

# Idaho Water Supply Outlook Report May 1, 2006



On March 30, 2006 Hydrologists Phil Morrissey (right above) and Jeff Anderson (left above) did a helicopter snow survey to ground truth automated SNOTEL measurements at sites in the central mountains. At Deadwood Summit SNOTEL, located east of Cascade at 6,860 feet, the 12 foot tall shelter was buried beneath the snow. Since this had happened in the past a shovel is permanently kept chained to the antenna tower next to the shelter at 15 feet. On this trip Phil had to dig out the



shovel (bottom left) so that Jeff (bottom right) could excavate an 8 foot deep hole to access the shelter's top door. Measurements that day showed 144 inches of snow on the ground with a water content of 58 inches. Water content peaked on April 20<sup>th</sup> with 62.9 inches and as of May 1 56.7 inches of water content was still on the ground.



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

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## *How forecasts are made*

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

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

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

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

***May 1, 2006***

## **SUMMARY**

Abundant moisture in April brought streams to a rise and more snow to melt this year. April precipitation ranged from 96% of average in the Bear River basin to 250% in the Little Wood basin. Current snowpacks range from a low of 90% of average in the Spokane basin, Snake River headwaters in western Wyoming to 150-180% of average in Raft, Little Wood, Portneuf, Weiser, Mann, Oakley, and Big Lost basins. Reservoir releases are being made from most reservoirs across the state to provide room for the highest runoff since 1999 or earlier. Highest streamflow forecasts are for Oakley Reservoir inflow and Salmon Falls Creek at 170% of average. The Big Wood, Little Wood and Big Lost rivers are forecast at 150-165% of average. The Salmon, Weiser, Payette, and Boise rivers are forecast at 125-140% of average. Near average runoff volumes for the May-July period are predicated for the Snake River near Heise, Little Lost River, Clearwater River and parts of the Bear River basin. Below average volumes are predicted in the Spokane, Lemhi and Dworshak basins. The volumes mentioned in this report are the 50% Chance of Exceedance Forecasts which means there is 50% chance the volume will be above or below this value. With soils saturated and many streams flowing at above average levels for the past few months, water managers may wish to consider basing their water management decisions on the Wetter Forecasts listed under the 30% and 10% Exceedance levels to minimize risk of having too much water, or until more of the snow melts and we are assured of being in the normal dry summer season that occurs in late spring or early summer. Farmers, irrigators, river runners, and hydropower producers will have plenty of water to meet their needs this year, and in some areas too much.

## **SNOWPACK**

A cool, wet April allowed many snow measuring stations to continue accumulating snow in April rather than starting to melt. That means there is more to melt this spring. In fact, a few higher sites in central Idaho just reached their peak snow water content for the season in late April. Valley rain and warm temperatures melted the lower elevation snow that had been lingering in the valleys most of winter. Abundant rains in early April combined with low elevation snowmelt, produced rapid increases and flooding in some basins. High elevation snowpacks are just now starting to melt and the record high amounts at Galena Summit (Big Wood basin), Fishpole Lake (Big Lost basin) and Howell Canyon (Raft basin) are going to take 45 to 60 days to melt. Trinity Mountain SNOTEL site (South Fork Boise) is not expected to melt out until mid-July. Moderate temperatures in May will help drain some of the water out of the pack. As temperatures warm in May and nighttime temperatures remain above freezing, melt rates will gradually increase from 0.5 inches per day to an inch and then 1.5 inches. Maximum melt rates could reach 2.0 inches in June or just prior to the snowpack being melted out. Melting an inch per day is the equivalent of receiving an inch of rain each day from that elevation zone. Current snowpacks range from a low of 90% of average in the Spokane, Gros Ventre, Hoback and Salt in western Wyoming. Highest snowpacks are 150-180% of average (from high to low) Raft, Little Wood, Portneuf, Weiser, Mann, Oakley, and Big Lost basins. Elsewhere, Clearwater is 97% of average, Salmon is 121%, Payette is 129%, Boise is 126%, Little Lost is 107%, Snake above Palisades and Owyhee are 100%, and Salmon Falls and Bruneau are 131%.

## PRECIPITATION

April snow and rain broke monthly precipitation records at eleven SNOTEL stations in the central mountains which received 201% of average in the Wood and Lost river basins and 150% in the Weiser, Payette and Boise river basins. Precipitation in other basins was also above average with the Panhandle receiving 102% of average, the Clearwater 112%, the Salmon 132%, the Upper Snake 114% and the Southside Snake basins at 137%. Only the Bear basin was below average for the month but only by a hair at 96%. For the water year to date all basins are above average with the central mountains (125-135% of average) and the basins to the south of the Snake River (115-135%) leading the pack. The Panhandle and Clearwater have been the driest at 100% and 106% of average respectively. Most central and southern Idaho basins have already received more than the total amount that falls for the whole year. These include Oakley, Owyhee, Boise, Big Wood, Weiser and Payette (from high to low) and are 110-101% of their annual precipitation amounts! The lowest in the state is the Little Lost and Birch basins at 71% of the annual totals, while the Snake above Palisades Reservoir has received 78% of its annual precipitation amount so far.

## RESERVOIRS

Additional releases are being made from most reservoirs across the state to provide room for the highest runoff since 1999 or earlier. From north to south: Coeur d'Alene and Priest lakes are 90% full, and Pend Oreille Lake is 61% full. Dworshak Reservoir is 71% full which is average. Cascade and Deadwood reservoirs are 60% full, and at 88% and 96% of average, respectively. The Boise reservoir system is 68% full which is average for this time of year. Magic Reservoir is basically full and passing water over the spillway. Final fill will occur after the Big Wood River snowmelt streamflow peak occurs. Little Wood Reservoir is 64% full and passing water. Mackay Reservoir was drained to half full and will have plenty of water to refill it. Release water is being utilized to help recharge the depleted aquifer. Jackson Lake and Palisades Reservoir have a combined storage of 52% of capacity, 88% of average and they both will fill. Blackfoot Reservoir is half full at 66% of average. American Falls Reservoir is nearly full at 96% of capacity, 108% of average, and releasing water with 17,000 cfs flowing over Shoshone Falls. This stretch of river should have good flows going through the canyon and over the numerous falls for most of May. Oakley Reservoir is 73% full 134% of average and could fill with the 10% Chance of Exceedance Forecasting occurring, and minimal irrigation demand, but releases for extra water can be made into infiltration canals. Salmon Falls Reservoir is half full, which is just above average. With the perfect storm and limited irrigation demand, it could fill and have to pass water into Salmon Falls Creek. Wildhorse Reservoir is full and passing water. Owyhee Reservoir is nearly full and still passing water with inflows above 5,000 cfs. Bear Lake is on the incline at 36% full which is half of its 30 year average.

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**

Get ready for big water this year. Many streams in the southern half of Idaho are forecast at the highest levels since 1999 or 1997. April rains kick started the melting of low elevation snow and the high snow is just warming up to start melting. That means most streams across southern Idaho will be high for an extended period of time and probably above average levels for the rest of the summer. Highest streamflow forecasts are for Oakley Reservoir inflow and Salmon Falls Creek at 170% of average. The Big Wood, Little Wood and Big Lost rivers are forecast at 150-165% of average. The Salmon, Weiser, Payette, and Boise rivers are forecast at 125-140% of average. Near average May-July volumes are forecast for the Snake River near Heise, Little Lost River, Clearwater River and parts of the Bear River basin. The only areas with below average volumes forecast are in the Spokane basin, tributaries in the Panhandle Region and Lemhi rivers. With soils saturated and many streams flowing at above average levels for the past few months, water managers may wish to use the 30% and 10% Exceedance levels to minimize their risk of having too much water. Like we always say, spring precipitation can make or break our forecasts, and until more of the snow drains out of the mountains and that normal hot, dry summer weather sets in, additional precipitation will cause a jump in most streams. Peak streamflows will be high, especially after what we have observed during the drought years, and depending on the spring temperatures and precipitation for the next 30 days.

## **RECREATION**

Multi-sport season is here! Pick a toy and enjoy spring! Lots of snow remains in the mountains so buttery corn snow should delight backcountry skiers and snowmobilers whenever nighttime temperatures dip below freezing and warm days soften conditions. Resort goers can still make turns at Tamarack Resort, in Donnelly, which plans to continue spinning lifts on weekends until May 20th! Other resorts have closed after one of their best seasons. Brundage Mountain in McCall, received over 400 inches of snow, and had their longest season in more than 20 years closing April 23rd. Sun Valley Resort finished its 70th season the same day after a 152 day season. April 15th was the last day of a great sliding season at Bogus Basin in Boise; the long season helped that resort make a profit after two years in the red. As ski lifts close the whitewater season is just heating up. Expert boaters have already been paddling big water on the North Fork of the Payette River between Cascade and Horseshoe Bend; highway 55 offers excellent viewpoints to watch these thrill seekers. May and June will be a great months to float the desert canyon streams which will see prolonged high water. Flows on the Owyhee River at Rome are currently over 5,500 cfs and should remain above 2,000 cfs into early June 1. The Owyhee can be run until flows dip below 800 cfs, so a long season is ahead. The Bruneau River is currently running above 2,100 cfs but has not peaked yet and high elevation snow will extend the boating season into June on this river. Commercial rafting companies are expecting an excellent whitewater season throughout the entire summer on the main Salmon. This will be one of the best whitewater seasons in almost ten years! Depending on your skill level be patient for flows to reach your comfort zone and then enjoy the rivers. Mountain bikers and hikers will appreciate a harvest of wildflowers starting in the prairies and foothills and climbing into the mountains as summer progresses. This will be a great spring to spend time in the lowlands as access to the mountains will be limited by snow until in July in some areas. Make time to visit Fairfield where the Camas lilies should be spectacular. Fishermen and fisherwomen may currently be frustrated by high flows producing less than ideal conditions in streams. They should take consolation that late season river fishing will pick up. With many reservoirs predicted to fill this should be an ideal summer for water skiing, boating and fishing. With so many choices there is no excuse for spending free time inside, grab a toy and let the play begin. But respect the water and be careful as the high, swift currents can sweep you away!

**IDAHO SURFACE WATER SUPPLY INDEX (SWSI)**

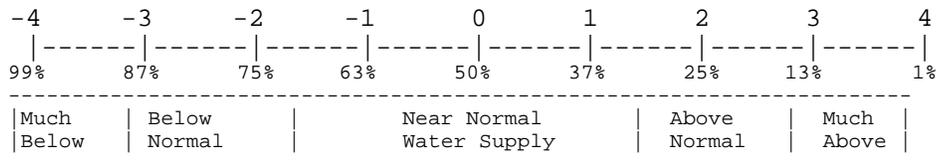
*As of May 1, 2006*

The Surface Water Supply Index (SWSI) is a predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.0 (abundant supply) to -4.0 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences. The SWSI analysis period is from 1971 to present.

SWSI values provide a more comprehensive outlook of water availability by combining streamflow forecasts and reservoir storage where appropriate. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been determined for some basins to indicate the potential for agricultural irrigation water shortages.

<i>BASIN or REGION</i>	<i>SWSI Value</i>	<i>Most Recent Year With Similar SWSI Value</i>	<i>Agricultural Water Supply Shortage May Occur When SWSI is Less Than</i>
PANHANDLE	-1.1	1998	NA
CLEARWATER	0.7	1999	NA
SALMON	2.0	1995	NA
WEISER	1.7	1996	NA
PAYETTE	1.7	1998	NA
BOISE	1.7	1996	-2.1
BIG WOOD	2.7	1984	-0.5
LITTLE WOOD	3.1	1984	-2.0
BIG LOST	2.0	1997	-0.5
LITTLE LOST	0.4	1996	0.0
HENRYS FORK	0.5	1993	-3.3
SNAKE (HEISE)	0.4	1995/1993	-1.8
OAKLEY	3.6	1975/1974	-1.0
SALMON FALLS	2.5	1985	-1.5
BRUNEAU	2.9	1995/1998	NA
BEAR RIVER	-1.9	1990	-3.3

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

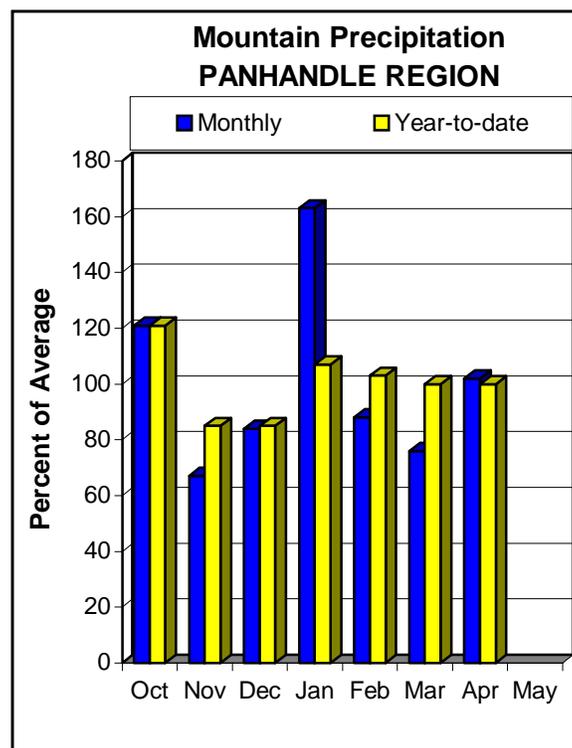
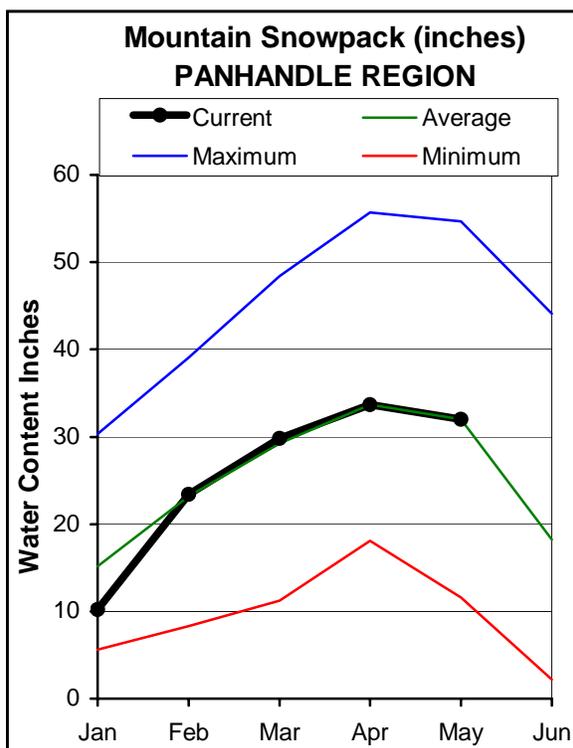
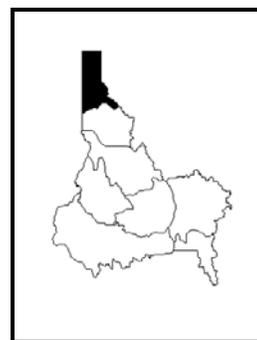


NA = Not Applicable

Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply," represents three SWSI units and would be expected to occur about one-third (36%) of the time.

# PANHANDLE REGION

## MAY 1, 2006



## WATER SUPPLY OUTLOOK

2006 is turning out to be a normal year in the Idaho Panhandle region. Precipitation in April was average and is average for the water year. The snowpack peaked at its 30-year average snow water equivalent amounts in April and remains near average for May 1. Snowpacks range from 91% of average in the Spokane basin to 121% in the Priest basin. Pend Oreille river basin is 102% of average. Overall the Panhandle region snowpack is average. Storage in the lakes and reservoirs in the Idaho Panhandle and western Montana ranges from 60-90% of capacity, with most reporting average or better storage. Streams are forecast at 85% of average for the St Joe, Coeur d'Alene and Spokane basins. Pend Oreille lake inflow is forecast at 97% of average and Priest River is forecast at 111%. Water users should have a near average water supply. With saturated soils and streams flowing above average the past few months, water users may wish to use the slightly wetter forecasts in the 30% Exceedance Forecast column if spring precipitation is not too far below normal this spring.

PANHANDLE REGION  
Streamflow Forecasts - May 1, 2006

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
KOOTENAI at Leonia (1,2)	MAY-JUL	4990	5510	5750	93	5990	6510	6170
	MAY-SEP	5950	6530	6800	94	7070	7650	7250
MOYIE RIVER at Eastport	MAY-JUL	255	280	300	91	320	345	330
	MAY-SEP	265	295	315	91	335	365	345
SMITH CREEK	MAY-JUL	93	104	111	107	118	129	104
	MAY-SEP	99	112	120	108	128	141	111
BOUNDARY CREEK	MAY-JUL	90	99	106	104	113	122	102
	MAY-SEP	95	105	112	104	119	129	108
CLARK FK at Whitehorse Rpds (1,2)	MAY-JUL	7560	8800	9370	98	9940	11180	9590
	MAY-SEP	8380	9770	10400	97	11030	12420	10700
PEND OREILLE Lake Inflow (2)	MAY-JUL	8790	9690	10300	97	10910	11810	10600
	MAY-SEP	9820	10820	11500	98	12180	13180	11800
PRIEST near Priest River (1,2)	MAY-JUL	570	645	680	111	715	790	615
	MAY-SEP	600	695	735	110	775	870	670
NF COEUR D'ALENE RIVER AT ENAVILLE	MAY-JUL	245	315	365	83	415	485	440
	MAY-SEP	280	355	405	84	455	530	480
ST. JOE at Calder	MAY-JUL	575	660	715	85	770	855	845
	MAY-SEP	630	715	775	85	835	915	910
SPOKANE near Post Falls (2)	MAY-JUL	1000	1230	1390	83	1550	1780	1670
	MAY-SEP	1070	1310	1480	84	1650	1890	1770
SPOKANE at Long Lake (2)	MAY-JUL	1170	1440	1620	85	1800	2070	1910
	MAY-SEP	1370	1650	1840	86	2030	2310	2130

PANHANDLE REGION Reservoir Storage (1000 AF) - End of April					PANHANDLE REGION Watershed Snowpack Analysis - May 1, 2006			
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	2484.0	3125.0	1954.8	Kootenai ab Bonners Ferry	30	197	101
FLATHEAD LAKE	1791.0	1134.0	1457.0	931.9	Moyie River	9	144	93
NOXON RAPIDS	335.0	312.1	320.3	272.3	Priest River	4	257	126
PEND OREILLE	1561.3	466.4	952.5	916.7	Pend Oreille River	84	184	102
COEUR D'ALENE	238.5	219.5	198.9	249.7	Rathdrum Creek	1	0	130
PRIEST LAKE	119.3	107.4	90.8	102.5	Hayden Lake	0	0	0
					Coeur d'Alene River	6	309	89
					St. Joe River	4	182	92
					Spokane River	9	265	91
					Palouse River	1	0	0

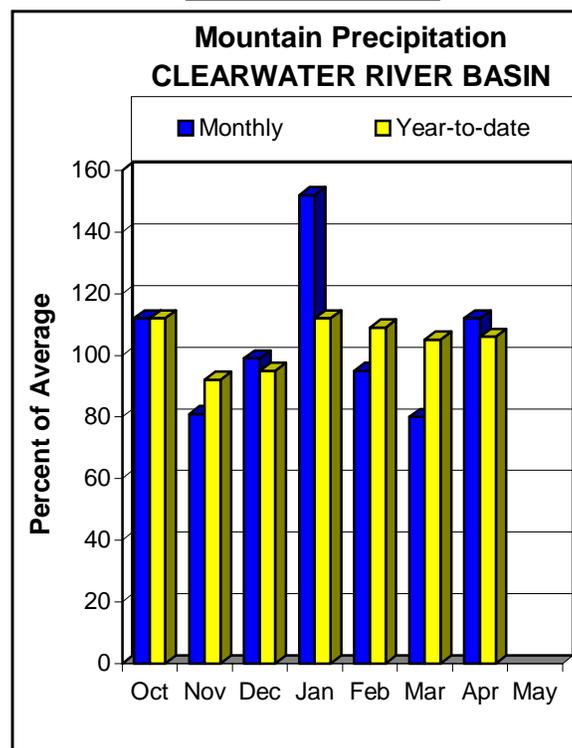
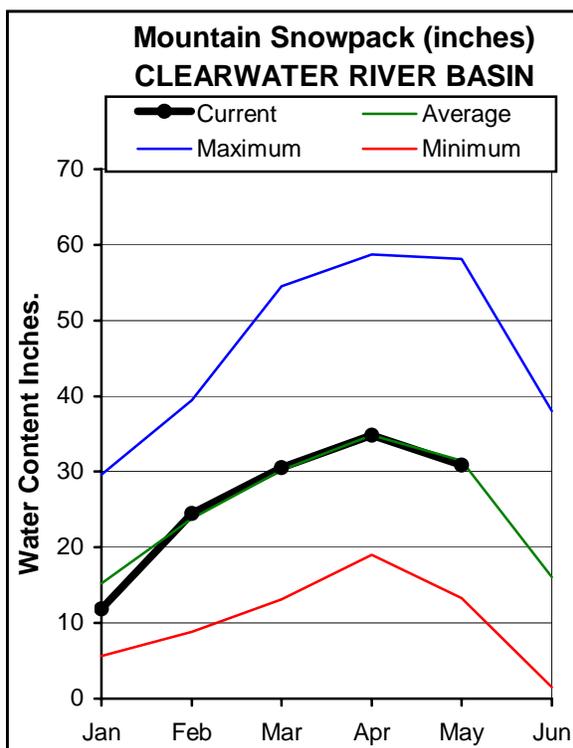
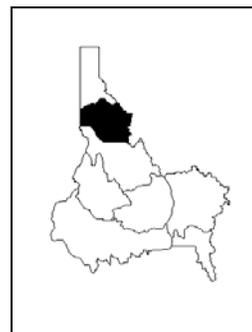
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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

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

# CLEARWATER RIVER BASIN

## MAY 1, 2006



## WATER SUPPLY OUTLOOK

After two months with below average precipitation, April precipitation was slightly above average at 112%. Precipitation for the water year is 106% of average; this is 81% of the annual total that falls during the entire water year. Snowpacks remain right at average ranging from 98-101% for the Clearwater basin and its tributaries. Streamflow runoff volumes are forecast near average with the Selway River forecast at 99% of average, Locsha River at 102%, and Dworshak reservoir inflow at 94%. The Clearwater River at Orofino is forecast at 102% of average while the river at Spalding is forecast at 101%. Dworshak Reservoir is storing average amounts at 71% of capacity. Water supplies will be near normal this year in the Clearwater basin, however, at the confluence with the Snake River at Lewiston, the streamflow has been high and will continue being high due to the abundant moisture in southern Idaho. Streamflow was around 100,000 cfs coming out of Hell's Canyon at the Snake River near Anatone, Washington gauging station 22 miles south of Lewiston. Record high for this station is 195,000 cfs on June 18, 1974 from the record high snowpack that year. We won't break this streamflow peak record this year because the high snowpacks are only concentrated in isolated pockets across southern Idaho. The Snake River at Hell's Canyon Dam is forecast at 120% of average while the Snake River below Lower Granite Dam is only forecast at 119% of average for the May-July runoff volume.

CLEARWATER RIVER BASIN  
Streamflow Forecasts - May 1, 2006

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
SELWAY near Lowell	MAY-JUL	1480	1620	1710	99	1800	1940	1720
	MAY-SEP	1570	1720	1820	100	1920	2070	1830
LOCHSA near Lowell	MAY-JUL	1130	1210	1270	102	1330	1410	1250
	MAY-SEP	1200	1290	1350	102	1410	1500	1330
DWORSHAK RESV INFLOW (1,2)	MAY-JUL	1380	1700	1850	94	2000	2320	1970
	MAY-SEP	1520	1860	2010	94	2160	2500	2130
CLEARWATER at Orofino (1)	MAY-JUL	3180	3610	3810	102	4010	4440	3730
	MAY-SEP	3390	3860	4080	102	4300	4770	3990
CLEARWATER at Spalding (1,2)	MAY-JUL	4750	5490	5830	101	6170	6910	5770
	MAY-SEP	5090	5890	6250	101	6610	7410	6190

CLEARWATER RIVER BASIN Reservoir Storage (1000 AF) - End of April					CLEARWATER RIVER BASIN Watershed Snowpack Analysis - May 1, 2006			
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	2447.3	3326.4	2421.3	North Fork Clearwater	9	180	97
					Lochsa River	3	188	98
					Selway River	4	207	101
					Clearwater Basin Total	16	184	97

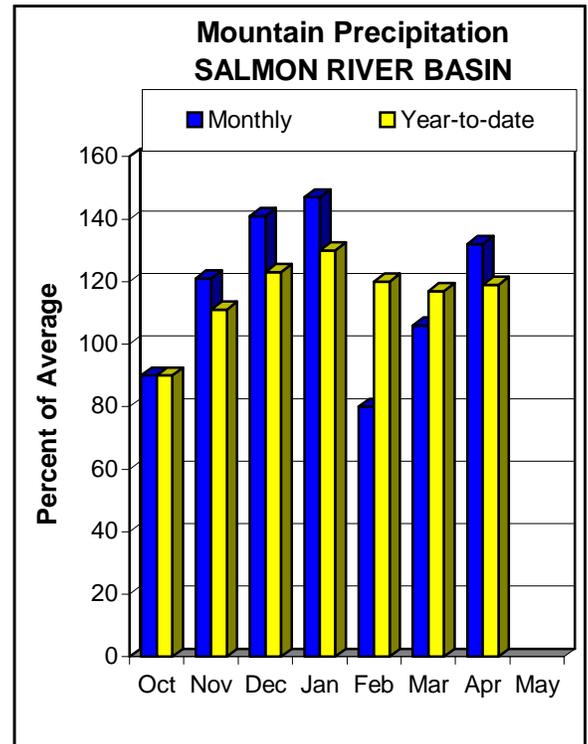
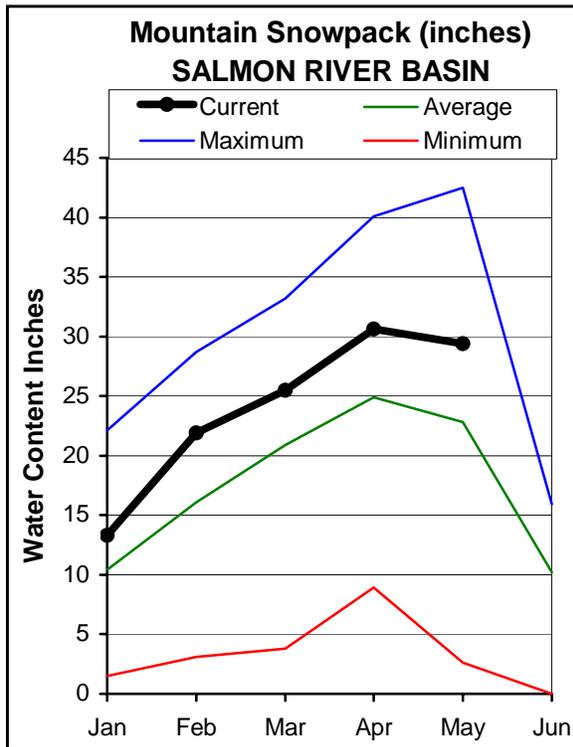
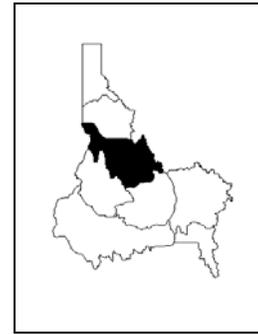
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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

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

# SALMON RIVER BASIN

## MAY 1, 2006



## WATER SUPPLY OUTLOOK

April precipitation ranged from twice average at Galena Summit SNOTEL in central Idaho to 90% of average at Mountain Meadows SNOTEL site south of Red River Ranger Station and along the Montana border. Overall, April precipitation in the Salmon basin was 132% of average. Water year to date precipitation is 119% of average, which is 88% of the annual total that normally falls each year. The snowpack in the Salmon basin ranges from average in the Lemhi basin to 142% of average in the Little Salmon basin. Snowpack in the Salmon basin above Salmon is 129% of average, South Fork Salmon is 127% and Middle Fork Salmon is 121%. Overall, the Salmon River basin snowpack is 121% of average, twice last year and the best since 1999. Deadwood Summit SNOTEL has 57 inches of snow water on May 1, average is 46 inches. Streams are forecast at 139% of average for the Middle Fork Salmon River, 130% for the Salmon River above Salmon and 127% for the Salmon River near White Bird, while Lemhi River is forecast at only 91%. This year's runoff should be similar to 1999. Precipitation and temperatures in May will determine magnitude and timing of streamflow peak, but water users and river runners can expect high peaks. Peak streams flows will occur mid-May to early June. After the peak flows occur, the above average snowpack will extend the floating season on the Middle Fork Salmon River to one of the best in several years. Look for a return to a gauge height of 2.0 feet in early to mid-August. Likewise with the main Salmon River where peak flows are forecast by NWS at 65,000–86,000 cfs.

SALMON RIVER BASIN  
Streamflow Forecasts - May 1, 2006

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
SALMON at Salmon (1)	MAY-JUL	865	950	990	130	1030	1110	760
	MAY-SEP	1020	1120	1160	129	1200	1300	900
Lemhi River nr Lemhi	MAY-JUL	50	58	64	91	70	80	70
	MAY-SEP	65	75	82	92	89	101	89
MF Salmon at MF Lodge	MAY-JUL	865	934	980	140	1026	1095	700
	MAY-SEP	959	1037	1090	139	1143	1222	785
SALMON at White Bird (1)	MAY-JUL	5790	6320	6560	127	6800	7330	5150
	MAY-SEP	6490	7090	7360	127	7630	8230	5780

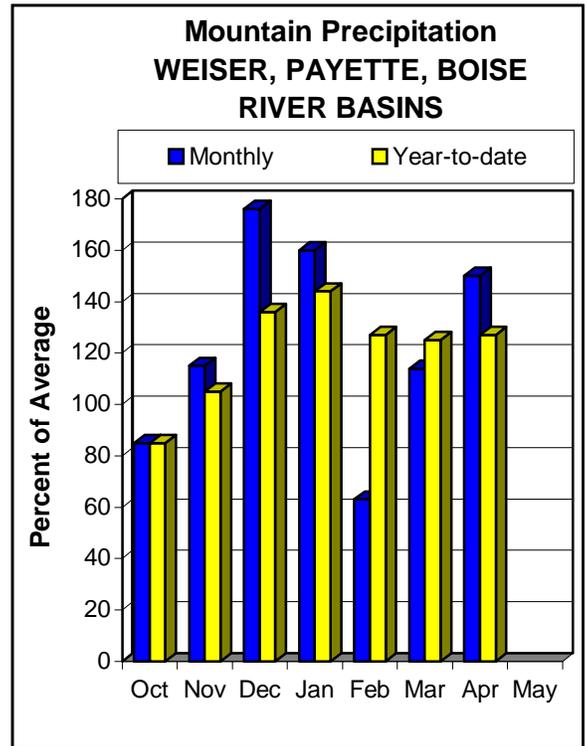
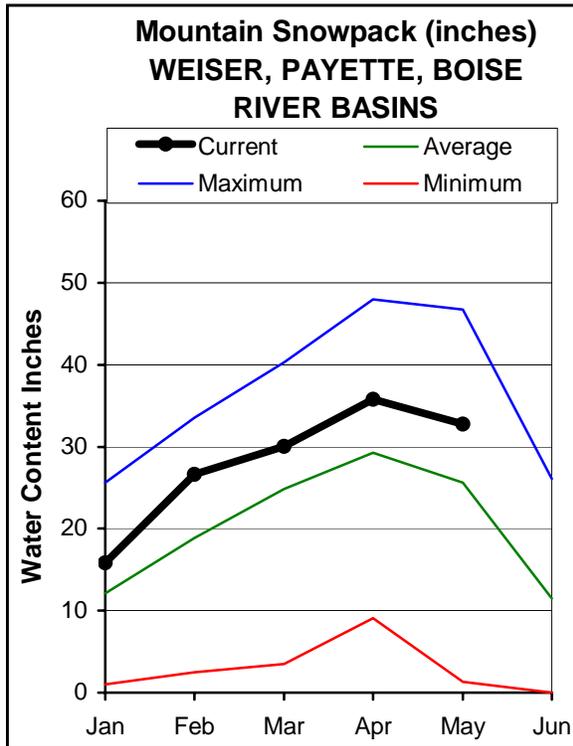
SALMON RIVER BASIN Reservoir Storage (1000 AF) - End of April					SALMON RIVER BASIN Watershed Snowpack Analysis - May 1, 2006			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					Salmon River ab Salmon	9	234	129
					Lemhi River	7	154	103
					Middle Fork Salmon River	3	246	121
					South Fork Salmon River	3	231	124
					Little Salmon River	4	273	142
					Salmon Basin Total	24	212	120

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

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

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

# WEISER, PAYETTE, BOISE RIVER BASINS MAY 1, 2006



## WATER SUPPLY OUTLOOK

April showers brought rapid increases in streamflow and melted the lower elevation snow that had been lingering in the valleys all winter. April precipitation was 136% of average in the Weiser, 141% in the Payette and 164% in the Boise basins! As a result, the flow in the Boise River near Boise was 662,000 acre-feet record high for April at 205% of average. Remaining snow in the Weiser basin is 158% of average, highest since 1999. The Payette snowpack is 129% of average, also highest since 1999 while the Boise basin snow is 126% and highest since 1997. The snow is more than twice last year. With inflows to reservoirs remaining high, outflows are high to maintain space in reservoir systems. May-July streamflow volumes are forecast at 129% for the Weiser River and Payette River near Horseshoe Bend and 133% for the Boise River near Boise. With a few higher elevation SNOTEL sites just reaching their peak snow water contents amounts in late April, it will take 1 to 2 months to melt this year's snowpack unless it gets very hot in May and June. Trinity Mountain SNOTEL site at 7,770 feet in the South Fork Boise basin has 56 inches of snow water, 120 inches of snow on the ground and will not melt out until early July. Last year the site melted out June 18 and in 1982 it melted out July 27. Moderate temperatures are needed in May to gradually bleed the water out of the mountains. Additional rains will runoff quickly from the saturated soils in the snow-free areas and will further increase the expected runoff volumes.

WEISER, PAYETTE, BOISE RIVER BASINS  
Streamflow Forecasts - May 1, 2006

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
WEISER near Weiser (1)	MAY-JUL	225	300	330	129	360	435	255
	MAY-SEP	260	335	370	130	405	480	285
SF PAYETTE at Lowman	MAY-JUL	375	400	415	109	430	455	380
	MAY-SEP	430	455	475	109	495	520	435
DEADWOOD RESERVOIR Inflow (1,2)	MAY-JUL	131	146	153	132	160	175	116
	MAY-SEP	142	158	165	132	172	188	125
LAKE FORK PAYETTE near McCall	MAY-JUL	88	94	98	129	102	108	76
	MAY-SEP	92	98	102	129	106	112	79
NF PAYETTE at Cascade (1,2)	MAY-JUL	425	490	520	132	550	615	395
	MAY-SEP	465	540	570	131	600	675	435
NF PAYETTE nr Banks (2)	MAY-JUL	600	665	705	140	745	810	505
	MAY-SEP	635	705	750	136	795	865	550
PAYETTE nr Horseshoe Bend (1,2)	MAY-JUL	1420	1580	1660	129	1740	1900	1290
	MAY-SEP	1540	1730	1810	127	1890	2080	1430
BOISE near Twin Springs (1)	MAY-JUL	555	615	640	126	665	725	510
	MAY-SEP	615	680	710	126	740	805	565
SF BOISE at Anderson Ranch Dam (1,2)	MAY-JUL	505	570	600	140	630	695	430
	MAY-SEP	550	620	650	140	680	750	465
MORES CREEK near Arrowrock Dam	MAY-JUL	78	89	97	123	105	116	79
	MAY-SEP	81	93	101	119	109	121	85
BOISE near Boise (1,2)	MAY-JUL	1230	1380	1440	133	1500	1650	1080
	MAY-SEP	1370	1520	1590	134	1660	1810	1190

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

WEISER, PAYETTE, BOISE RIVER BASINS  
Watershed Snowpack Analysis - May 1, 2006

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
MANN CREEK	11.1	11.1	10.7	10.5	Mann Creek	1	258	156
CASCADE	693.2	406.6	557.9	462.5	Weiser River	3	291	159
DEADWOOD	161.9	99.4	87.9	103.4	North Fork Payette	5	244	132
ANDERSON RANCH	450.2	351.4	230.2	302.3	South Fork Payette	4	236	120
ARROWROCK	272.2	186.5	148.8	180.9	Payette Basin Total	10	235	126
LUCKY PEAK	293.2	150.9	196.4	207.9	Middle & North Fork Boise	5	233	123
LAKE LOWELL (DEER FLAT)	165.2	92.2	103.5	141.5	South Fork Boise River	7	238	133
					Mores Creek	3	230	114
					Boise Basin Total	12	235	125
					Canyon Creek	1	0	100

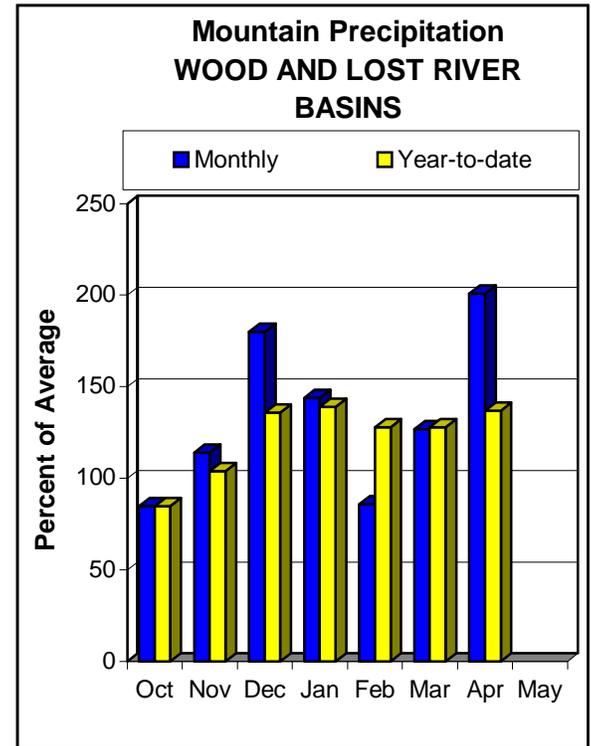
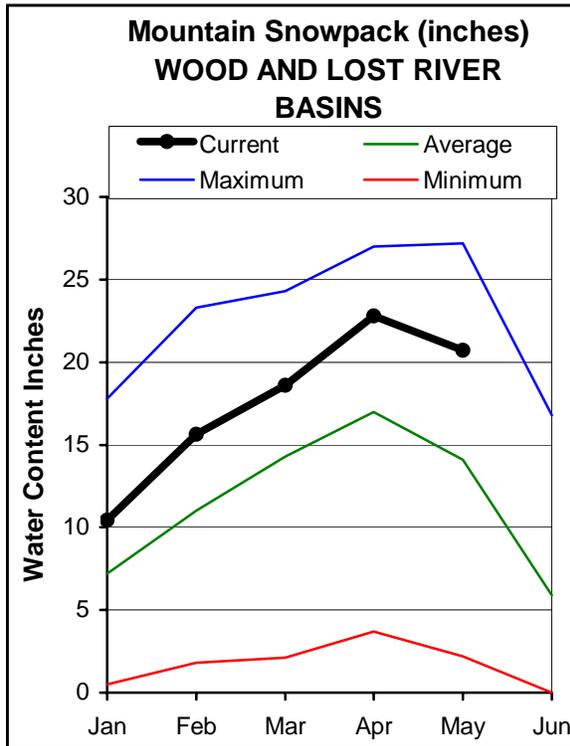
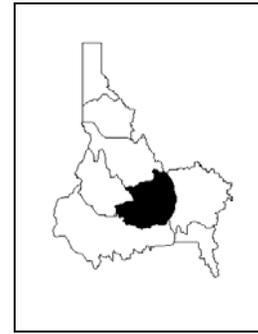
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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

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

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

# WOOD and LOST RIVER BASINS MAY 1, 2006



## WATER SUPPLY OUTLOOK

April precipitation was record breaking at 11 of 19 SNOTEL sites in the central mountain basins. Hyndman SNOTEL, in the Big Wood basin, saw 6.7 inches, 292% of average and the greatest amount in its 25 year record. Many stations received their average April amounts within the first seven days of the month. Overall precipitation in the central mountains was 201% of average for April and stands at 137% of average for the year to date. This was the second month in a row that the central mountains recorded the highest precipitation amounts in the state. Snowpacks range from near average for the Little Lost and Birch basins to 173% in the Little Wood basin. Swede Peak SNOTEL in the Little Wood basin has 22.1 inches of snow water, fourth highest May 1 measurement since records started in 1958, only 1965, 1967 and 1983 were higher. Fishpole Lake snow course in the Big Lost basin has 42.0 inches of snow water, less than an inch from the May 1, 1997 record for the last 45 years since records started. The Big Lost basin snowpack is 146% of average and 128% in Beaver and Camas basins. Melt from the 148% of average snowpack in the Big Wood combined with even greater snowpacks in the Little Wood basin has Blaine and Gooding Counties bracing for the possibility of more flooding this spring. NRCS streamflow trend models estimate that the Big Wood River at Hailey, which is forecast at 158% of average, will peak at 3,500 cfs based on average melt rates and could be much higher if warmer than average temperatures occur. Downstream melt from the Camas Prairie topped off Magic Reservoir in April when inflow exceeded the outlet capacity of power generators. The reservoir filled quickly and is basically full until flash boards are installed for the final fill after the peak snowmelt occurs. Water is spilling over the spillway and will continue as inflows are forecast at 163% of average. Below Magic Reservoir, dikes have been shored up to prevent the Big Wood River from spilling into the Little Wood drainage which has led to flooding in Shoshone and Gooding in the past. Little Wood Reservoir is 64% full and has also been releasing water with its inflow forecast at 161% of average. Mackay Reservoir managers dropped storage from 76% of capacity to 52% in the last month. The current storage of 23,100 acre-feet is 67% of average leaving some room for runoff from the Big Lost River which is forecast at 151% of average, 195,000 acre-feet with the peak not expected until mid to late June. The Little Lost River is forecast for near average. Water supplies will be abundant this year and remain challenging to manage as the high snow levels melt in the next two months.

WOOD AND LOST RIVER BASINS  
Streamflow Forecasts - May 1, 2006

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
BIG WOOD at Hailey (1)	MAY-JUL	274	329	355	158	382	447	225
	MAY-SEP	310	371	400	154	431	502	260
BIG WOOD ab Magic Reservoir	MAY-JUL	187	237	275	167	317	387	165
	MAY-SEP	235	275	300	168	325	365	179
CAMAS CREEK near Blaine	MAY-JUL	36	50	60	140	71	90	43
	MAY-SEP	37	51	61	139	72	91	44
BIG WOOD below Magic Dam (2)	MAY-JUL	260	305	335	163	365	410	205
	MAY-SEP	285	330	360	164	390	435	220
LITTLE WOOD R ab High Five Ck	MAY-JUL	75	86	94	162	102	116	58
	MAY-SEP	83	96	105	162	115	129	65
LITTLE WOOD near Carey (2)	MAY-JUL	82	93	100	161	107	118	62
	MAY-SEP	93	105	113	161	121	133	70
BIG LOST at Howell Ranch	MAY-JUL	220	240	250	154	260	280	162
	MAY-SEP	250	270	285	153	300	320	186
BIG LOST bl Mackay Reservoir	MAY-JUL	172	186	195	151	204	219	129
	MAY-SEP	205	220	230	145	240	255	159
LITTLE LOST bl Wet Creek	MAY-JUL	22	25	28	104	31	34	27
	MAY-SEP	28	33	36	103	39	44	35

WOOD AND LOST RIVER BASINS Reservoir Storage (1000 AF) - End of April					WOOD AND LOST RIVER BASINS Watershed Snowpack Analysis - May 1, 2006			
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	182.2	55.1	150.4	Big Wood ab Hailey	7	238	148
LITTLE WOOD	30.0	19.3	28.7	24.3	Camas Creek	3	792	126
MACKAY	44.4	23.1	27.3	34.6	Big Wood Basin Total	10	253	146
					Fish Creek	0	0	0
					Little Wood River	5	207	173
					Big Lost River	5	201	154
					Little Lost River	3	167	107
					Birch-Medicine Lodge Cree	2	133	96
					Camas-Beaver Creeks	2	99	128

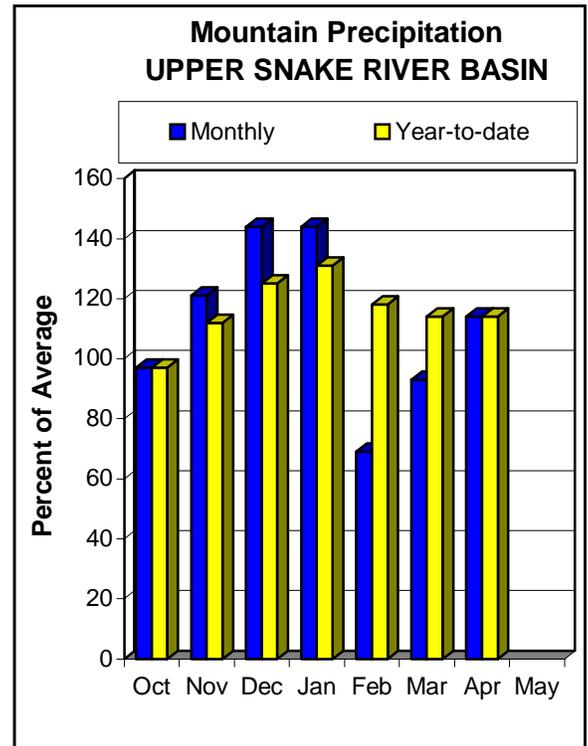
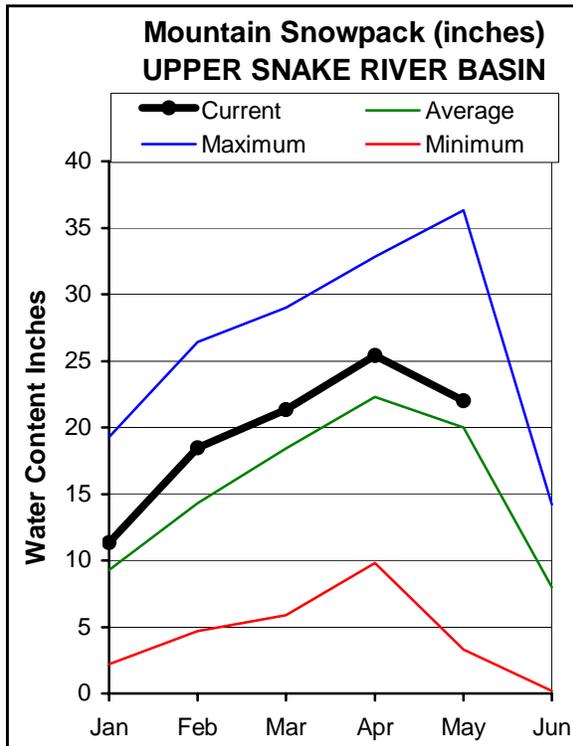
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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

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

# UPPER SNAKE BASINS

## MAY 1, 2006



## WATER SUPPLY OUTLOOK

April precipitation in the Upper Snake ranged from 63% to 204%, lower amounts were in Wyoming in the headwaters of the Gros Ventre, Greys and Hoback basins. Greatest precipitation amounts were at Wildhorse Divide near Pocatello and in northeast Idaho near Island Park. Overall April precipitation and year-to-date amounts totaled 114% of average. Below average precipitation and melting has caused snowpacks in the Gros Ventre, Hoback and Salt basins to dip slightly below average. Snowpacks in the Henrys Fork above Rexburg, including the Teton and Falls River basins are 114% of average, slightly higher than the Snake above Jackson Lake at 109%. Snow at upper elevation sites is just beginning to melt and will be enough to fill Jackson Lake and Palisades Reservoir which have a combined storage of 52% of capacity, 88% of average. Jackson Lake has not filled for five years. Combined storage in all eight Upper Snake reservoirs is 71% full, 96% of average. Henrys Lake, Island Park, Ririe, and American Falls reservoirs are all either full or close to it. Blackfoot Reservoir is almost half full at 66% of average. Streamflow forecasts range from 95-115% of average except for Blackfoot River forecast at 97%. The Snake River near Heise is forecast at 105% of average for the May-July period. The surface water supply index which combines reservoir storage and projected streamflows, indicates surface water supplies should be adequate and similar to the 1993 and 1995 seasons.

UPPER SNAKE RIVER BASIN  
Streamflow Forecasts - May 1, 2006

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
HENRYS FORK near Ashton (2)	MAY-JUL	415	460	490	109	520	565	450
	MAY-SEP	610	665	700	109	735	790	645
HENRYS FORK near Rexburg (2)	MAY-JUL	1310	1410	1480	111	1550	1650	1330
	MAY-SEP	1780	1900	1980	111	2060	2180	1780
FALLS RIVER nr Ashton (2)	MAY-JUL	295	330	350	105	370	405	335
	MAY-SEP	355	395	420	104	445	485	405
TETON RIVER NEAR DRIGGS	MAY-JUL	133	148	158	111	168	183	143
	MAY-SEP	174	193	205	109	215	235	188
TETON near St. Anthony	MAY-JUL	350	380	400	113	420	450	355
	MAY-SEP	430	465	490	113	515	550	435
SNAKE at Flagg Ranch	MAY-JUL	440	465	485	114	505	530	425
	MAY-SEP	490	520	540	114	560	590	475
SNAKE nr Moran (1,2)	MAY-JUL	680	760	795	106	830	910	750
	MAY-SEP	765	850	890	106	925	1015	840
PACIFIC CREEK at Moran	MAY-JUL	138	154	165	103	175	190	160
	MAY-SEP	144	161	172	103	182	202	167
SNAKE ab resv nr Alpine (1,2)	MAY-JUL	2020	2200	2280	106	2360	2540	2160
	MAY-SEP	2370	2580	2680	106	2780	2990	2530
GREYS above Palisades	MAY-JUL	285	305	320	107	335	355	300
	MAY-SEP	335	360	375	106	390	415	355
SALT near Etna	MAY-JUL	215	245	270	96	295	325	280
	MAY-SEP	285	325	350	97	375	415	360
SNAKE nr Irwin (1,2)	MAY-JUL	2760	3030	3160	106	3290	3560	2980
	MAY-SEP	3270	3590	3730	106	3870	4190	3520
SNAKE near Heise (2)	MAY-JUL	2990	3190	3330	105	3470	3670	3170
	MAY-SEP	3560	3790	3950	105	4110	4340	3760
WILLOW CREEK nr Ririe (2)	MAY-JUL	48	57	63	105	70	80	60
BLACKFOOT RESV INFLOW	MAY-JUN	32	47	58	67	69	84	86
SNAKE nr Blackfoot (1,2)	MAY-JUL	4060	4520	4720	114	4920	5380	4130
	MAY-SEP	5210	5670	5870	114	6070	6530	5140
PORTNEUF at Topaz	MAY-JUL	54	61	66	102	71	78	65
	MAY-SEP	75	80	84	100	88	93	84
AMERICAN FALLS RESV INFLOW (1,2)	MAY-JUL	2090	2740	3040	115	3340	3990	2640
	MAY-SEP	2390	3040	3340	115	3640	4290	2910

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

UPPER SNAKE RIVER BASIN  
Watershed Snowpack Analysis - May 1, 2006

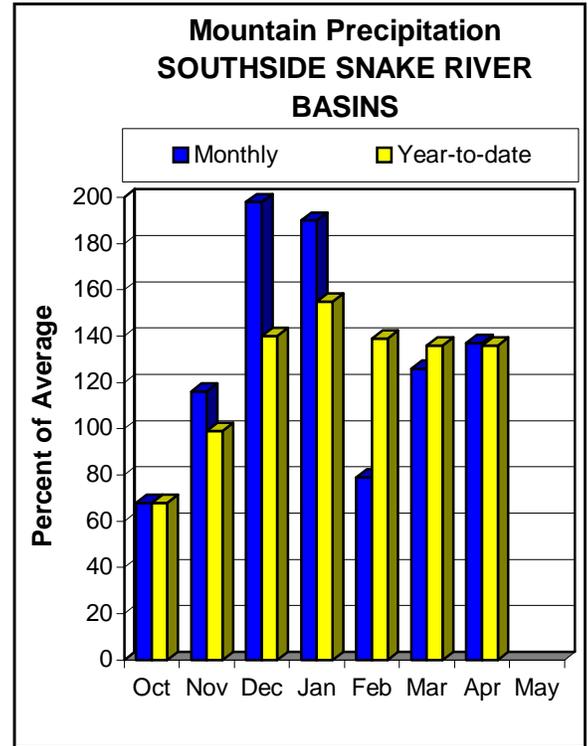
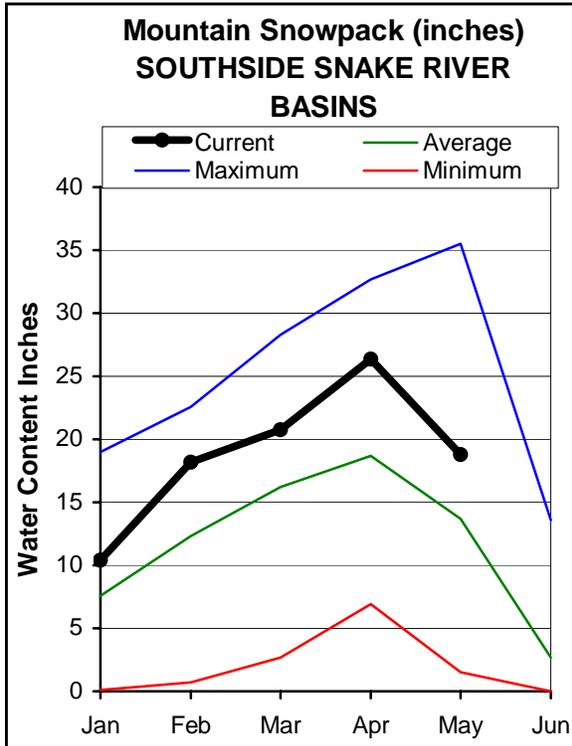
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
HENRYS LAKE	90.4	87.1	72.7	87.4	Henrys Fork-Falls River	9	173	123
ISLAND PARK	135.2	116.6	112.7	123.2	Teton River	8	166	104
GRASSY LAKE	15.2	9.4	9.4	12.7	Henrys Fork above Rexburg	17	170	115
JACKSON LAKE	847.0	482.1	201.0	471.1	Snake above Jackson Lake	5	185	112
PALISADES	1400.0	691.2	849.1	862.6	Gros Ventre River	2	127	89
RIRIE	80.5	78.8	46.9	56.2	Hoback River	5	132	83
BLACKFOOT	348.7	168.5	71.0	256.3	Greys River	5	142	107
AMERICAN FALLS	1672.6	1606.9	1472.0	1493.8	Salt River	5	131	93
					Snake above Palisades	21	151	100
					Willow Creek	7	240	128
					Blackfoot River	3	317	70
					Portneuf River	6	176	164
					Snake abv American Falls	39	160	111

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

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

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

# SOUTHSIDE SNAKE RIVER BASINS MAY 1, 2006



## WATER SUPPLY OUTLOOK

The National Weather Service forecast for a cool, wet start to April was exactly what happened. Overall April precipitation was 137% of average for the Southside Snake basins. Cool temperatures allowed precipitation to add snow in all basins. Snowpacks peaked during the second week of April and began melting. The Oakley Basin had its best winter since 1997 with snowpacks at 157% of average on May 1. Howell Canyon SNOTEL site recorded its highest snowpack since it started in 1949 reaching 49.1 inches of water content on April 12, 194% of the 25.3 inch average peak. Streamflow from Goose and Trapper creeks which provide most of the Oakley Reservoir inflow is forecast for 171% of average, 36,000 acre-feet, for May-July. Oakley reservoir contains 55,100 acre-feet with a capacity of 75,600. Oakley could fill based on the 10% Chance of Exceedance Forecast. However, releases can be made to infiltration trenches that are just waiting to absorb the water. High water problems are more likely from the unmanaged tributaries east of Oakley and around Pomerelle Ski Area where snow drifts on top are estimated at 60-80 feet deep. Snow is 130% of average in the Salmon Falls basin, second best since 1984. Streamflow forecast is for 170% of average for May-July, 97,000 acre-feet. The reservoir has risen to 93,900 out of 182,600 acre-feet but is unlikely to fill unless May and June have enough precipitation to reduce irrigation demand and the 10% Chance Exceedance forecast occurs. Snowmelt and rain sent the Bruneau River near Hot Spring to the NWS flood stage, about 3,200 cfs on April 6th. The May 1 snowpack in the Bruneau basin remains 131% of average and the streamflow forecast is for 148% of average. There is enough snow for one more snowmelt peak later this month and the above average snow will provide a long floating season on the Bruneau River. The Owyhee basin snowpack is melting and is currently 99% of average, down from 139% of average on April 1. The Owyhee River at Rome peaked at 26,300 cfs in early April, less than half the maximum discharge of 55,700 cfs on March 18, 1993. Flow at the Rome gage will probably remain above 2000 cfs into early June. Even so, managers had a rare opportunity to release water through the glory hole for much of the month in order to create room for spring melt. Owyhee River near Gold Creek is forecast at 155% of average and reservoir inflow is at 113%. The reservoir is 97% full.

SOUTHSIDE SNAKE RIVER BASINS  
Streamflow Forecasts - May 1, 2006

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
OAKLEY RESERVOIR INFLOW	MAY-JUL	27	32	36	171	40	46	21
	MAY-SEP	32	37	41	171	45	51	24
OAKLEY RESV STORAGE	MAY-31	63	66	68	151	70	74	45
	JUN-30	62	66	69	172	72	78	40
	JUL-31	54	59	62	202	66	72	31
SALMON FALLS CREEK nr San Jacinto	MAY-JUL	81	91	97	170	103	113	57
	MAY-SEP	90	100	106	171	112	122	62
SALMON FALLS RESV STORAGE	MAY-31	126	131	134	133	138	143	101
	JUN-30	129	139	144	152	149	159	95
	JUL-31	107	117	123	174	129	139	71
BRUNEAU near Hot Spring	MAY-JUL	177	214	240	148	268	312	162
	MAY-SEP	189	227	255	147	284	330	173
OWYHEE near Gold Creek (2)	MAY-JUL	8.4	14.0	18.6	155	24	33	12.0
	MAY-SEP	7.2	12.4	16.6	155	22	30	10.7
OWYHEE nr Owyhee (2)	MAY-JUL	45	61	71	142	81	97	50
OWYHEE near Rome	MAY-JUL	150	207	250	119	298	375	210
	MAY-SEP	171	230	275	120	324	403	230
OWYHEE RESV INFLOW (2)	MAY-JUL	158	213	255	113	301	376	225
	MAY-SEP	180	237	280	110	327	402	255
SUCCOR CK nr Jordan Valley	MAY-JUL	4.1	6.7	8.5	120	10.3	12.9	7.1
SNAKE RIVER at King Hill (1,2)	MAY-JUL	1026	1634	1910	94	2185	2795	2040
SNAKE RIVER near Murphy (1,2)	MAY-JUL	1275	1918	2210	103	2500	3145	2150
Reynolds Creek nr Tollgate	MAY-JUL	4.5	5.8	6.8	119	7.9	9.7	5.7
SNAKE RIVER at Weiser (1,2)	MAY-JUL	3203	4281	4770	120	5260	6340	3980
SNAKE RIVER at Hells Canyon Dam (1,2)	MAY-JUL	3680	4877	5420	120	5965	7160	4520
SNAKE blw Lower Granite Dam (1,2)	MAY-JUL	16510	18772	19800	119	20830	23090	16700
	MAY-SEP	18995	21612	22800	118	23990	26600	19300

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

SOUTHSIDE SNAKE RIVER BASINS  
Watershed Snowpack Analysis - May 1, 2006

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
OAKLEY	75.6	55.1	24.6	41.0	Raft River	1	185	183
SALMON FALLS	182.6	93.9	39.4	87.9	Goose-Trapper Creeks	4	159	157
WILDHORSE RESERVOIR	71.5	78.1	31.5	55.8	Salmon Falls Creek	7	128	130
OWYHEE	715.0	690.9	340.2	613.6	Bruneau River	5	131	131
BROWNLEE	1420.0	839.4	1391.4	1069.2	Reynolds Creek	6	207	126
					Owyhee Basin Total	7	113	99

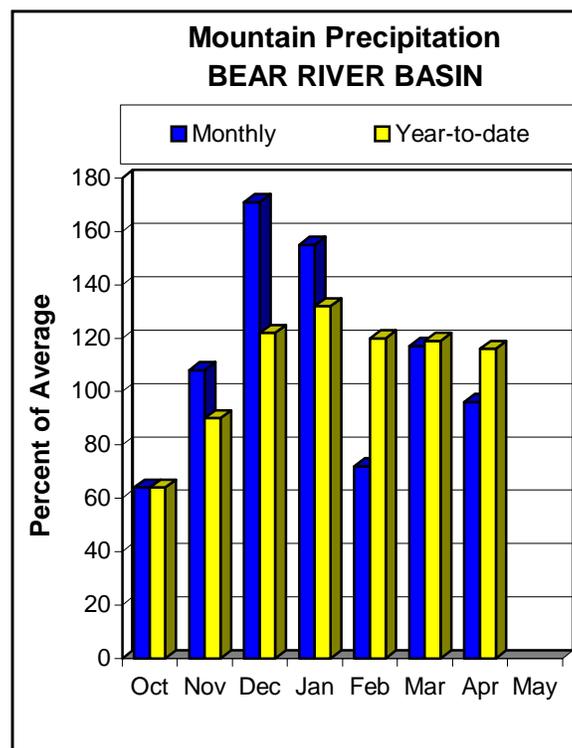
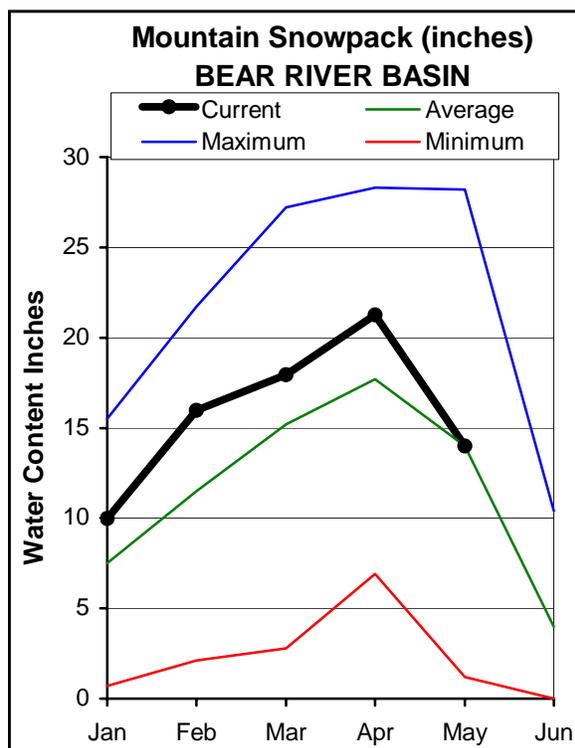
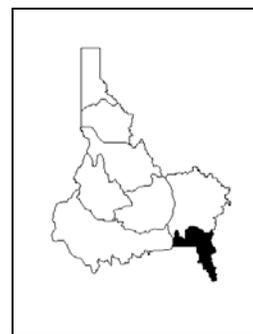
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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

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

# BEAR RIVER BASIN

## MAY 1, 2006



## WATER SUPPLY OUTLOOK

Mountain precipitation in the Bear River basin was 96% of the monthly average for April and continues to be above average for the water year at 116% of average. Most sites saw snowpacks peak during the first two weeks of the month. For example Emigrant Summit SNOTEL peaked on April 12 with 39.4 inches of water content and a half inch has melted on average per day since then. As of May 1 snowpacks for the entire basin are 100% of average. The melt is nearing completion in the Malad basin where the Oxford Spring SNOTEL site is snow-free. The Cub River has the best snowpack at 148% of average while the Mink, Smith, Thomas and upper and lower Bear basins are 103-108%. Since the beginning of October Bear Lake storage has gained 163,400 acre-feet. Current storage in Bear Lake is 511,000 acre-feet or 36% of capacity and 53% of average. Streamflow forecasts in the basin range from 95-125% of average. The Bear River at Stewart Dam is forecast at 107% of average. Surface water supplies will be adequate this year and any additional runoff will continue to increase Bear Lake reservoir storage.

BEAR RIVER BASIN  
Streamflow Forecasts - May 1, 2006

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Bear River nr UT-WY State Line	APR-JUL	104	112	118	104	124	132	113
	MAY-JUL	96	104	110	103	116	124	107
	APR-SEP	114	123	130	104	137	146	125
	MAY-SEP	107	116	123	103	130	139	119
Bear River ab Reservoir nr Woodruff	APR-JUL	97	115	128	94	141	159	136
	MAY-JUL	85	102	114	98	126	143	116
	APR-SEP	103	121	134	94	147	165	142
	MAY-SEP	91	108	120	98	132	149	122
Big Creek nr Randolph	APR-JUL	2.3	4.1	5.6	114	7.2	10.0	4.9
	MAY-JUL	2.1	3.4	4.5	105	5.8	7.9	4.3
Smiths Fork nr Border	APR-JUL	105	110	113	110	116	121	103
	APR-SEP	121	127	131	108	135	141	121
	MAY-JUL	93	98	101	106	104	109	95
	MAY-SEP	109	115	119	106	123	129	112
Bear River at Stewart Dam	APR-JUL	193	226	250	107	275	314	234
	APR-SEP	215	253	280	107	309	353	262
	MAY-JUL	151	183	205	110	228	258	186
	MAY-SEP	175	211	235	110	260	295	214
Little Bear River at Paradise	APR-JUL	48	55	60	130	65	73	46
	MAY-JUL	20	27	33	103	39	49	32
Logan R Abv State Dam Nr Logan	APR-JUL	144	153	160	127	167	177	126
	MAY-JUL	109	126	138	128	151	170	108
Blacksmith Fk Abv Up&L Dam Nr Hyrum	APR-JUL	53	59	64	133	69	77	48
	MAY-JUL	28	36	42	105	49	59	40

BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of April					BEAR RIVER BASIN Watershed Snowpack Analysis - May 1, 2006			
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	511.0	246.0	971.0	Smiths & Thomas Forks	4	113	107
MONPELIER CREEK	4.0	3.2	3.5	2.5	Bear River ab WY-ID line	13	105	103
					Montpelier Creek	1	0	0
					Mink Creek	1	126	108
					Cub River	1	132	148
					Bear River ab ID-UT line	19	111	106
					Malad River	1	0	0

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

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

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

**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 these volumes for each reservoir, and defines the storage volumes NRCS uses when reporting capacity and current reservoir storage. In most cases, NRCS reports usable storage, which includes active and inactive storage. (Revised Dec. 2005)

<b><u>Basin/ Reservoir</u></b>	<b><u>Dead Storage</u></b>	<b><u>Inactive Storage</u></b>	<b><u>Active Storage</u></b>	<b><u>Surcharge Storage</u></b>	<b><u>NRCS Capacity</u></b>	<b><u>NRCS Capacity Includes</u></b>
<b><u>Panhandle Region</u></b>						
Hungry Horse	39.73	--	3451.00	--	3451.0	Active
Flathead Lake	Unknown	--	1791.00	--	1791.0	Active
Noxon Rapids	Unknown	--	335.00	--	335.0	Active
Pend Oreille	406.20	112.40	1042.70	--	1561.3	Dead+Inactive+Active
Coeur d'Alene	--	13.50	225.00	--	238.5	Inactive+Active
Priest Lake	20.00	28.00	71.30	--	119.3	Dead+Inactive+Active
<b><u>Clearwater Basin</u></b>						
Dworshak	--	1452.00	2016.00	--	3468.0	Inactive+Active
<b><u>Weiser/Boise/Pavette Basins</u></b>						
Mann Creek	1.61	0.24	11.10	--	11.1	Active
Cascade	--	46.70	646.50	--	693.2	Inactive+Active
Deadwood	--	--	161.90	--	161.9	Active
Anderson Ranch	24.90	37.00	413.10	--	450.1	Inactive+Active
Arrowrock	--	--	272.20	--	272.2	Active
Lucky Peak	--	28.80	264.40	13.80	293.2	Inactive+Active
Lake Lowell	7.90	5.80	159.40	--	165.2	Inactive+Active
<b><u>Wood/Lost Basins</u></b>						
Magic	Unknown	--	191.50	--	191.5	Active
Little Wood	--	--	30.00	--	30.0	Active
Mackay	0.13	--	44.37	--	44.4	Active
<b><u>Upper Snake Basin</u></b>						
Henrys Lake	--	--	90.40	--	90.4	Active
Island Park	0.40	--	127.30	7.90	135.2	Active+Surcharge
Grassy Lake	--	--	15.18	--	15.2	Active
Jackson Lake	Unknown	--	847.00	--	847.0	Active
Palisades	44.10	155.50	1200.00	--	1400.0	Dead+Inactive+Active
Ririe	4.00	6.00	80.54	10.00	80.5	Active
Blackfoot	--	--	348.73	--	348.7	Active
American Falls	--	--	1672.60	--	1672.6	Active
<b><u>Southside Snake Basins</u></b>						
Oakley	0	--	75.60	--	75.6	Active
Salmon Falls	48.00	5.00	182.65	--	182.6	Active+Inactive
Wildhorse	--	--	71.50	--	71.5	Active
Owyhee	406.83	--	715.00	--	715.0	Active
Brownlee	0.45	444.70	975.30	--	1420.0	Inactive+Active
<b><u>Bear River Basin</u></b>						
Bear Lake	5.0 MAF	119.0	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 *							30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000 AF)	(% AVG.)	30% (1000AF)	10% (1000AF)		
SF PAYETTE RIVER at Lowman	APR-JUL	329	414	471	109	528	613	432	
	APR-SEP	369	459	521	107	583	673	488	
BOISE RIVER near Twin Springs (1)	APR-JUL	443	610	685	109	760	927	631	
	APR-SEP	495	670	750	109	830	1005	690	

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

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OFFICIAL BUSINESS



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