

# Wyoming Basin Outlook Report February 1, 2004



# 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 either above or below, the predicted 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 their operational decisions. 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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# Wyoming Water Supply Outlook Report

## General

Generally, snow water equivalent (SWE) across the state is below normal for this time of the year. SWE average for the State is about 91 percent of normal for this time of the year. SWE in the Northwest portion of the State is 95 of percent normal. SWE in Northeast Wyoming is 81 of percent of normal, and in the southeast part of the State is 85 percent of average. SWE in Southwestern Wyoming is 92 percent of average for this time of the year.

Precipitation for January varied from 24 percent below to 60 percent below average for the State. Year-to-date precipitation is also well below average for the year. Reservoir levels vary from well above average to well below average. Reservoirs in the North Platte River basin are generally well below average. Reservoirs in the northeast have near average storage. Forecast runoff varies from 27 to 107 percent of average.

## Snowpack

Snow water equivalent (SWE), across the State, is just below average for this time of year. SWE in the northwestern portion of the State is now at 95 percent of average (118 percent of last year). Northeast Wyoming SWE is currently about 81 percent of average (109 percent of last year). The southeast portion is currently about 85 percent of average SWE (121 percent of last year). And the southwest snowpack is about 92 percent of average (131 percent of last year).

## Precipitation

January precipitation was well below normal across the entire State. The Lower North Platte was the lowest in percentage at 40 percent of average. The following table displays the major river basins and their departure from normal for this month.

Basin	Departure from normal	Basin	Departure from normal
Snake River	-26%	Upper North Platte River	-49%
Yellowstone & Madison	-24%	Lower North Platte	-60%
Wind River	-40%	Little Snake River	-42%
Big Horn	-55%	Upper Green River	-27%
Shoshone & Clarks Fork	-24%	Lower Green River	-41%
Powder & Tongue River	-49%	Upper Bear River	-36%
Belle Fourche & Cheyenne	-30%		

## Streams

Stream flow yield is expected to be below average across the State. Most probable yield for the State is forecast to be about 83 percent of average (varies from 27 to 107 percent of average). The northwest part of the State is expected to yield about 89 percent of normal -- yield estimates vary from 27 to 107 percent of normal. Yield from the northeast portion of Wyoming will be below average (about 88 percent of average) -- yield estimates vary from 70 to 105 percent of average for the various forecast points. The southeast portion of the state will be about 75 percent of normal -- yield estimates range from 27 to 106 percent of normal. The southwest portion of Wyoming varies from 46 to 99 percent of average -- mean estimated yield for the forecast points in southwest Wyoming is about 83 percent of average.

## Reservoirs

**Only one reservoir did** not report (Eden Reservoir), and Eden Reservoir is below the staff gage. Reservoir storage, for those reporting, is generally below average for this time of the year. See following table for further information about reservoir storage.

## Major Reservoirs in Wyoming

BASIN AREA RESERVOIR	CURRENT AS % CAPACITY	LAST YR AS % CAPACITY	AVERAGE AS % CAPACITY	CURRENT AS % AVERAGE	CURRENT AS % LAST YR
-----					
WYOMING AND SURROUNDING STATES					
SHADEHILL	38	39	62	60	97
ANGOSTURA	64	61	79	81	104
DEERFIELD	99	95	81	122	104
PACTOLA	86	83	83	103	103
BELLE FOURCHE	47	48	51	93	98
JACKSON LAKE	17	29	57	30	58
GRASSY LAKE	63	81	76	82	77
FONTENELLE	58	62	61	95	93
BIG SANDY	10	9	48	21	115
EDEN			NO REPORT		
PILOT BUTTE	76	77	64	118	98
BULL LAKE	37	29	57	66	131
BOYSEN	55	37	88	63	151
BUFFALO BILL	64	50	65	99	130
KEYHOLE	57	60	52	108	95
SEMINOE	25	20	62	41	127
PATHFINDER	28	30	63	44	93
ALCOVA	85	85	84	101	100
GLENDO	36	29	56	65	124
GUERNSEY	29	21	16	186	143
WHEATLAND #2	20	12	43	46	161
PALISADES	28	32	74	38	90
HEBGEN LAKE	76	79	71	107	96
ENNIS LAKE	71	70	77	93	101
BIGHORN LAKE	56	47	67	83	119
TONGUE RIVER	58	40	28	204	145
FLAMING GORGE	69	70	81	86	99
WOODRUFF NARROWS	10	12	41	25	86

# Basin Summary of Snow Course Data

LOST - Data current as of:02/04/04 18:00:08

## BASIN SUMMARY OF SNOW COURSE DATA

FEBRUARY 2004

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
-----						
WYOMING Snow Course and SNOTEL Stations						
ALBANY	9400	1/26/04	29	6.3	5.8	9.5
ASTER CREEK	7750	1/29/04	71	21.5	14.6	19.6
BALD MOUNTAIN SNOTEL	9380	2/01/04	40	9.8	10.7	13.5
BASE CAMP SNOTEL	7030	2/01/04	---	15.4	12.5	12.7
BATTLE MTN. SNOTEL	7440	2/01/04	---	10.4	7.9	7.8
BEARLODGE DIVIDE	4680	1/27/04	10	1.9	.6	1.8
BEARTOOTH LK. SNOTEL	9280	2/01/04	62	14.3	16.2	16.2
BEAR TRAP SNOTEL	8200	2/01/04	21	3.9	2.4	3.5
BIG GOOSE	7760	1/30/04	14	2.0	2.7	4.0
BIG GOOSE SNOTEL	7760	2/01/04	21	4.7	5.0	6.0
BIG PARK	8620	1/27/04	40	10.3	6.9	12.3
BIG SANDY SNOTEL	9080	2/01/04	39	9.1	6.1	9.5
BLACKWATER SNOTEL	9780	2/01/04	---	15.6	13.5	16.6
BLIND BULL SNOTEL	8900	2/01/04	60	16.0	12.5	18.4
BLIND PARK SNOTEL	6870	2/01/04	22	3.6	4.5	5.2
BLUE RIDGE	9620	1/28/04	29	7.5	3.5	7.7
BONE SPGS. SNOTEL	9350	2/01/04	39	8.7	8.6	10.6
BROOKLYN LK. SNOTEL	10220	2/01/04	---	10.3	8.8	15.3
BUCK CREEK	7960	1/30/04	19	4.5	4.1	6.3
BURGESS JCT. SNOTEL	7880	2/01/04	---	5.9	5.9	7.4
BURROUGHS CRK SNOTEL	8750	2/01/04	36	8.3	10.7	10.1
CANYON SNOTEL	8090	2/01/04	43	9.1	8.4	8.9
CARTER MOUNTAIN	7950	1/30/04	12	1.9	1.4	3.0
CASPER MTN. SNOTEL	7850	2/01/04	---	5.8	4.6	9.0
CASTLE CREEK	8400	1/26/04	14	2.6	2.3	3.3
CCC CAMP	7000	1/28/04	35	8.1	6.3	8.4
CHALK CK #1 SNOTEL	9100	2/01/04	48	11.8	9.5	15.3
CHALK CK #2 SNOTEL	8200	2/01/04	35	7.7	6.8	9.9
CINNABAR PARK SNOTEL	9690	2/01/04	---	11.2	--	9.5
CLOUD PEAK SNOTEL	9850	2/01/04	32	8.0	7.6	8.1
COLE CANYON SNOTEL	5910	2/01/04	15	2.9	2.5	4.0
COLD SPRINGS SNOTEL	9630	2/01/04	15	3.9	4.3	6.0
COTTONWOOD CR SNOTEL	7700	2/01/04	---	14.1	12.9	14.2
CROW CREEK SNOTEL	8830	2/01/04	---	4.4	--	5.1
DARBY CANYON	8250	1/31/04	59	18.5	13.8	15.9
DEER PARK SNOTEL	9700	2/01/04	39	10.9	5.5	11.7
DITCH CREEK	6870	1/28/04	14	2.6	1.5	2.8
DIVIDE PEAK SNOTEL	8860	2/01/04	---	12.1	8.3	13.0
DOMELAKE SNOTEL	8880	2/01/04	23	6.7	6.4	7.9
DU NOIR	8760	1/27/04	20	2.3	3.5	5.8
EAST RIM DIV SNOTEL	7930	2/01/04	---	7.5	6.0	8.5
ELBO RANCH	7100	2/01/04	33	7.9	6.8	8.0
ELKHART PARK SNOTEL	9400	2/01/04	---	8.1	7.7	8.8

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
EVENING STAR SNOTEL	9200	2/01/04	62	15.9	17.5	19.7
FOUR MILE MEADOWS	7860	1/28/04	34	7.0	6.6	8.7
FOXPARK	9060	1/26/04	20	4.1	4.0	4.9
GEYSER CREEK	8500	1/27/04	15	3.5	2.6	4.8
GLADE CREEK	7040	1/29/04	68	19.0	12.5	16.1
GRANITE CRK SNOTEL	6770	2/01/04	---	12.8	9.7	12.4
GRANNIER MEADOWS	8860	1/28/04	34	8.9	6.1	9.1
GRASSY LAKE SNOTEL	7270	2/01/04	94	27.6	20.4	23.0
GRAVE SPRINGS SNOTEL	8550	2/01/04	25	6.1	2.2	5.7
GREYS BOUNDARY	5720	1/28/04	36	9.6	7.1	8.3
GROS VENTRE SNOTEL	8750	2/01/04	34	8.0	6.8	9.5
GROVER PARK DIVIDE	7000	1/28/04	30	6.8	5.9	7.5
HAIRPIN TURN	9480	1/26/04	30	7.0	5.0	11.1
HANSEN S.M. SNOTEL	8360	2/01/04	19	4.2	4.6	4.2
HAMS FORK SNOTEL	7840	2/01/04	---	7.4	6.2	8.4
HASKINS CREEK	8980	1/29/04	71	22.9	17.0	19.6
HOBBS PARK SNOTEL	10100	2/01/04	---	7.4	6.1	9.8
HUCKLEBERRY DIVIDE	7300	1/29/04	61	16.3	12.3	14.2
INDIAN CREEK SNOTEL	9430	2/01/04	---	14.9	11.5	17.6
JACKPINE CREEK	7350	1/31/04	62	17.6	12.3	14.7
KELLEY R.S. SNOTEL	8180	2/01/04	---	9.7	7.0	10.7
KENDALL R.S. SNOTEL	7740	2/01/04	---	9.7	7.4	9.8
KIRWIN SNOTEL	9550	2/01/04	21	4.2	5.8	7.7
LAKE CAMP	7780	2/02/04	33	7.6	5.4	6.5
LA PRELE SNOTEL	8380	2/01/04	---	5.3	3.5	7.3
LARSEN CREEK	9020	1/22/04	32	8.5	3.4	8.4
LEWIS LAKE SNOTEL	7850	2/01/04	---	25.1	21.1	23.1
LIBBY LODGE	8750	1/26/04	23	4.8	3.6	7.8
LITTLE BEAR RUN	6240	1/28/04	15	2.9	2.0	2.6
LITTLE WARM SNOTEL	9370	2/01/04	27	5.5	5.8	7.8
LOOMIS PARK SNOTEL	8240	2/01/04	---	11.1	10.3	11.2
LUPINE CREEK	7380	1/29/04	26	5.9	4.6	6.4
MALLO	6420	1/29/04	24	4.6	3.1	5.2
MARQUETTE SNOTEL	8760	2/01/04	21	4.4	4.9	5.9
MEDICINE LODGE LAKES	9340	1/30/04	30	9.7	5.6	7.5
MIDDLE FORK	7420	1/28/04	16	4.1	3.2	3.8
MIDDLE POWDER SNOTEL	7760	2/01/04	---	6.5	3.0	7.2
MORAN	6750	1/28/04	39	9.2	6.7	9.3
MOSS LAKE	9800	1/30/04	40	10.8	8.2	15.3
NEW FORK SNOTEL	8340	2/01/04	---	7.0	6.1	7.7
NORRIS BASIN	7500	1/31/04	32	7.2	5.3	7.6
NORTH BARRETT CREEK	9400	1/30/04	46	11.3	13.0	12.8
NORTH FRENCH SNOTEL	10130	2/01/04	---	14.7	15.8	18.4
NORTH RAPID CK SNTL	6130	2/01/04	16	3.5	4.6	5.0
NORTH TONGUE	8450	1/30/04	27	6.4	5.6	8.4
OLD BATTLE SNOTEL	9920	2/01/04	---	20.8	13.5	20.0
OLD FAITHFUL	7400	2/01/04	42	11.60	6.9	9.5
ONION GULCH	8780	1/31/04	20	3.8	2.3	5.2
OWL CREEK SNOTEL	8980	2/01/04	14	2.2	4.1	3.4
PARKERS PEAK SNOTEL	9400	2/01/04	48	13.2	13.5	14.8

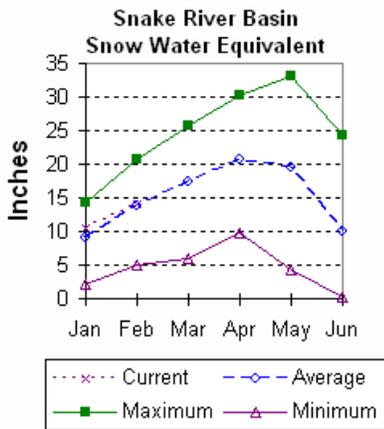
SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
PHILLIPS BENCH SNTL	8200	2/01/04	63	18.2	14.2	18.5
POCKET CREEK	9350	1/23/04	30	7.2	5.6	8.6
POLE MOUNTAIN	8700	1/28/04	24	5.1	4.3	6.1
POWDER RVR.PASS SNTL	9480	2/01/04	29	6.7	5.4	7.2
PURGATORY GULCH	8970	1/29/04	30	9.0	3.4	7.1
RANGER CREEK	8120	1/30/04	25	5.9	4.8	6.2
RENO HILL SNOTEL	8500	2/01/04	---	6.9	5.0	8.4
REUTER CANYON	6280	1/27/04	17	4.3	2.7	6.5
ROWDY CREEK	8300	1/23/04	39	12.8	9.2	14.6
RYAN PARK	8400	1/30/04	27	6.8	5.5	7.4
SAGE CK BASIN SNTL	7850	2/01/04	---	9.2	6.1	7.5
SALT RIVER SNOTEL	7600	2/01/04	---	9.0	6.6	9.2
SAND LAKE SNOTEL	10050	2/01/04	---	14.1	10.9	19.9
SANDSTONE RS SNOTEL	8150	2/01/04	---	8.0	6.1	9.7
SAWMILL DIVIDE	9260	1/30/04	26	6.4	6.5	8.8
SHELL CREEK SNOTEL	9580	2/01/04	38	9.0	8.5	9.9
SHERIDAN R.S.	7750	1/27/04	18	3.7	3.4	4.1
SNAKE RIVER STATION	6920	1/29/04	61	16.2	11.8	14.1
SNAKE RV STA SNOTEL	6920	2/01/04	---	14.5	11.7	12.6
SNIDER BASIN SNOTEL	8060	2/01/04	40	9.0	6.1	9.8
SOLDIER PARK	8780	1/31/04	15	2.2	2.2	3.5
SOUR DOUGH	8460	1/31/04	18	3.2	2.6	4.2
SOUTH BRUSH SNOTEL	8440	2/01/04	---	6.0	7.9	7.4
SOUTH PASS SNOTEL	9040	2/01/04	43	11.2	5.7	11.4
SPRING CRK. SNOTEL	9000	2/01/04	62	15.0	13.7	17.4
ST LAWRENCE ALT SNTL	8620	2/01/04	---	2.9	3.0	4.8
SUCKER CREEK SNOTEL	8880	2/01/04	27	6.2	6.3	7.2
SYLVAN LAKE SNOTEL	8420	2/01/04	50	12.2	13.3	15.2
SYLVAN ROAD SNOTEL	7120	2/01/04	40	8.8	9.3	8.8
T CROSS RANCH	7900	1/26/04	19	4.0	4.0	5.3
TETON PASS W.S.	7740	2/02/04	57	18.0	16.0	18.5
THUMB DIVIDE SNOTEL	7980	2/01/04	---	14.1	9.3	11.8
TIE CREEK SNOTEL	6870	2/01/04	14	3.4	3.5	4.0
TIMBER CREEK SNOTEL	7950	2/01/04	12	2.1	2.5	3.6
TOGWOTEE PASS SNOTEL	9580	2/01/04	59	14.4	13.5	16.9
TOWNSEND CRK SNOTEL	8700	2/01/04	23	5.3	3.9	5.6
TRIPLE PEAK SNOTEL	8500	2/01/04	---	14.3	12.6	16.6
TURPIN MEADOWS	6900	1/28/04	33	6.9	6.4	7.6
TWO OCEAN SNOTEL	9240	2/01/04	---	20.0	18.2	19.0
TYRELL RANGER STA.	8300	1/31/04	20	4.2	2.1	5.2
UPPER SPEARFISH	6500	1/30/04	19	3.8	2.8	4.7
WEBBER SPRING SNOTEL	9250	2/01/04	---	16.0	9.8	16.1
WHISKEY PARK SNOTEL	8950	2/01/04	---	16.0	14.2	18.5
WILLOW CREEK SNOTEL	8450	2/01/04	---	19.9	16.6	20.2
WINDY PEAK SNOTEL	7900	2/01/04	---	3.3	3.8	4.5
WOLVERINE SNOTEL	7650	2/01/04	31	7.0	7.9	8.6
WOOD ROCK G.S.	8440	1/30/04	22	3.9	4.6	6.5
YOUNTS PEAK SNOTEL	8350	2/01/04	34	6.9	9.3	12.0

(d) denotes discontinued site.

# Snake River Basin (1)

## Snow

The Snake River basin snow water equivalent (SWE) is near normal. Snake above Jackson Lake is 113 percent (132% of last year at this time). Pacific Creek SWE is 109 percent of average (119% of last year at this time). Gros Ventre River SWE is 88 percent of average (112% of last year at this time). SWE in the Hoback River drainage is 92 percent of average (122% of last year at this time), SWE in the Greys River drainage is 92 percent of average (120% of last year at this time). In the Salt River area, SWE is 97 percent of average (120% of last year at this time). SWE in the Snake River Basin above Palisades is 102 percent of average (124% of last year at this time). See the Basin Summary of Snow Courses at the beginning of this report for a detailed listing of snow course information.



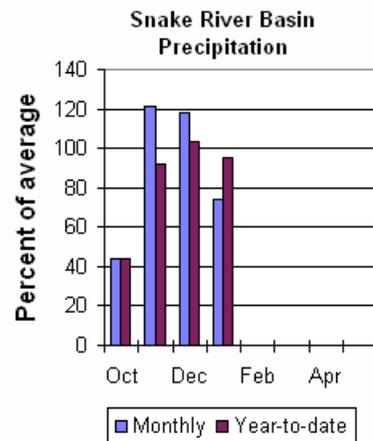
## Precipitation.

Precipitation across the basin was below average last month. Monthly precipitation, for the basin, was 74 percent of average (79 percent of last year). Last months percentages range from 40 to 94 percent of average. Water-year-to-date precipitation is 95 percent of normal for the Snake River basin (119 percent of last year at this time) Year-to-date percentages range from 79 to 110 percent of average.

## Reservoir.

Currently, usable reservoir storage, compared to average for the three storage reservoirs

in the basin, is below average. Grassy Lake storage is about 82 percent of average (9,700 acre feet compared to 12,500 last year). Jackson Lake storage is 33 percent of average (160,500 acre feet compared to 261,800 acre feet last year). Palisades Reservoir storage is about 44 percent of average (459,700 acre feet compared to 500,900 acre feet last year).



## Streamflow.

The most probable, 50 percent chance, April through September runoff yield forecast is below average for the basin. The Snake near Moran is expected to yield 925,000 acre-feet (102 percent of normal). Yield from the Snake River above Palisades Reservoir is estimated to be 2,680,000 acre-feet (98 percent of normal). The 50 percent chance yield near Heise is expected to be 3,960,000 acre-feet (95 percent of normal). Pacific Creek at Moran is expected to yield about 170,000 acre-feet (96 percent of average). Greys River above Palisades Reservoir is estimated to yield 340,000 acre-feet (86 percent of normal). Salt River near Etna is estimated to have a yield of 350,000 acre-feet (83 percent of normal).

SNAKE RIVER BASIN  
Streamflow Forecasts - February 1, 2004

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
SNAKE near Moran (1,2)	APR-JUL	665	780	835	103	890	1000	815
	APR-SEP	735	865	925	102	985	1115	905
SNAKE above Palisades (2)	APR-JUL	1940	2170	2320	98	2470	2700	2370
	APR-SEP	2240	2500	2680	98	2860	3120	2730
PALISADES RESERVOIR INFLOW (1,2)	APR-JUL	2410	2940	3180	96	3420	3950	3330
	APR-SEP	2830	3430	3700	96	3970	4570	3870
SNAKE near Heise (2)	APR-JUL	2730	3120	3390	95	3660	4050	3560
	APR-SEP	3210	3660	3960	95	4260	4710	4160
PACIFIC CREEK at Moran	APR-JUL	130	150	163	95	176	196	171
	APR-SEP	136	156	170	96	184	204	178
GREYS above Palisades	APR-JUL	215	265	295	87	325	375	340
	APR-SEP	255	305	340	86	375	425	395
SALT near Etna	APR-JUL	190	245	285	84	325	380	340
	APR-SEP	235	305	350	83	395	465	420

SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of January					SNAKE RIVER BASIN Watershed Snowpack Analysis - February 1, 2004			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
GRASSY LAKE	15.2	9.7	12.5	11.8	SNAKE above Jackson Lake	9	132	113
JACKSON LAKE	847.0	160.5	261.8	490.1	PACIFIC CREEK	3	119	109
PALISADES	1400.0	459.7	500.9	1040.3	GROS VENTRE RIVER	3	111	88
					HOBACK RIVER	5	122	92
					GREYS RIVER	5	120	92
					SALT RIVER	5	120	97
					SNAKE above Palisades	28	124	102

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

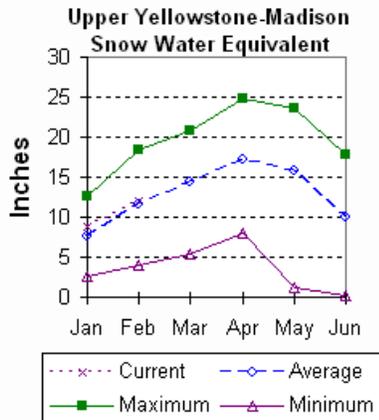
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

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

## Upper Yellowstone and Madison River Basins (2)

### Snow

Snowfall in these basins has been above average this year, but was below average this last month. Snow water equivalent (SWE) is about 114 percent of average (149 percent of last year) in the Madison drainage. SWE in the Yellowstone drainage is about 93 percent of average (111 percent of last year at this time). See the "Snow Course Basin Summary" at the beginning of this document for more details on specific sites.



acre-feet of water (75 percent of capacity) – 107 percent of average. Hebgen Lake is storing about 99 percent and Ennis Lake is storing about 97 percent of last year's volume.

### Streamflow

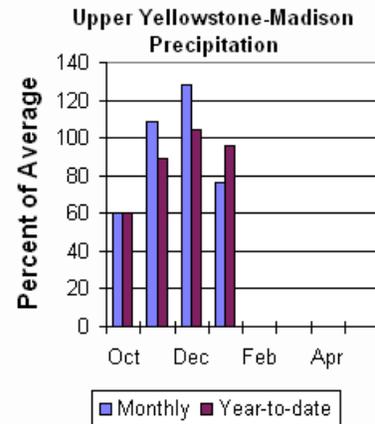
All the following forecasts are the 50 percent chance runoff for the April through September runoff period. Yellowstone at Lake Outlet is expected to yield about 745,000 acre feet (93 percent of normal). Yellowstone at Corwin Springs will yield about 1,940,000 acre-feet (98 percent of normal). Yellowstone near Livingston will yield about 2,250,000 acre feet (99 percent of normal). Hebgen lake inflow is estimated to be 535,000 acre feet (107 percent of normal). See the following page for detailed runoff volumes.

### Precipitation

Last month precipitation in the Madison and Yellowstone drainage was about 76 percent of average (82 percent of previous year) for the 5 reporting stations -- percentage range was from 66 to 170 percent of average. Water-year-to-date precipitation is about 96 percent of average (111 percent of last year's amount). Year to date percentage ranges from 91 to 104 percent

### Reservoir

Usable storage in Ennis Lake is estimated to be 29,600 acre-feet (72 percent of capacity) – 95 percent of average. Hebgen Lake is storing about 284,000



UPPER YELLOWSTONE & MADISON RIVER BASINS  
Streamflow Forecasts - February 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<===== Drier =====>>		===== Wetter =====>>				
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
YELLOWSTONE at Lake Outlet	APR-JUL	445	515	565	96	615	685	590
	APR-SEP	590	680	745	93	810	900	805
YELLOWSTONE RIVER at Corwin Springs	APR-JUL	1330	1500	1620	98	1740	1910	1650
	APR-SEP	1600	1800	1940	99	2080	2280	1970
YELLOWSTONE RIVER near Livingston	APR-JUL	1610	1770	1870	98	1970	2130	1900
	APR-SEP	1950	2130	2250	99	2370	2550	2280
HEBGEN Reservoir Inflow	APR-JUL	340	385	415	106	445	490	390
	APR-SEP	450	500	535	107	570	620	500

UPPER YELLOWSTONE & MADISON RIVER BASINS Reservoir Storage (1000 AF) - End of January					UPPER YELLOWSTONE & MADISON RIVER BASINS Watershed Snowpack Analysis - February 1, 2004			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ENNIS LAKE	41.0	29.6	29.9	31.3	MADISON RIVER in WY	9	149	114
HEBGEN LAKE	377.5	284.0	292.6	266.5	YELLOWSTONE RIVER in WY	12	111	93

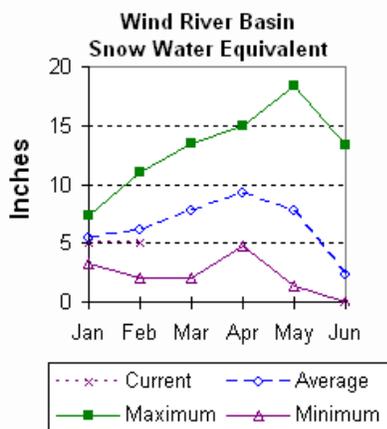
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

- (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.

## Wind River Basin (3)

### Snow

The Wind River basin has below average snow water equivalent (SWE) for this time of the year, but better than last year. SWE in the Wind River above Dubois is 75 percent of average (95 percent of last year). The Little Wind SWE is 71 percent of average water content (113 percent of last year), and the Popo Agie drainage SWE is about 104 percent of average (161 percent of last year). The Wind River basin, above Boysen Reservoir, SWE is about 83 percent of average (about 118 percent of last year). See the Basin Summary of Snow Course Data at the front of this report for details.



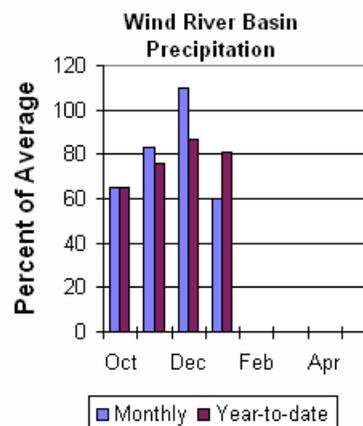
### Precipitation

Last months precipitation in the basin varied from 19 to 100 percent of average. Precipitation, for the basin, was about 60 percent of average for the 7 reporting stations; that is about 70 percent of last year's amount. Water year-to-date precipitation is 81 percent of normal. The current water-year-to-date average is about 105 percent of last year at this time. Year to date figures range from 63 to 90 percent of average.

### Reservoirs

Current storage varies from 67 to 119 percent of average.

Usable storage in Bull Lake is currently about 57,300 acre feet (38 percent of capacity) -- normally the reservoir is at 57 percent of capacity at this time of the year. Boysen Reservoir is storing about 57 percent of capacity (341,200 acre feet) -- normally the reservoir is at 84 percent of capacity at this time of the year. Pilot Butte is storing 75 percent of capacity (23,800 acre feet) -- normally the reservoir is at 63 percent of capacity at this time of the year.



### Streamflow

Water supply is estimated to be well below normal this year. The following values reflect the 50 percent chance yields for the April through September runoff period. The Wind River above Bull Lake Creek is expected to yield 490,000 acre feet (92 percent of average). Wind River at Riverton will yield about 535,000 acre feet (84 percent of average). Boysen Reservoir inflow will yield about 690,000 acre feet (85 percent of normal). Bull Lake Creek near Lenore is expected to yield about 148,000 acre feet (81 percent of average). Little Popo Agie River near Lander is expected to yield about 41,000 acre feet (77 percent of average). South Fork of Little Wind near Fort Washakie will yield about 66,000 acre feet (79 percent of average). Little Wind River near Riverton will yield about 300,000 acre feet (95 percent of average).

WIND RIVER BASIN  
Streamflow Forecasts - February 1, 2004

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
DINWOODY CREEK nr Burris	APR-JUL	40	51	59	89	67	78	67
	APR-SEP	63	77	86	92	95	109	94
WIND RIVER abv Bull Lake Cr (2)	APR-JUL	275	345	395	91	445	515	435
	APR-SEP	360	440	490	92	540	620	535
BULL LAKE CR near Lenore (2)	APR-JUL	78	104	122	82	140	166	148
	APR-SEP	94	126	148	81	170	200	182
WIND RIVER at Riverton (2)	APR-JUL	235	370	460	84	550	685	545
	APR-SEP	300	440	535	84	630	770	640
LT POPO AGIE RIVER nr Lander	APR-JUL	6.3	23	35	76	47	64	46
	APR-SEP	10.7	29	41	77	53	71	53
SF LT WIND nr Fort Washakie	APR-JUL	32	47	58	80	69	84	73
	APR-SEP	37	54	66	79	78	95	84
LT WIND RIVER nr Riverton	APR-JUL	122	205	265	95	325	410	280
	APR-SEP	151	240	300	95	360	450	315
BOYSEN RESERVOIR Inflow (2)	APR-JUL	320	505	625	87	745	930	717
	APR-SEP	370	560	690	85	820	1015	809

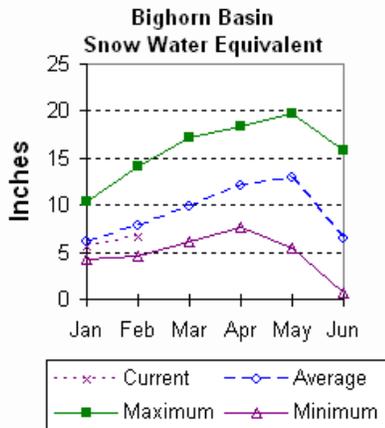
WIND RIVER BASIN Reservoir Storage (1000 AF) - End of January					WIND RIVER BASIN Watershed Snowpack Analysis - February 1, 2004			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BULL LAKE	151.8	57.3	43.1	85.9	WIND RIVER above Dubios	6	98	75
BOYSEN	596.0	341.2	234.9	501.8	LITTLE WIND	2	113	71
PILOT BUTTE	31.6	23.8	24.3	20.0	POPO AGIE	7	163	94
					WIND above Boysen Resv	13	118	83

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

# Bighorn River Basin (4)

## Snow

Snowpack in this basin is below average for this time of year. The Nowood drainage SWE is 95 percent of average (166 percent of last year). Greybull River SWE is 56 percent of average (76 percent of last year). Shell Creek SWE is 83 percent of average (102 percent of last year). The basin SWE, as a whole, is currently 84 percent of average (119 percent of last year). For more information see Basin Summary of Snow Courses at beginning of report.



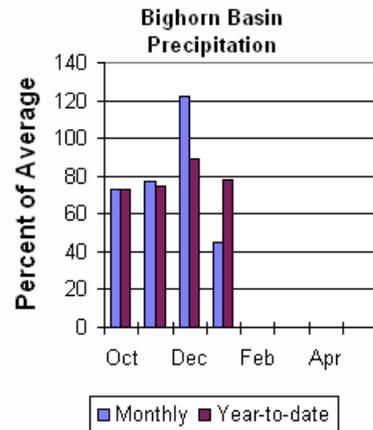
## Precipitation

Last month's precipitation was 45 percent of the monthly average (49 percent of last year). Sites ranged from 10 to 114 percent of average for the month. Year-to-date precipitation is 78 percent of normal; that is 103 percent of last year at this time. Year to date percentages, from the 10 reporting stations, range from 65 to 96.

## Reservoir

Boysen Reservoir is currently storing 341,200-acre feet (68 percent of average). Bighorn

Lake is now at 81 percent of average (699,300-acre feet). Boysen is currently storing 145 percent of last year at this time and Big Horn Lake is storing 113 percent of last year's volume.



## Streamflow

The 50 percent chance April through September runoff is anticipated to be below normal. The Boysen Reservoir inflow is forecast to yield 690,000 acre feet (85 percent of average); the Greybull River nr Meeteese should yield 144,000 acre feet (72 percent of average); Shell Creek near Shell should yield 71,000 acre feet (99 percent of average) and the Bighorn River at Kane should yield 905,000 acre feet (82 percent of average).

BIGHORN RIVER BASIN  
Streamflow Forecasts - February 1, 2004

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)				
		90% (1000AF)		70% (1000AF)		Chance Of Exceeding * 50% (Most Probable) (1000AF) (% AVG.)			30% (1000AF)		10% (1000AF)	
BOYSEN RESERVOIR Inflow (2)	APR-JUL	320	505	625	87	745	930	717				
	APR-SEP	370	560	690	85	820	1015	809				
GREYBULL RIVER nr Meeteetse	APR-JUL	75	91	102	69	113	129	148				
	APR-SEP	110	130	144	72	158	178	200				
SHELL CREEK nr Shell	APR-JUL	48	55	59	98	63	70	60				
	APR-SEP	60	66	71	99	76	82	72				
BIGHORN RIVER at Kane (2)	APR-JUL	575	730	835	84	940	1095	1000				
	APR-SEP	615	785	905	82	1020	1200	1110				

BIGHORN RIVER BASIN Reservoir Storage (1000 AF) - End of January					BIGHORN RIVER BASIN Watershed Snowpack Analysis - February 1, 2004			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BOYSEN	596.0	341.2	234.9	501.8	NOWOOD RIVER	5	168	96
BIGHORN LAKE	1356.0	699.3	616.4	859.5	GREYBULL RIVER	2	76	56
					SHELL CREEK	4	102	83
					BIGHORN (Boysen-Bighorn)	11	119	84

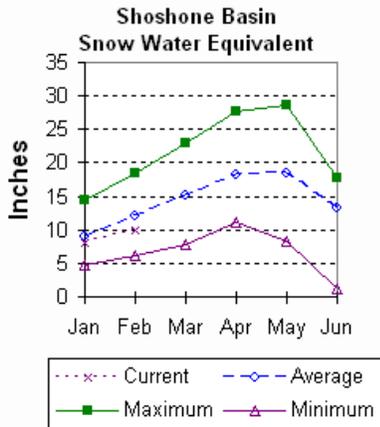
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

- (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.

# Shoshone and Clarks Fork River Basin (5)

## Snow

Snow Water Equivalent (SWE) is 88 percent of the January average (119 percent of last year) in the Shoshone River basin. The Clarks Fork River basin SWE is 91 percent of average (132 percent of last year). For more information see the Basin Summary of Snow Course Data at the beginning of this report.



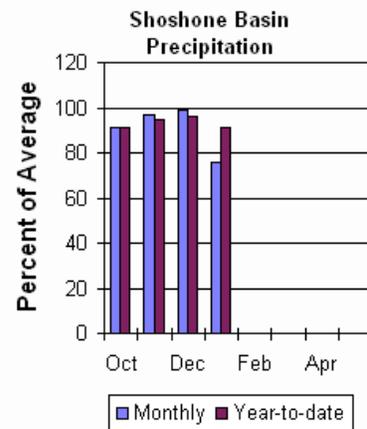
## Precipitation

Precipitation for last month was 76 percent of normal (51 percent of last year). Monthly percentages range from 44 to 102 percent of average. The basin year-to-date precipitation is now 96 percent of average (91 percent of last year). Year-to-date percentages range from 73 to 105 percent of average.

## Reservoir

Current usable storage in Buffalo Bill Reservoir is about 102 percent of average (129 percent of last year's storage) – the reservoir is about 65 percent

of capacity. Currently, about 422,000 acre-feet are stored in the reservoir compared to 326,700 acre feet last year. Detailed reservoir data is shown on the following page and on the reservoir storage summary at the beginning of this report.



## Streamflow

The fifty percent yield (April through September period) for the North Fork Shoshone River at Wapiti is expected to be 515,000 acre-feet (99 percent of average). South Fork of the Shoshone River near Valley is estimated to yield of 200,000 acre-feet (76 percent of average), and South Fork above Buffalo Bill Reservoir is expected to be 141,000 acre-feet (63 percent of average). At the Buffalo Bill Reservoir, the fifty percent chance yield for the Shoshone River is expected to be about 635,000 acre-feet (79 percent of average). The fifty-percent chance yield for the Clarks Fork of the Yellowstone near Belfry, Montana is expected to be about 555,000 acre-feet (93 percent of average).

SHOSHONE & CLARKS FORK RIVER BASINS  
Streamflow Forecasts - February 1, 2004

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90%		70%		Chance Of Exceeding *		
		(1000AF)	(1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
NF SHOSHONE RIVER at Wapiti	APR-JUL	375	425	460	100	495	545	460
	APR-SEP	425	480	515	99	550	605	520
SF SHOSHONE RIVER nr Valley	APR-JUL	128	157	176	78	193	223	225
	APR-SEP	145	178	200	76	220	255	265
SF SHOSHONE RIVER abv Buffalo Bill	APR-JUL	65	108	138	64	168	209	215
	APR-SEP	63	109	141	63	173	218	225
BUFFALO BILL DAM Inflow (2)	APR-JUL	390	500	570	79	640	750	720
	APR-SEP	440	555	635	79	715	830	805
CLARKS FORK RIVER nr Belfry	APR-JUL	410	470	510	94	550	610	540
	APR-SEP	455	515	555	93	595	655	595

SHOSHONE & CLARKS FORK RIVER BASINS Reservoir Storage (1000 AF) - End of January					SHOSHONE & CLARKS FORK RIVER BASINS Watershed Snowpack Analysis - February 1, 2004			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BUFFALO BILL	646.6	422.0	326.7	414.3	SHOSHONE RIVER	7	95	81
					CLARKS FORK in WY	7	93	85

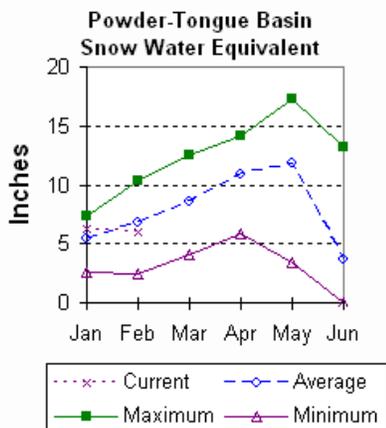
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

- (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.

## Powder and Tongue River Basins (6)

### Snow

Snow water equivalent (SWE) in the Upper Tongue River drainage is 79 percent of normal (100 percent of last year). The Goose Creek drainage SWE is 79 percent of average (100 percent of last year). SWE in the Clear Creek drainage is 88 percent of normal SWE (104 percent of last year). Crazy Woman Creek drainage SWE is 83 percent of average (133 percent of last year). The Upper Powder River drainage SWE is 90 percent of average (160 percent of last year). The Powder River basin SWE, in Wyoming, is about 89 percent of average (128 percent of last year). For more information see Basin Summary of Snow Courses at beginning of report.

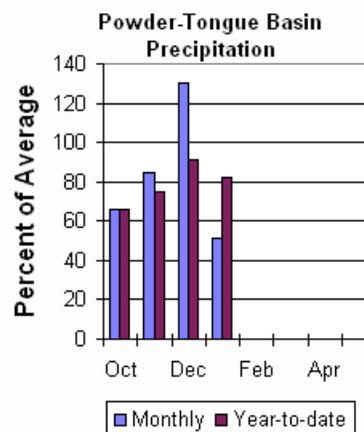


### Precipitation

Last month's precipitation was 51 percent of average for the 10 reporting stations (59 percent of last year). Monthly percentages range from 14 to 146 percent of average. Year-to-date precipitation is about 84 percent of average in the basin; this is 112 percent of last year at this time. Precipitation for the year ranges from 65 to 96 percent of average at the reporting stations.

### Reservoir

Tongue River Reservoir has a total capacity of 79,100 acre feet and is currently storing 45,800 acre feet. Current reservoir storage is 202 percent of average. The current reservoir is about 58 percent of capacity. Last year at this time the reservoir was storing about 32,900 acre feet – average storage is about 22,700 acre feet for this time of the year. Detailed reservoir data is shown on the following page and on the reservoir storage summary at the beginning of this report.



### Streamflow

The following runoff values are for the 50 percent probability during the April through September forecast period. The estimated yield for Tongue River near Dayton is 84,000-acre feet (77 percent of normal). Big Goose Creek near Sheridan is expected to yield about 46,000 acre feet (77 percent of average), while Little Goose Creek nr Big Horn is expected to yield about 34,000 acre feet (81 percent of average). Middle Fork of the Powder River near Barnum is estimated to yield 13,400 acre feet (72 percent of average). The North Fork of the Powder near Hazelton should yield about 9,800 acre-feet (94 percent of normal). The estimated yield for Clear Creek near Buffalo is 41,000 acre-feet (105 percent of average). Rock Creek near Buffalo will yield about 22,000 acre-feet (92 percent of normal), and Piney Creek at Kearny should yield about 43,000 acre-feet (83 percent of average).

POWDER & TONGUE RIVER BASINS  
Streamflow Forecasts - February 1, 2004

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
TONGUE RIVER nr Dayton (2)	APR-JUL	45	62	73	76	84	101	96
	APR-SEP	53	72	84	77	96	115	109
BIG GOOSE CREEK nr Sheridan	APR-JUL	15.5	29	38	73	47	61	52
	APR-SEP	23	37	46	77	55	69	60
LITTLE GOOSE CREEK nr Big Horn	APR-JUL	14.7	21	26	77	31	37	34
	APR-SEP	21	29	34	81	39	47	42
TONGUE RIVER RESERVOIR Inflow (2)	APR-JUL	63	118	156	71	194	250	220
	APR-SEP	80	138	178	71	220	275	250
MIDDLE FORK POWDER nr Barnum	APR-JUL	5.1	9.5	12.5	70	15.5	19.9	17.8
	APR-SEP	5.8	10.3	13.4	72	16.5	21	18.7
NORTH FORK POWDER nr Hazelton	APR-JUL	6.60	8.00	9.00	94	10.00	11.40	9.60
	APR-SEP	7.2	8.7	9.8	94	10.9	12.4	10.4
CLEAR CREEK nr Buffalo	APR-JUL	28	32	35	103	38	42	34
	APR-SEP	33	38	41	105	44	49	39
ROCK CREEK nr Buffalo	APR-JUL	12.7	15.8	17.9	90	20	23	19.9
	APR-SEP	16.7	19.9	22	92	24	27	24
PINEY CREEK at Kearny	APR-JUL	13.9	30	40	82	51	66	49
	APR-SEP	16.6	32	43	83	54	69	52
POWDER RIVER at Moorehead	MAR-JUL	96	164	210	88	255	325	240
	MAR-SEP	115	183	230	87	275	345	265
POWDER RIVER near Locate	MAR-JUL	154	200	235	76	270	315	310
	MAR-SEP	167	220	255	76	290	345	335

POWDER & TONGUE RIVER BASINS Reservoir Storage (1000 AF) - End of January					POWDER & TONGUE RIVER BASINS Watershed Snowpack Analysis - February 1, 2004			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
TONGUE RIVER	79.1	45.8	32.9	22.7	UPPER TONGUE RIVER	10	99	79
					GOOSE CREEK	3	99	78
					CLEAR CREEK	4	104	88
					CRAZY WOMAN CREEK	3	133	83
					UPPER POWDER RIVER	4	160	90
					POWDER RIVER in WY	8	128	89

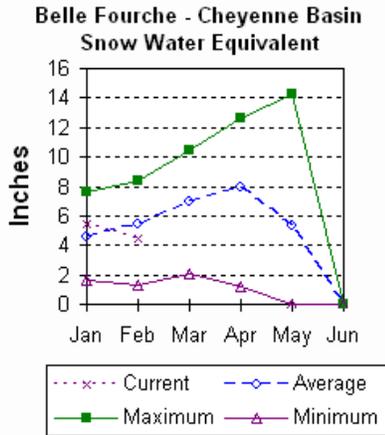
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

- (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.

## Belle Fourche and Cheyenne River Basins (7)

### Snow.

The Belle Fourche River Basin snow water equivalent (SWE) is below average. SWE is currently 83 percent of average snow pack; 131 percent of last years amount at this time. See Basin summary of Snow Course Data at the beginning of this report for a detailed listing.



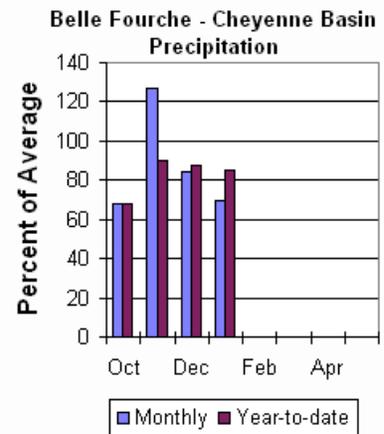
### Precipitation.

Precipitation, for last month was 70 percent of average in the Black Hills. Monthly percentages range from 54 to 164 percent. Year-to-date precipitation is 85 percent of average and 104 percent of last year's amount.

### Reservoir.

Usable reservoir storage is generally near average in the basin. Angostura is currently storing 81 percent of average

(79,700-acre feet), about 65 percent of capacity. Belle Fourche reservoir is storing 92 percent of average (93,000-acre feet), about 52 percent of capacity. Deerfield reservoir is storing 117 percent of average (15,000-acre feet), about 99 percent of capacity. Keyhole reservoir is storing 108 percent of average (110,500-acre feet), 57 percent of capacity. Pactola reservoir is storing 103 percent of average (47,400-acre feet), 86 percent of capacity. Shadehill reservoir is storing 60 percent of average (39,400-acre feet), 36 percent of capacity.



### Streamflow

Water supply is estimated to be near normal this year. The following values reflect the 50 percent chance yields for the March through July runoff period. Deerfield Reservoir inflow is forecast at 6,000 acre feet (95 percent of average). Pactola is forecast at 19,000 acre feet (91 percent of average).

BELLE FOURCHE & CHEYENNE RIVER BASINS  
Streamflow Forecasts - February 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<===== Drier =====>>		===== Wetter =====>>				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
DEERFIELD RESERVOIR Inflow	MAR-JUL	2.40	4.50	6.00	95	7.50	9.60	6.30
	APR-JUL			5.00	94			5.32
PACTOLA RESERVOIR Inflow	MAR-JUL	1.2	11.8	19.0	91	26	37	21
	APR-JUL	0.8	10.0	17.0	90	24	34	18.9

BELLE FOURCHE & CHEYENNE RIVER BASINS  
Reservoir Storage (1000 AF) - End of January

BELLE FOURCHE & CHEYENNE RIVER BASINS  
Watershed Snowpack Analysis - February 1, 2004

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ANGOSTURA	122.1	79.7	77.1	98.1	BELLE FOURCHE	8	133	84
BELLE FOURCHE	178.4	93.0	96.4	101.4				
DEERFIELD	15.2	15.0	15.1	12.8				
KEYHOLE	193.8	110.5	116.3	102.3				
PACTOLA	55.0	47.4	46.2	45.8				
SHADEHILL	81.4	29.4	30.0	49.1				

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

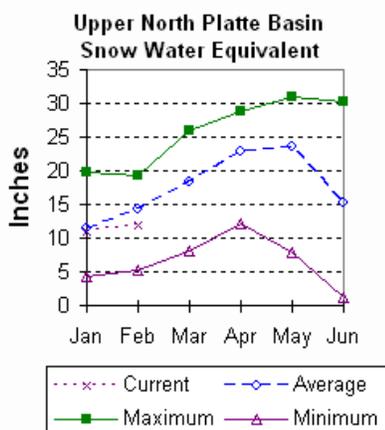
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

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

## Upper North Platte River Basin (8)

### Snow

The snow courses above Seminoe Reservoir have about 84 percent of average snow water equivalent (SWE) recorded for this time of the year (116 percent of last year). SWE in the drainage area above Northgate is about 79 percent of average and 104 percent of last year at this time. SWE in the Encampment River drainage is about 100 percent of normal and 151 percent of last year. Brush Creek SWE for the year is about 81 percent of normal and 98 percent of last year's SWE. Medicine Bow and Rock Creek drainage SWE is about 70 percent of average and 126 percent of last year at this time. For more information see Basin Summary of Snow Courses at the beginning of this report.



### Precipitation

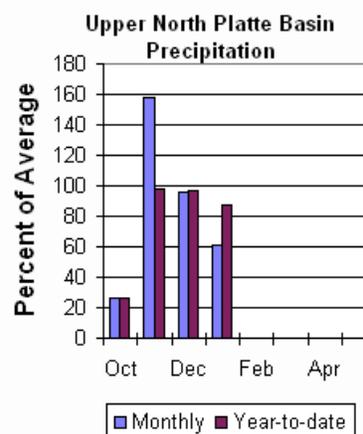
Eight reporting stations indicate last month's precipitation was 61 percent of average and about 81 percent of last year's amount. Precipitation varied from 61 to 81 percent of average last month. Total water-year-to-date precipitation is about 87 percent of average for the basin, which is about 112 percent of last year's amount. Year to date percentage ranges from 63 to 101 percent of average.

### Reservoirs

Seminoe Reservoir is currently storing about 42 percent of normal for this time of the year. Currently, the reservoir is storing 130 percent of last year's amount. Seminoe Reservoir is estimated to be storing 243,300 acre-feet (24 percent of capacity). Last year, at this time, the reservoir had 186,700 acre-feet in storage.

### Streamflow

All the following yields are based on the fifty percent chance April through September yield. Yield for the North Platte River near Northgate is expected to be about 230,000 acre-feet (85 percent of average). Encampment River near Encampment is estimated to yield 174,000 acre-feet (106 percent of normal). Rock Creek near Arlington is estimated to yield 42,000 acre-feet (74 percent of average). Seminoe Reservoir inflow should be about (750,000 acre-feet (87 percent of normal). See the following table for more detailed information on projected runoff.



UPPER NORTH PLATTE RIVER BASIN

Streamflow Forecasts - February 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<===== Drier =====>>		Chance Of Exceeding *		===== Wetter =====>>		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
NORTH PLATTE RIVER nr Northgate	APR-JUL	123	169	205	84	244	308	245
	APR-SEP	118	185	230	85	275	340	270
ENCAMPMENT RIVER nr Encampment	APR-JUL	123	148	164	105	180	205	156
	APR-SEP	132	157	174	106	191	215	165
ROCK CREEK nr Arlington	APR-JUL	25	33	39	74	46	56	53
	APR-SEP	28	36	42	74	49	59	57
SWEETWATER RIVER nr Alcova	APR-JUL	8.4	36	54	73	72	100	74
	APR-SEP	10.8	39	58	73	77	105	80
SEMINOE RESERVOIR Inflow	APR-JUL	375	565	695	87	825	1010	800
	APR-SEP	460	635	750	87	865	1040	860

UPPER NORTH PLATTE RIVER BASIN Reservoir Storage (1000 AF) - End of January					UPPER NORTH PLATTE RIVER BASIN Watershed Snowpack Analysis - February 1, 2004			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
SEMINOE	1016.7	243.3	186.7	573.2	N PLATTE above Northgate	7	104	79
					ENCAMPMENT RIVER	4	151	100
					BRUSH CREEK	5	98	81
					MEDICINE BOW & ROCK CREEK	3	126	70
					N PLATTE above Seminoe	19	116	84

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

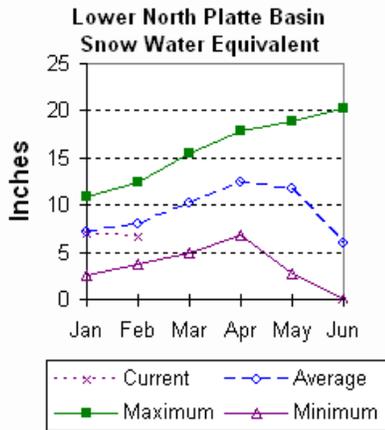
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

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

# Lower North Platte River Basin (9)

## Snow

SWE for the North Platte River basin in Wyoming averages 82 percent of normal (122 % of last year). The Sweetwater drainage SWE is currently 97 percent (191 percent of last year). Deer and LaPrele Creek SWE is 76 percent of average (133 percent of last year). SWE for the North Platte above the Laramie River drainage is 85 percent of average (124 % of last year). SWE for the Laramie River above Laramie is 72 percent of average (107 % of last year). SWE for the Little Laramie River is 65 percent of average (122 percent of last year). For the entire Laramie River drainage, Laramie River above mouth, SWE is 69 percent of average (112% of last year). For more information see Basin Summary of Snow Courses at beginning of report.

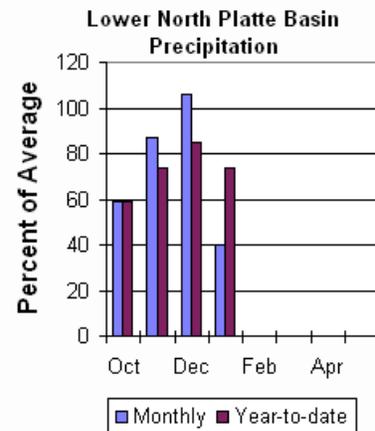


## Precipitation

Of the 6 reporting stations, percentages for the month range from 0 to 100. Last month's precipitation for the basin was 40 percent of average (80 percent of last year). The water year-to-date precipitation for the basin is currently 74 percent of average (118 percent of last year). Year to date percentages range from 63 to 93.

## Reservoir

The Lower North Platte River basin reservoir storage is well below average, except for Alcova Reservoir. Reservoir storage is as follows: Alcova 156,400 acre feet (101 percent of average); Glendo 182,500 acre feet (64 percent of average); Guernsey 13,400 acre feet (176 percent of average); Pathfinder 282,100 acre feet (43 percent of average); Seminoe 257,600 acre feet (42 percent of average), and Wheatland No.2 19,600 acre feet (46 percent of average).



## Streamflow

Yields from 27 to 84 percent are expected in the basin during the forecast period. The following yields are based on the fifty percent chance probability runoff for the April through September forecast period. The Sweetwater near Alcova is forecast to yield about 58,000 acre-feet (73% of average). Deer Creek at Glenrock is expected to yield about 21,000 acre feet (51% of average). LaPrele Creek above the reservoir is estimated to yield 11,500 acre-feet (48% of average). North Platte River below Guernsey Reservoir is expected to yield about 850,000 acre-feet (84% of normal), and below Glendo Reservoir is anticipated to yield about 820,000 acre-feet (83% of average). Laramie River near Woods Landing should yield about 102,000 acre-feet (76% of average). The Little Laramie near Filmore should produce about 43,000 acre-feet (67 percent of average).

LOWER NORTH PLATTE, SWEETWATER & LARAMIE RIVER BASINS  
Streamflow Forecasts - February 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Chance Of Exceeding *		Wetter		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
SWEETWATER RIVER nr Alcova	APR-JUL	8.4	36	54	73	72	100	74
	APR-SEP	10.8	39	58	73	77	105	80
DEER CREEK at Glenrock	APR-JUL	7.6	15.0	20	53	25	32	38
	APR-SEP	8.3	15.9	21	51	26	34	41
LaPRELE CREEK abv Reservoir	APR-JUL	1.0	4.4	11.3	47	18.2	28	24
	APR-SEP	1.2	4.5	11.5	48	18.5	29	24
NORTH PLATTE - Alcova to Orin Gain	APR-JUL	5.0	15.0	42	28	80	137	152
	APR-SEP	5.0	16.0	43	27	82	140	161
NORTH PLATTE RIVER blw Glendo Res	APR-JUL	535	695	800	83	905	1060	960
	APR-SEP	540	710	820	83	930	1100	990
NORTH PLATTE RIVER blw Guernsey Res	APR-JUL	485	680	815	84	950	1140	970
	APR-SEP	510	710	850	84	990	1190	1010
LARAMIE RIVER nr Woods	APR-JUL	33	69	93	76	117	153	123
	APR-SEP	36	75	102	76	129	168	135
LITTLE LARAMIE RIVER nr Filmore	APR-JUL	24	34	41	70	48	58	59
	APR-SEP	22	35	43	67	51	64	64

LOWER NORTH PLATTE, SWEETWATER & LARAMIE RIVER BASINS  
Reservoir Storage (1000 AF) - End of January

LOWER NORTH PLATTE, SWEETWATER & LARAMIE RIVER BASINS  
Watershed Snowpack Analysis - February 1, 2004

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ALCOVA	184.3	156.6	156.0	155.0	SWEETWATER	4	191	97
GLENDO	506.4	213.2	176.5	334.9	DEER & LaPRELE CREEKS	3	133	76
GUERNSEY	45.6	16.0	11.7	9.1	N PLATTE abv Laramie R.	26	124	85
PATHFINDER	1016.5	290.6	316.6	678.3	LARAMIE RIVER abv Laramie	10	107	77
SEMINOE	1016.7	243.3	186.7	573.2	LITTLE LARAMIE RIVER	5	122	74
WHEATLAND #2	98.9	20.8	12.2	45.3	LARAMIE RIVER above mouth	13	112	74
					NORTH PLATTE	32	122	82

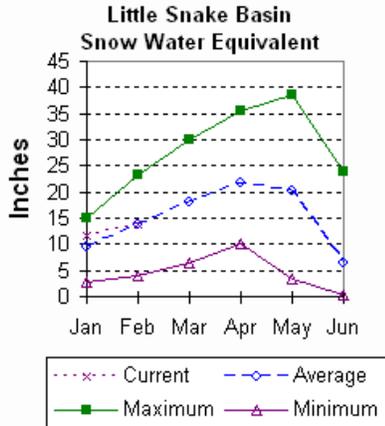
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

- (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.

# Little Snake River Basin (10)

## Snow

Snowfall has been above average across the basin this year. Currently, snow water equivalent (SWE) in the Little Snake River drainage is 100 percent of average (132 percent of last year at this time). For more information see Basin Summary of Snow Courses at beginning of this report.

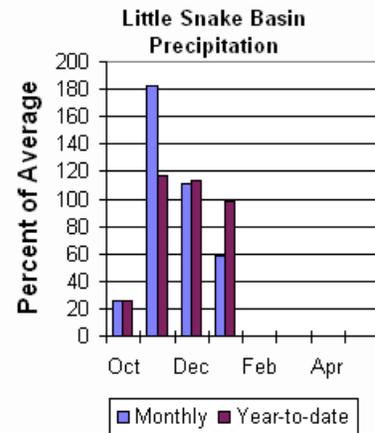


## Precipitation

Precipitation across the basin was above average this past month. Last Month's precipitation was 58 percent of average (86 percent of last year) for the 5 reporting stations. Last month's precipitation ranged from 35 to 74 percent of average. The Little Snake River basin water-year-to-date precipitation is currently 98 percent of average (119 percent of last year). Year-to-date percentages range from 85 to 125 percent of average.

## Streamflow

Runoff yield in the Little Snake River drainage is expected to be below normal this year. Stream yield is based on the 50 percent probability for the April through July forecast period. The Little Snake River near Slater should yield about 156,000 acre-feet (98 percent of normal). Little Snake River near Dixon is estimated to yield 325,000 acre-feet (99 percent of normal).



LITTLE SNAKE RIVER BASIN  
Streamflow Forecasts - February 1, 2004

Forecast Point	Forecast Period	Future Conditions				Wetter		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Little Snake River nr Slater	APR-JUL	110	136	156	98	177	210	159
LITTLE SNAKE R nr Dixon	APR-JUL	204	275	325	99	375	445	330

LITTLE SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of January				LITTLE SNAKE RIVER BASIN Watershed Snowpack Analysis - February 1, 2004				
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					LITTLE SNAKE RIVER	8	132	100

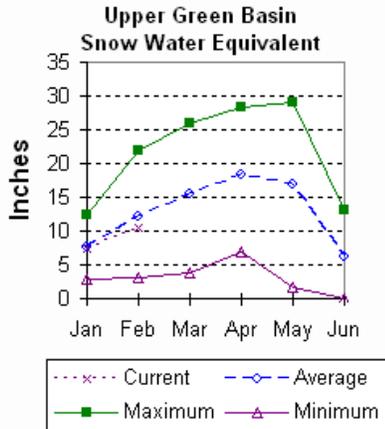
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

- (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 Green River Basin (11)

## Snow

Snow water equivalent (SWE) is below normal in the upper Green River drainage this year. The Green River basin SWE above Warren Bridge is 93 percent of normal (119 percent of last year). SWE on the west side of the Upper Green River basin is about 87 percent of normal, 127 percent of this time last year. Newfork River SWE is now 89 percent of normal (115 percent of last year). Big Sandy-Eden Valley SWE is about 98 percent of average (185 percent of last year). For more information see the Basin Summary of Snow Courses at the beginning of this report.

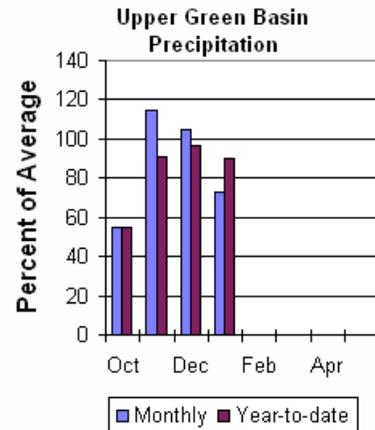


## Precipitation

The 11 reporting precipitation sites in the basin were 73 percent of average last month (91 percent of last year at this time). Last month's precipitation varied from 13 to 84 percent of average. Water year-to-date precipitation is about 98 percent of average (120 percent of last year). Year to date percentage of average ranges from 79 to 103 percent for the reporting stations.

## Reservoir

Usable storage in Big Sandy Reservoir is currently about 5,800 acre feet (31 percent of average) -- 153 percent of last year and 15 percent of capacity. Eden Reservoir is too low to measure. Fontenelle Reservoir is storing 179,000 acre-feet (98 percent of average and 52 percent of the total capacity). Detailed reservoir data is shown on the following page and on the reservoir storage summary at the beginning of this report.



## Streamflow

The fifty-percent chance April through July runoff in the Upper Green River basin is forecast below average. Green River at Warren Bridge is expected to yield about 230,000 acre-feet (87 percent of normal). Pine Creek above Fremont Lake is expected to yield 87,000 acre-feet (84 percent of normal). New Fork River near Big Piney is expected to yield about 320,000 acre-feet (81 percent of normal). Fontenelle Reservoir Inflow is estimated to be 650,000 acre-feet (76 percent of average), and Big Sandy near Farson is expected to be about 47,000 acre-feet (81 percent of normal).

UPPER GREEN RIVER BASIN  
Streamflow Forecasts - February 1, 2004

Forecast Point	Forecast Period	Future Conditions				Wetter		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
Green River at Warren Bridge	APR-JUL	169	205	230	87	255	290	265
Pine Creek abv Fremont Lake	APR-JUL	69	80	87	84	94	105	104
New Fork River nr Big Piney	APR-JUL	195	270	320	81	370	445	395
Fontenelle Reservoir Inflow	APR-JUL	468	573	650	76	732	861	860
Big Sandy River nr Farson	APR-JUL	29	40	47	81	54	65	58

UPPER GREEN RIVER BASIN Reservoir Storage (1000 AF) - End of January				UPPER GREEN RIVER BASIN Watershed Snowpack Analysis - February 1, 2004				
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BIG SANDY	38.3	5.8	3.8	18.6	GREEN above Warren Bridge	4	117	93
EDEN		NO REPORT			UPPER GREEN (West Side)	7	127	87
FONTENELLE	344.8	179.0	197.8	182.2	NEWFORK RIVER	3	115	89
					BIG SANDY/EDEN VALLEY	2	185	98
					GREEN above Fontenelle	14	123	88

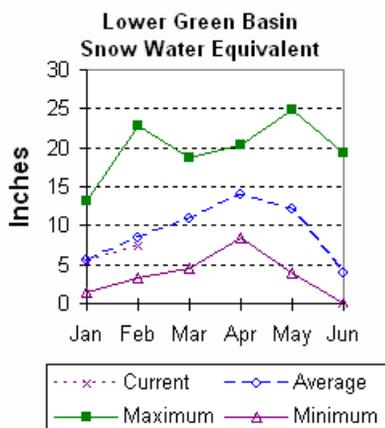
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

- (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.

## Lower Green River Basin (12)

### Snow

The Henrys Fork drainage, as of February 1, is 81 percent of average (130% of last year). SWE in the Hams Fork, as of February 1, is 86 percent of average (134% of last year). Blacks Fork SWE is currently 76 percent of average (122 percent of last year). The basin, as a whole, is 88 percent of average (128 percent of last year). For more information see Basin Summary of Snow Courses at beginning of this report.



### Precipitation

Precipitation was below average for the 3 reporting stations during last month (59 percent of average). Precipitation ranged from 5 to 62 percent of average for the month. The basin year-to-date precipitation is currently 78 percent of average (123 percent of last year). Year to date percentages range from 78 to 79.

### Reservoir

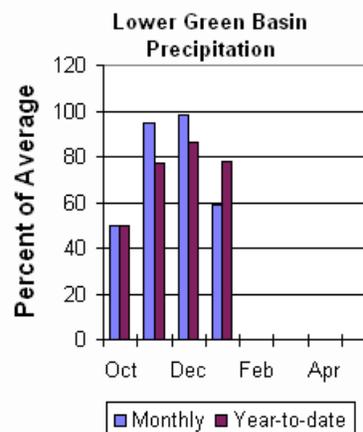
Fontenelle Reservoir is currently storing 179,000 acre feet; this is 98 percent of

average (90 percent of last year). Flaming Gorge is currently storing 2,601,000 acre feet, this is 88 percent of average (99 percent of last year). Viva Naughton did not report this month..

### Streamflow

Expected yields vary from 72 to 81 percent of average across the basin.

The following forecast values are based on a 50 percent chance probability for the April through July forecast period. Green River near Green River is forecast to yield about 645,000-acre feet (74 percent of average). Blacks Fork near Robertson is forecast to yield 77,000-acre feet (81 percent of average). East Fork of Smiths Fork near Robertson is estimated to yield 23,000 acre-feet (74 percent of average). The estimated yield for Hams Fork near Frontier is 50,000-acre feet (77 percent of average). Flaming Gorge Reservoir inflow will be about 880,000-acre feet (74 percent of average).



LOWER GREEN RIVER BASIN  
Streamflow Forecasts - February 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<===== Drier =====>>		Chance Of Exceeding *		===== Wetter =====>>		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Green River nr Green River, WY	APR-JUL	385	540	645	74	750	905	875
Blacks Fork nr Robertson	APR-JUL	47	65	77	81	89	107	95
EF of Smiths Fork nr Robertson	APR-JUL	17.2	20	23	74	26	31	31
Hams Fk blw Pole Ck nr Frontier	APR-JUL	29	41	50	77	60	77	65
Hams Fk Inflow to Viva Naughton Res	APR-JUL	27	49	64	72	79	101	89
Flaming Gorge Reservoir Inflow	APR-JUL	515	730	880	74	1030	1250	1190

LOWER GREEN RIVER BASIN Reservoir Storage (1000 AF) - End of January					LOWER GREEN RIVER BASIN Watershed Snowpack Analysis - February 1, 2004			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
FONTENELLE	344.8	179.0	197.8	182.2	HAMS FORK RIVER	4	134	86
VIVA NAUGHTON RES	42.4	29.7	24.6	30.3	BLACKS FORK	2	122	76
					HENRYS FORK	2	130	81
					GREEN above Flaming Gorge	22	128	88

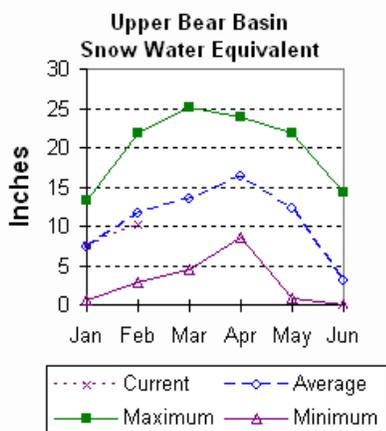
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

- (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 Bear River Basin (13)

## Snow

Snow water equivalent (SWE), at snow courses in the Bear River above the Idaho State line, is 88 percent of average (143 percent of last year). SWE for the Bear River in Utah is estimated to be 79 percent of average; that is about 122 percent of last year at this time. SWE in the Wyoming portion of the Bear River drainage (Smiths and Thomas Forks) is estimated at 88 percent of average (137 percent of last year at this time.). See the Basin Summary of Snow Course Data at the beginning of this report for more detailed information.



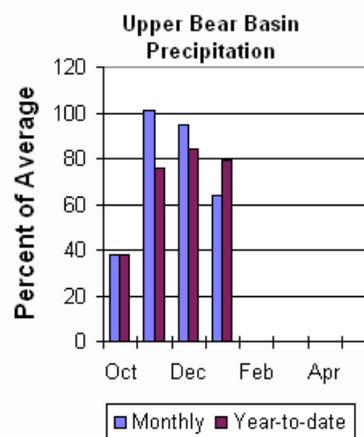
The reservoir is storing about the same amount as last year at this time.

## Precipitation

Precipitation for last month was 64 percent of average for the 2 reporting stations; this is 123 percent of the precipitation received last year. The year-to-date precipitation, for the basin, is 79 percent of average; this is 129 percent of last year's amount.

## Reservoir

Usable storage in Woodruff Narrows reservoir is about 7,000 acre feet (28 percent of average). Reservoir storage is about 12 percent of capacity.



## Streamflow

The following 50 percent chance stream flow yields are for the April through September period. Smiths Fork near Border is estimated to yield 93,000 acre-feet (77 percent of normal). Bear River above the Utah-Wyoming State Line is expected to yield about 94,000 acre feet ( 75 percent of average), The Bear River near Woodruff is expected to yield about 65,000 acre-feet (about 46 percent of normal).

UPPER BEAR RIVER BASIN  
Streamflow Forecasts - February 1, 2004

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)				
		90% (1000AF)		70% (1000AF)		Chance Of Exceeding * 50% (Most Probable) (1000AF) (% AVG.)			30% (1000AF)		10% (1000AF)	
Smiths Fork nr Border	APR-JUL	50	68	80	78	92	110	103				
	APR-SEP	59	79	93	77	107	127	121				
Bear River nr UT-WY State Line	APR-JUL	51	71	85	75	99	119	113				
	APR-SEP	55	78	94	75	110	133	125				
Bear River ab Reservoir nr Woodruff	APR-JUL	10.0	42	64	47	86	118	136				
	APR-SEP	9.0	42	65	46	88	121	142				

UPPER BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of January					UPPER BEAR RIVER BASIN Watershed Snowpack Analysis - February 1, 2004			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					UPPER BEAR RIVER in Utah	5	122	79
					SMITHS & THOMAS FORKS	4	137	88
					BEAR RIVER abv ID line	7	143	88
					NORTHWEST	74	118	95
					NORTHEAST	23	109	81
					SOUTHEAST	36	121	85
					SOUTHWEST	31	130	92

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