 71% a year ago. Bear Lake remains nearly empty at 11% full, 17% of average. Montpelier Reservoir is 25% full, 59% of average. Streamflow forecasts remain the same as a month ago, decreasing from 74% of average in the headwaters to 12% at Bear Lake. Water users that rely on Bear Lake should be planning and planting for irrigation shortages. However, water users who get their water supply from headwater streams or higher tributaries can expect water supplies similar to last year.

BEAR RIVER BASIN

Streamilow Forecasts - March 1, 2004

		<<======	Drier ====	== Future Co	onditions ==	===== Wetter	:====>>		
Forecast Point	Forecast	1	======================================						
	Period	90% (1000AF)	70% (1000AF)	50% (Most (1000AF)	Probable) (% AVG.)	30% (1000AF)	10%   (1000AF)	30-Yr Avg. (1000AF)	
		==========		===========		============	==========		
Bear River nr UT-WY State Line	APR-SEP	60	79	93	74	107	126	125	
Bear River ab Reservoir nr Woodruff	APR-SEP	43	56	   65 	46	   85 	113	142	
Smiths Fork nr Border	APR-JUL	54	68	77	75	86	100	103	
	APR-SEP	64	80	90	74	100	116	121	
Bear River at Stewart Dam	APR-JUL	7.0	18.0	29	12	42	67	234	
	APR-SEP	7.0	19.0	31	12	45	71	262	

BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of February					BEAR RIVER BASIN   Watershed Snowpack Analysis - March 1, 2004				
Reservoir	Usable   Capacity  	*** Usa This Year	ble Stora Last Year	ige *** Avg	Watershed 1	Number of Data Sites	This Yea ======== Last Yr	r as % of ====== Average	
BEAR LAKE	1421.0	152.8	372.7	910.7	Smiths & Thomas Forks	4	107	85 85	
MONTPELIER CREEK	4.0	1.0		1.7	Bear River ab WY-ID line	e 14	121	84	
					Montpelier Creek	2	109	85	
					Mink Creek	4	147	101	
					Cub River	3	137	100	
					Bear River ab ID-UT line	e 25	130	92	
					Malad River	3	180	126	

\* 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.

### Interpreting Streamflow Forecasts

#### Introduction

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

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

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

#### To Decrease the Chance of Having Too Little Water

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

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

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

90 Percent Chance of Exceeding Forecast. There is a 90 percent

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

#### To Decrease the Chance of Having Too Much Water

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

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

30 Percent Chance of Exceeding Forecast. There is a 30 percent chance that the streamflow volume will exceed this forecast value. There is a 70 percent chance the streamflow volume will be less than this forecast value. 10 Percent Chance of Exceeding Forecast. there is a 10 percent chance that the streamflow volume will exceed this forecast value. There is a 90 percent chance the streamflow volume will be less than this forecast value.

#### Using the forecasts - an example

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

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

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

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

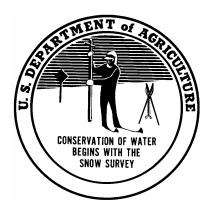
In years when users expect extremely wet conditions for the remainder of the season and the threat of severe flooding and downstream damage exists, they might choose to use the 76,000 acre-foot (10 percent chance of exceeding) forecast for their water management operations. Streamflow volumes will exceed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

WEISER, PAYETTE, BOISE RIVER BASINS Streamflow Forecasts										
Forecast Point	Forecast	<pre>  &lt;&lt;===== Drier ===== Future Conditions ======= Wetter ====&gt;&gt; st   ========== Chance Of Exceeding * ====================</pre>								
	Period	90%   (1000AF)	70% (1000AF)	50% (Most   (1000AF)	Probable) (% AVG.)	30%   (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)		
SF PAYETTE RIVER at Lowman	APR-JUL APR-SEP	329 369	414 459	   471   521	109 107	528 583	613 673	432 488		
BOISE RIVER near Twin Springs (1)	APR-JUL APR-SEP	443 495	610 670	685 750	109 109	760 830	927 1005	631		

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

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OFFICIAL BUSINESS



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