

# Wyoming

# Basin Outlook Report

# June 1, 2003



# 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) 261-6481**

---

## *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 below normal for this time of the year. Lower than normal SWE is mostly caused by faster than normal melting during the warmer than normal period at the end of May. SWE averages for the State are about 46 percent of normal for this time of the year. Precipitation for the month was mixed, with some better than average and some well below average. All basins, except the Shoshone, Clarks Fork, and upper North Platte River, report water year-to-date precipitation below average. Reservoir levels vary from below average to average – average to above average in the northeast. Many of the larger reservoirs are below average. Forecast runoff varies from 25 to 98 percent of average, with the average for the state being about 65 percent. It is likely that some irrigated areas will be short of water -- especially those relying on direct diversions. In some cases, reservoirs may not fill with the spring runoff, especially in the southern portion of the State.

## Snowpack

Although conditions did improve slightly in the early part of the month, warmer than normal temperatures in that later part of the month resulted in faster than normal runoff and below average snow water equivalent over most of the State. SWE in the northwestern portion of the State is now at 62 percent of average (102 percent of last year). Northeast Wyoming SWE is currently about 40 percent of average (84 percent of last year). The southeast portion is currently about 47 percent of average SWE (378 percent of last year). And the southwest is about 34 percent of average (173 percent of last year).

## Precipitation

May precipitation was generally below average. Most of the State received well below average precipitation over the past month. Year to date precipitation is generally below average across the State. Year-to-date departures from normal range from -34 percent, in the Upper Bear, to 3% above normal in the Shoshone Clarks Fork drainage.

### Current month departures from normal

Basin	Departure from normal	Basin	Departure from normal
Snake River	-34%	Upper North Platte River	-9%
Yellowstone & Madison	-19%	Lower North Platte	-28%
Wind River	-26%	Little Snake River	-12%
Big Horn	-29%	Upper Green River	-35%
Shoshone & Clarks Fork	-19%	Lower Green River	-19%
Powder & Tongue River	-30%	Upper Bear River	-55%
Belle Fourche & Cheyenne	-41%		

## Streams

Stream flow yield is expected to be below average to much below average across the State. Most probable yield for the State is forecast to be about 65 percent of average. The northwest part of the State is expected to yield about 71 percent of normal -- yield estimates vary from 44 to 98 percent of normal. Yield from the northeast

portion of Wyoming will be below average (about 64 percent of average) -- yield estimates vary from 36 to 82 percent of average for the various forecast points. The southeast portion of the state is expected to be about 66 percent of normal -- yield estimates range from 31 to 86 percent of normal. Forecast for the southwest portion of Wyoming varies from 25 to 86 percent of average -- mean estimated yield for the forecast points in southwest Wyoming is about 58 percent of average.

## Reservoirs

Reservoir storage varies from above average to well below 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     M A Y     2 0 0 3

BASIN AREA RESERVOIR	CURRENT AS % CAPACITY	LAST YR AS % CAPACITY	AVERAGE AS % CAPACITY	CURRENT AS % AVERAGE	CURRENT AS % LAST YR
-----					
WYOMING AND SURROUNDING STATES					
SHADEHILL	50	60	84	59	84
ANGOSTURA	84	88	96	87	95
DEERFIELD	100	100	89	112	100
PACTOLA	100	100	88	113	100
BELLE FOURCHE	85	94	85	100	90
JACKSON LAKE	73	55	68	107	133
GRASSY LAKE	89	88	95	94	102
FONTENELLE	41	39	53	78	106
BIG SANDY	46	35	77	60	131
EDEN			NO REPORT		
PILOT BUTTE	47	50	77	62	95
BULL LAKE	33	25	63	52	133
BOYSEN	53	38	81	65	138
BUFFALO BILL	71	42	61	117	168
KEYHOLE	68	81	61	111	84
SEMINOE	27	37	65	41	73
PATHFINDER	34	51	76	45	67
ALCOVA	98	97	97	101	101
GLENDO	77	70	99	77	110
GUERNSEY	64	62	79	81	104
WHEATLAND #2	21	22	60	36	95
PALISADES	58	56	74	78	104
HEBGEN LAKE	92	90	83	111	103
ENNIS LAKE	86	92	86	99	93
BIGHORN LAKE	50	47	64	78	105
TONGUE RIVER	100	51	61	165	196
FLAMING GORGE	71	0	81	87	0
WOODRUFF NARROWS	42	0	70	59	0
TOTAL OF 27 RESERVOIRS	60	38	75	81	158
Raw KAF Totals Current=	7986	Last Year=	5042	Average=	9908
		Capacity=			13245

# Basin Summary of Snow Course Data

B A S I N   S U M M A R Y   O F  
S N O W   C O U R S E   D A T A

JUNE   2003

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
-----						
WYOMING Snow Course and SNOTEL Stations						
BALD MOUNTAIN SNOTEL	9380	6/01/03	---	10.0	12.4	16.7
BASE CAMP SNOTEL	7030	6/01/03	---	.0	.0	.0
BATTLE MTN. SNOTEL	7440	6/01/03	---	.0	.0	.0
BEARTOOTH LK. SNOTEL	9280	6/01/03	---	22.3	17.8	20.1
BEAR TRAP SNOTEL	8200	6/01/03	---	.0	.0	.0
BIG GOOSE SNOTEL	7760	6/01/03	0	.0	.0	2.7
BIG SANDY SNOTEL	9080	6/01/03	0	.0	.0	1.4
BLACKWATER SNOTEL	9780	6/01/03	---	19.9	19.4	24.7
BLIND BULL SNOTEL	8900	6/01/03	17	7.2	10.2	17.8
BLIND PARK SNOTEL	6870	6/01/03	---	.0	.0	.0
BONE SPGS. SNOTEL	9350	6/01/03	---	5.4	8.6	8.2
BROOKLYN LK. SNOTEL	10220	6/01/03	---	1.2	.0	11.6
BURGESS JCT. SNOTEL	7880	6/01/03	---	.0	.0	2.6
BURROUGHS CRK SNOTEL	8750	6/01/03	---	.7	.9	3.4
CANYON SNOTEL	8090	6/01/03	---	.0	.0	1.3
CASPER MTN. SNOTEL	7850	6/01/03	---	.0	.0	4.2
CHALK CK #1 SNOTEL	9100	6/01/03	0	.0	.0	12.0
CHALK CK #2 SNOTEL	8200	6/01/03	0	.0	.0	.8
CLOUD PEAK SNOTEL	9850	6/01/03	---	3.4	1.5	7.7
COLE CANYON SNOTEL	5910	6/01/03	0	.0	.0	--
COLD SPRINGS SNOTEL	9630	6/01/03	0	.0	.0	1.1
COTTONWOOD CR SNOTEL	7700	6/01/03	---	.0	.0	5.1
DEER PARK SNOTEL	9700	6/01/03	1	.6	1.8	8.0
DIVIDE PEAK SNOTEL	8860	6/01/03	---	.0	.0	3.7
DOMELAKE SNOTEL	8880	6/01/03	---	.0	.0	3.2
EAST RIM DIV SNOTEL	7930	6/01/03	---	.0	.0	1.5
ELBO RANCH	7100	6/01/03	0	.0	.0	--
ELKHART PARK SNOTEL	9400	6/01/03	---	.0	.0	3.3
EVENING STAR SNOTEL	9200	6/01/03	---	22.4	17.8	26.7
GRANITE CRK SNOTEL	6770	6/01/03	---	.0	.0	.8
GRASSY LAKE SNOTEL	7270	6/01/03	4	1.0	3.2	14.0
GRAVE SPRINGS SNOTEL	8550	6/01/03	---	.0	.0	1.8
GROS VENTRE SNOTEL	8750	6/01/03	0	.0	.0	3.7
HANSEN S.M. SNOTEL	8360	6/01/03	---	.0	.0	.2
HAMS FORK SNOTEL	7840	6/01/03	---	.0	.0	.0
HOBBS PARK SNOTEL	10100	6/01/03	---	.2	1.0	10.1
INDIAN CREEK SNOTEL	9430	6/01/03	---	2.7	5.5	14.7
KELLEY R.S. SNOTEL	8180	6/01/03	---	.0	.0	1.4
KENDALL R.S. SNOTEL	7740	6/01/03	---	.0	.0	.0
KIRWIN SNOTEL	9550	6/01/03	2	.6	.0	5.5
LA PRELE SNOTEL	8380	6/01/03	---	.0	.0	.8
LEWIS LAKE SNOTEL	7850	6/01/03	---	5.3	7.4	17.9
LEWIS LAKE DIVIDE	7850	5/28/03	37	20.7	17.4	--

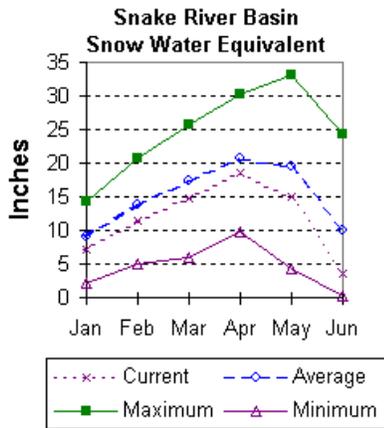
SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
LITTLE WARM SNOTEL	9370	6/01/03	---	.0	.0	1.9
LOOMIS PARK SNOTEL	8240	6/01/03	---	.0	.0	2.3
MARQUETTE SNOTEL	8760	6/01/03	---	3.9	.0	4.2
MIDDLE POWDER SNOTEL	7760	6/01/03	---	.0	.0	2.6
NEW FORK SNOTEL	8340	6/01/03	---	.0	.0	.0
NORTH FRENCH SNOTEL	10130	6/01/03	---	20.4	7.3	23.9
NORTH RAPID CK SNTL	6130	6/01/03	---	.0	.0	.0
OLD BATTLE SNOTEL	9920	6/01/03	---	21.5	6.4	25.6
OWL CREEK SNOTEL	8980	6/01/03	---	.0	.0	.5
PARKERS PEAK SNOTEL	9400	6/01/03	28	13.2	8.4	18.5
PHILLIPS BENCH SNTL	8200	6/01/03	2	.6	2.5	14.0
POWDER RVR.PASS SNTL	9480	6/01/03	---	.0	.0	2.3
RENO HILL SNOTEL	8500	6/01/03	---	.0	.0	3.4
SAGE CK BASIN SNTL	7850	6/01/03	---	.0	.0	2.1
SALT RIVER SNOTEL	7600	6/01/03	---	.0	.0	.0
SAND LAKE SNOTEL	10050	6/01/03	---	24.8	13.4	25.8
SANDSTONE RS SNOTEL	8150	6/01/03	---	.0	.0	.0
SHELL CREEK SNOTEL	9580	6/01/03	---	2.9	9.7	10.4
SNAKE RV STA SNOTEL	6920	6/01/03	---	.0	.0	.0
SNIDER BASIN SNOTEL	8060	6/01/03	0	.0	.0	.0
SOUTH BRUSH SNOTEL	8440	6/01/03	---	.0	.0	1.7
SOUTH PASS SNOTEL	9040	6/01/03	---	.0	.0	6.3
SPRING CRK. SNOTEL	9000	6/01/03	12	4.7	8.7	15.0
ST LAWRENCE ALT SNTL	8620	6/01/03	---	.0	.0	.7
SUCKER CREEK SNOTEL	8880	6/01/03	---	.0	.0	3.6
SYLVAN LAKE SNOTEL	8420	6/01/03	---	6.3	5.3	11.4
SYLVAN ROAD SNOTEL	7120	6/01/03	---	.0	.0	.0
THUMB DIVIDE SNOTEL	7980	6/01/03	---	.0	.0	1.9
TIE CREEK SNOTEL	6870	6/01/03	0	.0	.0	.0
TIMBER CREEK SNOTEL	7950	6/01/03	---	.0	.0	.5
TOGWOTEE PASS SNOTEL	9580	6/01/03	35	15.2	16.4	21.9
TOWNSEND CRK SNOTEL	8700	6/01/03	---	.0	.0	1.7
TRIPLE PEAK SNOTEL	8500	6/01/03	---	.0	.0	4.8
TWO OCEAN SNOTEL	9240	6/01/03	---	23.6	24.7	25.2
WEBBER SPRING SNOTEL	9250	6/01/03	---	.0	.0	6.5
WHISKEY PARK SNOTEL	8950	6/01/03	---	6.9	.0	13.6
WILLOW CREEK SNOTEL	8450	6/01/03	---	.0	.0	14.3
WINDY PEAK SNOTEL	7900	6/01/03	---	.0	.0	.1
WOLVERINE SNOTEL	7650	6/01/03	0	.0	.0	.0
YOUNTS PEAK SNOTEL	8350	6/01/03	3	1.7	3.2	7.0

(d) denotes discontinued site.

# Snake River Basin (1)

## Snow

Warm weather melted snow at a faster than normal rate this last part of May and as a result much of the area SWE is well below normal for this time of the year. Snake above Jackson Lake is 51 percent of average (85% of last year at this time). Pacific Creek is 94 percent of average (96% of last year at this time). Gros Ventre River is 59 percent of average (93% of last year at this time). Hoback River is 28 percent of average (71% of last year at this time), Greys River is 23 percent of average (63% of last year at this time). Snake River Basin above Palisades is 37 percent of average (79% 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 66 percent of average for the 17 reporting stations (86% of last year). Last months percentages range from 33 to 93 percent of average. Water-year-to-date precipitation is 83 percent of normal for the Snake River basin (97% of last year at this time) Year-to-date percentages range from 67 to 96 percent of average.

## Reservoir.

Grassy Lake Reservoir has a total capacity of 15,200-acre feet. Reservoir storage is

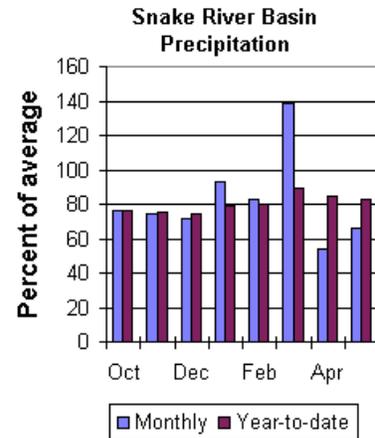
currently 13,600 acre feet (94 percent of average). Grassy Lake Reservoir is currently storing 102 percent of last year's volume and 89 percent of capacity

Jackson Lake has a total capacity of 847,000-acre feet. Reservoir storage is currently 615,300-acre feet (107 percent of average). Jackson Lake is currently storing 133 percent of last year's volume and 73 percent of capacity

Palisades Reservoir has a total capacity of 1,400,000-acre feet. Reservoir storage is currently 438,500-acre feet (78 percent of average). Palisades Reservoir is currently storing 104 percent of last year's volume and 58 percent of capacity

## Streamflow.

The most probable runoff, based on the 50 percent chance yield, for June through September runoff is forecast below average for the basin. The Snake near Moran is expected to yield 365,000 acre-feet (63 percent of normal). Yield from the Snake River above Palisades Reservoir is estimated to be 1,040,000 acre-feet (57 percent of normal). Palisades Reservoir inflow is estimated to be 1,520,000 acre feet (61 percent of average). The 50 percent chance yield near Heise is expected to be 1,630,000 acre-feet (62 percent of normal). Pacific Creek at Moran is expected to yield about 78,000 acre-feet (74 percent of average). Greys River above Palisades Reservoir is estimated to yield 135,000 acre-feet (55 percent of normal). Salt River near Etna is estimated to have a yield of 106,000 acre-feet (44 percent of normal).



=====

SNAKE RIVER BASIN  
Streamflow Forecasts - June 1, 2003

=====

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)	
SNAKE near Moran (1,2)	JUN-JUL	160	260	305	63	350	450	488				
	JUN-SEP	210	315	365	63	415	520	578				
SNAKE above Palisades (2)	JUN-JUL	590	720	810	55	900	1030	1470				
	JUN-SEP	800	945	1040	57	1135	1280	1835				
PALISADES RESERVOIR INFLOW (1,2)	JUN-JUL	680	950	1070	55	1190	1460	1952				
	JUN-SEP	1085	1385	1520	61	1660	1960	2496				
SNAKE near Heise (2)	JUN-JUL	815	1010	1140	56	1270	1465	2054				
	JUN-SEP	1255	1480	1630	62	1785	2005	2652				
PACIFIC CREEK at Moran	JUN-JUL	49	63	73	73	83	97	100				
	JUN-SEP	54	68	78	74	88	102	106				
GREYS above Palisades	JUN-JUL	64	84	98	52	112	132	188				
	JUN-SEP	97	120	135	55	150	172	244				
SALT near Etna	JUN-JUL	19.0	43	59	36	75	99	162				
	JUN-SEP	60	87	106	44	125	152	239				

SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of May					SNAKE RIVER BASIN Watershed Snowpack Analysis - June 1, 2003			
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	13.6	13.3	14.4	SNAKE above Jackson Lake	5	85	51
JACKSON LAKE	847.0	615.3	462.6	572.6	PACIFIC CREEK	2	96	94
PALISADES	1400.0	809.6	777.1	1033.6	GROS VENTRE RIVER	2	75	59
					HOBACK RIVER	5	71	28
					GREYS RIVER	4	63	23
					SALT RIVER	3	0	0
					SNAKE above Palisades	17	75	37

=====

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

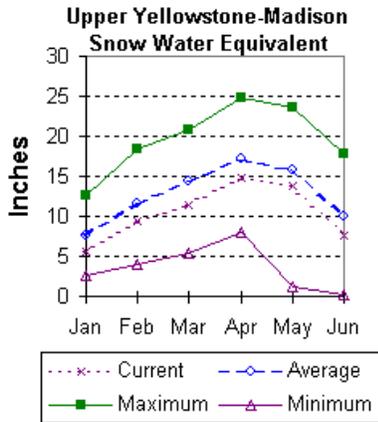
The average is computed for the 1971-2000 base period.

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

## Upper Yellowstone and Madison River Basins (2)

### Snow

Snowfall has been near average this year, but has fallen a little short this last month. Snow water equivalent (SWE) is about 68 percent of average (102 percent of last year) in the Madison drainage. SWE in the Yellowstone drainage is about 84 percent of average (110 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.



storing about 348,500 acre-feet of water (92 percent of capacity) – 111 percent of average. Hebgen Lake is storing about 103 percent and Ennis Lake was storing about 93 percent of last year's volume.

### Streamflow

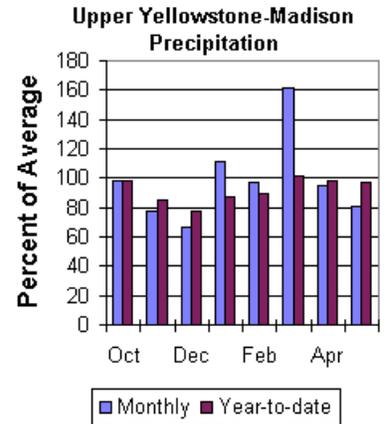
All the following forecasts are based on the 50 percent chance runoff for the June through September runoff period. Yellowstone at Lake Outlet is expected to yield about 500,000 acre feet (72 percent of normal). Yellowstone at Corwin Springs will yield about 1,260,000 acre-feet (86 percent of normal). Yellowstone near Livingston will yield about 1,430,000 acre feet (84 percent of normal). See the following page for detailed runoff volumes.

### Precipitation

Last month's precipitation in the Madison and Yellowstone drainage was about 81 percent of average for the 5 reporting stations -- percentage range was from 71 to 96 percent of average. Water-year-to-date precipitation is about 97 percent of average (99 percent of last year's amount). Year to date percentage ranges from 87 to 112 percent

### Reservoir

Current usable storage for Ennis Lake is about 35,100 acre-feet (86 percent of capacity) – 88 percent of average. Hebgen Lake is



UPPER YELLOWSTONE & MADISON RIVER BASINS  
Streamflow Forecasts - June 1, 2003

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)	
YELLOWSTONE at Lake Outlet	JUN-JUL	235	300	345	71	390	455	485
	JUN-SEP	380	450	500	72	550	620	695
YELLOWSTONE RIVER at Corwin Springs	JUN-JUL	735	880	975	86	1075	1215	1140
	JUN-SEP	970	1140	1260	86	1380	1550	1460
YELLOWSTONE RIVER near Livingston	JUN-JUL	790	975	1100	84	1230	1410	1310
	JUN-SEP	1020	1260	1430	84	1600	1840	1700

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

UPPER YELLOWSTONE & MADISON RIVER BASINS  
Watershed Snowpack Analysis - June 1, 2003

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	35.1	37.7	35.3	MADISON RIVER in WY	6	102	68
HEBGEN LAKE	377.5	348.5	338.0	314.7	YELLOWSTONE RIVER in WY	8	110	84

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

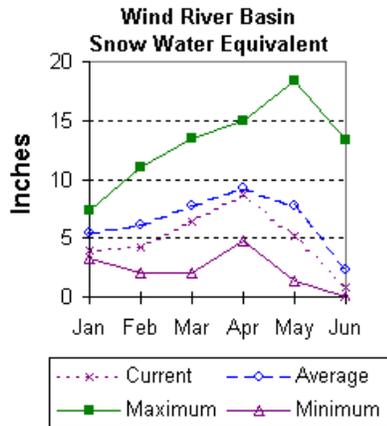
The average is computed for the 1971-2000 base period.

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

## Wind River Basin (3)

### Snow

Most SNOTEL sites have melted out in the Wind River basin. Snow water equivalent (SWE) is below normal for this time of the year. SWE in the Wind River above Dubois is 58 percent of average (92 percent of last year). Little Wind SWE is 2 percent of average water content (20 percent of last year), and the Popo Agie drainage SWE is about 3 percent of average (29 percent of last year). The Wind River basin, above Boysen Reservoir, SWE is about 35 percent of average (about 88 percent of last year). See the Basin Summary of Snow Course Data at the front of this report for details.



Boysen Reservoir has a total capacity of 741,594 acre feet at the top of the joint use pool, including 179,097 acre feet inactive and 40,084 acre feet dead storage. Reservoir storage above the dead pool is currently 313,800 acre feet (65 percent of average). Boysen Reservoir is currently storing 138 percent of last year's volume and 53 percent of capacity.

Bull Lake has a capacity of 152,459 acre feet, including 722 acre feet dead storage. Reservoir storage above the dead storage is currently 50,000 acre feet (52 percent of average). The reservoir is currently storing 133 percent of last year's volume and 33 percent of capacity.

Pilot Butte Reservoir has a capacity of 33,721 acre feet, including 3,138 acre feet dead storage. Reservoir storage above the dead storage is currently 15,000 acre feet (62 percent of average). Reservoir is currently storing 95 percent of last year's volume and 47 percent of capacity.

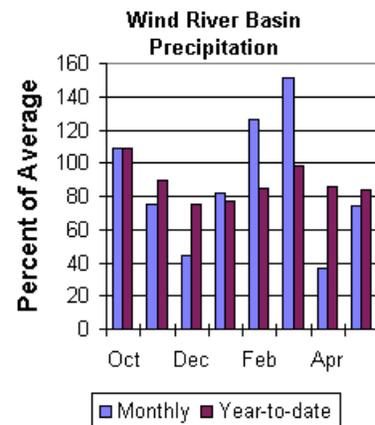
### Streamflow

Water supply is estimated to be much below normal this year. The following values reflect the 50 percent chance yields for the June through September runoff period. The Wind River above Bull Lake Creek is expected to yield 325,000 acre feet (78 percent of average). Wind River at Riverton will yield about 335,000 acre feet (67 percent of average). Boysen Reservoir inflow will yield about 315,000 acre feet (52 percent of normal). Bull Lake Creek near Lenore is expected to yield about 110,000 acre feet (72 percent of average). Little Popo Agie River near Lander is expected to yield about 21,000 acre feet (58 percent of average). South Fork of Little Wind near Fort Washakie will yield about 44,000 acre feet (68 percent of average). Little Wind River near Riverton will yield about 110,000 acre feet (49 percent of average).

### Precipitation

Last month's precipitation in the basin varied from 54 to 131 percent of average. Precipitation for the basin was about 74 percent of average (99% of last year) for the 8 reporting stations. Water year-to-date precipitation is 84 percent of normal. The current water-year-to-date average is about 109 percent of last year at this time. Year to date figures range from 70 to 105 percent of average.

### Reservoirs



WIND RIVER BASIN  
Streamflow Forecasts - June 1, 2003

Forecast Point	Forecast Period	<<==== Drier ==== Future Conditions ===== Wetter =====>>				30-Yr Avg. (1000AF)		
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)		30% (1000AF)	10% (1000AF)
DINWOODY CREEK nr Burris	JUN-JUL	31	36	40	76	44	49	53
	JUN-SEP	50	59	65	81	71	80	80
WIND RIVER abv Bull Lake Cr (2)	JUN-JUL	119	191	240	76	290	360	315
	JUN-SEP	181	265	325	78	385	470	415
BULL LAKE CR near Lenore (2)	JUN-JUL	60	74	83	70	92	106	118
	JUN-SEP	81	98	110	72	122	139	152
WIND RIVER at Riverton (2)	JUN-JUL	143	215	265	66	315	385	400
	JUN-SEP	215	285	335	67	385	455	500
LT POPO AGIE RIVER nr Lander	JUN-JUL	4.2	10.9	15.5	53	19.9	27	29
	JUN-SEP	8.6	16.0	21	58	26	33	36
SF LT WIND nr Fort Washakie	JUN-JUL	25	32	36	67	40	47	54
	JUN-SEP	29	38	44	68	50	59	65
LT WIND RIVER nr Riverton	JUN-JUL	33	36	84	45	132	202	188
	JUN-SEP	46	57	110	49	163	241	225
BOYSEN RESERVOIR Inflow (2)	JUN-JUL	119	203	260	50	315	400	516
	JUN-SEP	108	230	315	52	400	520	609

WIND RIVER BASIN Reservoir Storage (1000 AF) - End of May					WIND RIVER BASIN Watershed Snowpack Analysis - June 1, 2003			
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	50.0	37.7	95.3	WIND RIVER above Dubios	3	75	58
BOYSEN	596.0	313.8	228.2	485.6	LITTLE WIND	2	20	2
PILOT BUTTE	31.6	15.0	15.8	24.2	POPO AGIE	4	29	3
					WIND above Boysen Resv	7	73	35

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

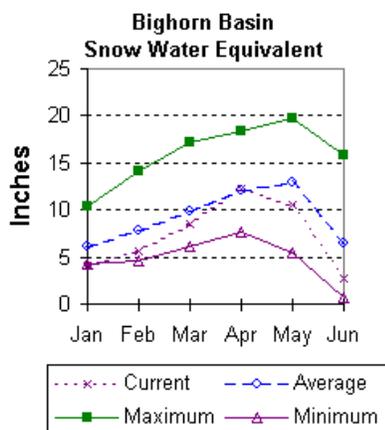
The average is computed for the 1971-2000 base period.

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

## Bighorn River Basin (4)

### Snow

Warm weather melted snow at a faster than normal rate this last part of May and as a result some of the area SWE is well below normal for this time of the year. Snowpack in this basin is well below average for this time of year. The Nowood drainage is melted out as of June 1. Greybull River SWE is currently just 10 percent of average. Shell Creek SWE is 52 percent of average (60 percent of last year). The basin SWE, as a whole, is currently 41 percent of average (62 percent of last year). For more information see Basin Summary of Snow Courses at beginning of report.



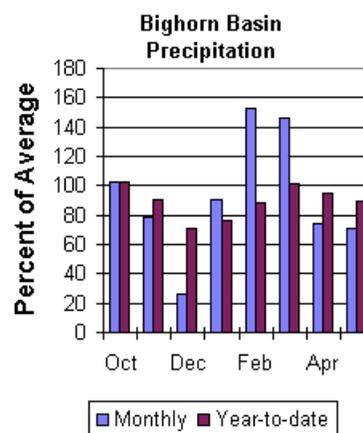
### Precipitation

May precipitation was 71 percent of the monthly average (106 percent of last year). Sites ranged from 43 to 131 percent of average for the month. Year-to-date precipitation is 90 percent of normal; that is 112 percent of last year at this time. Year to date percentages, from the 12 reporting stations, range from 62 to 104.

### Reservoir

Boysen Reservoir has a capacity of 741,594-acre feet at the top of the joint use pool, including 179,097-acre feet inactive and 40,084-acre feet

dead storage. Reservoir storage above the dead storage is currently 313,800-acre feet (65 percent of average). Boysen Reservoir is currently storing 138 percent of last year's volume. Bighorn Lake has a total capacity of 1,356,000-acre feet, including 16,008-acre feet of dead and 477,576-acre feet of inactive storage. Big Horn Lake is currently storing 675,100-acre feet (78 percent of average) above the dead storage pool. Big Horn Lake is currently storing 105 percent of last year's volume.



### Streamflow

The 50 percent chance June through September runoff is anticipated to be below normal. The Boysen Reservoir inflow is forecast to yield 315,000 acre feet (52 percent of average); the Greybull River nr Meeteese should yield 160,000 acre feet (98 percent of average); Shell Creek near Shell should yield 37,000 acre feet (71 percent of average) and the Bighorn River at Kane should yield 405,000 acre feet (52 percent of average).

BIGHORN RIVER BASIN  
Streamflow Forecasts - June 1, 2003

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>				30-Yr Avg. (1000AF)		
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF) (% AVG.)	30% (1000AF)		10% (1000AF)	
BOYSEN RESERVOIR Inflow (2)	JUN-JUL	119	203	260	50	315	400	516
	JUN-SEP	108	230	315	52	400	520	609
GREYBULL RIVER nr Meeteetse	JUN-JUL	81	98	110	100	122	139	110
	JUN-SEP	120	144	160	98	176	200	163
SHELL CREEK nr Shell	JUN-JUL	18.2	23	26	65	29	34	40
	JUN-SEP	27	33	37	71	41	47	52
BIGHORN RIVER at Kane (2)	JUN-JUL	173	280	350	52	420	525	675
	JUN-SEP	199	320	405	52	490	610	785

BIGHORN RIVER BASIN Reservoir Storage (1000 AF) - End of May					BIGHORN RIVER BASIN Watershed Snowpack Analysis - June 1, 2003			
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	313.8	228.2	485.6	NOWOOD RIVER	2	0	0
BIGHORN LAKE	1356.0	675.1	642.2	867.1	GREYBULL RIVER	2	0	10
					SHELL CREEK	3	60	52
					BIGHORN (Boysen-Bighorn)	7	62	41

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

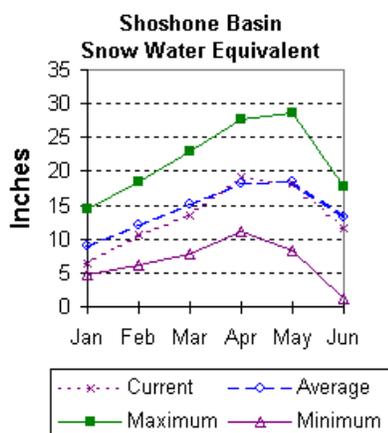
The average is computed for the 1971-2000 base period.

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

## Shoshone and Clarks Fork River Basin (5)

### Snow

Warm weather melted snow at a faster than normal rate this last part of May and as a result some of the area SWE is well below normal for this time of the year. Snow Water Equivalent (SWE) is 73 percent of average (119 percent of last year) in the Shoshone River basin. The Clarks Fork River basin SWE is about 102 percent of average (127 percent of last year). For more information see the Basin Summary of Snow Course Data at the beginning of this report.



(117 percent of average). Buffalo Bill Reservoir is currently storing 168 percent of last year's volume and 71 percent of capacity

### Streamflow

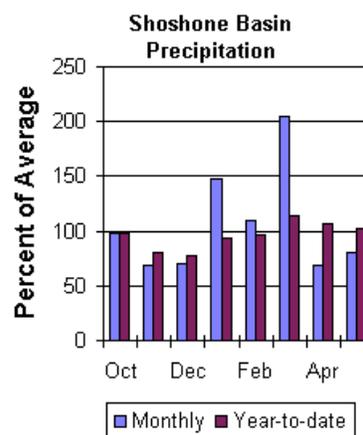
The fifty percent yield (June through September period) for North Fork Shoshone River at Wapiti is expected to be 320,000 acre-feet (88 percent of average). South Fork of the Shoshone River near Valley is estimated to yield of 180,000 acre-feet (86 percent of average), and South Fork above Buffalo Bill Reservoir is expected to be 145,000 acre-feet (83 percent of average). At the Buffalo Bill Reservoir, the fifty percent chance yield for the Shoshone River is expected to be about 500,000 acre-feet (84 percent of average). The fifty-percent chance yield for the Clarks Fork of the Yellowstone near Belfry, Montana is expected to be about 425,000 acre-feet (96 percent of average).

### Precipitation

Precipitation for last month was 81 percent of normal (115% of last year's amount) for the 9 reporting stations. Monthly percentages range from 41 to 116 percent of average. The basin year-to-date precipitation is now 103 percent of average (115 percent of last year). Year-to-date percentages range from 89 to 120 percent of average.

### Reservoir

Buffalo Bill Reservoir has a total capacity of 646,565-acre feet, including 41,748 dead storage. Reservoir storage is currently 461,200-acre feet



SHOSHONE & CLARKS FORK RIVER BASINS  
Streamflow Forecasts - June 1, 2003

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>				30-Yr Avg. (1000AF)
		Chance Of Exceeding *				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF) (% AVG.)	30% 10% (1000AF) (1000AF)	
NF SHOSHONE RIVER at Wapiti	JUN-JUL	146	220	270 89	320 395	305
	JUN-SEP	181	265	320 88	375 460	365
SF SHOSHONE RIVER nr Valley	JUN-JUL	111	133	148 86	163 185	172
	JUN-SEP	132	161	180 86	199 228	210
SF SHOSHONE RIVER abv Buffalo Bill	JUN-JUL	72	109	135 83	161 198	163
	JUN-SEP	72	116	145 83	174 217	174
BUFFALO BILL DAM Inflow (2)	JUN-JUL	355	400	430 84	460 505	515
	JUN-SEP	410	465	500 84	535 590	595
CLARKS FORK RIVER nr Belfry	JUN-JUL	216	310	375 96	440 535	390
	JUN-SEP	239	350	425 96	500 610	445

SHOSHONE & CLARKS FORK RIVER BASINS Reservoir Storage (1000 AF) - End of May					SHOSHONE & CLARKS FORK RIVER BASINS Watershed Snowpack Analysis - June 1, 2003			
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	461.2	274.3	395.7	SHOSHONE RIVER	6	119	73
					CLARKS FORK in WY	7	127	102

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

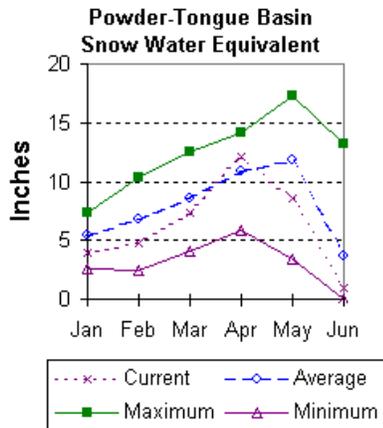
The average is computed for the 1971-2000 base period.

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

## Powder and Tongue River Basins (6)

### Snow

Warm weather melted snow at a faster than normal rate this last part of May and as a result some of the area SWE is well below normal for this time of the year. Snow water equivalent (SWE) in the Upper Tongue River drainage is 27 percent of normal (45 percent of last year). Clear Creek drainage SWE is 43 percent of normal SWE (227 percent of last year). The Powder River basin SWE, in Wyoming, is about 27 percent of average (227 percent of last year). For more information see Basin Summary of Snow Courses at beginning of report.



percent of average). Tongue River Reservoir is currently storing 196 percent of last year's volume and 100 percent of capacity

### Streamflow

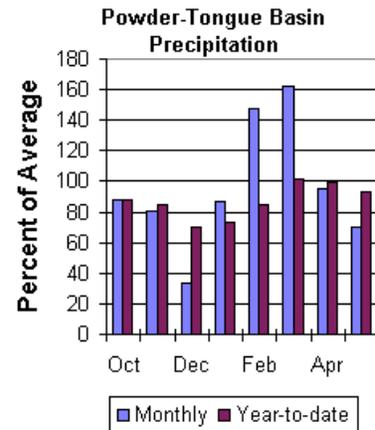
The following runoff values are for the 50 percent probability during the June through September forecast period. The estimated yield for Tongue River near Dayton is 50,000-acre feet (70 percent of normal). Middle Fork of the Powder River near Barnum is estimated to yield 2,500-acre feet (36 percent of average). The North Fork of the Powder near Hazelton should yield about 3,900 acre-feet (66 percent of normal). The estimated yield for Clear Creek near Buffalo is 19,000 acre-feet (68 percent of average). Rock Creek near Buffalo will yield about 13,000 acre-feet (82 percent of normal), and Piney Creek at Kearny should yield about 21,000 acre-feet (66 percent of average).

### Precipitation

Monthly precipitation was 70 percent of average for the 12 reporting stations (105% of last year's amount). Monthly percentages range from 46 to 130 percent of average. Precipitation for the year ranges from 62 to 106 percent of average at the reporting stations. Year-to-date precipitation is about 106 percent of average in the basin; this is 121 percent of last year at this time.

### Reservoir

Tongue River Reservoir has a total capacity of 79,100-acre feet. Reservoir storage is currently 79,100-acre feet (165



POWDER & TONGUE RIVER BASINS  
Streamflow Forecasts - June 1, 2003

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)	
		90%	70%	50%	30%		10%	30%	10%	
TONGUE RIVER nr Dayton (2)	JUN-JUL	27	34	38	66	42	49	58		
	JUN-SEP	37	45	50	70	55	63	71		
TONGUE RIVER RESERVOIR Inflow (2)	JUN-JUL	40	60	73	58	86	106	126		
	JUN-SEP	51	78	97	63	116	143	153		
MIDDLE FORK POWDER nr Barnum	JUN-JUL	0.25	1.39	1.80	31	3.36	5.66	5.90		
	JUN-SEP	0.71	2.02	2.50	36	4.17	6.57	6.90		
NORTH FORK POWDER nr Hazelton	JUN-JUL	1.01	2.30	3.20	63	4.10	5.40	5.10		
	JUN-SEP	1.36	2.90	3.90	66	4.90	6.40	5.90		
CLEAR CREEK nr Buffalo	JUN-JUL	6.9	12.5	15.5	71	18.5	25	22		
	JUN-SEP	8.9	15.0	19.0	68	23	29	28		
ROCK CREEK nr Buffalo	JUN-JUL	4.1	7.0	9.0	75	11.0	13.9	12.0		
	JUN-SEP	7.2	10.7	13.0	82	15.3	18.8	15.9		
PINEY CREEK at Kearny	JUN-JUL	5.9	12.9	17.6	61	22	29	29		
	JUN-SEP	5.8	14.8	21	66	27	36	32		
POWDER RIVER at Moorehead	JUN-JUL	25	35	61	58	87	126	105		
	JUN-SEP	15.0	55	82	64	109	149	128		
POWDER RIVER near Locate	JUN-JUL	26	44	56	48	68	86	116		
	JUN-SEP	43	65	80	57	95	117	141		

POWDER & TONGUE RIVER BASINS  
Reservoir Storage (1000 AF) - End of May

POWDER & TONGUE RIVER BASINS  
Watershed Snowpack Analysis - June 1, 2003

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	79.1	40.4	48.0	UPPER TONGUE RIVER	7	45	27
					GOOSE CREEK	2	0	0
					CLEAR CREEK	2	227	43
					CRAZY WOMAN CREEK	1	0	0
					UPPER POWDER RIVER	3	0	0
					POWDER RIVER in WY	5	227	27

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

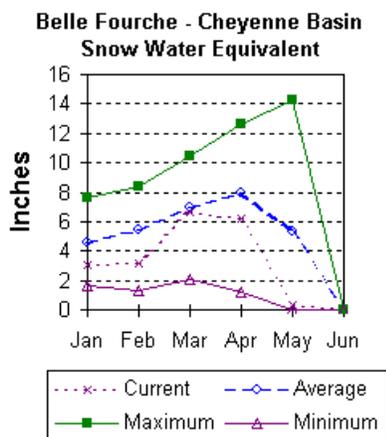
The average is computed for the 1971-2000 base period.

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

## Belle Fourche and Cheyenne River Basins (7)

### Snow.

The Belle Fourche River Basin is melted out as of June 1<sup>st</sup>. See Basin summary of Snow Course Data at the beginning of this report for a detailed listing.

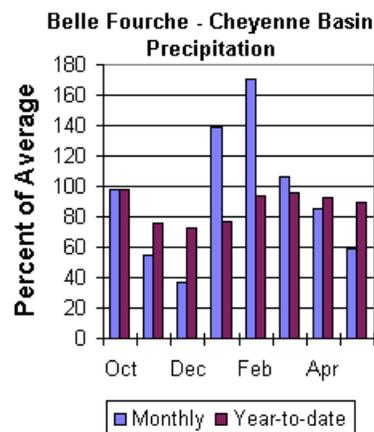


### Precipitation.

Precipitation, for the month of May was 59 percent of average in the Black Hills. Monthly percentages range from 32 to 100 percent. Year-to-date precipitation is 89 percent of average and 113 percent of last year's amount.

### Reservoir.

Usable reservoir storage varies from 59 to 113 percent of average -- usable reservoir storage is total reservoir storage minus dead storage.



Angostura is currently storing 84 percent of capacity (102,000-acre feet compared to 107,900-acre feet last year) – storage is 87 percent of average. Belle Fourche reservoir storage is about 85 percent of capacity (151,900-acre feet compared to 168,300-acre feet last year) – storage is about 100 percent of average. Deerfield reservoir storage is about 100 percent of capacity (15,200-acre feet compared to 15,200-acre feet last year) – storage is about 112 percent of average. Keyhole reservoir storage is about 68 percent of capacity (131,400-acre feet compared to 156,800-acre feet last year) – storage is about 111 percent of average. Pactola reservoir storage is about 100 percent of capacity (55,100-acre feet compared to 55,000-acre feet last year) – storage is about 113 percent of average. Shadehill reservoir storage is about 50 percent of capacity (40,800 acre feet compared to 48,500 acre feet last year – storage is about 59 percent of average.

### Streamflow

Water supply is estimated to be below normal this year. There is no forecast for this month in the Black Hills.

BELLE FOURCHE & CHEYENNE RIVER BASINS  
Streamflow Forecasts - June 1, 2003

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>				30-Yr Avg. (1000AF)
		Chance Of Exceeding *				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF) (% AVG.)	30%    10% (1000AF) (1000AF)	
BELLE FOURCHE & CHEYENNE RIVER BASINS						

No forecasts issued this month

BELLE FOURCHE & CHEYENNE RIVER BASINS Reservoir Storage (1000 AF) - End of May					BELLE FOURCHE & CHEYENNE RIVER BASINS Watershed Snowpack Analysis - June 1, 2003			
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	102.0	107.9	117.2	BELLE FOURCHE	1	0	0
BELLE FOURCHE	178.4	151.9	168.3	152.3				
DEERFIELD	15.2	15.2	15.2	13.6				
KEYHOLE	193.8	131.4	156.8	118.9				
PACTOLA	55.0	55.1	55.0	48.6				
SHADEHILL	81.4	40.8	48.5	68.7				

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

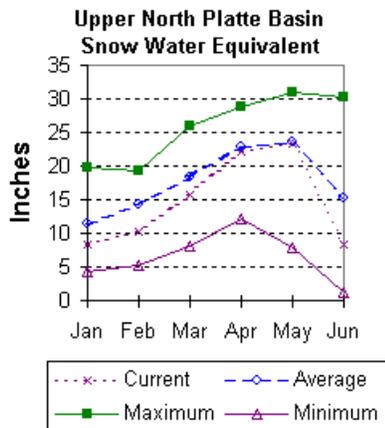
The average is computed for the 1971-2000 base period.

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

## Upper North Platte River Basin (8)

### Snow

Warm weather melted snow at a faster than normal rate this last part of May and as a result much of the area SWE is well below normal for this time of the year. The snow courses above Seminoe Reservoir have about 55 percent of average snow water equivalent (SWE) recorded for this time of the year (273 percent of last year). SWE in the drainage area above Northgate is about 37 percent of average and 266 percent of last year at this time. SWE in the Encampment River drainage is about 62 percent of normal and 444 percent of last year. Brush Creek SWE for the year is about 80 percent of normal and 279 percent of last year's SWE. Medicine Bow and Rock Creek drainage SWE is about 70 percent of average and 194 percent of last year at this time. For more information see Basin Summary of Snow Courses at the beginning of this report.



usable reservoir storage is total reservoir storage minus dead storage. Seminoe Reservoir is currently storing 27 percent of capacity (272,200 acre feet compared to 372,300 acre feet last year)

### Streamflow

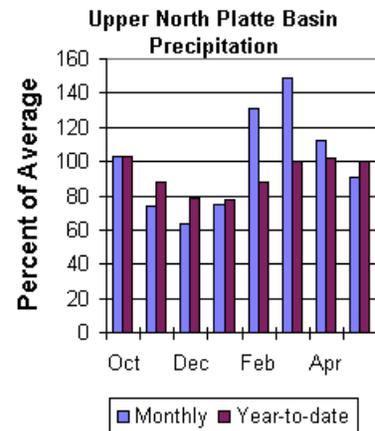
All the following yields are based on the fifty percent chance June through September yield. Yield for the North Platte River near Northgate is expected to be about 125,000 acre-feet (79 percent of average). Encampment River near Encampment is estimated to yield 93,000 acre-feet (86 percent of normal). Rock Creek near Arlington is estimated to yield 28,000 acre-feet (68 percent of average). Sweetwater River near Alcova is expected to yield 12,200 acre feet (31 percent of average). Seminoe Reservoir inflow should be about (385,000 acre-feet (77 percent of normal)). See the following table for more detailed information on projected runoff.

### Precipitation

Twelve reporting stations indicate that last month's precipitation was 91 percent of average and about 299 percent of last year's amount. Precipitation varied from 55 to 144 percent of average. Total water-year-to-date precipitation is about 100 percent of average for the basin, which is about 149 percent of last year's amount. Year to date percentage ranges from 86 to 120 percent of average.

### Reservoirs

Seminoe Reservoir has a total capacity of 1,016,700 acre feet. Usable reservoir storage is about 41 percent of average --



UPPER NORTH PLATTE RIVER BASIN  
Streamflow Forecasts - June 1, 2003

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)	
		90%	70%	50%	30%		10%	30%	10%	
NORTH PLATTE RIVER nr Northgate	JUN-JUL	81	95	105	79	116	133	133		
	JUN-SEP	92	112	125	79	138	158	159		
ENCAMPMENT RIVER nr Encampment	JUN-JUL	57	74	85	86	96	113	99		
	JUN-SEP	62	80	93	86	106	124	108		
ROCK CREEK nr Arlington	JUN-JUL	22	24	25	66	26	28	38		
	JUN-SEP	25	27	28	68	29	32	41		
SWEETWATER RIVER nr Alcova	JUN-JUL	1.5	5.7	9.8	30	13.9	19.8	33		
	JUN-SEP	4.1	8.9	12.2	31	15.5	19.8	39		
SEMINOE RESERVOIR Inflow	JUN-JUL	250	310	355	82	400	460	435		
	JUN-SEP	310	355	385	77	415	460	500		

UPPER NORTH PLATTE RIVER BASIN  
Reservoir Storage (1000 AF) - End of May

UPPER NORTH PLATTE RIVER BASIN  
Watershed Snowpack Analysis - June 1, 2003

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
		Year	Year	Avg			Last Yr	Average
SEMINOE	1016.7	272.2	372.3	658.3	N PLATTE above Northgate	5	266	37
					ENCAMPMENT RIVER	3	444	62
					BRUSH CREEK	2	279	80
					MEDICINE BOW & ROCK CREEK	2	194	70
					N PLATTE above Seminoe	13	273	55

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

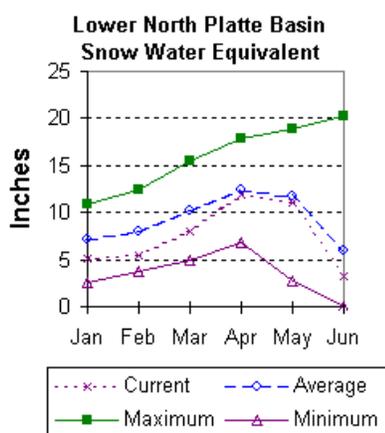
The average is computed for the 1971-2000 base period.

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

## Lower North Platte River Basin (9)

### Snow

Warm weather melted snow at a faster than normal rate this last part of May and as a result some of the area SWE is well below normal for this time of the year. SWE for the North Platte River basin in Wyoming averages 54 percent of normal (298 % of last year). The Sweetwater drainage SWE is currently 4 percent of average (33 percent of last year). Deer and LaPrele Creek is currently melted out. SWE for the North Platte above the Laramie River drainage is 50 percent of average (262 % of last year). SWE for the Laramie River above Laramie is 88 percent of average. SWE for the Little Laramie River is 10 percent of average. SWE for the Laramie River above the mouth is 68 percent of average. For more information see Basin Summary of Snow Courses at beginning of report.



Alcova Reservoir is currently storing 98 percent of capacity (180,500 compared to 179,200-acre feet last year) – storage is 101 percent of average. Glendo Reservoir is currently storing 77 percent of capacity (389,600 compared to 354,200-acre feet last year) – storage is 77 percent of average. Guernsey Reservoir is currently storing 64 percent of capacity (29,300 compared to 28,300-acre feet last year) – storage is 81 percent of average. Pathfinder Reservoir is currently storing 34 percent of capacity (349,800 compared to 519,200-acre feet last year) – storage is 45 percent of average. Seminoe Reservoir is currently storing 27 percent of capacity (272,200 compared to 372,300-acre feet last year) – storage is 41 percent of average. Wheatland No. 2 Reservoir is currently storing 21 percent of capacity (21,000 compared to 22,000-acre feet last year) – storage is 36 percent of average.

### Streamflow

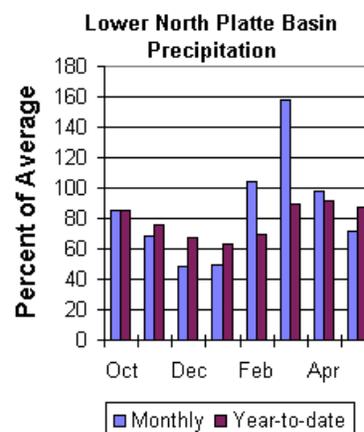
Yields from 31 to 81 percent are expected in the basin during the forecast period. The following yields are based on the fifty percent chance probability runoff for the June through September forecast period. The Sweetwater near Alcova is forecast to yield about 12,200 acre-feet (31 percent of average). LaPrele Creek above the reservoir is estimated to yield 81 percent of average (4,200 acre-feet). The Alcova to Orin gain is expected to yield about 67 percent of average (22,000 acre-feet). North Platte River below Guernsey Reservoir is expected to yield about 68 percent of normal (340,000 acre-feet), and below Glendo Reservoir is anticipated to yield about 66 percent of average (310,000 acre-feet). Laramie River near Woods should yield about 67 percent of average (60,000 acre-feet). The Little Laramie near Filmore should produce about 35,000 acre-feet (75 percent of average).

### Precipitation

Of the 13 reporting stations, percentages for the month range from 32 to 126. May precipitation for the basin was 72 percent of average (161 percent of last year). The water year-to-date precipitation for the basin is currently 87 percent of average (146 percent of last year). Year to date percentages range from 53 to 135.

### Reservoir

Usable reservoir storage varies from 36 to 101 percent of average -- usable reservoir storage is total reservoir storage minus dead storage.



LOWER NORTH PLATTE, SWEETWATER & LARAMIE RIVER BASINS  
Streamflow Forecasts - June 1, 2003

Forecast Point	Forecast Period	Future Conditions				Wetter		30-Yr Avg. (1000AF)
		Drier		Wetter		30%	10%	
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	(1000AF)	(1000AF)	
SWEETWATER RIVER nr Alcova	JUN-JUL	1.5	5.7	9.8	30	13.9	19.8	33
	JUN-SEP	4.1	8.9	12.2	31	15.5	19.8	39
LaPRELE CREEK abv Reservoir	JUN-JUL	0.81	2.30	4.00	82	5.70	8.20	4.90
	JUN-SEP	1.05	2.50	4.20	81	5.90	8.40	5.20
NORTH PLATTE - Alcova to Orin Gain	JUN-JUL	2.8	8.2	16.9	68	26	39	25
	JUN-SEP	7.5	12.6	22	67	31	45	33
NORTH PLATTE RIVER blw Glendo	JUN-JUL	203	270	315	72	360	425	440
	JUN-SEP	192	260	310	66	360	430	470
NORTH PLATTE RIVER blw Guernsey	JUN-JUL	201	280	335	74	390	470	450
	JUN-SEP	193	280	340	68	400	485	500
LARAMIE RIVER nr Woods	JUN-JUL	23	39	50	65	61	77	77
	JUN-SEP	31	48	60	67	72	89	89
LITTLE LARAMIE RIVER nr Filmore	JUN-JUL	22	27	30	71	33	38	42
	JUN-SEP	26	31	35	75	39	44	47

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

LOWER NORTH PLATTE, SWEETWATER & LARAMIE RIVER BASINS  
Watershed Snowpack Analysis - June 1, 2003

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	180.5	179.2	178.8	SWEETWATER	2	33	4
GLENDO	506.4	389.6	354.2	503.4	DEER & LaPRELE CREEKS	2	0	0
GUERNSEY	45.6	29.3	28.3	36.2	N PLATTE abv Laramie R.	17	262	50
PATHFINDER	1016.5	349.8	519.2	775.1	LARAMIE RIVER abv Laramie	3	0	88
SEMINOE	1016.7	272.2	372.3	658.3	LITTLE LARAMIE RIVER	1	0	10
WHEATLAND #2	98.9	21.0	22.0	59.0	LARAMIE RIVER above mouth	4	0	68
					NORTH PLATTE	17	298	54

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

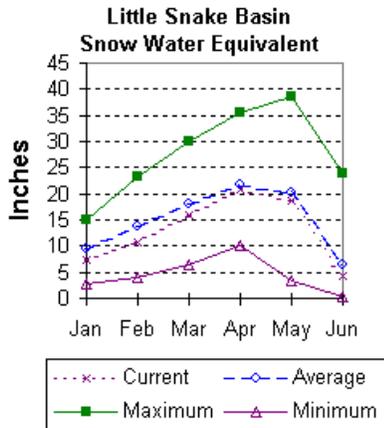
The average is computed for the 1971-2000 base period.

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

# Little Snake River Basin (10)

## Snow

Warm weather melted snow at a faster than normal rate this last part of May and as a result some of the area SWE is well below normal for this time of the year. Currently, snow water equivalent (SWE) in the Little Snake River drainage is 64 percent of average (444 percent of last year at this time). For more information see Basin Summary of Snow Courses at beginning of this report.



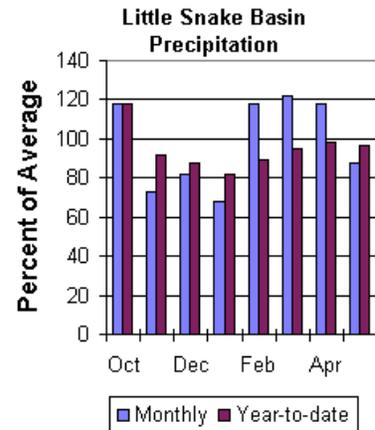
## Precipitation

Precipitation across the basin was above average this past month. Last month's precipitation was 88 percent of average (408 percent of last year) for the 5 reporting stations. Monthly precipitation ranged from 50 to 101 percent of average. The Little Snake River basin water-year-to-date precipitation is currently 97 percent of average (148 percent of last year). Year-to-date percentages range from 94 to 99 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 126,000 acre-feet (79 percent of normal). Little Snake River near Dixon is estimated to yield 260,000 acre-feet (79 percent of normal).



LITTLE SNAKE RIVER BASIN  
Streamflow Forecasts - June 1, 2003

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>				30-Yr Avg. (1000AF)
		Chance Of Exceeding *		Chance Of Exceeding *		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF) (% AVG.)	30% 10% (1000AF) (1000AF)	
Little Snake River nr Slater	APR-JUL	87	109	126 79	144 173	159
LITTLE SNAKE R nr Dixon	APR-JUL	156	220	260 79	300 365	330

LITTLE SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of May				LITTLE SNAKE RIVER BASIN Watershed Snowpack Analysis - June 1, 2003				
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of Last Yr	% of Average
		This Year	Last Year	Avg				
					LITTLE SNAKE RIVER	6	444	64

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

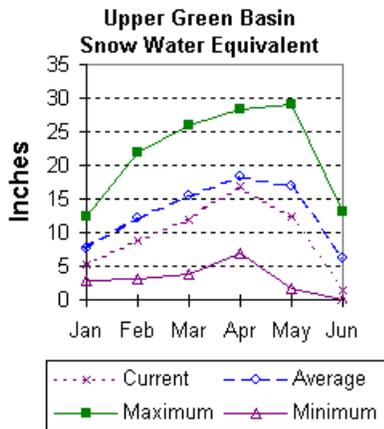
The average is computed for the 1971-2000 base period.

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

# Upper Green River Basin (11)

## Snow

Warm weather melted snow at a faster than normal rate this last part of May and as a result much of the area SWE is well below normal for this time of the year. The Upper Green River Basin snow water equivalent (SWE), above Fontenelle Reservoir, is 23 percent of average (60 percent of last year). SNOTEL sites in the Green River basin above Warren Bridge have melted out. SWE on the west side of the Upper Green River basin is about 28 percent of normal, 60 percent of this time last year. Snotel sites in the remaining portion of the basin have melted out. SWE is much less than last year at this time. For more information see the Basin Summary of Snow Courses at the beginning of this report.



17,700 acre feet (77 percent of average). Big Sandy Reservoir is currently storing 60 percent of last year's volume and 46 percent of capacity.

Eden Reservoir has a capacity of 38,300 acre feet. The water level in Eden Reservoir is below the gage used to measure the amount of water being stored.

Fontenelle Reservoir has a capacity of 344,800 acre feet. Reservoir storage is currently 142,300 acre feet (53 percent of average). Reservoir is currently storing 78 percent of last year's volume and 41 percent of capacity.

Detailed reservoir data is shown on the following page and on the reservoir storage summary at the beginning of this report.

## Streamflow

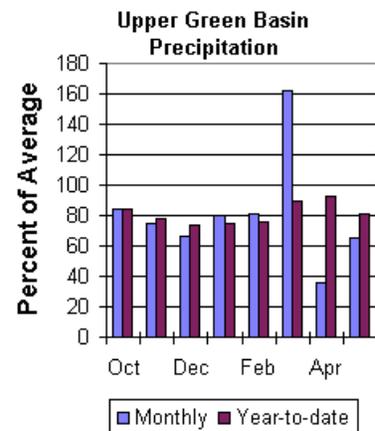
The following forecast is based on the fifty-percent chance April through July runoff in the Upper Green River basin. Green River at Warren Bridge is expected to yield about 190,000 acre-feet (72 percent of normal). Pine Creek above Fremont Lake is expected to yield 89,000 acre-feet (86 percent of normal). New Fork River near Big Piney is expected to yield about 240,000 acre-feet (61 percent of normal). Fontenelle Reservoir Inflow is estimated to be 450,000 acre-feet (52 percent of average), and Big Sandy near Farson is expected to be about 38,000 acre-feet (66 percent of normal).

## Precipitation

The 10 reporting precipitation sites in the basin were 65 percent of average (80 percent of last year's amount). Precipitation varied from 23 to 88 percent of average. Water year-to-date precipitation is about 81 percent of average (98 percent of last year). Year to date percentage of average ranges from 68 to 97 percent for the reporting stations.

## Reservoir

Big Sandy Reservoir has a total capacity of 11,800 acre feet, including 730 acre feet dead storage. Reservoir storage above the dead pool is currently



UPPER GREEN RIVER BASIN  
Streamflow Forecasts - June 1, 2003

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)	
		90%	70%	50%	30%	10%	30%		10%	
Green River at Warren Bridge	APR-JUL	155	175	190	72	205	225	265		
Pine Creek abv Fremont Lake	APR-JUL	76	84	89	86	94	102	104		
	JUN-JUL	40	49	56	68	63	72	82		
New Fork River nr Big Piney	APR-JUL	175	215	240	61	265	305	395		
Fontenelle Reservoir Inflow	APR-JUL	362	413	450	52	488	547	860		
Big Sandy River nr Farson	APR-JUL	30	35	38	66	41	46	58		

UPPER GREEN RIVER BASIN Reservoir Storage (1000 AF) - End of May					UPPER GREEN RIVER BASIN Watershed Snowpack Analysis - June 1, 2003			
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	17.7	13.5	29.4	GREEN above Warren Bridge	4	0	0
EDEN		NO REPORT			UPPER GREEN (West Side)	5	60	28
FONTENELLE	344.8	142.3	134.5	181.9	NEWFORK RIVER	2	0	0
					BIG SANDY/EDEN VALLEY	1	0	0
					GREEN above Fontenelle	11	60	23

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

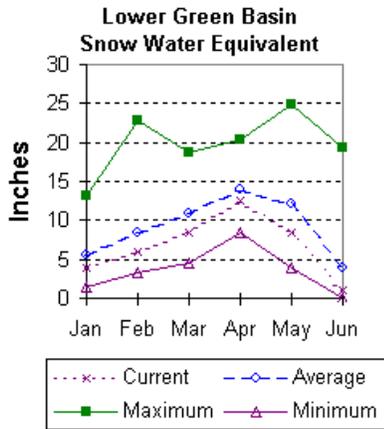
The average is computed for the 1971-2000 base period.

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

# Lower Green River Basin (12)

## Snow

Warm weather melted snow at a faster than normal rate this last part of May and as a result some of the area SWE is well below normal for this time of the year. SWE in the Hams Fork is currently 17 percent of average (49% of last year). Blacks Fork SWE is currently 49 percent of average (179 percent of last year). The Henry's Fork is melted out. The basin, as a whole, is 26 percent of average (74 percent of last year). For more information see Basin Summary of Snow Courses at beginning of this report.



Fontenelle is currently storing 41 percent of capacity (142,300-acre feet compared to 134,500-acre feet last year) – storage is 78 percent of average. Flaming Gorge is currently storing 71 percent of capacity (2,647,000-acre feet compared to 2,820,000-acre feet last year) – storage is 87 percent of average. Viva Naughton is currently storing 89 percent of capacity (37,900-acre feet compared to 38,400-acre feet last year) – storage is 97 percent of average.

## Streamflow

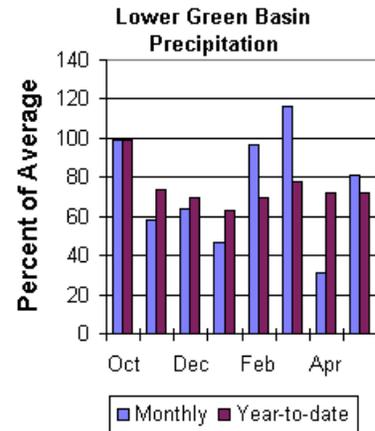
Expected yields vary from 44 to 59 percent of average across the basin. The following forecast values are based on a 50 percent chance probability for the April through July forecast period. Green River near Green River is forecast to yield about 460,000-acre feet (53 percent of average). Blacks Fork near Robertson is forecast to yield 56,000-acre feet (59 percent of average). East Fork of Smiths Fork near Robertson is estimated to yield 17,200 acre-feet (56 percent of average). The estimated yield for Hams Fork near Frontier is 32,000-acre feet (49 percent of average). Viva Naughton Reservoir inflow will be about 39,000-acre feet (44 percent of average). Flaming Gorge Reservoir inflow will be about 540,000-acre feet (45 percent of average).

## Precipitation

Precipitation was below average for the month (81 percent) for the 3 reporting stations. Precipitation ranged from 49 to 106 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 65 to 83.

## Reservoir

Usable reservoir storage varies from 78 to 97 percent of average -- usable reservoir storage is total reservoir storage minus dead storage.



LOWER GREEN RIVER BASIN  
Streamflow Forecasts - June 1, 2003

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	320	405	460	53	515	600	875		
Blacks Fork nr Robertson	APR-JUL	44	51	56	59	61	68	95		
EF of Smiths Fork nr Robertson	APR-JUL	15.2	16.3	17.2	56	18.1	19.5	31		
Hams Fk blw Pole Ck nr Frontier	APR-JUL	23	28	32	49	36	43	65		
Hams Fk Inflow to Viva Naughton Res	APR-JUL	20	31	39	44	47	58	89		
Flaming Gorge Reservoir Inflow	APR-JUL	350	465	540	45	615	725	1190		

LOWER GREEN RIVER BASIN Reservoir Storage (1000 AF) - End of May					LOWER GREEN RIVER BASIN Watershed Snowpack Analysis - June 1, 2003			
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	142.3	134.5	181.9	HAMS FORK RIVER	3	49	17
FLAMING GORGE	3749.0	2647.0	---	3040.0	BLACKS FORK	2	179	49
VIVA NAUGHTON RES	42.4	37.9	38.4	39.0	HENRYS FORK	2	0	0
					GREEN above Flaming Gorge	18	74	26

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

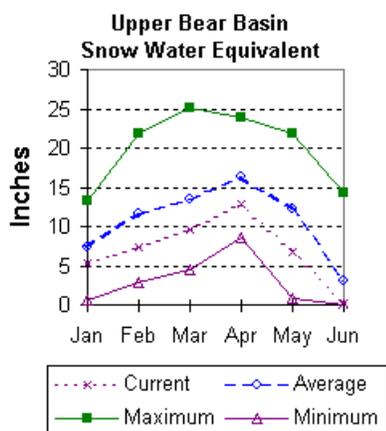
The average is computed for the 1971-2000 base period.

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

# Upper Bear River Basin (13)

## Snow

Warm weather melted snow at a faster than normal rate this last part of May and normal precipitation did not fall and as a result much of the area SWE is well below normal for this time of the year. SNOTEL sites have melted in the upper Bear River in Utah, so there is no way to compute comparison to normal. SWE in the Wyoming portion of the Bear River drainage (Smiths and Thomas Forks) is estimated at 17 percent of average (49 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.

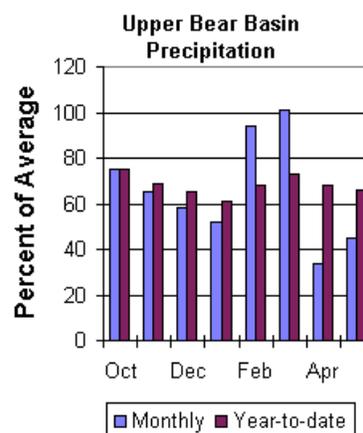


## Precipitation

Precipitation for last month was 45 percent of average for the 2 reporting stations, 53 percent of last year's amount. The year-to-date precipitation, for the basin, is 66 percent of average; this is 89 percent of last year's amount.

## Reservoir

Woodruff Narrows Reservoir has a total capacity of 57,300-acre feet. Reservoir storage is currently 3,800 acre feet (59 percent of average). Woodruff Narrows Reservoir is currently storing 42 percent of capacity.



## Streamflow

The following is based on the 50 percent chance stream flow yields for the June through September period. Bear River above the Utah-Wyoming State Line is expected to yield about 34,000 acre feet (42 percent of average). Woodruff Narrows Reservoir inflow is expected to be about 18,000 acre-feet (about 25 percent of normal).

UPPER BEAR RIVER BASIN  
Streamflow Forecasts - June 1, 2003

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)	
Bear R nr UT-WY State Line	APR-JUL	65	70	73	63	77	82	116
	APR-SEP	71	76	80	64	84	90	125
	JUN-JUL	19.8	24	27	39	31	37	70
	JUN-SEP	26	30	34	42	38	45	82
Woodruff Narrows Res inflow	APR-JUL	34	46	55	40	65	82	136
	APR-SEP	33	46	56	39	67	86	142
	JUN-JUL	8.7	13.3	17.0	27	21	28	64
	JUN-SEP	8.9	13.9	18.0	25	23	30	71

Reservoir	UPPER BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of May				UPPER BEAR RIVER BASIN Watershed Snowpack Analysis - June 1, 2003			
	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
WOODRUFF NARROWS	57.3	23.8	---	40.3	UPPER BEAR RIVER in Utah	5	0	0
					SMITHS & THOMAS FORKS	3	49	17
					BEAR RIVER abv ID line	6	49	8

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

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

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