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# Wyoming Basin Outlook Report April 1, 2001



# 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 much below normal for this time of the year. SWE averages for the State are about 67 percent of normal for this time of the year. Northwest portion of the State is 56 of percent normal. Northeast Wyoming is 71 of percent of normal, and the southeast part of the State is 75 percent of average. Southwestern Wyoming is 65 percent of average for this time of the year.

Precipitation for March was generally much below average for the State. Year-to-date precipitation is below average for the State – the Belle Fourche drainage is still feeling the effects of the heavy snow last fall and is currently 99 percent of average. Reservoir levels vary from about 30 percent of average to 159 percent of average, the exception being Eden Reservoir which is too low to measure. Generally, the larger capacity reservoirs are above average storage. Forecast runoff varies from 20 to 77 percent of average. The mean of all the forecast points in the State is about 53 percent of average (47 percent below average).

## Snowpack

SWE is below to much below average for the entire State. SWE in the northwestern portion of the State is about 54 percent of average (63 percent of last year). Northeast Wyoming SWE is currently about 73 percent of average (92 percent of last year). The southeast portion is currently about 75 percent of average SWE (85 percent of last year). And the southwest is about 65 percent of average (74 percent of last year).

## Precipitation

March precipitation was much below normal over the State. Most of the basins in the state received less than 70 percent of normal precipitation. The Wind River and Lower North Platte received less than half of the usual precipitation. 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	-31%
Yellowstone & Madison	-15%	Lower North Platte	-55%
Wind River	-57%	Little Snake River	-31%
Big Horn	-29%	Upper Green River	-36%
Shoshone & Clarks Fork	-26%	Lower Green River	-39%
Powder & Tongue River	-31%	Upper Bear River	-35%
Belle Fourche & Cheyenne	-21%		

## Streams

Stream flow yield is expected to be below average across the State, and well below average in the northern half of the State. Most probable yield for the State is forecast to be about 52 percent of average (varies from 20 to 77 percent of average). The northwest part of the State is expected to yield about 50 percent of normal -- yield estimates vary from 21 to 69 percent of normal through the northwest region of the State. Yield from the northeast portion of Wyoming will be below average (about 52 percent of average) -- yield estimates vary from 41 to 60 percent of average for the various forecast points. The southeast portion of the state will be about 57 percent

of normal -- yield estimates range from 30 to 71 percent of normal. The southwest portion of Wyoming yield will be much below normal (about 53 percent of average), and estimates vary from 20 to 77 percent of average.

## Reservoirs

The following reservoir data is based on the usable capacity of each reservoir. Although several reservoirs did not report, reservoir storage for those reporting is generally near average for this time of the year. See following table for further information about reservoir storage.

## Major Reservoirs in Wyoming

### B A S I N     W I D E R E S E R V O I R     S U M M A R Y

FOR THE END OF MARCH 2001

BASIN AREA RESERVIOR	CURRENT AS % CAPACITY	LAST YR AS % CAPACITY	AVERAGE AS % CAPACITY	CURRENT AS % AVERAGE	CURRENT AS % LAST YR
ALCOVA	85	85	88	97	100
ANGOSTURA	89	99	90	99	90
BELLE FOURCHE	99	101	73	135	98
BIG SANDY	20	55	52	39	36
BIGHORN LAKE	63	67	59	107	94
BOYSEN	75	88	89	84	85
BUFFALO BILL	55	67	56	100	82
BULL LAKE	41	63	55	75	65
DEERFIELD	99	99	89	112	101
EDEN			NO REPORT		
ENNIS LAKE	73	71	81	90	102
FLAMING GORGE			AVERAGE NOT ESTABLISHED		
FONTENELLE	32	30	46	70	105
GLENDO	78	92	83	94	85
GRASSY LAKE	85	84	74	115	102
GUERNSEY	41	41	47	86	100
HEBGEN LAKE	72	81	65	110	89
JACKSON LAKE	76	78	56	136	98
KEYHOLE	87	90	56	156	96
PACTOLA	99	98	85	116	100
PALISADES	55	85	72	76	65
PATHFINDER	76	98	61	125	77
PILOT BUTTE	74	71	68	108	104
SEMINOE	64	73	36	176	87
SHADEHILL	102	69	78	131	147
VIVA NAUGHTON RES	76	79	64	119	96
WHEATLAND #2	46	75	49	92	61
WOODRUFF NARROWS			NO REPORT		
GLENDO PROJECT USERS	83	85	69	120	98
KENDRICK PROJECT	81	82	68	119	98
NORTH PLATTE PROJ	65	100	64	103	65

# Basin Summary of Snow Course Data

## BASIN SUMMARY OF SNOW COURSE DATA

APRIL 2001

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90
-----						
WYOMING Snow Course and SNOTEL Stations						
ALBANY	9400	3/29/01	36	9.7	11.9	14.7
ASTER CREEK	7750	3/29/01	38	12.6	26.0	30.7
BALD MOUNTAIN SNOTEL	9380	4/01/01	---	14.1	19.6	20.5
BASE CAMP SNOTEL	7030	4/01/01	---	8.0	17.6	17.8
BATTLE MTN. SNOTEL	7440	4/01/01	---	9.0	11.1	11.3
BEARLODGE DIVIDE	4680	3/30/01	14	4.5	.0	2.2
BEARTOOTH LK. SNOTEL	9280	4/01/01	---	11.9	21.0	23.8
BEAR TRAP SNOTEL	8200	4/01/01	---	5.4	5.8	7.2
BIG GOOSE	7760	3/29/01	18	3.1	5.4	7.8
BIG GOOSE SNOTEL	7760	4/01/01	---	5.8	8.0	---
BIG PARK	8620	3/26/01	39	11.6	17.7	20.2
BIG SANDY SNOTEL	9080	4/01/01	---	9.8	11.4	14.7
BLACKWATER SNOTEL	9780	4/01/01	---	14.6	17.4	22.4
BLIND BULL SNOTEL	8900	4/01/01	---	15.5	24.9	29.8
BLIND PARK PILLOW	6870	4/01/01	---	7.7	6.0	11.1
BLUE RIDGE	9620	3/28/01	18	4.1	7.0	12.5
BONE SPGS. SNOTEL	9350	4/01/01	---	10.6	15.0	16.5
BOXELDER	7280	3/30/01	25	6.4	6.3	8.0
BROOKLYN LK. SNOTEL	10220	4/01/01	---	17.0	17.9	26.4
BRYAN FLAT	6420	3/28/01	16	6.1	6.6	9.0
BUCK CREEK	7960	3/30/01	34	9.8	9.8	11.0
BURGESS JCT. SNOTEL	7880	4/01/01	---	8.4	11.5	11.8
BURROUGHS CRK SNOTEL	8750	4/01/01	---	8.5	12.5	15.0
CANYON SNOTEL	8090	4/01/01	---	8.8	13.4	13.1
CARTER MOUNTAIN	7950	3/28/01	7	1.4	2.4	5.2
CASPER MTN. SNOTEL	7850	4/01/01	---	11.6	15.5	16.6
CASTLE CREEK	8400	3/29/01	9	2.0	4.7	4.6
CCC CAMP	7000	3/29/01	22	7.6	12.2	12.5
CHALK CK #1 SNOTEL	9100	4/01/01	46	16.4	22.5	23.9
CHALK CK #2 SNOTEL	8200	4/01/01	34	11.8	13.6	15.8
CLOUD PEAK SNOTEL	9850	4/01/01	---	9.9	14.5	14.9
COLD SPRINGS SNOTEL	9630	4/01/01	---	3.1	6.6	8.4
COTTONWOOD CR SNOTEL	7700	4/01/01	---	15.6	23.0	24.5
DARBY CANYON	8250	3/31/01	52	16.8	22.2	24.1
DEER PARK SNOTEL	9700	4/01/01	---	10.4	14.1	---
DITCH CREEK	6870	3/28/01	20	5.5	1.0	---
DIVIDE PEAK SNOTEL	8860	4/01/01	---	14.9	16.6	21.3
DOMELAKE SNOTEL	8880	4/01/01	---	9.4	11.2	13.8
DU NOIR	8760	3/30/01	16	3.7	5.2	8.5
EAST RIM DIV SNOTEL	7930	4/01/01	---	9.9	11.7	14.0
ELBO RANCH	7100	4/01/01	25	6.4	10.4	11.3
ELKHART PARK SNOTEL	9400	4/01/01	---	11.0	12.2	13.9
EVENING STAR SNOTEL	9200	4/01/01	---	14.7	24.0	27.2

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90
FOUR MILE MEADOWS	7860	3/28/01	22	6.4	11.9	13.2
FOXPARK	9060	3/29/01	31	7.9	7.9	7.7
GEYSER CREEK	8500	3/29/01	12	2.9	5.0	7.4
GLADE CREEK	7040	3/30/01	37	12.9	21.5	23.6
GRANITE CRK SNOTEL	6770	4/01/01	---	10.9	15.0	18.8
GRANNIER MEADOWS	8860	3/28/01	24	5.5	9.1	14.7
GRASSY LAKE SNOTEL	7270	4/01/01	---	20.6	32.5	36.3
GRAVE SPRINGS SNOTEL	8550	4/01/01	---	6.2	7.8	9.6
GREYS BOUNDARY	5720	3/29/01	20	6.9	11.9	11.2
GROS VENTRE SNOTEL	8750	4/01/01	---	9.7	11.1	15.8
GROVER PARK DIVIDE	7000	3/29/01	11	3.8	10.8	12.1
HAIRPIN TURN	9480	3/29/01	39	11.4	12.3	17.3
HANSEN S.M. SNOTEL	8360	4/01/01	---	5.0	6.5	7.1
HAMS FORK SNOTEL	7840	4/01/01	---	7.5	11.7	12.3
HASKINS CREEK	8980	3/29/01	72	25.1	27.4	30.4
HOBBS PARK SNOTEL	10100	4/01/01	---	6.4	10.9	15.1
HUCKLEBERRY DIVIDE	7300	3/29/01	33	11.0	20.0	21.7
INDIAN CREEK SNOTEL	9430	4/01/01	---	17.3	22.6	29.0
JACKPINE CREEK	7350	3/31/01	35	13.3	20.4	22.3
KELLEY R.S. SNOTEL	8180	4/01/01	---	10.5	14.3	17.3
KENDALL R.S. SNOTEL	7740	4/01/01	---	8.3	14.6	14.7
KIRWIN SNOTEL	9550	4/01/01	---	5.5	8.6	10.0
LA BONTE	8450	3/28/01	15	4.2	4.2	5.8
LAKE CAMP	7780	3/31/01	22	6.3	12.3	9.9
LA PRELE SNOTEL	8380	4/01/01	---	9.0	10.2	10.6
LARSEN CREEK	9020	3/27/01	22	5.6	12.4	12.4
LEWIS LAKE SNOTEL	7850	4/01/01	---	16.7	26.7	35.7
LEWIS LAKE DIVIDE	7850	3/29/01	59	20.9	39.7	42.1
LIBBY LODGE	8750	3/29/01	26	8.1	8.8	11.5
LITTLE BEAR RUN	6240	3/28/01	19	4.6	1.2	---
LITTLE WARM SNOTEL	9370	4/01/01	---	7.6	10.5	11.6
LOOMIS PARK SNOTEL	8240	4/01/01	---	11.3	17.7	17.6
LUPINE CREEK	7380	3/29/01	11	3.4	8.6	10.2
MALLO	6420	3/28/01	33	7.4	3.9	6.7
MARQUETTE SNOTEL	8760	4/01/01	---	4.5	6.4	8.1
MEDICINE LODGE LAKES	9340	3/29/01	39	7.8	11.3	11.2
MIDDLE FORK	7420	3/28/01	15	3.1	1.6	6.4
MIDDLE POWDER SNOTEL	7760	4/01/01	---	8.6	11.2	12.2
MORAN	6750	3/28/01	16	5.4	11.4	12.7
MOSS LAKE	9800	3/29/01	53	16.1	16.0	25.3
MOUNT TOM	5560	3/29/01	27	7.9	.9	4.5
NEW FORK SNOTEL	8340	4/01/01	---	8.8	10.9	11.3
NORRIS BASIN	7500	4/04/01	22	5.9	10.1	11.5
NORTH BARRETT CREEK	9400	3/29/01	65	18.4	19.4	21.5
NORTH FRENCH SNOTEL	10130	4/01/01	---	26.4	25.2	25.6
NORTH RAPID CK PILL.	6130	4/01/01	---	7.6	6.2	---
NORTH TONGUE	8450	3/29/01	34	7.0	11.0	13.6
OLD BATTLE SNOTEL	9920	4/01/01	---	23.6	26.0	32.2
OLD FAITHFUL	7400	3/31/01	17	5.0	12.8	14.8
ONION GULCH	8780	3/28/01	27	4.4	7.0	8.9
OWL CREEK SNOTEL	8980	4/01/01	---	3.5	4.4	4.6
PARKERS PEAK SNOTEL	9400	4/01/01	---	13.9	18.1	21.8

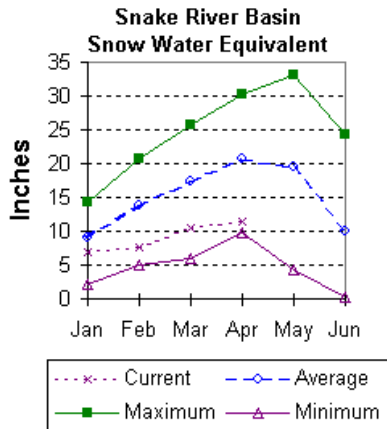
SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90
PHILLIPS BENCH SNOT.	8200	4/01/01	---	16.3	23.2	29.4
POCKET CREEK	9350	3/27/01	37	9.1	11.8	12.8
POISON MEADOWS	8500				---	29.1
POLE MOUNTAIN	8700	3/29/01	34	7.6	7.2	7.9
POWDER RVR.PASS SNOT	9480	4/01/01	---	6.6	9.4	10.9
PURGATORY GULCH	8970	3/29/01	36	11.3	10.8	11.2
RANGER CREEK	8120	3/29/01	28	5.0	8.8	9.3
RENO HILL SNOTEL	8500	4/01/01	---	12.6	12.8	14.4
REUTER CANYON	6280	3/29/01	45	15.8	4.3	9.2
ROWDY CREEK	8300	3/28/01	37	11.7	19.7	22.1
RYAN PARK	8400	3/29/01	32	9.6	9.1	11.2
SALT RIVER SNOTEL	7600	4/01/01	---	7.6	13.4	14.5
SAND LAKE SNOTEL	10050	4/01/01	---	24.2	23.5	33.1
SANDSTONE SNOTEL	8150	4/01/01	---	11.6	14.3	15.0
SAWMILL DIVIDE	9260	3/29/01	39	8.0	11.3	13.3
SHELL CREEK SNOTEL	9580	4/01/01	---	10.8	14.7	15.0
SHERIDAN R.S.	7750	3/30/01	6	1.3	5.0	6.0
SNAKE RIVER STATION	6920	3/29/01	30	10.4	19.6	21.1
SNAKE RV STA SNOTEL	6920	4/01/01	---	10.2	17.3	18.8
SNIDER BASIN SNOTEL	8060	4/01/01	---	8.8	12.3	14.9
SNOW KING MTN	7660				11.4	15.2
SOLDIER PARK	8780	3/28/01	16	2.7	3.6	6.1
SOUR DOUGH	8460	3/28/01	21	3.8	5.5	7.1
SOUTH BRUSH SNOTEL	8440	4/01/01	---	9.3	10.6	13.4
SOUTH PASS SNOTEL	9040	4/01/01	---	9.1	14.5	16.4
SPRING CRK. SNOTEL	9000	4/01/01	---	16.9	22.5	28.3
ST LAWRENCE ALT SNOT	8620	4/01/01	---	3.1	4.6	7.6
SUCKER CREEK SNOTEL	8880	4/01/01	---	8.1	12.2	12.2
SYLVAN LAKE SNOTEL	8420	4/01/01	---	14.3	19.5	22.3
SYLVAN ROAD SNOTEL	7120	4/01/01	---	8.3	13.4	12.5
T CROSS RANCH	7900	3/29/01	16	3.7	4.9	7.2
TETON PASS W.S.	7740	4/02/01	46	16.6	24.7	26.7
THUMB DIVIDE SNOTEL	7980	4/01/01	---	7.6	14.6	17.2
THUMB DIVIDE	7980	3/29/01	24	6.1	14.3	20.7
TIE CREEK SNOTEL	6870	4/01/01	---	4.9	6.4	---
TIMBER CREEK SNOTEL	7950	4/01/01	---	3.1	2.8	6.3
TOGWOTEE PASS SNOTEL	9580	4/01/01	60	16.6	21.4	25.2
TOWNSEND CRK SNOTEL	8700	4/01/01	---	5.3	6.6	9.9
TRIPLE PEAK SNOTEL	8500	4/01/01	---	15.1	22.7	25.9
TURPIN MEADOWS	6900	3/28/01	13	3.5	10.3	10.3
TWO OCEAN SNOTEL	9240	4/01/01	---	19.1	25.4	26.8
TYRELL RANGER STA.	8300	3/28/01	21	3.4	6.4	8.2
UPPER SPEARFISH	6500	3/29/01	30	8.0	4.3	7.0
WARREN PEAK SNOTEL	6520				10.9	11.1
WEBBER SPRING SNOTEL	9250	4/01/01	---	16.1	19.7	28.3
WHISKEY PARK SNOTEL	8950	4/01/01	---	21.5	24.3	29.0
WILLOW CREEK SNOTEL	8450	4/01/01	---	18.4	30.2	30.5
WINDY PEAK SNOTEL	7900	4/01/01	---	7.5	7.8	8.8
WOLVERINE SNOTEL	7650	4/01/01	---	6.7	11.1	11.7
WOOD ROCK G.S.	8440	3/29/01	29	5.8	9.2	10.7
YOUNTS PEAK SNOTEL	8350	4/01/01	---	8.4	15.0	17.3

(d) Denotes discontinued site.

# Snake River Basin (1)

## Snow

Percentage of average snow water equivalent (SWE) for each drainage in the basin is: Snake above Jackson Lake -- 52 percent (59% of last year at this time), Pacific Creek -- 57 percent (60% of last year at this time), Gros Ventre River -- 63 percent (76% of last year at this time), Hoback River -- 60 percent (73% of last year at this time), Greys River -- 58 percent (65% of last year at this time), Salt River -- 56 percent (59% of last year at this time). Snake River Basin above Palisades is 55 percent of average (63% 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.

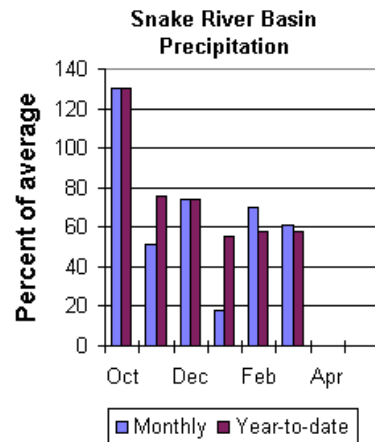


## Precipitation.

Precipitation across the basin was much below average for last month. Monthly precipitation, for the basin, was 85 percent of average (78 percent of last year). March percentages range from 29 to 120 percent of average. Water-year-to-date precipitation is 66 percent of normal for the Snake River basin (75 percent of last year at this time) Year-to-date percentages range from 49 to 90 percent of average.

## Reservoir.

Current usable storage compared to average for the three reservoirs in the basin is as follows: Grassy Lake —115 percent of average (12,900 acre feet compared to 12,700 last year), Jackson lake — 136 percent of average (641,200 acre feet compared to 657,400 acre feet last year), and Palisades Reservoir —55 percent of average (773,000 acre feet compared to 1,188,800 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 540,000 acre-feet (62 percent of normal). Yield from the Snake River above Palisades Reservoir is estimated to be 1,710,000 acre-feet (64 percent of normal). The 50 percent chance yield near Heise is expected to be 2,380,000 acre-feet (59 percent of normal). Pacific Creek at Moran is expected to yield about 98,000 acre-feet (59 percent of average). Greys River above Palisades Reservoir is estimated to yield 197,000 acre-feet (51 percent of normal). Salt River near Etna is estimated to have a yield of 191,000 acre-feet (48 percent of normal).



SNAKE RIVER BASIN  
Streamflow Forecasts - April 1, 2001

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)		
		90% (1000AF)		70% (1000AF)		50% (Most Probable) (1000AF) (% AVG.)			30% (1000AF) 10% (1000AF)	
SNAKE near Moran (1,2)	APR-SEP	399	496	540	62	584	681	869		
SNAKE above Palisades (2)	APR-SEP	1439	1600	1710	64	1820	1981	2671		
PALISADES RESERVOIR INFLOW (1,2)	APR-SEP	1669	2041	2210	59	2379	2751	3763		
SNAKE near Heise (2)	APR-SEP	1910	2190	2380	59	2570	2850	4049		
PACIFIC CREEK at Moran	APR-SEP	68	86	98	59	110	128	166		
GREYS above Palisades	APR-SEP	143	175	197	51	219	251	388		
SALT near Etna	APR-SEP	113	160	191	48	222	269	399		

SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of March					SNAKE RIVER BASIN Watershed Snowpack Analysis - April 1, 2001			
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	12.9	12.7	11.2	SNAKE above Jackson Lake	9	59	52
JACKSON LAKE	847.0	641.2	657.4	473.2	PACIFIC CREEK	3	60	57
PALISADES	1400.0	773.0	1188.8	1014.0	GROS VENTRE RIVER	3	76	63
					HOBACK RIVER	6	73	60
					GREYS RIVER	5	65	58
					SALT RIVER	5	59	56
					SNAKE above Palisades	29	63	55

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

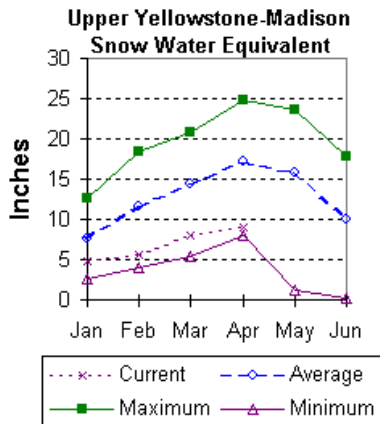
The average is computed for the 1961-1990 base period.

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

## Upper Yellowstone and Madison River Basins (2)

### Snow

Snowfall in these basins this year has been well below average for this time of the year. Snow water equivalent (SWE) is about 50 percent of average (57 percent of last year) in the Madison drainage. SWE in the Yellowstone drainage is about 54 percent of average (60 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.



Lake usable storage is about 270,400 acre-feet of water (72 percent of capacity) – 110 percent of average. Ennis Lake is storing about 102 percent and Hebgen Lake is storing about 89 percent of last year's volume.

### Streamflow

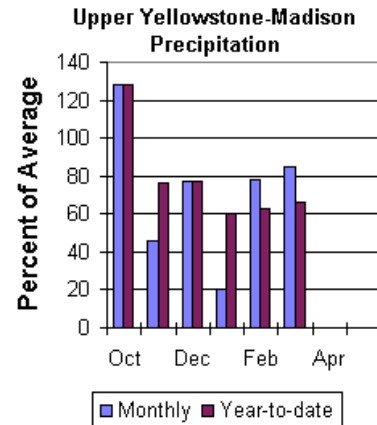
All the following forecasts are the 50 percent chance runoff for the April through September runoff period. Yellowstone at Lake Outlet is expected to yield about 440,000 acre feet (56 percent of normal). Yellowstone at Corwin Springs will yield about 1,200,000 acre-feet (62 percent of normal). Yellowstone near Livingston will yield about 1,375,000 acre feet (61 percent of normal). Hebgen lake inflow is estimated to be 355,000 acre feet (69 percent of normal). See the following page for detailed runoff volumes.

### Precipitation

March precipitation in the Madison and Yellowstone drainage was about 85 percent of average (78 percent of previous year) for the 6 reporting stations -- percentage range was from 29 to 120 percent of average. Water-year-to-date precipitation is about 66 percent of average (75 percent of last year's amount). Year to date percentage ranges from 49 to 90 percent

### Reservoir

Usable reservoir storage for Ennis Lake is 29,900 acre-feet (73 percent of capacity) – 90 percent of average. Hebgen



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UPPER YELLOWSTONE & MADISON RIVER BASINS  
Streamflow Forecasts - April 1, 2001

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Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>				30-Yr Avg. (1000AF)				
		90% (1000AF)		70% (1000AF)			50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF) 10% (1000AF)	
		371	412	440	56		490	563	792	
YELLOWSTONE at Lake Outlet	APR-SEP	371	412	440	56	490	563	792		
YELLOWSTONE RIVER at Corwin Spgs.	APR-SEP	1024	1129	1200	62	1315	1485	1937		
YELLOWSTONE RIVER near Livingston	APR-SEP	1131	1276	1375	61	1474	1619	2241		
HEBGEN Reservoir Inflow	APR-SEP	282	314	335	69	366	412	486		

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

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UPPER YELLOWSTONE & MADISON RIVER BASINS  
Watershed Snowpack Analysis - April 1, 2001

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Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
		41.0	29.9	29.2			33.2	MADISON RIVER in WY
ENNIS LAKE	41.0	29.9	29.2	33.2	MADISON RIVER in WY	9	57	50
HEBGEN LAKE	377.5	270.4	304.7	246.6	YELLOWSTONE RIVER in WY	12	60	54

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

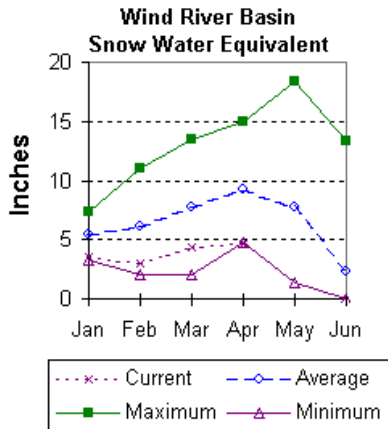
The average is computed for the 1961-1990 base period.

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

## Wind River Basin (3)

### Snow

The Wind River basin has much below average snow water equivalent (SWE) for this time of the year. SWE in the Wind River above Dubois is 57 percent of average (71 percent of last year). The Little Wind SWE is 42 percent of average water content (61 percent of last year), and the Popo Agie drainage SWE is about 45 percent of average (69 percent of last year). The Wind River basin, above Boysen Reservoir, SWE is about 50 percent of average (about 68 percent of last year). See the Basin Summary of Snow Course Data at the front of this report for details.



average. Bull Lake is currently storing about 62,200 acre feet (41 percent of capacity) -- the reservoir is at 75 percent of average at this time of the year. Boysen Reservoir is storing about 75 percent of capacity 447,200 acre feet) -- the reservoir is at 84 percent of average for this time of the year. Pilot Butte is storing 74 percent of capacity (23,300 acre feet) -- the reservoir is at 108 percent of average for this time of the year.

### Streamflow

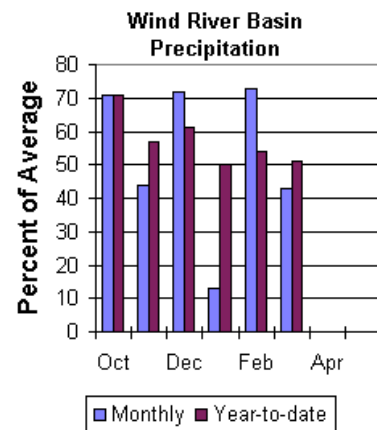
Water supply is estimated to be much below normal this year. The following values reflect the 50 percent chance yields for the April through September runoff period. The Wind River above Bull Lake Creek is expected to yield 320,000 acre feet (60 percent of average). Wind River at Riverton will yield about 300,000 acre feet (46 percent of average). Boysen Reservoir inflow will yield about 320,000 acre feet (40 percent of normal). Bull Lake Creek near Lenore is expected to yield about 105,000 acre feet (57 percent of average). Little Popo Agie River near Lander is expected to yield about 15,500 acre feet (30 percent of average). South Fork of Little Wind near Fort Washakie will yield about 40,000 acre feet (49 percent of average). Little Wind River near Riverton will yield about 160,000 acre feet (49 percent of average).

### Precipitation

March precipitation in the basin varied from 16 to 86 percent of average. March precipitation for the basin was about 43 percent of average for the 10 reporting stations; that is about 47 percent of last year's amount. Water year-to-date precipitation is 51 percent of normal. The current water-year-to-date average is about 69 percent of last year at this time. Year to date figures range from 38 to 112 percent of average.

### Reservoirs

Current usable storage varies from 75 to 108 percent of



WIND RIVER BASIN  
Streamflow Forecasts - April 1, 2001

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>										
		90%		70%		50% (Most Probable)		30%		10%		30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(1000AF)	(1000AF)	(1000AF)	(1000AF)	(1000AF)	(1000AF)		
WIND RIVER abv Bull Lake Cr (2)	APR-SEP	264	297	320	60	358	413	538				
WIND RIVER at Riverton (2)	APR-SEP	206	262	300	46	383	504	648				
BOYSEN RESERVOIR Inflow (2)	APR-SEP	201	272	320	40	440	616	809				
BULL LAKE CR near Lenore (2)	APR-SEP	84	96	105	57	120	143	183				
LT POPO AGIE RIVER nr Lander	APR-SEP	10.3	13.4	15.5	30	23	33	52				
SF LT WIND nr Fort Washakie	APR-SEP	27	35	40	49	51	66	81				
LT WIND RIVER nr Riverton	APR-SEP	87	131	160	49	220	308	324				

WIND RIVER BASIN Reservoir Storage (1000 AF) - End of March					WIND RIVER BASIN Watershed Snowpack Analysis - April 1, 2001			
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	62.2	95.4	83.4	WIND RIVER above Dubios	7	71	57
BOYSEN	596.0	447.2	523.6	529.3	LITTLE WIND	2	61	42
PILOT BUTTE	31.6	23.3	22.5	21.5	POPO AGIE	6	69	45
					WIND above Boysen Resv	14	68	50

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

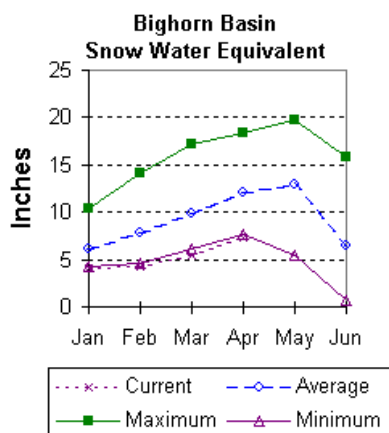
The average is computed for the 1961-1990 base period.

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

## Bighorn River Basin (4)

### Snow

Snowpack in this basin is well below average for this time of year. The Nowood drainage SWE is 58 percent of average (65 percent of last year). Greybull River SWE is 53 percent of average (75 percent of last year). Shell Creek SWE is 66 percent of average (70 percent of last year). The basin SWE, as a whole, is currently 61 percent of average (69 percent of last year). For more information see Basin Summary of Snow Courses at beginning of report.



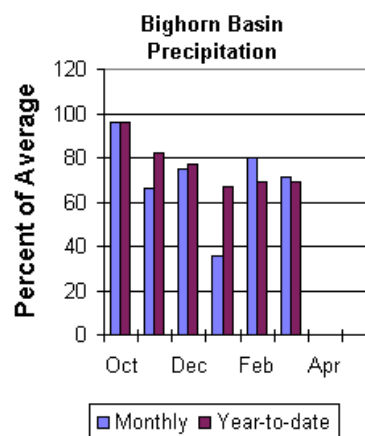
### Precipitation

March precipitation was 71 percent of the monthly average (87 percent of last year). Sites ranged from 23 to 113 percent of average for the month. Year-to-date precipitation is 69 percent of normal; that is 78 percent of last year at this time. Year to date percentages, from the 13 reporting stations, range from 56 to 161.

### Reservoir

Usable storage in Boysen Reservoir is currently 447,200-acre feet (84 percent of

average). Bighorn Lake is now at 107 percent of average (854,300-acre feet). Boysen is currently storing 85 percent of last year at this time and Big Horn Lake is storing 94 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 320,000 acre feet (40 percent of average); the Greybull River nr Meeteese should yield 90,000 acre feet (45 percent of average); Shell Creek near Shell should yield 42,000 acre feet (56 percent of average) and the Bighorn River at Kane should yield 230,000 acre feet (21 percent of average).

BIGHORN RIVER BASIN  
Streamflow Forecasts - April 1, 2001

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)		
		90% (1000AF)		70% (1000AF)		50% (Most Probable) (1000AF) (% AVG.)			30% (1000AF) 10% (1000AF)	
BOYSEN RESERVOIR Inflow (2)	APR-SEP	201	272	320	40	440	616	809		
GREYBULL RIVER nr Meeteetse	APR-SEP	72	83	90	45	106	131	201		
SHELL CREEK nr Shell	APR-SEP	36	40	42	56	46	53	75		
BIGHORN RIVER at Kane (2)	APR-SEP	142	194	230	21	399	648	1124		

BIGHORN RIVER BASIN Reservoir Storage (1000 AF) - End of March					BIGHORN RIVER BASIN Watershed Snowpack Analysis - April 1, 2001			
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	447.2	523.6	529.3	NOWOOD RIVER	5	68	60
BIGHORN LAKE	1356.0	854.3	912.0	798.5	GREYBULL RIVER	2	75	53
					SHELL CREEK	4	70	66
					BIGHORN (Boysen-Bighorn)	11	70	62

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

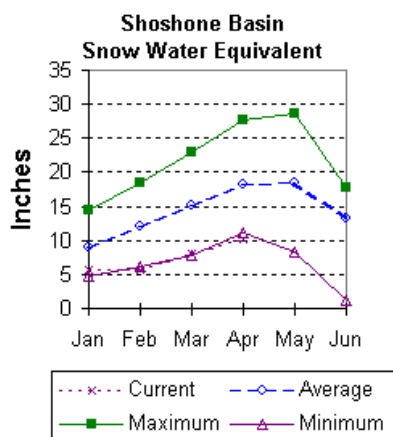
The average is computed for the 1961-1990 base period.

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

## Shoshone and Clarks Fork River Basin (5)

### Snow

Snow Water Equivalent (SWE) is 58 percent of the April 1 average (67 percent of last year) in the Shoshone River basin. The Clarks Fork River basin SWE is 54 percent of average (59 percent of last year). For more information see the Basin Summary of Snow Course Data at the beginning of this report.



reservoir is about 56 percent of capacity. Currently, about 358,400 acre-feet of usable storage is in the reservoir compared to 436,200 acre feet last year – normally the reservoir stores about 359,000 acre feet at 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

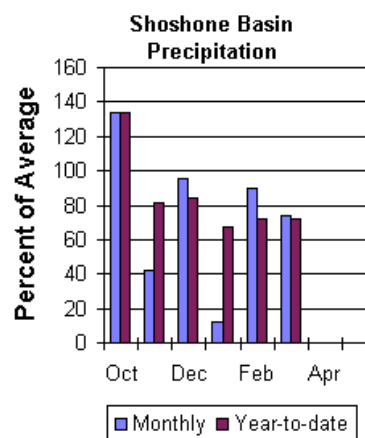
The fifty percent yield (April through September period) for North Fork Shoshone River at Wapiti is expected to be 290,000 acre-feet (56 percent of average). South Fork of the Shoshone River near Valley is estimated to yield of 125,000 acre-feet (47 percent of average), and South Fork above Buffalo Bill Reservoir is expected to be 94,000 acre-feet (41 percent of average). At the Buffalo Bill Reservoir, the fifty percent chance yield for the Shoshone River is expected to be about 450,000 acre-feet (56 percent of average). The fifty-percent chance yield for the Clarks Fork of the Yellowstone near Belfry, Montana is expected to be about 330,000 acre-feet (56 percent of average).

### Precipitation

Precipitation for the month of March was 74 percent of normal (102 percent of last year). Monthly percentages range from 8 to 237 percent of average. The basin year-to-date precipitation is now 72 percent of average (76 percent of last year). Year-to-date percentages range from 40 to 135 percent of average.

### Reservoir

Current usable storage in Buffalo Bill Reservoir is 100 percent of average (82 percent of last year's storage) – the





SHOSHONE & CLARKS FORK RIVER BASINS  
Streamflow Forecasts - April 1, 2001

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>				30-Yr Avg. (1000AF)		
		90% (1000AF)		50% (Most Probable) (1000AF) (% AVG.)			30% (1000AF) 10% (1000AF)	
		70% (1000AF)						
NF SHOSHONE RIVER at Wapiti	APR-SEP	253	275	290	56	317	357	520
SF SHOSHONE RIVER nr Valley	APR-SEP	103	116	125	47	144	171	269
SF SHOSHONE RIVER abv Buffalo Bill	APR-SEP	63	81	94	41	125	171	229
BUFFALO BILL DAM Inflow (2)	APR-SEP	365	415	450	56	512	602	804
CLARKS FORK RIVER nr Belfry	APR-SEP	280	310	330	56	366	419	590

SHOSHONE & CLARKS FORK RIVER BASINS Reservoir Storage (1000 AF) - End of March					SHOSHONE & CLARKS FORK RIVER BASINS Watershed Snowpack Analysis - April 1, 2001			
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	358.4	436.2	359.0	SHOSHONE RIVER	7	67	58
					CLARKS FORK in WY	7	59	54

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

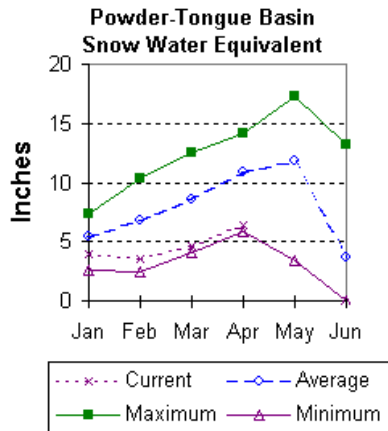
The average is computed for the 1961-1990 base period.

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

## Powder and Tongue River Basins (6)

### Snow

Snow water equivalent (SWE) in the Upper Tongue River drainage is 64 percent of normal (71 percent of last year). The Goose Creek drainage is 64 percent of average (77 percent of last year). Clear Creek drainage is 54 percent of normal SWE (63 percent of last year). Crazy Woman Creek is 51 percent of average (62 percent of last year). The Upper Powder River drainage is 63 percent of average (74 percent of last year). The Powder River basin snow water equivalent (SWE), in Wyoming, is about 59 percent of average (69 percent of last year). For more information see Basin Summary of Snow Courses at beginning of report.

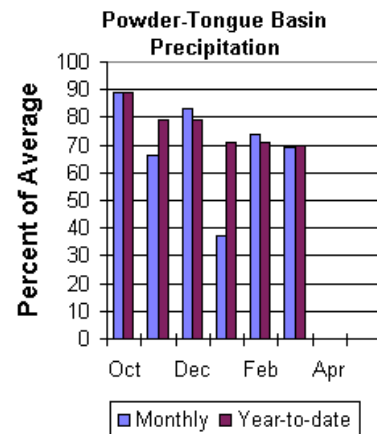


### Precipitation

March precipitation was 69 percent of average for the 11 reporting stations (84 percent of last year). Monthly percentages range from 6 to 89 percent of average. Precipitation for the year ranges from 57 to 86 percent of average at the reporting stations. Year-to-date precipitation is about 70 percent of average in the basin; this is 76 percent of last year at this time.

### Reservoir

Tongue River Reservoir is currently at 113 percent of average usable storage for this time of year (40,900 acre feet) – the reservoir is about 52 percent of capacity (total capacity is 79,100 acre feet). Last year at this time the reservoir was storing about 36,100 acre feet – average storage is about 36,900 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 68,000-acre feet (59 percent of normal). Middle Fork of the Powder River near Barnum is estimated to yield 8,300-acre feet (42 percent of average). The North Fork of the Powder near Hazelton should yield about 4,900 acre-feet (49 percent of normal). The estimated yield for Clear Creek near Buffalo is 22,000 acre-feet (56 percent of average). Rock Creek near Buffalo will yield about 14,000 acre-feet (58 percent of normal), and Piney Creek at Kearny should yield about 21,000 acre-feet (41 percent of average).

POWDER & TONGUE RIVER BASINS  
Streamflow Forecasts - April 1, 2001

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>				30-Yr Avg. (1000AF)		
		90% (1000AF)		50% (Most Probable) (1000AF) (% AVG.)			30% (1000AF) 10% (1000AF)	
		70% (1000AF)						
TONGUE RIVER nr Dayton (2)	APR-SEP	52	61	68	59	79	96	115
MIDDLE FORK POWDER nr Barnum	APR-SEP	5.3	7.1	8.3	42	11.2	15.4	19.7
NORTH FORK POWDER nr Hazelton	APR-SEP	3.6	4.4	4.9	49	6.0	7.5	10.1
CLEAR CREEK nr Buffalo	APR-SEP	17.1	20	22	56	26	31	39
ROCK CREEK nr Buffalo	APR-SEP	10.0	12.4	14.0	58	16.8	21	24
PINEY CREEK at Kearny	APR-SEP	10.5	16.7	21	41	31	47	51

POWDER & TONGUE RIVER BASINS Reservoir Storage (1000 AF) - End of March					POWDER & TONGUE RIVER BASINS Watershed Snowpack Analysis - April 1, 2001			
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	40.9	36.9	36.1	UPPER TONGUE RIVER	8	71	64
					GOOSE CREEK	2	76	64
					CLEAR CREEK	4	71	61
					CRAZY WOMAN CREEK	3	68	55
					UPPER POWDER RIVER	4	75	64
					POWDER RIVER in WY	8	73	62

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

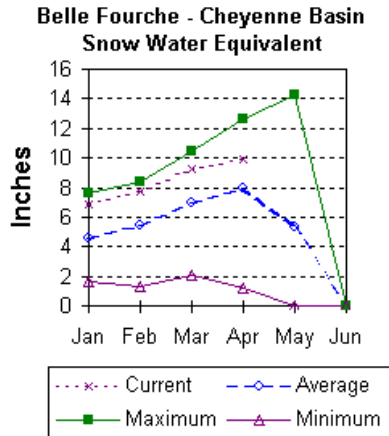
The average is computed for the 1961-1990 base period.

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

# Belle Fourche and Cheyenne River Basins (7)

## Snow.

Snow Water Equivalent (SWE) in the Belle Fourche River basin, as of April 1, is 126 percent of normal. This is 265 percent of what it was last year at this time. See Basin summary of Snow Course Data at the beginning of this report for a detailed listing.



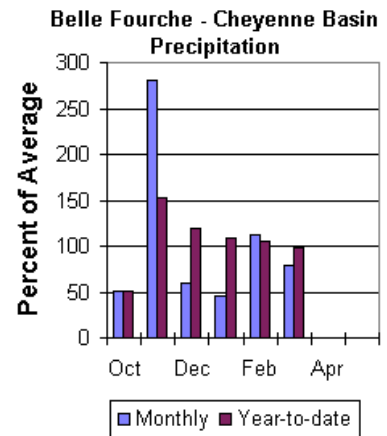
## Precipitation.

Precipitation, for the month of March was 79 percent of average in the Black Hills (125 percent of last March). Monthly percentages range from 26 to 156 percent. Year-to-date precipitation is 99 percent of average and 154 percent of last year's amount. Year to date percentages range from 81 to 146. This is from the 3 reporting stations.

basin. Angostura is currently storing 99 percent of average (108,600-acre feet). Belle Fourche reservoir is storing 135 percent of average (176,500-acre feet). Deerfield reservoir is storing 112 percent of average (15,100-acre feet). Keyhole reservoir is storing 156 percent of average (167,700-acre feet). Pactola reservoir is storing 116 percent of average (54,300-acre feet), and Shadehill reservoir is storing 131 percent of average (82,700-acre feet).

## Reservoir.

Usable reservoir storage is generally above average in the



## Streamflow

Streamflow forecasts are below average as of April 1. Deerfield Reservoir inflow is forecast at 2,500 acre feet (60 percent of average). Pactola is forecast at 10,000 acre feet (53 percent of average). This is for the April – July runoff period.

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BELLE FOURCHE & CHEYENNE RIVER BASINS  
Streamflow Forecasts - April 1, 2001

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Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>										
		90%		70%		50% (Most Probable)		30%		10%		30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)	(1000AF)		
DEERFIELD RESERVOIR Inflow	APR-JUL	0.88	1.85	2.50	60	3.59	5.20	4.20				
PACTOLA RESERVOIR Inflow	APR-JUL	0.8	6.3	10.0	53	17.0	27	18.9				

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

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BELLE FOURCHE & CHEYENNE RIVER BASINS  
Watershed Snowpack Analysis - April 1, 2001

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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	108.6	120.5	110.1	BELLE FOURCHE	6	278	126
BELLE FOURCHE	178.4	176.5	180.2	130.9				
DEERFIELD	15.2	15.1	15.0	13.5				
KEYHOLE	193.8	167.7	174.7	107.6				
PACTOLA	55.0	54.3	54.1	46.8				
SHADEHILL	81.4	82.7	56.3	63.1				

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

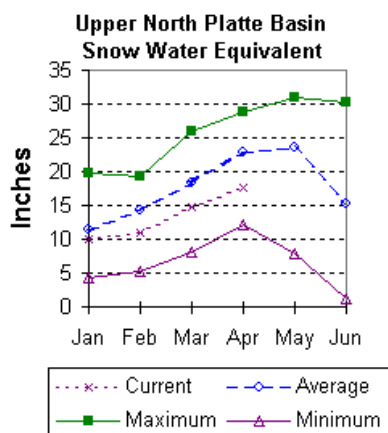
The average is computed for the 1961-1990 base period.

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

## Upper North Platte River Basin (8)

### Snow

The snow courses above Seminoe Reservoir have about 77 percent of average snow water equivalent (SWE) recorded for this time of the year (87 percent of last year). SWE in the drainage area above Northgate is about 80 percent of average and 77 percent of last year at this time. SWE in the Encampment River drainage is about 72 percent of normal and 90 percent of last year. Brush Creek SWE for the year is about 82 percent of normal and 99 percent of last year's SWE. Medicine Bow and Rock Creek drainage SWE is about 68 percent of average and 100 percent of last year at this time. For more information see Basin Summary of Snow Courses at the beginning of this report.

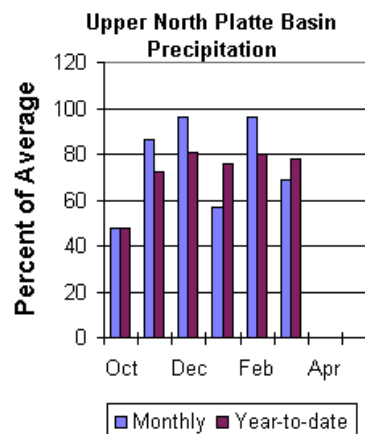


### Precipitation

Nine reporting stations indicate March precipitation was 69 percent of average and about 78 percent of last year's amount. March precipitation varied from 24 to 89 percent of average. Total water-year-to-date precipitation is about 78 percent of average for the basin, which is about 89 percent of last year's amount. Year to date percentage ranges from 50 to 100 percent of average for the 9 reporting stations.

### Reservoirs

Seminoe Reservoir usable storage is currently about 176 percent of normal for this time of the year. The reservoir is storing 87 percent of last year's amount. Seminoe Reservoir is estimated to be storing 646,200 acre-feet (64 percent of capacity). Last year, at this time, the reservoir had 743,000 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 146,000 acre-feet (54 percent of average). Encampment River near Encampment is estimated to yield 111,000 acre-feet (71 percent of normal). Rock Creek near Arlington is estimated to yield 35,000 acre-feet (63 percent of average). Seminoe Reservoir inflow should be about (488,000 acre-feet (57 percent of normal). See the following table for more detailed information on projected runoff.

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UPPER NORTH PLATTE RIVER BASIN  
Streamflow Forecasts - April 1, 2001

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Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)				
		90%		70%		50% (Most Probable)			30%		10%	
		(1000AF)	(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)		(1000AF)	(1000AF)	(1000AF)	
North Platte River nr Northgate	APR-SEP	48	106	146	54	186	244	271				
Encampment River nr Encampment	APR-SEP	73	96	111	71	126	149	156				
Rock Creek nr Arlington	APR-SEP	25	31	35	63	40	47	56				
Seminole Reservoir inflow	APR-JUL	299	394	450	57	554	708	788				
	APR-SEP	236	386	488	57	590	740	851				

UPPER NORTH PLATTE RIVER BASIN Reservoir Storage (1000 AF) - End of March					UPPER NORTH PLATTE RIVER BASIN Watershed Snowpack Analysis - April 1, 2001			
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	646.2	743.0	368.0	N PLATTE above Northgate	7	77	80
					ENCAMPMENT RIVER	4	90	72
					BRUSH CREEK	5	99	82
					MEDICINE BOW & ROCK CREEK	3	100	68
					N PLATTE above Seminole	19	87	77

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

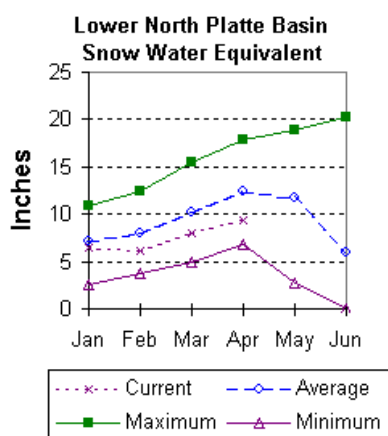
The average is computed for the 1961-1990 base period.

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

## Lower North Platte River Basin (9)

### Snow

SWE for the North Platte River basin in Wyoming averages 75 percent of normal (86 % of last year). The Sweetwater drainage SWE is currently 46 percent (56 percent of last year). Deer and LaPrele Creek SWE is 86 percent of average (97 percent of last year). SWE for the North Platte above the Laramie River drainage is 75 percent of average (86 % of last year). SWE for the Laramie River above Laramie is 76 percent of average (82 % of last year). SWE for the Little Laramie River is 66 percent of average (91 percent of last year). SWE for the Laramie River above the mouth is 73 percent of average (84 % of last year). For more information see Basin Summary of Snow Courses at beginning of report.



Alcova 156,400 acre feet (97 percent of average); Glendo 395,000 acre feet (94 percent of average); Guernsey 18,600 acre feet (86 percent of average); Pathfinder 770,900 acre feet (125 percent of average); Seminoe 646,200 acre feet (176 percent of average). Wheatland No.2 45,000 acre feet (92 percent of average).. Water allocated to project use is near average with North Platte Project users at 103 percent of average, Kendrick Project users at 119 percent of average, and Glendo Project users at 120 percent of average.

### Streamflow

Yields from 30 to 66 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 22,000 acre-feet (30 percent of average). Deer Creek at Glenrock is expected to yield about 56 percent of average (22,000 acre-feet). LaPrele Creek above the reservoir is estimated to yield 64 percent of average (16,100 acre-feet). North Platte River below Guernsey Reservoir is expected to yield about 47 percent of normal (463,000 acre-feet), and below Glendo Reservoir is anticipated to yield about 48 percent of average (460,000 acre-feet). Laramie River near Woods should yield about 66 percent of average (89,000 acre-feet). The Little Laramie near Filmore should produce about 38,000 acre-feet (59 percent of average).

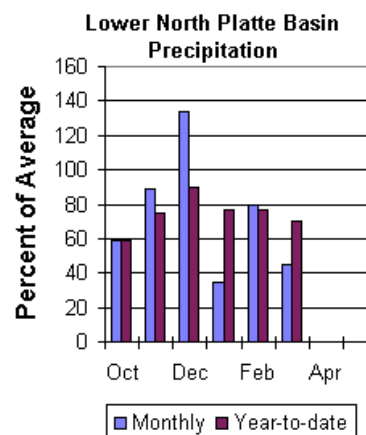
### Precipitation

Last months precipitation ranged from 10 to 74 percent for the 11 reporting stations. March precipitation for the basin was 45 percent of average (51 percent of last year). The water year-to-date precipitation for the basin is currently 70 percent of average (84 percent of last year). Year to date percentages range from 38 to 105.

### Reservoir

The Lower North Platte River basin usable storage is average to well above average.

Reservoir storage is as follows:





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LOWER NORTH PLATTE, SWEETWATER & LARAMIE RIVER BASINS  
Streamflow Forecasts - April 1, 2001

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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)				
		90%	70%	50%	30%	10%										
Sweetwater River nr Alcova	APR-JUL	8.3	15.2	20	29	36	60	69	APR-SEP	8.9	16.3		22	30	39	63
Deer Creek at Glenrock	APR-SEP	10.2	16.7	22	56	28	38	39								
La Prele Creek ab La Prele Reservoir	APR-SEP	4.0	9.9	16.1	64	25	42	25								
North Platte River blw Glendo Reserv	APR-JUL	182	338	445	48	552	708	925	APR-SEP	182	348	460	48	572	738	958
North Platte River blw Guernsey Resv	APR-JUL	291	385	447	48	580	775	938	APR-SEP	305	404	463	47	601	803	985
Laramie River nr Woods	APR-SEP	26	63	89	66	115	152	135								
Little Laramie River nr Filmore	APR-SEP	21	31	38	59	45	55	64								

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

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LOWER NORTH PLATTE, SWEETWATER & LARAMIE RIVER BASINS  
Watershed Snowpack Analysis - April 1, 2001

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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	156.4	156.8	162.0	SWEETWATER	3	61	46
GLENDO	506.4	395.9	463.6	420.3	DEER & LAPRELE CREEKS	4	97	86
GUERNSEY	45.6	18.6	18.6	21.6	N PLATTE abv Laramie R.	26	85	75
PATHFINDER	1016.5	770.9	994.9	619.0	LARAMIE RIVER abv Laramie	9	82	76
SEMINOE	1016.7	646.2	743.0	368.0	LITTLE LARAMIE RIVER	4	91	66
WHEATLAND #2	98.9	45.0	74.0	48.7	LARAMIE RIVER above mouth	12	84	73
NORTH PLATTE PROJ	1062.1	695.2	1065.2	676.0	NORTH PLATTE	34	86	75
KENDRICK PROJECT	1201.7	968.4	987.0	812.7				
GLENDO PROJECT USERS	183.2	152.1	155.0	127.2				

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

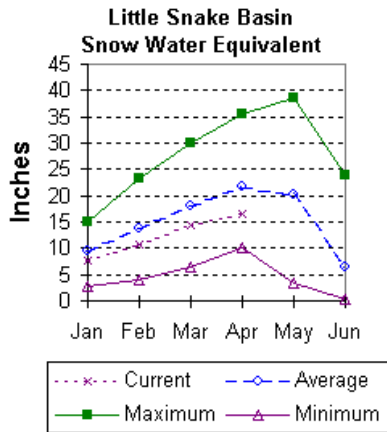
The average is computed for the 1961-1990 base period.

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

# Little Snake River Basin (10)

## Snow

Snowfall has been below average across the basin this year. Currently, snow water equivalent (SWE) in the Little Snake River drainage is 77 percent of average (88 percent of last year at this time). For more information see Basin Summary of Snow Courses at beginning of this report.



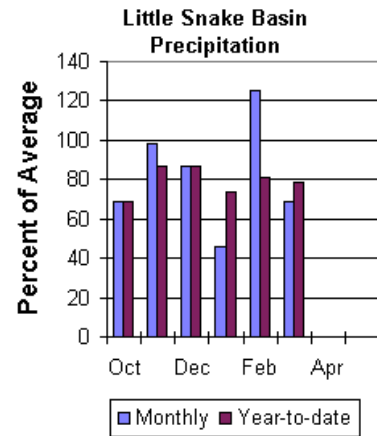
## Precipitation

Precipitation across the basin was below average this past month. March precipitation was 69 percent of average (87 percent of last year) for the 5 reporting stations. March precipitation ranged from 61 to 84 percent of average. The Little Snake River basin water-year-to-date precipitation is currently 79 percent of average (90 percent of last year). Year-to-date percentages range from 73 to 85 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 100,000 acre-feet (65 percent of normal). Little Snake River near Dixon is estimated to yield 210,000 acre-feet (64 percent of normal).



LITTLE SNAKE RIVER BASIN  
Streamflow Forecasts - April 1, 2001

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)		
		90% (1000AF)		70% (1000AF)		50% (Most Probable) (1000AF) (% AVG.)			30% (1000AF) 10% (1000AF)	
Little Snake River nr Slater	APR-JUL	64	84	100	65	117	144	155		
LITTLE SNAKE R nr Dixon	APR-JUL	100	166	210	64	254	320	329		

LITTLE SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of March				LITTLE SNAKE RIVER BASIN Watershed Snowpack Analysis - April 1, 2001				
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	88	77

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

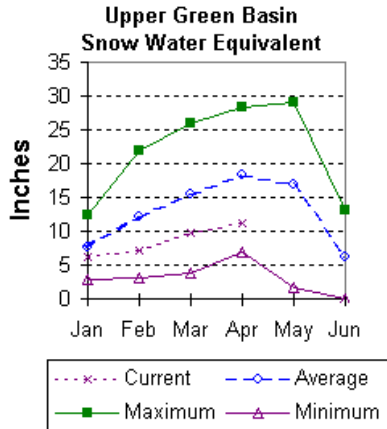
The average is computed for the 1961-1990 base period.

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

# Upper Green River Basin (11)

## Snow

The Upper Green River Basin snow water equivalent (SWE), above Fontenelle Reservoir, is about 61 percent of average (71 percent of last year). The Green River basin SWE above Warren Bridge is 63 percent of normal (71 percent of last year). SWE on the west side of the Upper Green River basin is about 57 percent of normal, 68 percent of this time last year. Newfork River SWE is now about 76 percent of normal (83 percent of last year). Big Sandy-Eden Valley SWE is about 57 percent of average (65 percent of last year). For more information see the Basin Summary of Snow Courses at the beginning of this report.



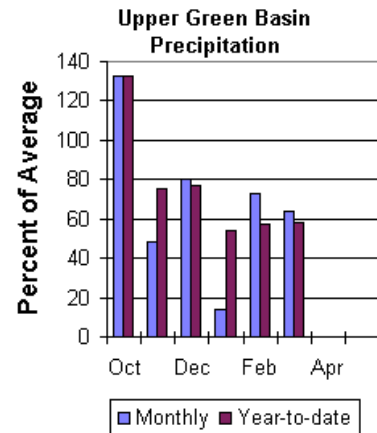
## Precipitation

The 11 reporting precipitation sites in the basin were 64 percent of the March average (82 percent of last year at this time). March precipitation varied from 40 to 91 percent of average. Water year-to-date precipitation is about 58 percent of average (79 percent of last year). Year to date percentage of average ranges from 52 to 65 percent for the reporting stations.

## Reservoir

Usable storage in Big Sandy Reservoir is 7,700 acre-feet (39

percent of average and 52 percent of the total capacity). Eden Reservoir is storing 0 acre-feet (0 percent of average and 0 percent of the total capacity). Usable storage in Fontenelle Reservoir is 110,300 acre feet (70 percent of average and 46 percent of capacity). Flaming Gorge Reservoir is currently storing 3,025,000 acre feet -- 935 percent of last year and 801 percent of capacity. There is no average established for Flaming Gorge. 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 165,000 acre-feet (62 percent of normal). Pine Creek above Fremont Lake is expected to yield 80,000 acre-feet (77 percent of normal). New Fork River near Big Piney is expected to yield about 240,000 acre-feet (62 percent of normal). Fontenelle Reservoir Inflow is estimated to be 450,000 acre-feet (53 percent of average), and Big Sandy near Farson is expected to be about 35,000 acre-feet (61 percent of normal).

UPPER GREEN RIVER BASIN  
Streamflow Forecasts - April 1, 2001

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)		
		90% (1000AF)		70% (1000AF)		50% (Most Probable) (1000AF) (% AVG.)			30% (1000AF) 10% (1000AF)	
Green River at Warren Bridge	APR-JUL	122	148	165	62	182	208	266		
Pine Creek abv Fremont Lake	APR-JUL	65	74	80	77	86	95	104		
New Fork River nr Big Piney	APR-JUL	134	197	240	62	283	346	385		
Fontenelle Reservoir Inflow	APR-JUL	335	401	450	53	502	583	849		
Big Sandy River nr Farson	APR-JUL	17.8	28	35	61	42	52	57		

UPPER GREEN RIVER BASIN Reservoir Storage (1000 AF) - End of March					UPPER GREEN RIVER BASIN Watershed Snowpack Analysis - April 1, 2001			
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	7.7	21.1	19.9	GREEN above Warren Bridge	4	72	63
EDEN		NO REPORT			UPPER GREEN (West Side)	7	68	57
FLAMING GORGE	3749.0	3025.0	3199.0	---	NEWFORK RIVER	3	83	76
FONTENELLE		NO REPORT			BIG SANDY/EDEN VALLEY	2	65	57
					GREEN above Fontenelle	14	71	61

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

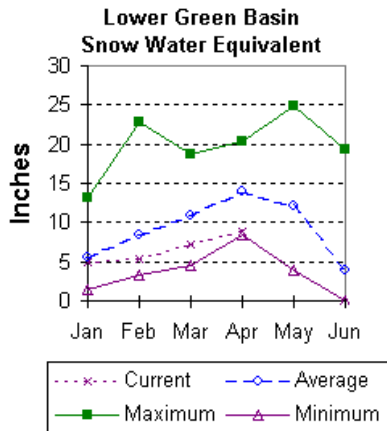
The average is computed for the 1961-1990 base period.

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

## Lower Green River Basin (12)

### Snow

Snow Water Equivalent in the Lower Green, as of April 1, is below average. SWE in the Hams Fork is 60 percent of average (71% of last year). Blacks Fork SWE is currently 66 percent of average (73 percent of last year). The Henry's fork SWE is currently 84 percent of average (89 percent of last year). The basin, as a whole, is 63 percent of average (72 percent of last year). For more information see Basin Summary of Snow Courses at beginning of this report.

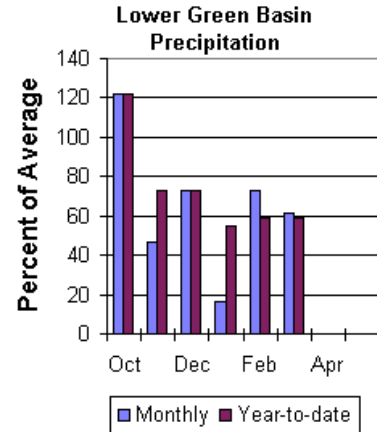


### Precipitation

Precipitation was below average for the 3 reporting stations during March. Precipitation ranged from 28 to 75 percent of average for the month. The entire basin received 61 percent of average for the month (83 percent of last year). The basin year-to-date precipitation is currently 59 percent of average (84 percent of last year). Year to date percentages range from 55 to 68.

### Reservoir

Usable storage in Fontenelle Reservoir this month is 110,300 acre feet ( 70 percent of average and 105 percent of last year. Flaming Gorge is currently at 3,025,000 acre feet of usable storage. There is no average established for Flaming Gorge. Viva Naughton is currently at 32,200 acre feet of usable storage (119 percent of average).



### Streamflow

Expected yields vary from 37 to 74 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 460,000-acre feet (51 percent of average). Blacks Fork near Robertson is forecast to yield 70,000-acre feet (74 percent of average). East Fork of Smiths Fork near Robertson is estimated to yield 22,000 acre-feet (73 percent of average). The estimated yield for Hams Fork near Frontier is 28,000-acre feet (42 percent of average). Viva Naughton Reservoir inflow will be about 33,000-acre feet (37 percent of average). Flaming Gorge Reservoir inflow will be about 620,000-acre feet (52 percent of average).

LOWER GREEN RIVER BASIN  
Streamflow Forecasts - April 1, 2001

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)		
		90% (1000AF)		70% (1000AF)		50% (Most Probable) (1000AF) (% AVG.)			30% (1000AF) 10% (1000AF)	
Green River nr Green River, WY	APR-JUL	244	373	460	51	547	676	899		
Blacks Fork nr Robertson	APR-JUL	47	61	70	74	79	93	95		
EF of Smiths Fork nr Robertson	APR-JUL	17.4	20	22	73	24	28	30		
Hams Fk blw Pole Ck nr Frontier	APR-JUL	16.7	23	28	42	33	42	66		
Hams Fk Inflow to Viva Naughton Res	APR-JUL	23	29	33	37	44	59	89		
Flaming Gorge Reservoir Inflow	APR-JUL	319	498	620	52	742	921	1196		

LOWER GREEN RIVER BASIN Reservoir Storage (1000 AF) - End of March					LOWER GREEN RIVER BASIN Watershed Snowpack Analysis - April 1, 2001			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
FONTENELLE		NO REPORT			HAMS FORK RIVER	4	71	60
FLAMING GORGE	3749.0	3025.0	3199.0	---	BLACKS FORK	5	73	66
VIVA NAUGHTON RES	42.4	32.2	33.4	27.1	HENRYS FORK	3	89	84
					GREEN above Flaming Gorge	26	72	63

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

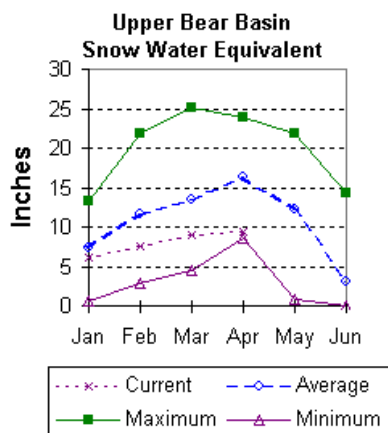
The average is computed for the 1961-1990 base period.

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- (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 57 percent of average (68 percent of last year). SWE for the Bear River in Utah is estimated to be 60 percent of average; that is about 69 percent of last year at this time. SWE in the Wyoming portion of the Bear River drainage (Smiths and Thomas Forks) is estimated at 58 percent of average (69 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.



### Precipitation

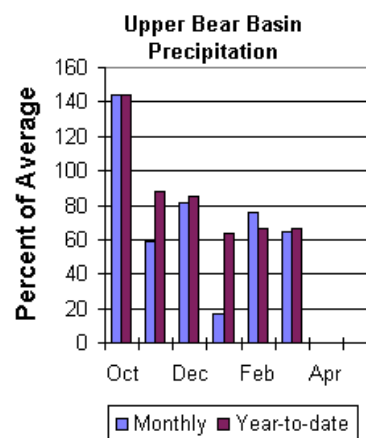
Precipitation for the month of March was 65 percent of average for the 2 reporting stations; this is 71 percent of the previous March. The year-to-date precipitation, for the basin, is 66 percent of average; this is 85 percent of last year's amount.

### Reservoir

Woodruff Narrows reservoir did not report this month.

### Streamflow

The following 50 percent chance stream flow yields are for the April through September period. Smiths Fork near Border is estimated to yield 52,000 acre-feet (44 percent of normal), and Thomas Fork drainage near the Idaho-Wyoming state line is estimated to yield 7,200 acre-feet or 20 percent of normal. Bear River near the Utah-Wyoming State Line is expected to yield about 60,000 acre feet (48 percent of average), The Bear River near Woodruff is expected to yield about 68,000 acre-feet (about 44 percent of normal).





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UPPER BEAR RIVER BASIN  
Streamflow Forecasts - April 1, 2001

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Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>					30-Yr Avg. (1000AF)					
		90% (1000AF)		70% (1000AF)		50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)		10% (1000AF)		
		39	46	52	44	59		70	118			
SMITHS FK nr Border, WY	APR-SEP	39	46	52	44	59	70	118				
THOMAS FK nr WY-ID State Line (Disc.	APR-SEP	4.5	5.9	7.2	20	8.7	11.6	36				
Bear R nr UT-WY State Line	APR-SEP	47	54	60	48	66	77	126				
BEAR R nr Woodruff, UT	APR-SEP	40	55	68	44	84	114	154				

UPPER BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of March				UPPER BEAR RIVER BASIN Watershed Snowpack Analysis - April 1, 2001			
Reservoir	Usable Capacity	*** Usable Storage ***		Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year			Avg	Last Yr
WOODRUFF NARROWS		NO REPORT		UPPER BEAR RIVER in Utah	7	69	60
				SMITHS & THOMAS FORKS	4	69	58
				BEAR RIVER abv ID line	9	68	57
				NORTHWEST	77	63	54
				NORTHEAST	19	92	73
				SOUTHEAST	37	85	75
				SOUTHWEST	35	74	65

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

The average is computed for the 1961-1990 base period.

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**Wyoming**  
**Basin Outlook Report**  
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