

# Wyoming

# Basin Outlook Report

# May 1, 2004



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

---

*For more water supply and resource management information, contact:*

**Dave Taylor**  
**Water Supply Specialist**  
**100 East "B" Street**  
**Casper, WY 82601**  
**(307) 233-6749**

---

## *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.

---

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.

---

# Wyoming Water Supply Outlook Report

## General

Generally, snow water equivalent (SWE) across the state is much below normal for this time of the year. Snow started melting from the SNOTEL sites about one month early. Many sites that normally peak about the middle of April actually reached their peak the first to middle of March. SWE average for the State is about 69 percent of normal for this time of the year. SWE in the Northwest portion of the State is 74 of percent normal. SWE in Northeast Wyoming is 64 of percent normal, and in the southeast part of the State is 67 percent of average. SWE in Southwestern Wyoming is 69 percent of average for this time of the year.

Precipitation for March varied from 66 percent below to 17 percent above average for the State. Year-to-date precipitation is also well below average for the year (varied from 8 to 28 percent below average). 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 13 to 100 percent of average across the State.

## Snowpack

Snow water equivalent (SWE), across the State, is below average for this time of year. SWE in the northwestern portion of the State is now about 60 percent of average (73 percent of last year). Northeast Wyoming SWE is currently about 61 percent of average (72 percent of last year). The southeast portion is currently about 56 percent of average SWE (60 percent of last year). And the southwest snowpack is about 49 percent of average (70 percent of last year).

## Precipitation

Last month's precipitation was below normal across most of the State. The Belle Fourche was the lowest in percentage at 42 percent of average. The Wind River Basin was the only basin to receive above average precipitation during the month at 129 percent. 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	-39%	Upper North Platte River	-14%
Yellowstone & Madison	-33%	Lower North Platte	-25%
Wind River	+29%	Little Snake River	-15%
Big Horn	-15%	Upper Green River	-31%
Shoshone & Clarks Fork	-29%	Lower Green River	-26%
Powder & Tongue River	-22%	Upper Bear River	-45%
Belle Fourche & Cheyenne	-58%		

## Streams

Stream flow yield is expected to be well below average across the State. Most probable yield for the State is forecast to be about 60 percent of average (varies from 13 to 83 percent of average). The northwest part of the State is expected to yield about 67 percent of normal -- yield estimates vary from 42 to 83 percent of normal. Yield from the northeast portion of Wyoming is expected to yield about 70 percent of average -- yield estimates vary from 41 to 79 percent of average for the various forecast points. Yield in the southeast portion of the state

will be about 48 percent of normal -- yield estimates range from 13 to 83 percent of normal. Yield in the southwest portion of Wyoming varies from 39 to 66 percent of average -- mean estimated yield for the forecast points in southwest Wyoming is about 60 percent of average.

## Reservoirs

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

## Major Reservoirs in Wyoming

### WYOMING AND SURROUNDING STATES

BASIN AREA RESERVOIR	CURRENT AS % CAPACITY	LAST YR AS % CAPACITY	AVERAGE AS % CAPACITY	CURRENT AS % AVERAGE	CURRENT AS % LAST YR
SHADEHILL	83	49	80	103	168
ANGOSTURA	72	82	93	78	88
DEERFIELD	99	100	89	110	99
PACTOLA	90	93	87	103	97
BELLE FOURCHE	70	80	82	86	88
JACKSON LAKE	31	40	56	55	76
GRASSY LAKE	69	88	84	83	79
FONTENELLE	54	45	42	130	122
BIG SANDY	30	23	65	46	128
EDEN			NO REPORT		
PILOT BUTTE	86	73	81	106	117
BULL LAKE	40	26	55	73	152
BOYSEN	65	49	76	85	132
BUFFALO BILL	67	55	54	123	121
KEYHOLE	59	68	60	98	86
SEMINOE	29	21	50	57	137
PATHFINDER	30	31	73	40	96
ALCOVA	97	97	97	100	100
GLENDO	66	67	90	72	98
GUERNSEY	48	63	73	65	76
WHEATLAND #2	28	19	60	46	148
PALISADES	51	54	62	82	94
HEBGEN LAKE	70	77	67	104	91
ENNIS LAKE	69	72	82	83	95
BIGHORN LAKE	47	45	58	81	105
TONGUE RIVER	62	71	40	156	89
FLAMING GORGE	70	71	79	89	99
VIVA NAUGHTON RES	91	74	67	135	123
WOODRUFF NARROWS	49	32	67	73	151

# Basin Summary of Snow Course Data

BASIN SUMMARY OF  
SNOW COURSE DATA

MAY 2004

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
-----						
WYOMING Snow Course and SNOTEL Stations						
ALBANY	9400	4/28/04	15	4.9	11.3	12.3
BALD MOUNTAIN SNOTEL	9380	5/01/04	55	18.5	18.9	23.6
BASE CAMP SNOTEL	7030	5/01/04	---	1.2	9.4	12.3
BATTLE MTN. SNOTEL	7440	5/01/04	---	.0	.0	4.6
BEARLODGE DIVIDE	4680	5/01/04	0	.0	.0	.4
BEARTOOTH LK. SNOTEL	9280	5/01/04	60	20.5	29.2	25.9
BEAR TRAP SNOTEL	8200	5/01/04	1	.2	1.6	2.5
BIG GOOSE	7760	4/26/04	11	2.0	6.9	7.7
BIG GOOSE SNOTEL	7760	5/01/04	15	5.1	10.8	11.6
BIG PARK	8620	4/29/04	34	12.7	15.7	19.6
BIG SANDY SNOTEL	9080	5/01/04	23	10.6	9.2	13.5
BLACKWATER SNOTEL	9780	5/01/04	---	19.5	28.7	28.8
BLIND BULL SNOTEL	8900	5/01/04	44	19.9	22.5	27.9
BLIND PARK SNOTEL	6870	5/01/04	0	.0	.5	4.0
BLUE RIDGE	9620	5/01/04	---	12.3E	7.8	12.5
BONE SPGS. SNOTEL	9350	5/01/04	44	16.7	17.6	18.3
BROOKLYN LK. SNOTEL	10220	5/01/04	---	16.8	18.9	28.2
BUCK CREEK	7960	4/29/04	4	1.0	7.6	9.6
BURGESS JCT. SNOTEL	7880	5/01/04	---	9.4	13.1	13.3
BURROUGHS CRK SNOTEL	8750	5/01/04	35	12.1	16.9	13.6
CANYON SNOTEL	8090	5/01/04	12	5.6	12.3	11.3
CARTER MOUNTAIN	7950	4/29/04	9	1.0	2.8	5.3
CASPER MTN. SNOTEL	7850	5/01/04	---	6.7	11.4	17.1
CASTLE CREEK	8400	4/28/04	6	1.6	.3	2.4
CCC CAMP	7000	4/29/04	4	.4	.8	8.0
CHALK CK #1 SNOTEL	9100	5/01/04	33	13.2	15.7	25.3
CHALK CK #2 SNOTEL	8200	5/01/04	12	4.3	6.4	12.0
CINNABAR PARK SNOTEL	9690	5/01/04	---	13.6	--	11.5
CLOUD PEAK SNOTEL	9850	5/01/04	35	14.0	16.1	16.2
COLE CANYON SNOTEL	5910	5/01/04	0	.0	1.6	5.3
COLD SPRINGS SNOTEL	9630	5/01/04	7	1.0	1.5	4.8
COTTONWOOD CR SNOTEL	7700	5/01/04	---	10.1	15.1	19.8
CROW CREEK SNOTEL	8830	5/01/04	---	.0	--	5.4
DARBY CANYON	8250	4/27/04	47	21.1	22.0	24.6
DEER PARK SNOTEL	9700	5/01/04	41	17.8	14.0	18.6
DIVIDE PEAK SNOTEL	8860	5/01/04	---	12.1	19.4	19.3
DOMELAKE SNOTEL	8880	5/01/04	18	7.4	11.6	13.5
DU NOIR	8760	4/27/04	1	.5	1.7	6.3
EAST RIM DIV SNOTEL	7930	5/01/04	---	6.4	7.7	13.1
ELBO RANCH	7100	5/03/04	8	3.2	4.6	9.5
ELKHART PARK SNOTEL	9400	5/01/04	---	6.6	10.7	12.8
EVENING STAR SNOTEL	9200	5/01/04	46	19.1	31.7	33.3
FOXPARK	9060	4/28/04	0	.0	6.3	5.3

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
GEYSER CREEK	8500	4/28/04	3	1.0	2.0	5.4
GLADE CREEK	7040	4/28/04	22	9.5	12.2	20.1
GRANITE CRK SNOTEL	6770	5/01/04	---	5.3	5.7	12.8
GRANNIER MEADOWS	8860	4/29/04	30	9.0	7.1	14.6
GRASSY LAKE SNOTEL	7270	5/01/04	45	22.2	29.3	33.4
GRAVE SPRINGS SNOTEL	8550	5/01/04	23	8.0	4.8	11.1
GREYS BOUNDARY	5720	4/29/04	0	.0	.0	2.6
GROS VENTRE SNOTEL	8750	5/01/04	18	7.4	10.8	13.3
GROVER PARK DIVIDE	7000	4/29/04	0	.0	.0	6.4
HAIRPIN TURN	9480	4/28/04	18	6.4	10.2	15.6
HANSEN S.M. SNOTEL	8360	5/01/04	0	.0	2.1	4.9
HAMS FORK SNOTEL	7840	5/01/04	---	.0	.0	6.0
HASKINS CREEK	8980	4/29/04	56	26.4	34.0	31.6
HOBBS PARK SNOTEL	10100	5/01/04	---	16.5	13.2	18.0
INDIAN CREEK SNOTEL	9430	5/01/04	---	20.7	21.4	28.3
JACKPINE CREEK	7350	4/27/04	26	12.0	16.1	19.2
KELLEY R.S. SNOTEL	8180	5/01/04	---	6.1	8.9	14.1
KENDALL R.S. SNOTEL	7740	5/01/04	---	.4	4.0	10.0
KIRWIN SNOTEL	9550	5/01/04	25	7.6	13.9	13.0
LA PRELE SNOTEL	8380	5/01/04	---	.0	6.5	7.1
LARSEN CREEK	9020	4/27/04	14	5.3	4.2	10.9
LEWIS LAKE SNOTEL	7850	5/01/04	---	22.5	31.4	34.6
LEWIS LAKE DIVIDE	7850	4/28/04	61	31.4	37.8	42.3
LIBBY LODGE	8750	4/28/04	0	.0	3.8	8.3
LITTLE WARM SNOTEL	9370	5/01/04	19	5.6	6.4	11.1
LOOMIS PARK SNOTEL	8240	5/01/04	---	4.8	9.5	14.3
LUPINE CREEK	7380	4/29/04	0	.0	.0	5.8
MARQUETTE SNOTEL	8760	5/01/04	28	8.3	13.7	11.3
MEDICINE LODGE LAKES	9340	4/26/04	32	11.0	11.6	11.9
MIDDLE FORK	7420	4/29/04	6	1.8	1.8	4.7
MIDDLE POWDER SNOTEL	7760	5/01/04	---	7.7	7.6	14.3
MOSS LAKE	9800	4/30/04	23	10.8	25.0	25.8
NEW FORK SNOTEL	8340	5/01/04	---	1.1	5.4	8.4
NORTH BARRETT CREEK	9400	4/30/04	31	14.1	27.7	22.7
NORTH FRENCH SNOTEL	10130	5/01/04	---	20.6	35.4	34.5
NORTH RAPID CK SNTL	6130	5/01/04	0	.0	.7	3.8
NORTH TONGUE	8450	4/26/04	30	7.2	10.2	13.3
OLD BATTLE SNOTEL	9920	5/01/04	---	32.6	34.5	36.9
OLD FAITHFUL	7400	5/01/04	5	2.3	5.3	9.3
ONION GULCH	8780	4/25/04	17	4.5	5.2	8.4
OWL CREEK SNOTEL	8980	5/01/04	4	.9	.7	4.0
PARKERS PEAK SNOTEL	9400	5/01/04	39	15.6	27.9	24.5
PHILLIPS BENCH SNTL	8200	5/01/04	41	18.8	22.2	29.4
POCKET CREEK	9350	4/27/04	28	10.5	11.4	13.8
POLE MOUNTAIN	8700	4/28/04	0	.0	7.8	5.0
POWDER RVR.PASS SNTL	9480	5/01/04	18	5.4	8.7	10.7
PURGATORY GULCH	8970	4/29/04	18	7.4	12.5	11.2
RANGER CREEK	8120	4/26/04	0	.0	5.4	7.6
RENO HILL SNOTEL	8500	5/01/04	---	7.6	14.0	14.7
REUTER CANYON	6280	5/01/04	0	.0	.0	3.6

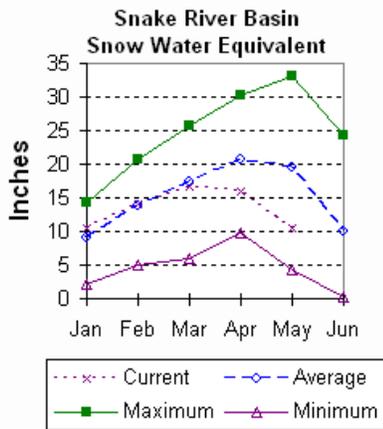
SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
RYAN PARK	8400	4/30/04	0	.0	8.0	7.2
SAGE CK BASIN SNTL	7850	5/01/04	---	.0	.0	11.2
SALT RIVER SNOTEL	7600	5/01/04	---	3.7	4.2	10.6
SAND LAKE SNOTEL	10050	5/01/04	---	24.3	31.3	37.0
SANDSTONE RS SNOTEL	8150	5/01/04	---	.0	6.4	9.5
SAWMILL DIVIDE	9260	4/26/04	34	10.1	15.0	15.1
SHELL CREEK SNOTEL	9580	5/01/04	50	14.9	16.1	16.8
SHERIDAN R.S.	7750	4/26/04	3	.7	.7	3.3
SNAKE RV STA SNOTEL	6920	5/01/04	---	.7	5.4	12.2
SNIDER BASIN SNOTEL	8060	5/01/04	15	5.6	6.9	12.6
SOLDIER PARK	8780	4/25/04	14	3.1	4.4	6.3
SOUR DOUGH	8460	4/25/04	19	4.8	6.2	7.4
SOUTH BRUSH SNOTEL	8440	5/01/04	---	.0	11.2	11.1
SOUTH PASS SNOTEL	9040	5/01/04	42	16.0	10.4	18.0
SPRING CRK. SNOTEL	9000	5/01/04	53	21.2	24.6	28.6
ST LAWRENCE ALT SNTL	8620	5/01/04	---	1.2	1.2	6.1
SUCKER CREEK SNOTEL	8880	5/01/04	23	8.5	14.1	13.1
SYLVAN LAKE SNOTEL	8420	5/01/04	17	7.5	21.1	23.8
SYLVAN ROAD SNOTEL	7120	5/01/04	0	.0	9.1	8.1
T CROSS RANCH	7900	4/28/04	0	.0	1.6	3.3
TETON PASS W.S.	7740	5/03/04	36	16.8	25.0	27.5
THUMB DIVIDE SNOTEL	7980	5/01/04	---	5.7	11.3	14.9
TIE CREEK SNOTEL	6870	5/01/04	0	.0	3.3	3.9
TIMBER CREEK SNOTEL	7950	5/01/04	14	3.4	4.0	4.8
TOGWOTEE PASS SNOTEL	9580	5/01/04	49	19.5	24.4	27.9
TOWNSEND CRK SNOTEL	8700	5/01/04	31	10.2	5.3	9.1
TRIPLE PEAK SNOTEL	8500	5/01/04	---	9.7	16.4	23.7
TWO OCEAN SNOTEL	9240	5/01/04	---	24.3	35.8	31.8
TYRELL RANGER STA.	8300	4/25/04	12	2.7	2.2	6.1
WEBBER SPRING SNOTEL	9250	5/01/04	---	16.0	17.8	25.1
WHISKEY PARK SNOTEL	8950	5/01/04	---	19.4	28.9	30.5
WILLOW CREEK SNOTEL	8450	5/01/04	---	16.3	23.3	30.6
WINDY PEAK SNOTEL	7900	5/01/04	---	.0	8.5	4.9
WOLVERINE SNOTEL	7650	5/01/04	0	.0	4.7	7.2
WOOD ROCK G.S.	8440	4/26/04	25	6.5	11.4	11.5
YOUNTS PEAK SNOTEL	8350	5/01/04	25	6.4	16.4	18.1

(d) denotes discontinued site.

# Snake River Basin (1)

## Snow

The Snake River basin snow water equivalent (SWE) is below normal. SWE in the Snake above Jackson Lake is 58 percent of average (68% of last year at this time). Pacific Creek SWE is 58 percent of average (56% of last year at this time). Gros Ventre River SWE is 59 percent of average (76% of last year at this time). SWE in the Hoback River drainage is 54 percent of average (78% of last year at this time), SWE in the Greys River drainage is 59 percent of average (77% of last year at this time). In the Salt River area, SWE is 40 percent of average (70% of last year at this time). SWE in the Snake River Basin above Palisades is 54 percent of average (72% 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.



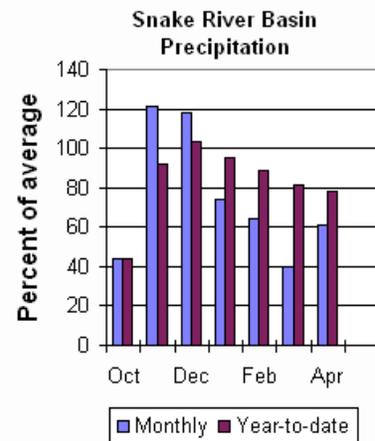
## Precipitation.

Precipitation across the basin was below average last month. Monthly precipitation, for the basin, was 61 percent of average (113 percent of last year). Last months percentages range from 41 to 99 percent of average. Water-year-to-date precipitation is 78 percent of normal for the Snake River basin (92 percent of last year at this time). Year-to-date percentages range from 70 to 87 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 83 percent of average (10,500 acre feet compared to 12,900 last year). Jackson Lake storage is 55 percent of average (259,600 acre feet compared to 342,700 acre feet last year). Palisades Reservoir storage is about 82 percent of average (710,400 acre feet compared to 1,115,400 acre feet last year).



## Streamflow.

The most probable, 50 percent chance, May through September runoff yield forecast is below average for the basin. The Snake near Moran is expected to yield 570,000 acre-feet (68% of normal). Yield from the Snake River above Palisades Reservoir is estimated to be 1,720,000 acre-feet (68% of normal). Palisades reservoir inflow is expected to be about 2,260,000 acre feet (64% of average). The 50 percent chance yield near Heise is expected to be 2,420,000 acre-feet (64% of normal). Pacific Creek at Moran is expected to yield about 113,000 acre-feet (68% of average). Greys River above Palisades Reservoir is estimated to yield 186,000 acre-feet (52% of normal). Salt River near Etna is estimated to have a yield of 166,000 acre-feet (46% of normal).

SNAKE RIVER BASIN  
Streamflow Forecasts - May 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)	
SNAKE near Moran (1,2)	MAY-JUL	395	475	510	68	545	625	750		
	MAY-SEP	445	530	570	68	610	695	840		
SNAKE above Palisades (2)	MAY-JUL	1290	1410	1490	69	1570	1690	2160		
	MAY-SEP	1480	1620	1720	68	1820	1960	2530		
PALISADES RESERVOIR INFLOW (1,2)	MAY-JUL	1520	1790	1920	64	2050	2320	2980		
	MAY-SEP	1800	2120	2260	64	2400	2720	3520		
SNAKE near Heise (2)	MAY-JUL	1700	1900	2040	64	2180	2380	3170		
	MAY-SEP	2030	2260	2420	64	2580	2810	3760		
PACIFIC CREEK at Moran	MAY-JUL	81	97	108	68	119	135	160		
	MAY-SEP	85	102	113	68	124	141	167		
GREYS above Palisades	MAY-JUL	121	142	157	52	172	192	300		
	MAY-SEP	146	171	186	52	201	226	355		
SALT near Etna	MAY-JUL	71	105	128	46	151	186	280		
	MAY-SEP	103	141	166	46	191	231	360		

SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of April					SNAKE RIVER BASIN Watershed Snowpack Analysis - May 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	10.5	13.3	12.7	SNAKE above Jackson Lake	6	68	58
JACKSON LAKE	847.0	259.6	342.7	471.1	PACIFIC CREEK	2	56	58
PALISADES	1400.0	710.4	759.4	862.6	GROS VENTRE RIVER	3	74	59
					HOBACK RIVER	5	78	54
					GREYS RIVER	5	77	59
					SALT RIVER	5	70	40
					SNAKE above Palisades	23	71	54

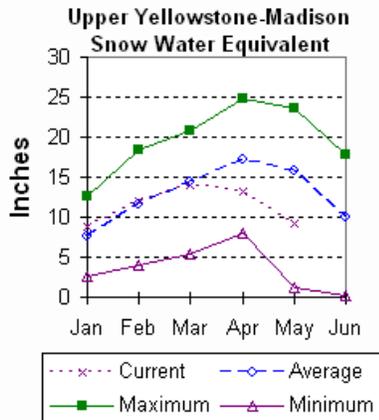
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

- (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 mixed this year, however, SWE, in both basins, is below average this month. Snow water equivalent (SWE) is about 64 percent of average (80 percent of last year) in the Madison drainage. SWE in the Yellowstone drainage is about 52 percent of average (55 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 (70 percent of capacity) – 99 percent of average. Hebgen Lake is storing about 91 percent and Ennis Lake is storing about 95 percent of last year's volume.

### Streamflow

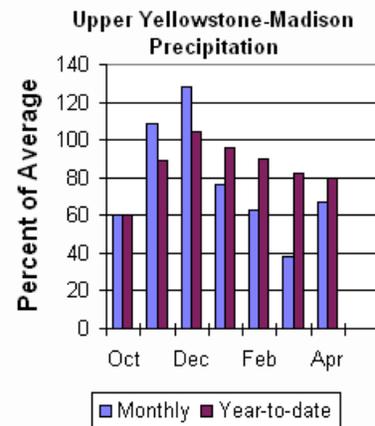
All the following forecasts are the 50 percent chance runoff for the May through September runoff period. Yellowstone at Lake Outlet is expected to yield about 520,000 acre feet (68 percent of normal). Yellowstone at Corwin Springs will yield about 1,330,000 acre-feet (71 percent of normal). Yellowstone near Livingston will yield about 1,520,000 acre feet (71 percent of normal). Hebgen lake inflow is estimated to be 360,000 acre feet (82 percent of normal). See the following page for detailed runoff volumes.

### Precipitation

Last month precipitation in the Madison and Yellowstone drainage was about 67 percent of average (73 percent of previous year) for the 5 reporting stations -- percentage range was from 47 to 89 percent of average. Water-year-to-date precipitation is about 75 percent of average (82 percent of last year's amount). Year to date percentage ranges from 75 to 84 percent.

### Reservoir

Usable storage in Ennis Lake is estimated to be 28,200 acre-feet (69 percent of capacity) – 90 percent of average. Hebgen Lake is storing about 264,500



UPPER YELLOWSTONE & MADISON RIVER BASINS  
Streamflow Forecasts - May 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)	
YELLOWSTONE at Lake Outlet	MAY-JUL	290	345	380	69	415	470	555		
	MAY-SEP	430	485	520	68	555	610	770		
YELLOWSTONE RIVER at Corwin Springs	MAY-JUL	890	1020	1100	71	1180	1310	1550		
	MAY-SEP	1090	1230	1330	71	1430	1570	1870		
YELLOWSTONE RIVER near Livingston	MAY-JUL	1050	1160	1240	70	1320	1430	1770		
	MAY-SEP	1290	1430	1520	71	1610	1750	2150		
HEBGEN Reservoir Inflow	MAY-JUL	215	245	270	82	295	325	330		
	MAY-SEP	295	335	360	82	385	425	440		

UPPER YELLOWSTONE & MADISON RIVER BASINS  
Reservoir Storage (1000 AF) - End of April

UPPER YELLOWSTONE & MADISON RIVER BASINS  
Watershed Snowpack Analysis - May 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	28.2	29.6	33.8	MADISON RIVER in WY	8	80	64
HEBGEN LAKE	377.5	264.5	291.7	254.6	YELLOWSTONE RIVER in WY	10	55	52

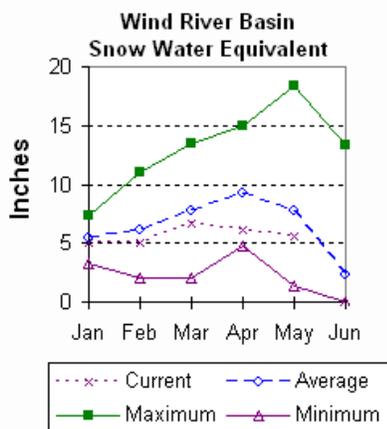
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

- (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. SWE in the Wind River above Dubois is 58 percent of average (76 percent of last year at this time). The Little Wind SWE is 73 percent of average water content (123 percent of last year), and the Popo Agie drainage SWE is about 88 percent of average (140 percent of last year). The Wind River basin, above Boysen Reservoir, SWE is about 71 percent of average (about 107 percent of last year). See the Basin Summary of Snow Course Data at the front of this report for details.



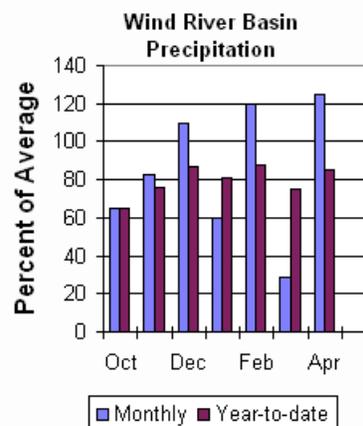
### Precipitation

Last months precipitation in the basin varied from 66 to 277 percent of average. Precipitation, for the basin, was about 125 percent of average for the 7 reporting stations; that is about 334 percent of last year's amount. Water year-to-date precipitation is 85 percent of normal and about 99 percent of last year at this time. Year-to-date percentages range from 71 to 104 percent of average.

### Reservoirs

Current storage varies from 73 to 106 percent of average.

Usable storage in Bull Lake is currently about 60,900 acre feet (40 percent of capacity) -- normally the reservoir is at 56 percent of capacity at this time of the year. Boysen Reservoir is storing about 65 percent of capacity (387,100 acre feet) -- normally the reservoir is at 76 percent of capacity at this time of the year. Pilot Butte is storing 86 percent of capacity (27,200 acre feet) -- normally the reservoir is at 81 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 May through September runoff period. Dinwoody Creek near Burris is estimated to yield 72,000 acre feet (78% of average). The Wind River above Bull Lake Creek is expected to yield 400,000 acre feet (78 percent of average). Bull Lake Creek near Lenore is expected to yield about 104,000 acre feet (58 percent of average). Wind River at Riverton will yield about 340,000 acre feet (56 percent of average). Little Popo Agie River near Lander is expected to yield about 37,000 acre feet (76 percent of average). South Fork of Little Wind near Fort Washakie will yield about 60,000 acre feet (74 percent of average). Little Wind River near Riverton will yield about 240,000 acre feet (83 percent of average). Boysen Reservoir inflow will yield about 445,000 acre feet (59 percent of normal).

WIND RIVER BASIN  
Streamflow Forecasts - May 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)	
DINWOODY CREEK nr Burris	MAY-JUL MAY-SEP	39 59	44 67	48 72	74 78	52 77	57 85	65 93
WIND RIVER abv Bull Lake Cr (2)	MAY-JUL MAY-SEP	230 300	285 360	320 400	78 78	355 440	410 500	410 510
BULL LAKE CR near Lenore (2)	MAY-JUL MAY-SEP	56 72	72 91	83 104	58 58	94 117	110 136	144 178
WIND RIVER at Riverton (2)	MAY-JUL MAY-SEP	118 162	220 270	290 340	57 56	360 410	460 520	510 610
LT POPO AGIE RIVER nr Lander	MAY-JUL MAY-SEP	19.3 23	27 31	32 37	74 76	37 43	45 51	43 49
SF LT WIND nr Fort Washakie	MAY-JUL MAY-SEP	33 40	44 52	52 60	74 74	60 68	71 80	70 81
LT WIND RIVER nr Riverton	MAY-JUL MAY-SEP	98 122	165 190	210 240	82 83	255 290	320 360	255 290
BOYSEN RESERVOIR Inflow (2)	MAY-JUL MAY-SEP	163 185	305 340	400 445	60 59	495 550	635 705	665 758

WIND RIVER BASIN Reservoir Storage (1000 AF) - End of April				WIND RIVER BASIN Watershed Snowpack Analysis - May 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	60.9	40.1	83.9	WIND RIVER above Dubios	7	74	58
BOYSEN	596.0	387.1	293.9	453.4	LITTLE WIND	2	123	73
PILOT BUTTE	31.6	27.2	23.2	25.7	POPO AGIE	7	140	88
					WIND above Boysen Resv	14	102	71

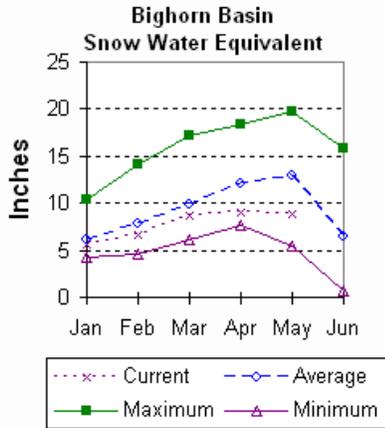
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

- (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. Nowood drainage SWE is 61 percent of average (89 percent of last year). Greybull River SWE is 62 percent of average (61 percent of last year). Shell Creek SWE is 76 percent of average (86 percent of last year). The basin SWE, as a whole, is currently 68 percent of average (83 percent of last year). For more information see Basin Summary of Snow Courses at beginning of report.



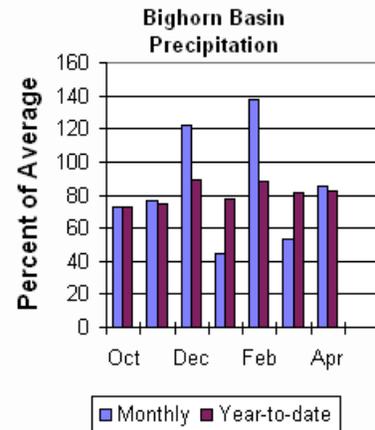
## Precipitation

Last month's precipitation was 85 percent of the monthly average (118 percent of last year). Sites ranged from 35 to 157 percent of average for the month. Year-to-date precipitation is 82 percent of normal; that is 86 percent of last year at this time. Year-to-date percentages, from the 10 reporting stations, range from 55 to 99.

## Reservoir

Boysen Reservoir is currently storing 387,100-acre feet (85 percent of average). Bighorn

Lake is now at 81 percent of average (640,100-acre feet). Boysen is currently storing 132 percent of last year at this time and Big Horn Lake is storing 105 percent of last year's volume.



## Streamflow

The 50 percent chance May through September runoff is anticipated to be below normal. The Boysen Reservoir inflow is forecast to yield 445,000 acre feet (59 percent of average); the Greybull River nr Meeteese should yield 154,000 acre feet (79 percent of average); Shell Creek near Shell should yield 63,000 acre feet (91 percent of average) and the Bighorn River at Kane should yield 615,000 acre feet (60 percent of average).

BIGHORN RIVER BASIN  
Streamflow Forecasts - May 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)	MAY-JUL	163	305	400	60	495	635	665		
	MAY-SEP	185	340	445	59	550	705	758		
GREYBULL RIVER nr Meeteetse	MAY-JUL	76	95	108	77	121	140	141		
	MAY-SEP	114	138	154	79	170	194	194		
SHELL CREEK nr Shell	MAY-JUL	42	48	52	91	56	62	57		
	MAY-SEP	53	59	63	91	67	73	69		
BIGHORN RIVER at Kane (2)	MAY-JUL	330	475	570	62	665	810	915		
	MAY-SEP	350	505	615	60	725	880	1020		

BIGHORN RIVER BASIN Reservoir Storage (1000 AF) - End of April					BIGHORN RIVER BASIN Watershed Snowpack Analysis - May 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	387.1	293.9	453.4	NOWOOD RIVER	5	89	61
BIGHORN LAKE	1356.0	640.1	608.0	791.9	GREYBULL RIVER	2	61	62
					SHELL CREEK	4	86	76
					BIGHORN (Boysen-Bighorn)	11	83	68

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

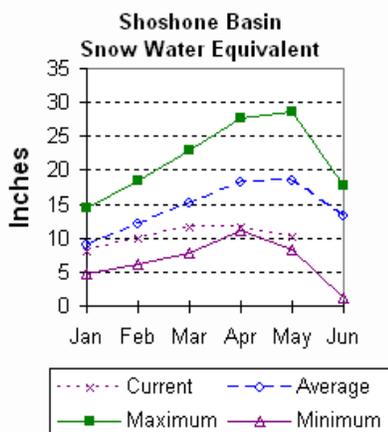
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(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 48 percent of average (50 percent of last year) in the Shoshone River basin. The Clarks Fork River basin SWE is 63 percent of average (62 percent of last year). For more information see the Basin Summary of Snow Course Data at the beginning of this report.



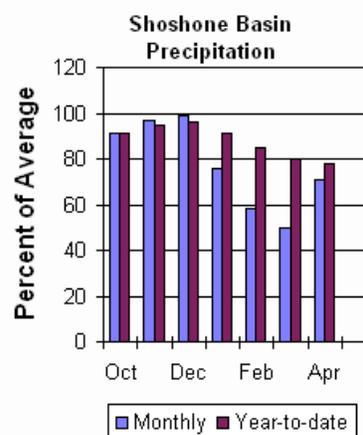
### Precipitation.

Precipitation for last month was 71 percent of normal (101 percent of last year). Monthly percentages range from 49 to 110 percent of average. The basin year-to-date precipitation is now 78 percent of average (73 percent of last year). Year-to-date percentages range from 64 to 88 percent of average.

### Reservoir.

Current usable storage in Buffalo Bill Reservoir is about 123 percent of average (121

percent of last year's storage) – the reservoir is about 67 percent of capacity. Currently, about 432,100 acre-feet are stored in the reservoir compared to 357,800 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 (May through September period) for the North Fork Shoshone River at Wapiti is expected to be 365,000 acre-feet (75 percent of average). South Fork of the Shoshone River near Valley is estimated to yield of 155,000 acre-feet (61 percent of average), and South Fork above Buffalo Bill Reservoir is expected to be 91,000 acre-feet (42 percent of average). At the Buffalo Bill Reservoir, the fifty percent chance yield for the Shoshone River is expected to be about 470,000 acre-feet (62 percent of average). The fifty-percent chance yield for the Clarks Fork of the Yellowstone near Belfry, Montana is expected to be about 440,000 acre-feet (77 percent of average).

SHOSHONE & CLARKS FORK RIVER BASINS  
Streamflow Forecasts - May 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)	
NF SHOSHONE RIVER at Wapiti	MAY-JUL	270	300	320	75	340	370	425		
	MAY-SEP	315	345	365	75	385	415	485		
SF SHOSHONE RIVER nr Valley	MAY-JUL	99	118	130	61	142	161	215		
	MAY-SEP	119	141	155	61	169	191	255		
SF SHOSHONE RIVER abv Buffalo Bill	MAY-JUL	41	68	89	45	110	141	200		
	MAY-SEP	48	68	91	42	114	148	215		
BUFFALO BILL DAM Inflow (2)	MAY-JUL	280	360	410	61	460	540	675		
	MAY-SEP	335	415	470	62	525	605	755		
CLARKS FORK RIVER nr Belfry	MAY-JUL	320	370	400	78	430	480	515		
	MAY-SEP	355	405	440	77	475	525	570		

SHOSHONE & CLARKS FORK RIVER BASINS Reservoir Storage (1000 AF) - End of April					SHOSHONE & CLARKS FORK RIVER BASINS Watershed Snowpack Analysis - May 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	432.1	357.8	352.2	SHOSHONE RIVER	7	50	48
					CLARKS FORK in WY	7	62	63

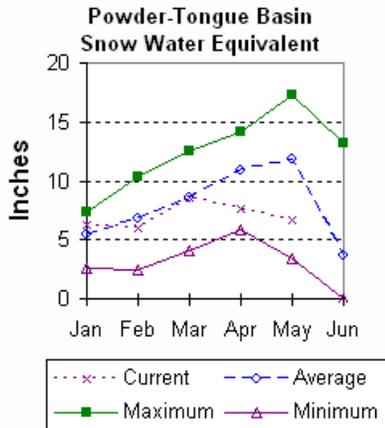
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

- (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 66 percent of normal (70 percent of last year). The Goose Creek drainage SWE is 56 percent of average (60 percent of last year). SWE in the Clear Creek drainage is 63 percent of normal SWE (76 percent of last year). Crazy Woman Creek drainage SWE is 55 percent of average (73 percent of last year). Upper Powder River drainage SWE is 50 percent of average (77 percent of last year). Powder River basin SWE, in Wyoming, is about 56 percent of average (76 percent of last year). For more information see Basin Summary of Snow Courses at beginning of report.



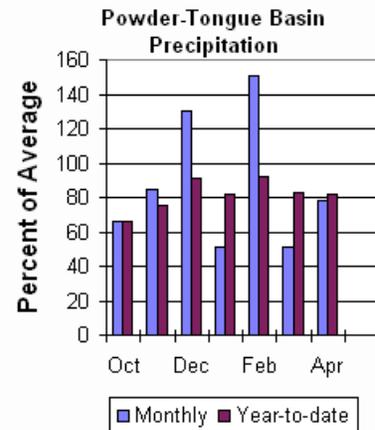
### Precipitation

Last month's precipitation was 78 percent of average for the 9 reporting stations (89 percent of last year). Monthly percentages range from 8 to 111 percent of average. Year-to-date precipitation is about 82 percent of average in the basin; this is 82 percent of last year at this time. Precipitation for the year ranges from 55 to 99 percent of average at the reporting stations.

### Reservoir

Tongue River Reservoir has a total capacity of 79,100 acre feet and is currently storing

49,400 acre feet. Current reservoir storage is 156 percent of average. The current reservoir is about 62 percent of capacity. Last year at this time the reservoir was storing about 55,800 acre feet – average storage is about 31,700 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 May through September forecast period. The estimated yield for Tongue River near Dayton is 73,000-acre feet (71 percent of normal). Big Goose Creek near Sheridan is expected to yield about 34,000 acre feet (59 percent of average), while Little Goose Creek nr Big Horn is expected to yield about 28,000 acre feet (70 percent of average). Middle Fork of the Powder River near Barnum is estimated to yield 7,200 acre feet (43 percent of average). The North Fork of the Powder near Hazelton should yield about 7,700 acre-feet (79 percent of normal). The estimated yield for Clear Creek near Buffalo is 27,000 acre-feet (73 percent of average). Rock Creek near Buffalo will yield about 17,200 acre-feet (75 percent of normal), and Piney Creek at Kearny should yield about 35,000 acre-feet (73 percent of average).

POWDER & TONGUE RIVER BASINS  
Streamflow Forecasts - May 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)	
TONGUE RIVER nr Dayton (2)	MAY-JUL	37	52	62	69	72	87	90
	MAY-SEP	46	62	73	71	84	100	103
BIG GOOSE CREEK nr Sheridan	MAY-JUL	6.0	18.5	27	55	35	48	49
	MAY-SEP	12.7	25	34	59	43	55	58
LITTLE GOOSE CREEK nr Big Horn	MAY-JUL	11.6	17.2	21	66	25	30	32
	MAY-SEP	17.6	24	28	70	32	38	40
TONGUE RIVER RESERVOIR Inflow (2)	MAY-JUL	33	82	115	58	148	195	199
	MAY-SEP	48	100	136	60	172	222	225
MIDDLE FORK POWDER nr Barnum	MAY-JUL	1.0	4.2	6.4	41	8.6	11.8	15.6
	MAY-SEP	1.6	5.0	7.2	43	9.4	12.8	16.6
NORTH FORK POWDER nr Hazelton	MAY-JUL	4.70	6.10	7.00	78	7.90	9.30	9.00
	MAY-SEP	5.20	6.70	7.70	79	8.70	10.20	9.80
CLEAR CREEK nr Buffalo	MAY-JUL	17.2	21	23	72	25	29	32
	MAY-SEP	19.9	24	27	73	30	34	37
ROCK CREEK nr Buffalo	MAY-JUL	8.4	11.5	13.6	72	15.7	18.8	18.9
	MAY-SEP	11.8	15.0	17.2	75	19.4	23	23
PINEY CREEK at Kearny	MAY-JUL	9.3	23	33	75	43	57	44
	MAY-SEP	10.7	25	35	73	45	59	48
POWDER RIVER at Moorehead	MAY-JUL	13.0	75	117	66	159	220	178
	MAY-SEP	28	91	134	67	177	242	200
POWDER RIVER near Locate	MAY-JUL	67	97	118	61	139	169	195
	MAY-SEP	81	116	139	63	162	197	220

POWDER & TONGUE RIVER BASINS Reservoir Storage (1000 AF) - End of April					POWDER & TONGUE RIVER BASINS Watershed Snowpack Analysis - May 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	49.4	55.8	31.7	UPPER TONGUE RIVER	10	70	66
					GOOSE CREEK	3	60	56
					CLEAR CREEK	4	76	63
					CRAZY WOMAN CREEK	3	73	55
					UPPER POWDER RIVER	4	77	50
					POWDER RIVER in WY	8	76	56

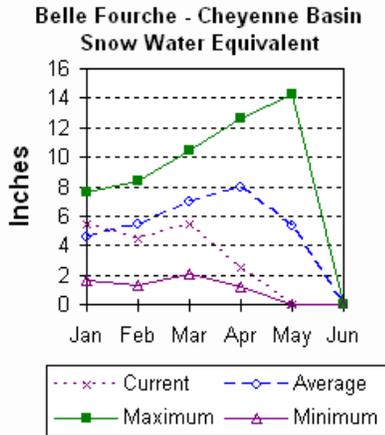
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

- (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 is melted out as of April 1. See Basin summary of Snow Course Data at the beginning of this report for a detailed listing.



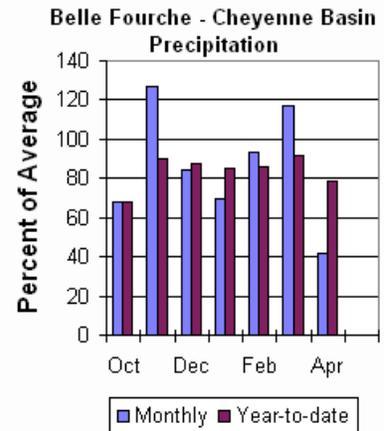
### Precipitation.

Precipitation, for last month was 42 percent of average in the Black Hills. Monthly percentages range from 14 to 64 percent. Year-to-date precipitation is 79 percent of average and 85 percent of last year's amount.

### Reservoir.

Usable reservoir storage is generally near average in the basin. Angostura is currently storing 78 percent of average

(88,300-acre feet), about 72 percent of capacity. Belle Fourche reservoir is storing 86 percent of average (125,100-acre feet), about 70 percent of capacity. Deerfield reservoir is storing 110 percent of average (15,000-acre feet), about 99 percent of capacity. Keyhole reservoir is storing 98 percent of average (113,800-acre feet), 59 percent of capacity. Pactola reservoir is storing 103 percent of average (49,500-acre feet), 90 percent of capacity. Shadehill reservoir is storing 103 percent of average (67,200-acre feet), 83 percent of capacity.



### Streamflow

Water supply is estimated to be below normal this year. The following values reflect the 50 percent chance yields for the May through July runoff period. Deerfield Reservoir inflow is forecast at 3,000 acre feet (75 percent of average). Pactola is forecast at 11,000 acre feet (73 percent of average).

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

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>								
		90% (1000AF)		70% (1000AF)		50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF) 10% (1000AF)		30-Yr Avg. (1000AF)
		Chance Of Exceeding *								
DEERFIELD RESERVOIR Inflow	MAY-JUL	0.05	1.80	3.00	75	4.20	5.90	3.99		
PACTOLA RESERVOIR Inflow	MAY-JUL	1.2	4.9	11.0	73	16.7	26	15.1		

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

BELLE FOURCHE & CHEYENNE RIVER BASINS  
Watershed Snowpack Analysis - May 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	88.3	100.3	113.7	BELLE FOURCHE	4	0	0
BELLE FOURCHE	178.4	125.1	142.6	145.7				
DEERFIELD	15.2	15.0	15.2	13.6				
KEYHOLE	193.8	113.8	131.8	115.8				
PACTOLA	55.0	49.5	51.0	47.9				
SHADEHILL	81.4	67.2	39.9	65.2				

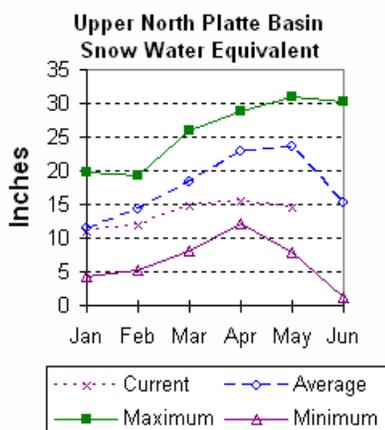
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

- (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 62 percent of average snow water equivalent (SWE) recorded for this time of the year (63 percent of last year). SWE in the drainage area above Northgate is about 66 percent of average and 62 percent of last year at this time. SWE in the Encampment River drainage is about 73 percent of normal and 80 percent of last year. Brush Creek SWE for the year is about 45 percent of normal and 42 percent of last year's SWE. Medicine Bow and Rock Creek drainage SWE is about 57 percent of average and 69 percent of last year at this time. For more information see Basin Summary of Snow Courses at the beginning of this report.



### Precipitation

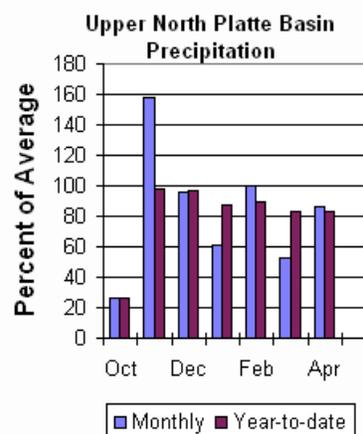
Eight reporting stations indicate last month's precipitation was 86 percent of average and about 80 percent of last year's amount. Precipitation varied from 44 to 143 percent of average last month. Total water-year-to-date precipitation is about 83 percent of average for the basin, which is about 82 percent of last year's amount. Year to date percentage ranges from 68 to 89 percent of average.

### Reservoirs

Seminoe Reservoir is currently storing about 57 percent of average for this time of the year. Currently, the reservoir is storing 137 percent of last year's amount. Seminoe Reservoir is estimated to be storing 290,100 acre-feet (29 percent of capacity). Last year, at this time, the reservoir had 211,700 acre-feet in storage.

### Streamflow

All the following yields are based on the fifty percent chance May through September yield. Yield for the North Platte River near Northgate is expected to be about 74,000 acre-feet (32 percent of average). Encampment River near Encampment is estimated to yield 120,000 acre-feet (77 percent of normal). Rock Creek near Arlington is estimated to yield 25,000 acre-feet (46 percent of average). Seminoe Reservoir inflow should be about (345,000 acre-feet (46 percent of normal)). See the following table for more detailed information on projected runoff.



UPPER NORTH PLATTE RIVER BASIN  
Streamflow Forecasts - May 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)	
NORTH PLATTE RIVER nr Northgate	MAY-JUL	35	51	63	31	76	99	205		
	MAY-SEP	13.0	49	74	32	99	135	230		
ENCAMPMENT RIVER nr Encampment	MAY-JUL	77	97	110	75	123	143	147		
	MAY-SEP	85	106	120	77	134	155	156		
ROCK CREEK nr Arlington	MAY-JUL	16.9	20	23	44	26	30	52		
	MAY-SEP	18.8	22	25	46	28	32	55		
SWEETWATER RIVER nr Alcova	MAY-JUL	27	41	50	82	59	73	61		
	MAY-SEP	30	45	55	83	65	80	66		
SEMINOE RESERVOIR Inflow	MAY-JUL	125	235	310	45	385	495	690		
	MAY-SEP	225	295	345	46	395	465	750		

UPPER NORTH PLATTE RIVER BASIN Reservoir Storage (1000 AF) - End of April					UPPER NORTH PLATTE RIVER BASIN Watershed Snowpack Analysis - May 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	290.1	211.7	510.4	N PLATTE above Northgate	7	62	66
					ENCAMPMENT RIVER	4	80	73
					BRUSH CREEK	5	42	45
					MEDICINE BOW & ROCK CREEK	3	69	57
					N PLATTE above Seminoe	19	63	62

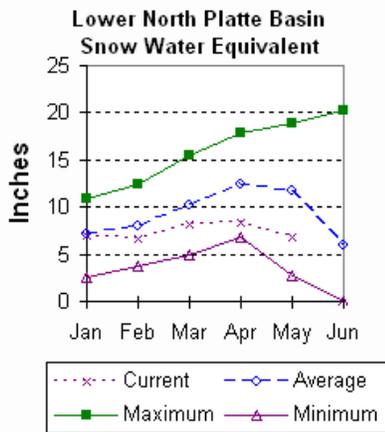
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

- (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 58 percent of normal (62 % of last year). The Sweetwater drainage SWE is currently 77 percent (135 percent of last year). Deer and LaPrele Creek SWE is 27 percent of average (31 percent of last year). SWE for the North Platte above the Laramie River drainage is 62 percent of average (66 % of last year). SWE for the Laramie River above Laramie is 57 percent of average (53 % of last year). SWE for the Little Laramie River is 44 percent of average (64 percent of last year). For the entire Laramie River drainage, Laramie River above mouth, SWE is 58 percent of average (62% of last year). For more information see Basin Summary of Snow Courses at beginning of report.



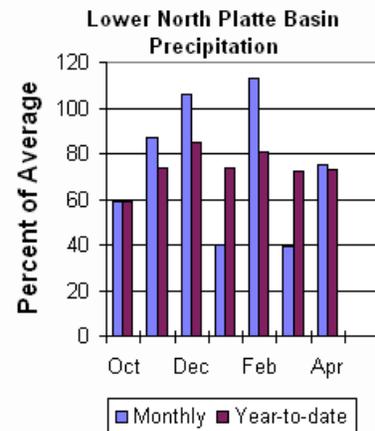
## Precipitation

Of the 6 reporting stations, percentages for the month range from 23 to 180. Last month's precipitation for the basin was 75 percent of average (87 percent of last year). The water year-to-date precipitation for the basin is currently 73 percent of average (83 percent of last year). Year-to-date percentages range from 64 to 88.

## Reservoir

The Lower North Platte River basin reservoir storage is well below average, except for Alcova and Guernsey

reservoirs. Reservoir storage is as follows: Alcova 178,400 acre feet (100 percent of average); Glendo 332,100 acre feet (72 percent of average); Guernsey 21,800 acre feet (65 percent of average); Pathfinder 302,300 acre feet (40 percent of average); Seminoe 290,100 acre feet (57 percent of average), and Wheatland No.2 27,200 acre feet (46 percent of average).



## Streamflow

Yields from 13 to 83 percent are expected in the basin during the forecast period. The following yields are based on the fifty percent chance probability runoff for the May through September forecast period. The Sweetwater near Alcova is forecast to yield about 55,000 acre-feet (83% of average). Deer Creek at Glenrock is expected to yield about 5,500 acre feet (16% of average). LaPrele Creek above the reservoir is estimated to yield 2,400 acre-feet (13% of average). North Platte River below Guernsey Reservoir is expected to yield about 355,000 acre-feet (41% of normal), and below Glendo Reservoir is anticipated to yield about 330,000 acre-feet (40% of average). Laramie River near Woods Landing should yield about 70,000 acre-feet (55% of average). The Little Laramie near Filmore should produce about 15,800 acre-feet (26 percent of average).

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

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)		
		90% (1000AF)		70% (1000AF)		Chance Of Exceeding * (1000AF) (% AVG.)			30% (1000AF) 10% (1000AF)	
SWEETWATER RIVER nr Alcova	MAY-JUL	27	41	50	82	59	73	61		
	MAY-SEP	30	45	55	83	65	80	66		
LAPRELE CREEK abv Reservoir	MAY-JUL	0.4	2.8	2.5	13	5.6	10.1	18.6		
	MAY-SEP	0.4	2.8	2.4	13	5.5	10.0	18.9		
NORTH PLATTE - Alcova to Orin Gain	MAY-JUL	6.0	23	25	22	47	80	113		
	MAY-SEP	4.0	24	28	23	52	87	122		
NORTH PLATTE RIVER blw Glendo Res	MAY-JUL	71	215	315	39	415	560	800		
	MAY-SEP	79	230	330	40	430	580	830		
NORTH PLATTE RIVER blw Guernsey Res	MAY-JUL	35	210	330	41	450	625	815		
	MAY-SEP	48	230	355	41	480	660	860		
LARAMIE RIVER nr Woods	MAY-JUL	25	49	65	57	81	105	115		
	MAY-SEP	25	52	70	55	88	115	127		
LITTLE LARAMIE RIVER nr Filmore	MAY-JUL	7.2	12.1	15.4	28	18.7	24	56		
	MAY-SEP	6.3	11.9	15.8	26	19.7	25	61		

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

LOWER NORTH PLATTE, SWEETWATER & LARAMIE RIVER BASINS  
Watershed Snowpack Analysis - May 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	178.4	177.9	178.8	SWEETWATER	4	135	77
GLENDO	506.4	332.1	338.3	458.2	DEER & LAPRELE CREEKS	3	31	27
GUERNSEY	45.6	21.8	28.5	33.3	N PLATTE abv Laramie R.	26	66	62
PATHFINDER	1016.5	302.3	314.4	747.1	LARAMIE RIVER abv Laramie	11	53	60
SEMINOE	1016.7	290.1	211.7	510.4	LITTLE LARAMIE RIVER	5	64	55
WHEATLAND #2	98.9	27.2	18.4	59.7	LARAMIE RIVER above mouth	14	56	56
					NORTH PLATTE	33	62	58

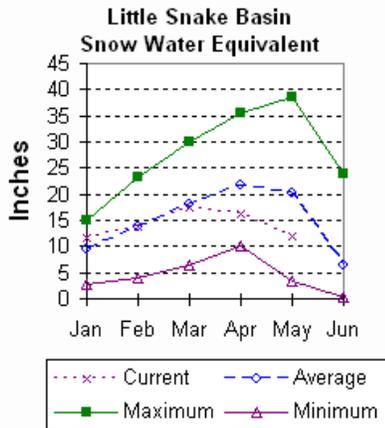
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

- (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

Currently, snow water equivalent (SWE) in the Little Snake River drainage is 59 percent of average (64 percent of last year at this time). For more information see Basin Summary of Snow Courses at beginning of this report.

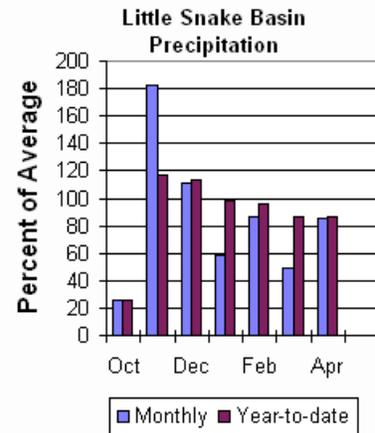


Runoff yield in the Little Snake River drainage is expected to be much below normal this year. Stream yield is based on the 50 percent probability for the April through July forecast period. The Little Snake River near Slater should yield about 96,000 acre-feet (60 percent of normal). Little Snake River near Dixon is estimated to yield 190,000 acre-feet (58 percent of normal).

## Precipitation

Precipitation across the basin was below average this past month. Last Month's precipitation was 85 percent of average (72 percent of last year) for the 5 reporting stations. Last month's precipitation ranged from 66 to 169 percent of average. The Little Snake River basin water-year-to-date precipitation is currently 87 percent of average (88 percent of last year). Year-to-date percentages range from 80 to 91 percent of average.

## Streamflow



LITTLE SNAKE RIVER BASIN  
Streamflow Forecasts - May 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)	
Little Snake River nr Slater	APR-JUL	62	81	96	60	112	137	159
LITTLE SNAKE R nr Dixon	APR-JUL	84	147	190	58	232	297	330

LITTLE SNAKE RIVER BASIN	LITTLE SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of April	Watershed Snowpack Analysis - May 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	64	59

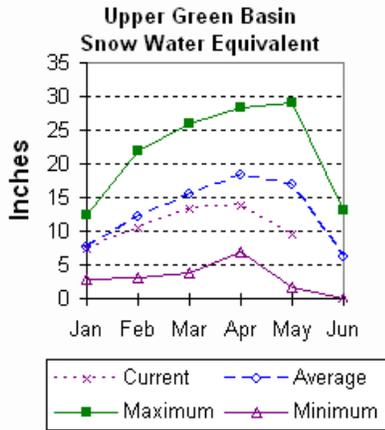
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

- (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 37 percent of normal (59 percent of last year). SWE on the west side of the Upper Green River basin is about 64 percent of normal, 84 percent of this time last year. Newfork River SWE is now about 52 percent of normal (66 percent of last year). Big Sandy-Eden Valley SWE is about 65 percent of average (119 percent of last year). SWE in the Green River above Fontenelle Reservoir is about 56 percent of average (76 percent of last year). For more information see the Basin Summary of Snow Courses at the beginning of this report.



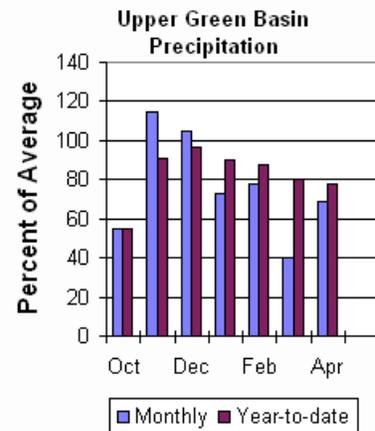
## Precipitation.

The 11 reporting precipitation sites in the basin were 69 percent of average last month (192 percent of last year at this time). Last month's precipitation varied from 44 to 288 percent of average. Water year-to-date precipitation is about 78 percent of average (94 percent of last year). Year to date percentage of average ranges from 69 to 90 percent for the reporting stations.

## Reservoir.

Usable storage in Big Sandy Reservoir is currently about 11,300 acre feet (46 percent of

average) -- 128 percent of last year and 30 percent of capacity. Eden Reservoir is too low to measure. Fontenelle Reservoir is storing 187,100 acre-feet (130 percent of average and 54 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 160,000 acre-feet (60 percent of normal). Pine Creek above Fremont Lake is expected to yield 69,000 acre-feet (66 percent of normal). New Fork River near Big Piney is expected to yield about 200,000 acre-feet (51 percent of normal). Fontenelle Reservoir Inflow is estimated to be 425,000 acre-feet (49 percent of average), and Big Sandy near Farson is expected to be about 38,000 acre-feet (66 percent of normal).

UPPER GREEN RIVER BASIN  
Streamflow Forecasts - May 1, 2004

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)		
		90% (1000AF)		70% (1000AF)		Chance Of Exceeding * (1000AF) (% AVG.)			30% (1000AF) 10% (1000AF)	
		123	145	160	60	175	196		265	
Green River at Warren Bridge	APR-JUL	123	145	160	60	175	196	265		
Pine Creek abv Fremont Lake	APR-JUL	56	64	69	66	74	82	104		
	MAY-JUL	52	60	65	65	70	78	100		
New Fork River nr Big Piney	APR-JUL	115	165	200	51	235	285	395		
Fontenelle Reservoir Inflow	APR-JUL	324	383	425	49	470	539	860		
Big Sandy River nr Farson	APR-JUL	24	32	38	66	44	52	58		

UPPER GREEN RIVER BASIN Reservoir Storage (1000 AF) - End of April				UPPER GREEN RIVER BASIN Watershed Snowpack Analysis - May 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	11.3	8.8	24.8	GREEN above Warren Bridge	4	61	37
EDEN		NO REPORT			UPPER GREEN (West Side)	6	84	64
FONTENELLE	344.8	187.1	153.9	143.5	NEWFORK RIVER	3	66	52
					BIG SANDY/EDEN VALLEY	2	119	65
					GREEN above Fontenelle	13	76	56

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

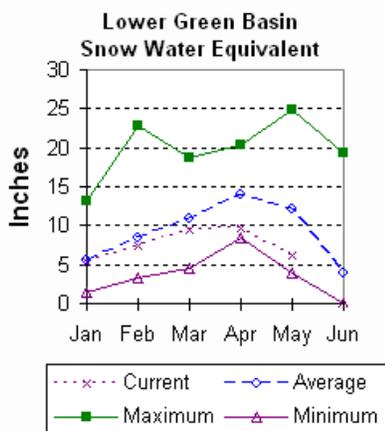
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(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 SWE is currently 24 percent of average (45% of last year). SWE in the Hams Fork is 58 percent of average (86% of last year). Blacks Fork SWE is currently 43 percent of average (61 percent of last year). SWE in the basin, as a whole, is 51 percent of average (74 percent of last year). For more information see Basin Summary of Snow Courses at beginning of this report.



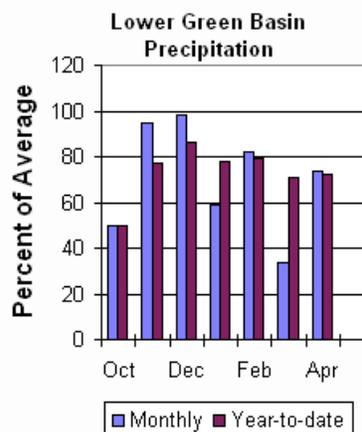
### Precipitation

Precipitation was below average for the 3 reporting stations during last month (74 percent of average). Precipitation ranged from 63 to 96 percent of average for the month. The basin year-to-date precipitation is currently 72 percent of average (100 percent of last year). Year-to-date percentages range from 70 to 76.

### Reservoir

Fontenelle Reservoir is currently storing 187,100 acre feet; this is 130 percent of

average (122 percent of last year). Flaming Gorge is currently storing 2,638,000 acre feet, this is 89 percent of average (99 percent of last year). Viva Naughton is currently storing 38,500 acre feet, this is 135 percent of average (123 percent of last year).



### Streamflow

Expected yields vary from 43 to 57 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 430,000-acre feet (49 percent of average). Blacks Fork near Robertson is forecast to yield 54,000-acre feet (57 percent of average). East Fork of Smiths Fork near Robertson is estimated to yield 16,800 acre-feet (54 percent of average). The estimated yield for Hams Fork near Frontier is 33,000-acre feet (51 percent of average). Flaming Gorge Reservoir inflow will be about 510,000-acre feet (43 percent of average).

LOWER GREEN RIVER BASIN  
Streamflow Forecasts - May 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)	
Green River nr Green River, WY	APR-JUL	245	355	430	49	505	615	875		
Blacks Fork nr Robertson	APR-JUL	38	48	54	57	60	70	95		
EF of Smiths Fork nr Robertson	APR-JUL	14.2	15.7	16.8	54	18.0	19.8	31		
Hams Fk blw Pole Ck nr Frontier	APR-JUL	24	29	33	51	37	44	65		
Hams Fk Inflow to Viva Naughton Res	APR-JUL	21	32	40	45	48	59	89		
Flaming Gorge Reservoir Inflow	APR-JUL	255	405	510	43	615	765	1190		

LOWER GREEN RIVER BASIN  
Reservoir Storage (1000 AF) - End of April

LOWER GREEN RIVER BASIN  
Watershed Snowpack Analysis - May 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	187.1	153.9	143.5	HAMS FORK RIVER	4	86	58
VIVA NAUGHTON RES	42.4	38.5	31.4	28.6	BLACKS FORK	5	61	43
					HENRYS FORK	3	45	24
					GREEN above Flaming Gorge	25	74	51

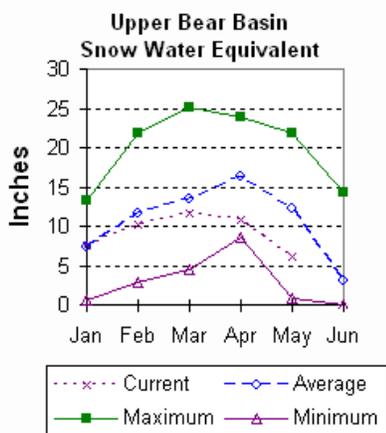
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

- (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) in the upper Bear River basin in Utah is estimated to be 34 percent of average; that is about 77 percent of last year at this time. SWE in the Wyoming portion of the Bear River drainage (Smiths and Thomas Forks) is estimated at 60 percent of average (86 percent of last year at this time.). Bear River basin SWE, above the Idaho State line, is 50 percent of average (89 percent of last year). See the Basin Summary of Snow Course Data at the beginning of this report for more detailed information.



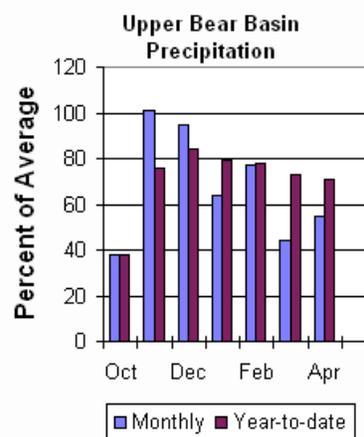
capacity. Reservoir storage last year at this time was 18,500 acre feet at this time.

## Precipitation

Precipitation for last month was 55 percent of average for the 2 reporting stations; this is 163 percent of the precipitation received last year. The year-to-date precipitation, for the basin, is 71 percent of average; this is 104 percent of last year's amount.

## Reservoir

Usable storage, in Woodruff Narrows reservoir, is about 8,000 acre feet (73 percent of average). Current reservoir storage is about 49 percent of



## Streamflow

The following 50 percent chance stream flow yields are for the May through September period. Smiths Fork near Border is estimated to yield 46,000 acre-feet (41 percent of normal. Bear River above the Utah-Wyoming State Line is expected to yield about 49,000 acre feet (41 percent of average)

UPPER BEAR RIVER BASIN  
Streamflow Forecasts - May 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	MAY-JUL	29	34	37	39	40	45	95		
	MAY-SEP	36	42	46	41	50	56	112		
Bear River nr UT-WY State Line	MAY-JUL	30	38	44	41	50	58	107		
	MAY-SEP	33	42	49	41	56	65	119		

UPPER BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of April					UPPER BEAR RIVER BASIN Watershed Snowpack Analysis - May 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	7	77	34
					SMITHS & THOMAS FORKS	4	86	60
					BEAR RIVER abv ID line	9	89	50
					NORTHWEST	68	73	60
					NORTHEAST	19	72	61
					SOUTHEAST	36	60	55
					SOUTHWEST	34	70	49

\* 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.