

USDA United States Department of Agriculture

> Natural Resources Conservation Service

# Wyoming **Basin Outlook Report** June 1, 2004



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

For more water supply and resource management information, contact:

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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. Snow started melting from the SNOTEL sites about one month early. Many sites that normally peak about the middle of April actually reached their peak the first to middle of March. SWE average for the State is about 40 percent of normal for this time of the year. SWE in the Northwest portion of the State is 56 of percent normal. SWE in Northeast Wyoming is 34 of percent normal, and in the southeast part of the State is 31 percent of average. SWE in Southwestern Wyoming is 38 percent of average for this time of the year.

Precipitation for March varied from 60 percent below to 37 percent above average for the State. Year-to-date precipitation is also well below average for the year (varies from 75 to 86 percent of average). Reservoir levels vary from well above average to well below average. Reservoirs in the North Platte River basin are generally well below average. Reservoirs in the northeast have near average storage. Forecast runoff varies from 20 to 74 percent of average across the State.

## Snowpack

Snow water equivalent (SWE), across the State, is below average for this time of year. SWE in the northwestern portion of the State is now about 56 percent of average (90 percent of last year). Northeast Wyoming SWE is currently about 34 percent of average (85 percent of last year). The southeast portion is currently about 31 percent of average SWE (67 percent of last year). And the southwest snowpack is about 38 percent of average (111 percent of last year).

## Precipitation

Last month's precipitation was generally below normal across most of the State. The Lower North Platte was the lowest in percentage at 40 percent of average. The west side of the state received above average precipitation during the month. 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	+37%	Upper North Platte River	-45%
Yellowstone & Madison	+27%	Lower North Platte	-60%
Wind River	-13%	Little Snake River	-21%
Big Horn	-42%	Upper Green River	+20%
Shoshone & Clarks Fork	-06%	Lower Green River	+20%
Powder & Tongue River	-53%	Upper Bear River	+19%
Belle Fourche & Cheyenne	-41%		

## Streams

Stream flow yield is expected to be well below average across the State. Most probable yield for the State is forecast to be about 45 percent of average (varies from 19 to 75 percent of average). The northwest part of the State is expected to yield about 55 percent of normal -- yield estimates vary from 30 to 75 percent of normal. Yield from the northeast portion of Wyoming is expected to yield about 44 percent of average -- yield estimates vary from 20 to 65 percent of average for the various forecast points. Yield in the southeast portion of the state will be about 38 percent of normal -- yield estimates range from 20 to 54 percent of normal. Yield in the

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southwest portion of Wyoming varies from 19 to 64 percent of average -- mean estimated yield for the forecast points in southwest Wyoming is about 46 percent of average.

#### Reservoirs

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

#### Major Reservoirs in Wyoming

WYOMING AND SURROUNDING		•			
SHADEHILL	SIAIES 80	50	84	95	159
ANGOSTURA	66	84	96	69	79
DEERFIELD	98	100	89		98 98
				110	
PACTOLA	87	100	88	98	86
BELLE FOURCHE	69	85	85	80	81
JACKSON LAKE	54	73	68	79	74
GRASSY LAKE	64	89	95	68	72
FONTENELLE	56	41	53	106	136
BIG SANDY	49	46	77	64	106
EDEN			NO REPORT		
PILOT BUTTE	46	47	77	60	97
BULL LAKE	40	33	63	63	121
BOYSEN	66	53	81	81	125
BUFFALO BILL	62	71	61	101	87
KEYHOLE	57	68	61	93	85
SEMINOE	33	27	65	50	122
PATHFINDER	26	34	76	34	76
ALCOVA	96	98	97	99	98
GLENDO	70	77	99	71	91
GUERNSEY	63	64	79	79	98
WHEATLAND #2	24	21	60	41	115
PALISADES	26	58	74	35	45
HEBGEN LAKE	87	92	83	104	94
ENNIS LAKE			NO REPORT		
BIGHORN LAKE	48	50	64	75	96
TONGUE RIVER			NO REPORT		
FLAMING GORGE	69	71	81	86	98
WOODRUFF NARROWS	54	42	70	77	130
TOTAL OF 25 RESERVOIRS	-	60	75	73	91
Raw KAF Totals Current=	-		-	-	-
ion iocaib carrent-	, 1 1 3		, c, h metage=	JUID CAPACITY-	20220

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## **Basin Summary of Snow Course Data**

LOST - Data current as of:06/07/04 10:00:04

BASIN SUMMARY OF SNOW COURSE DATA

JUNE 2004

SNOW COURSE	ELEVATION	DATE		WATER CONTENT		AVERAGE 71-00
WYOMING Snow Course and	SNOTEL St	cations				
BALD MOUNTAIN SNOTEL	9380	6/01/04	33	12.1	10.0	16.7
BASE CAMP SNOTEL	7030	6/01/04		.0	.0	.0
BATTLE MTN. SNOTEL	7440	6/01/04		.0	.0	.0
BEARTOOTH LK. SNOTEL	9280	6/01/04	43	16.4	22.3	20.1
BEAR TRAP SNOTEL	8200	6/01/04	0	.0	.0	.0
BIG GOOSE SNOTEL	7760	6/01/04		.0	.0	2.7
BIG SANDY SNOTEL	9080	6/01/04	0	.0	.0	1.4
BLACKWATER SNOTEL	9780	6/01/04		14.9	19.9	
BLIND BULL SNOTEL	8900	6/01/04		10.2	7.2	17.8
BLIND PARK SNOTEL	6870	6/01/04		.0	.0	.0
BONE SPGS. SNOTEL			12	3.8	5.4	8.2
BROOKLYN LK. SNOTEL	10220			.0	1.2	11.6
BURGESS JCT. SNOTEL		6/01/04		.0	.0	2.6
BURROUGHS CRK SNOTEL	8750	6/01/04	2	.6	.7	3.4
CANYON SNOTEL	8090	6/01/04	0	.0	.0	1.3
CASPER MTN. SNOTEL	7850	6/01/04		.0	.0	4.2
CHALK CK #1 SNOTEL	9100	6/01/04	0	.0	.0	12.0
CHALK CK #2 SNOTEL	8200	6/01/04	0	.0	.0	.8
CINNABAR PARK SNOTEL	9690	6/01/04		.0		.2
CLOUD PEAK SNOTEL	9850	6/01/04		.0	3.4	7.7
COLE CANYON SNOTEL	5910	6/01/04		.0	.0	.6
COLD SPRINGS SNOTEL	9630	6/01/04	0	.0	.0	1.1
COTTONWOOD CR SNOTEL	7700	6/01/04		.0	.0	5.1
CROW CREEK SNOTEL	8830	6/01/04		.0		.0
DEER PARK SNOTEL	9700	6/01/04	9	4.7	.6	8.0
DIVIDE PEAK SNOTEL	8860	6/01/04		.0	.0	3.7
DOME LAKE SNOTEL	8880	6/01/04	0	.0	.0	3.2
EAST RIM DIV SNOTEL	7930	6/01/04		.0	.0	1.5
ELKHART PARK SNOTEL	9400	6/01/04		.0	.0	3.3
EVENING STAR SNOTEL	9200	6/01/04	30	13.4	22.4	26.7
GRANITE CRK SNOTEL	6770	6/01/04		.0	.0	.8
GRASSY LAKE SNOTEL	7270	6/01/04		1.2	1.0	14.0
GRAVE SPRINGS SNOTEL	8550			.0	.0	1.8
GROS VENTRE SNOTEL	8750			.0	.0	3.7
HANSEN S.M. SNOTEL	8360	6/01/04	0	.0	.0	.2
HAMS FORK SNOTEL	7840	6/01/04		.0	.0	.0
HOBBS PARK SNOTEL	10100	6/01/04		1.3	.2	10.1
INDIAN CREEK SNOTEL	9430	6/01/04		11.3	2.7	14.7
KELLEY R.S. SNOTEL	8180	6/01/04		.0	.0	1.4
KENDALL R.S. SNOTEL	7740	6/01/04		.0	.0	.0
KIRWIN SNOTEL	9550	6/01/04	0	.0	.6	5.5
LA PRELE SNOTEL	8380	6/01/04		.0	.0	.8
LEWIS LAKE SNOTEL	7850	5/01/04		5.3	5.3	17.9

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
LITTLE WARM SNOTEL	9370	6/01/04	1	.2	.0	1.9
LOOMIS PARK SNOTEL	8240	6/01/04		.0	.0	2.3
MARQUETTE SNOTEL	8760	6/01/04	0	.0	3.9	4.2
MIDDLE POWDER SNOTEL	7760	6/01/04		.0	.0	2.6
NEW FORK SNOTEL	8340	6/01/04		.0	.0	.0
NORTH FRENCH SNOTEL	10130	6/01/04		5.5	20.4	23.9
NORTH RAPID CK SNTL	6130	6/01/04	0	.0	.0	.0
OLD BATTLE SNOTEL	9920	6/01/04		21.2	21.5	25.6
OWL CREEK SNOTEL	8980	6/01/04	0	.0	.0	.5
PARKERS PEAK SNOTEL	9400	6/01/04	19	7.5	13.2	18.5
PHILLIPS BENCH SNTL	8200	6/01/04	6	2.9	.6	14.0
POWDER RVR.PASS SNTL	9480	6/01/04	0	.0	.0	2.3
RENO HILL SNOTEL	8500	6/01/04		.0	.0	3.4
SAGE CK BASIN SNTL	7850	6/01/04		.0	.0	2.1
SALT RIVER SNOTEL	7600	6/01/04		.0	.0	.0
SAND LAKE SNOTEL	10050	6/01/04		12.0	24.8	25.8
SANDSTONE RS SNOTEL	8150	6/01/04		.0	.0	.0
SHELL CREEK SNOTEL	9580	6/01/04	16	3.5	2.9	10.4
SNAKE RV STA SNOTEL	6920	6/01/04		.0	.0	.0
SNIDER BASIN SNOTEL	8060	6/01/04	0	.0	.0	.0
SOUTH BRUSH SNOTEL	8440	6/01/04		.0	.0	1.7
SOUTH PASS SNOTEL	9040	6/01/04	0	.0	.0	6.3
SPRING CRK. SNOTEL	9000	6/01/04	25	10.5	4.7	15.0
ST LAWRENCE ALT SNTL	8620	6/01/04		.0	.0	.7
SUCKER CREEK SNOTEL	8880	6/01/04	0	.0	.0	3.6
SYLVAN LAKE SNOTEL	8420	6/01/04	0	.0	6.3	11.4
SYLVAN ROAD SNOTEL	7120	6/01/04	0	.0	.0	.0
THUMB DIVIDE SNOTEL	7980	6/01/04		.0	.0	1.9
TIE CREEK SNOTEL	6870	6/01/04	0	.0	.0	.0
TIMBER CREEK SNOTEL	7950	6/01/04	0	.0	.0	.5
TOGWOTEE PASS SNOTEL	9580	6/01/04	39	16.4	15.2	21.9
TOWNSEND CRK SNOTEL	8700	6/01/04	0	.0	.0	1.7
TRIPLE PEAK SNOTEL	8500	6/01/04		.0	.0	4.8
TWO OCEAN SNOTEL	9240	6/01/04		20.4	23.6	25.2
WEBBER SPRING SNOTEL	9250	6/01/04		.0	.0	6.5
WHISKEY PARK SNOTEL	8950	6/01/04		.0	6.9	13.6
WILLOW CREEK SNOTEL	8450	6/01/04		.4	.0	14.3
WINDY PEAK SNOTEL	7900	6/01/04		.0	.0	.1
WOLVERINE SNOTEL	7650	6/01/04	0	.0	.0	.0
YOUNTS PEAK SNOTEL	8350	6/01/04	0	2.2	1.7	7.0

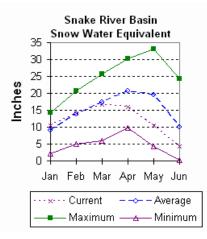
(d) denotes discontinued site.

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## Snake River Basin (1)

## Snow

The Snake River basin snow water equivalent (SWE) is below normal. SWE in the Snake above Jackson Lake is 46 percent of average (90% of last year at this time). Pacific Creek SWE is 81 percent of average (86% of last year at this time). Gros Ventre River SWE is 64 percent of average (108% of last year at this time). SWE in the Hoback River drainage is 39 percent of average (142% of last year at this time), SWE in the Greys River drainage is 41 percent of average (177% of last year at this time). In the Salt River area, SWE is 2 percent of average (0% of last year at this time). SWE in the Snake River Basin above Palisades is 43 percent of average (117% 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 137 percent of average (205 percent of last year). Last months percentages range from 53 to 198 percent of average. Water-year-to-date precipitation is 85 percent of normal for the Snake River basin (102 percent of last year at this time). Year-to-date percentages range from 77 to 93 percent of average.

#### Reservoir.

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

in the basin, is below average. Grassy Lake storage is about 68 percent of average (9,800 acre feet compared to 13,600 last year). Jackson Lake storage is 79 percent of average (454,900 acre feet compared to 615,300 acre feet last year). Palisades Reservoir storage is about 35 percent of average (366,600 acre feet compared to 809,600 acre feet last year).

## Streamflow.

The most probable, 50 percent chance, June through September runoff yield forecast is below average for the basin. The Snake near Moran is

expected to yield 210,000 acre-feet (36% of normal). Yield from the Snake River above Palisades Reservoir is estimated to be 775,000 acre-feet (42% of normal). Palisades reservoir inflow is expected to be about 1,120,000 acre feet (45% of average). The 50 percent chance yield near Heise is expected to be 1,210,000 acre-feet (46% of normal). Pacific Creek at Moran is expected to yield about 38,000 acre-feet (36% of average). Greys River above Palisades Reservoir is estimated to yield 120,000 acre-feet (49% of normal). Salt River near Etna is estimated to have a yield of 108,000 acre-feet (45% of normal).



SNAKE RIVER BASIN									
Streamflow Forecasts - June 1, 2004									
<pre>&lt;===== Drier ===== Future Conditions ====== Wetter ====&gt;&gt;</pre>									
Forecast Point	Forecast	!   =======			Chance Of E	xceeding * :			
	Period	90%	70%			Probable)	30%	10%	30-Yr Avg.
		(1000AF)	(1000A	(F)		(% AVG.)	(1000AF)	(1000AF)	(1000AF)
				==== =			==================		
SNAKE near Moran (1,2)	JUN-JUL	121	143	з ј	157	32	202	302	490
	JUN-SEP	166	192	2 j	210	36	260	365	580
				İ			i i i i i i i i i i i i i i i i i i i		
SNAKE above Palisades (2)	JUN-JUL	430	475	5	505	34	595	725	1470
	JUN-SEP	673	734	L İ	775	42	875	1015	1840
				İ			i i i i i i i i i i i i i i i i i i i		
PALISADES RESERVOIR INFLOW (1,2)	JUN-JUL	619	685	5	730	37	850	1120	1950
	JUN-SEP	966	1058	3	1120	45	1260	1560	2500
				i			ĺ		
SNAKE near Heise (2)	JUN-JUL	663	736	5 İ	785	38	915	1105	2050
	JUN-SEP	1037	1140	) j	1210	46	1360	1590	2650
				Í					
PACIFIC CREEK at Moran	JUN-JUL	23	27	, i	30	30	40	54	100
	JUN-SEP	29	34	ı j	38	36	48	62	106
				i			i i i i i i i i i i i i i i i i i i i		
GREYS above Palisades	JUN-JUL	65	73	3 j	79	42	93	113	188
	JUN-SEP	102	113	3 İ	120	49	135	158	245
				i		-			
SALT near Etna	JUN-JUL	46	55	5 İ	61	38	77	101	162
	JUN-SEP	87	100	b i	108	45	127	154	240
				i i		-			
							===============		
SNAKE I	RIVER BASIN				1		SNAKE RIVER E	BASIN	
Reservoir Storage (10)	0 AF) - End	of May			i ,	Watershed Si	nowpack Analys	is - June 1	L, 2004
	Usable	*** Usah	ole Stora		1		Numbe	er This	Year as % of
Reservoir	Capacity	This	Last		Water	shed	of	=====	
		Year	Year	Avg	i i		Data Si	tes Last	Yr Average
GRASSY LAKE	15.2	9.8	13.6	14.	4 SNAKE	above Jacks	son Lake 5	90	46
JACKSON LAKE	847.0	454.9	615.3	572.	6 PACIF	IC CREEK	2	86	81
PALISADES	1400.0	366.6	809.6	1033.	6 GROS	VENTRE RIVER	R 2	120	64
					HOBAC	K RIVER	5	142	39
					GREYS	RIVER	4	177	41
					1				
					SALT	RIVER	3	0	2
					SNAKE	above Palis	sades 17	120	43

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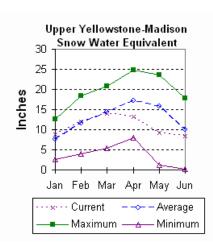
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table. \_\_\_\_\_

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## **Upper Yellowstone and Madison River Basins (2)**

#### Snow

Snowfall in these basins has been mixed this year, however, SWE, in both basins, is below average this month. Snow water equivalent (SWE) is about 107 percent of average (159 percent of last year) in the Madison drainage. SWE in the Yellowstone drainage is about 62 percent of average (73 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.



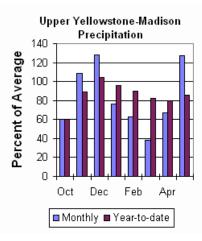
## Precipitation

Last month precipitation in the Madison and Yellowstone drainage was about 127 percent of average (158 percent of previous year) for the 5 reporting stations -- percentage range was from 121 to 154 percent of average. Water-year-to-date precipitation is about 86 percent of average (89 percent of last year's amount). Year to date percentage ranges from 80 to 90 percent.

#### Reservoir

Ennis Lake did not report this month. Hebgen Lake is storing about 264,500 acre-feet of water (87 percent of capacity) – 104 percent of average.

Hebgen Lake is storing about 94 of last year's volume.



## Streamflow

All the following forecasts are the 50 percent chance runoff for the June through September runoff period. Yellowstone at Lake Outlet is expected to yield about 470,000 acre feet (68 percent of normal).

Yellowstone at Corwin Springs will yield about 1,020,000 acre-feet (70

percent of normal). Yellowstone near Livingston will yield about 1,190,000 acre feet (70 percent of normal). Hebgen lake inflow is estimated to be 230,000 acre feet (74 percent of normal). See the following page for detailed runoff volumes.

UPPER YELLOWSTONE & MADISON RIVER BASINS

====== Wetter ====>>
* ===============
)   30% 10%   30-Yr Avg.
)   (1000AF) (1000AF)   (1000AF)
520 590 695
   895 1045 1140
1140 1310 1460
   1045 1225 1310
1360 1600 1700
166 191 200   255 290 310
LLOWSTONE & MADISON RIVER BASINS
d Snowpack Analysis - June 1, 2004
Number This Year as % of of =================================
Data Sites Last Yr Average
in WY 6 159 107
11 WI 6 159 107
IVER in WY 8 73 62

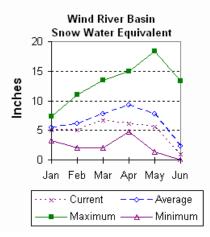
The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
The value is natural volume - actual volume may be affected by upstream water management.

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# Wind River Basin (3)

## Snow

The Wind River basin has below average snow water equivalent (SWE) for this time of the year. SWE in the Wind River above Dubois is 63 percent of average (108 percent of last year at this time). The Little Wind SWE is 12 percent of average water content (650 percent of last year), and the Popo Agie drainage SWE is about 23 percent of average (750 percent of last year). The Wind River basin, above Boysen Reservoir, SWE is about 40 percent of average (about 115 percent of last year). See the Basin Summary of Snow Course Data at the front of this report for details.



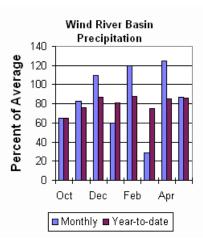
## Precipitation

Last months precipitation in the basin varied from 28 to 136 percent of average. Precipitation, for the basin, was about 87 percent of average for the 7 reporting stations; that is about 121 percent of last year's amount. Water year-to-date precipitation is 86 percent of normal and about 102 percent of last year at this time. Year-to-date percentages range from 78 to 96 percent of average.

#### Reservoirs

Current storage varies from 60 to 81 percent of average. Usable storage in Bull Lake is

currently about 60,400 acre feet (40 percent of capacity) -- normally the reservoir is at 63 percent of capacity at this time of the year. Boysen Reservoir is storing about 66 percent of capacity 393,600 acre feet) -- normally the reservoir is at 81 percent of capacity at this time of the year. Pilot Butte is storing 46 percent of capacity (14,500 acre feet) -- normally the reservoir is at 77 percent of capacity at this time of the year.



## Streamflow

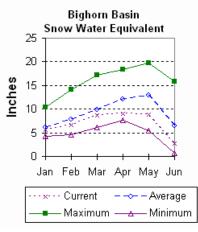
Water supply is estimated to be well below normal this year. The following values reflect the 50 percent chance yields for the June through September runoff period. Dinwoody Creek near Burris is estimated to yield 45,000 acre feet (56% of average). The Wind River above Bull Lake Creek is expected to yield 260,000 acre feet (63 percent of average). Bull Lake Creek near Lenore is expected to yield about 93,000 acre feet (61 percent of average). Wind River at Riverton will yield about 260,000 acre feet (52 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 41,000 acre feet (63 percent of average). Little Wind River near Riverton will yield about 127,000 acre feet (56 percent of average). Boysen Reservoir inflow will yield about 270,000 acre feet (44 percent of normal).

WIND RIVER BASIN									
Streamflow Forecasts - June 1, 2004									
<pre>&lt;===== Drier ===== Future Conditions ====== Wetter ====&gt;&gt;</pre>									
		ĺ						Í	
Forecast Point	Forecast				Of Exceeding '				
	Period	90%	70%		ost Probable)		0%	10%	30-Yr Avg.
		(1000AF)			AF) (% AVG.)			1000AF)	(1000AF)
DINWOODY CREEK nr Burris	JUN-JUL	21	26	======================================			34	======= 39	53
DINWOODI CREEK III BUIIIB	JUN-SEP	30	39	i 4			51	60	80
	OON DEI	50	55	-	5 50	1	51	00	
WIND RIVER abv Bull Lake Cr (2)	JUN-JUL	79	151	20	0 64	1 :	250	320	315
	JUN-SEP	116	200	26	0 63	j :	320	405	415
				İ		i			
BULL LAKE CR near Lenore (2)	JUN-JUL	49	63	7	2 61		81	95	118
	JUN-SEP	64	81	9	3 61	:	105	122	152
WIND RIVER at Riverton (2)	JUN-JUL	88	160	21			260	330	400
	JUN-SEP	140	210	26	0 52		310	380	500
LT POPO AGIE RIVER nr Lander	JUN-JUL	5.7	12.4	17.	0 59		22	28	29
HI FOFO AGIE KIVER III BAIMEI	JUN-SEP	8.6	16.0	2			26	33	36
	0011 021	010	2000	-		1	20	55	50
SF LT WIND nr Fort Washakie	JUN-JUL	23	30	3	4 63	i	38	45	54
	JUN-SEP	26	35	j 4	1 63	i	47	56	65
				ĺ		Ì			
LT WIND RIVER nr Riverton	JUN-JUL	15.0	56	10			152	220	188
	JUN-SEP	16.0	74	12	7 56	:	180	260	225
					0 45			250	51.6
BOYSEN RESERVOIR Inflow (2)	JUN-JUL JUN-SEP	89 63	175 185	23			285 355	370 475	516 609
	JUN-SEP	05	105	2/		· ·	555	475	009
				 ==========		, =============			
WIND R	IVER BASIN			1		WIND RIV	VER BASI	N	
Reservoir Storage (100				İ	Watershed				
	Usable		le Storage *				Number		Year as % of
Reservoir	Capacity	This	Last		atershed	_	of		
	I	Year		vg			ata Site		
BULL LAKE	151.8	60.4			IND RIVER abov		3	120	63
BULL LAKE	151.0	00.4	50.0 9	5.5   W	IND RIVER abov	ve Dubios	3	120	03
BOYSEN	596.0	393.6	313.8 48	5.6 Ц	ITTLE WIND		2	650	12
				-   -			-		
PILOT BUTTE	31.6	14.5	15.0 2	4.2 P	OPO AGIE		4	750	23
				W	IND above Boys	sen Resv	7	127	40

## **Bighorn River Basin (4)**

## Snow

Snowpack in this basin is near average for this time of year. Nowood drainage SWE is 0 percent of average (0 percent of last year). Greybull River SWE is 0 percent of average (0 percent of last year). Shell Creek SWE is 106 percent of average (55 percent of last year). The basin SWE, as a whole, is currently 103 percent of average (42 percent of last year). For more information see Basin Summary of Snow Courses at beginning of report.



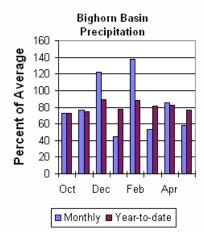
## Precipitation

Last month's precipitation was 58 percent of the monthly average (82 percent of last year). Sites ranged from 14 to 78 percent of average for the month. Year-to-date precipitation is 77 percent of normal; that is 86 percent of last year at this time. Year-to-date percentages, from the 10 reporting stations, range from 53 to 92.

## Reservoir

Boysen Reservoir is currently storing 393,600-acre feet (81 percent of average). Bighorn

Lake is now at 75 percent of average (646,000-acre feet). Boysen is currently storing 125 percent of last year at this time and Big Horn Lake is storing 96 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

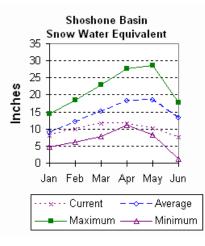
270,000 acre feet (44 percent of average); the Greybull River nr Meeteese should yield 109,000 acre feet (67 percent of average); Shell Creek near Shell should yield 34,000 acre feet (65 percent of average) and the Bighorn River at Kane should yield 350,000 acre feet (45 percent of average).

BIGHORN RIVER BASIN											
Streamflow Forecasts - June 1, 2004											
<pre></pre>											
		<<=====	= Drier ===	=== )	Future Co	onditions =:	===== We	tter ==	===>>		
Forecast Point	Forecast			<i>C</i> h	ango Of E	xceeding * :					
Forecast Point	Period	90%	 70%			Probable)			10%	30-Yr Avg.	
	reriou	(1000AF)				(% AVG.)			10%	(1000AF)	
		, , , , ,			,						
BOYSEN RESERVOIR Inflow (2)	JUN-JUL	89	175	i	230	45	28	5	370	516	
	JUN-SEP	63	185	i	270	44	35	5	475	609	
				İ							
GREYBULL RIVER nr Meeteetse	JUN-JUL	39	56	1	68	62	8	-	97	110	
	JUN-SEP	69	93		109	67	12	5	149	163	
				!				_			
SHELL CREEK nr Shell	JUN-JUL	17.2	22	!	25	63	2		33	40	
	JUN-SEP	24	30	!	34	65	3	8	44	52	
BIGHORN RIVER at Kane (2)	JUN-JUL	133	240	-	310	46	38	^	485	675	
BIGHORN RIVER at Kane (2)	JUN-SEP	145	240	-	310	40	30   43		400 555	785	
	UON-BEF	145	205	ł	550	40	1 13	5	555	705	
							, 				
BIGHORN	RIVER BASIN				1	1	BIGHORN RI	VER BAS	SIN		
Reservoir Storage (10)	00 AF) - End	of May			i	Watershed Si	nowpack An	alysis	- June 1,	2004	
				=====							
	Usable		le Storage	***			N	umber	This Y	ear as % of	
Reservoir	Capacity	This	Last		Water	shed		of			
	I	Year		Avg	!			a Sites			
											-
BOYSEN	596.0	393.6	313.8 4	85.6	I NOWOC	D RIVER		2	0	0	
BIGHORN LAKE	1356.0	646.0	675.1 8	67.1		ULL RIVER		2	0	0	
DIGNORT LARE	10000	010.0	0,0.1 0	0/•±		NIVIN KIVIK		4	Ū	0	
					SHELL	CREEK		3	106	55	
								-			
					BIGHC	RN (Boysen-1	Bighorn)	7	103	42	
					İ	_					

## Shoshone and Clarks Fork River Basin (5)

#### Snow.

Snow Water Equivalent (SWE) is 41 percent of average (56 percent of last year) in the Shoshone River basin. The Clarks Fork River basin SWE is 73 percent of average (72 percent of last year). For more information see the Basin Summary of Snow Course Data at the beginning of this report.



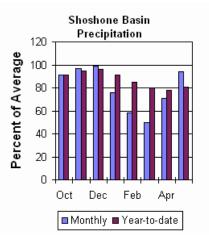
## Precipitation.

Precipitation for last month was 94 percent of normal (116 percent of last year). Monthly percentages range from 8 to 139 percent of average. The basin year-to-date precipitation is now 81 percent of average (79 percent of last year). Year-to-date percentages range from 70 to 90 percent of average.

#### Reservoir.

Current usable storage in Buffalo Bill Reservoir is about 101 percent of average (87

percent of last year's storage) – the reservoir is about 62 percent of capacity. Currently, about 400,600 acre-feet are stored in the reservoir compared to 461,200 acre feet last year. Detailed reservoir data is shown on the following page and on the reservoir storage summary at the beginning of this report.



## Streamflow

The fifty percent yield (June through September period) for the North Fork Shoshone River at Wapiti is expected to be 180,000 acre-feet (49 percent of average). South Fork of the Shoshone River near Valley is estimated to yield of 110,000 acre-feet (52 percent of average), and South Fork above Buffalo Bill Reservoir is expected to be 70,000 acre-feet (40 percent of average). At the Buffalo Bill Reservoir, the fifty percent chance yield for the Shoshone River is expected to be about 300,000 acre-feet (50 percent of average). The fifty-percent chance yield for the Clarks Fork of the Yellowstone near Belfry, Montana is expected to be about 320,000 acre-feet (72 percent of average).

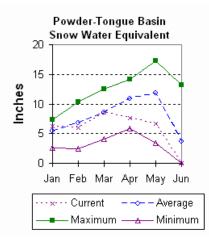
SHOSHONE & CLARKS FORK RIVER BASINS
Character Tana 1 2004

Streamflow Forecasts - June 1, 2004									
<pre></pre>									
		<<======	Drier ====	== Future (	Conditions =	===== Wetter	====>>		
Forecast Point	Forecast			- Change Of	Exceeding *				
Forecast Point	Period	90%	70%		Probable)	   30%	10%	30-Yr Avg.	
	FELIOU		(1000AF)		(% AVG.)	(1000AF)		(1000AF)	
		1 4 5 5 7					, ,		
NF SHOSHONE RIVER at Wapiti	JUN-JUL	26	100	150	49	200	275	305	
	JUN-SEP	41	124	180	49	235	320	365	
				İ		İ			
SF SHOSHONE RIVER nr Valley	JUN-JUL	53	75	90	52	105	127	172	
	JUN-SEP	62	91	110	52	129	158	210	
SF SHOSHONE RIVER abv Buffalo Bill	JUN-JUL	2.0	39	65	40	91	128	163	
	JUN-SEP	2.0	40	70	40	99	143	174	
BUFFALO BILL DAM Inflow (2)	JUN-JUL	173	219	250	49	280	325	515	
	JUN-SEP	212	265	300	50	335	390	595	
CLARKS FORK RIVER nr Belfry	JUN-JUL	121	215	   280	72	   345	440	390	
CLARKS FORK RIVER HF Bellry	JUN-SEP	134	215	280   320	72	345   395	440 505	445	
	JUN-SEP	134	245	1 320	12	395	505	445	
				 ===============		! ================			
SHOSHONE & CLARK	S FORK RIVE	R BASINS		1	SHOSHONE	& CLARKS FORK	RIVER BASI	NS	
Reservoir Storage (100				i		nowpack Analys			
	Usable	*** Usab	Le Storage *	**		Numbe	r This	Year as % of	
Reservoir	Capacity	This	Last	Wate	ershed	of			
	İ	Year	Year A	vg		Data Si	tes Last	Yr Average	
BUFFALO BILL	646.6	400.6	461.2 39	5.7   SHOS	SHONE RIVER	6	56	41	
				CLAP	RKS FORK in W	Y 7	72	73	
				I					

## Powder and Tongue River Basins (6)

#### Snow

Snow water equivalent (SWE) in the Upper Tongue River drainage is 24 percent of normal (88 percent of last year). The Goose Creek drainage SWE is 0 percent of average (0 percent of last year). SWE in the Clear Creek drainage is 0 percent of normal SWE (0 percent of last year). Crazy Woman Creek drainage SWE is 0 percent of average (0 percent of last year). Upper Powder River drainage SWE is 0 percent of average (0 percent of last year). Powder River basin SWE, in Wyoming, is about 0 percent of average (0 percent of last year). For more information see Basin Summary of Snow Courses at beginning of report.



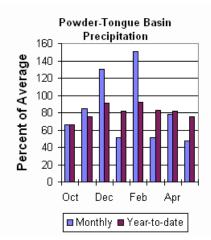
## Precipitation

Last month's precipitation was 47 percent of average for the 9 reporting stations (66 percent of last year). Monthly percentages range from 26 to 166 percent of average. Year-to-date precipitation is 75 percent of average in the basin; this is 80 percent of last year at this time. Precipitation for the year ranges from 53 to 92 percent of average at the reporting stations.

#### Reservoir

Tongue River Reservoir did not report this month. Last year at this time the reservoir

was storing about 79,100 acre feet – average storage is about 48,000 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 June through September forecast period. The estimated yield for

Tongue River near Dayton is 43,000-acre feet (61 percent of normal). Big Goose Creek near Sheridan is expected to yield about 23,000 acre feet (52 percent of average), while Little Goose Creek nr Big Horn is expected to yield about 18,800 acre feet (65 percent of average). Middle Fork of the Powder River near Barnum is estimated to yield 2,200 acre feet (30 percent of average). The North Fork of the Powder near Hazelton should yield about 2,300 acre-feet (39 percent of normal). The estimated yield for Clear Creek near Buffalo is 9,800 acre-feet (35 percent of average). Rock Creek near Buffalo will yield about 4,800 acre-feet (30 percent of normal), and Piney Creek at Kearny should yield about 10,000 acre-feet (31 percent of average).

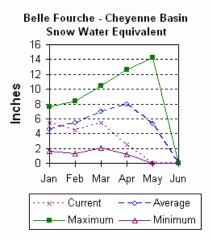
POWDER & TONGUE RIVER BASINS Streamflow Forecasts - June 1, 2004											
<====== Drier ===== Future Conditions ====== Wetter =====>>											
Forecast Point	Forecast			= Chance Of E	Exceeding * =		i				
	Period	90%	70%	50% (Most	Probable)	30%	10%	30-Yr Avg.			
		(1000AF)	(1000AF)		(% AVG.)	,	(1000AF)	(1000AF)			
				1	1						
TONGUE RIVER nr Dayton (2)	JUN-JUL	14.2	25	32	55	39	50	58			
	JUN-SEP	22	35	43	61	51	64	71			
BIG GOOSE CREEK nr Sheridan	JUN-JUL	0.3	9.0	15.1	43	21	30	35			
	JUN-SEP	7.3	17.0	23	52	29	39	44			
				i	i						
LITTLE GOOSE CREEK nr Big Horn	JUN-JUL	5.5	8.9	11.2	53	13.5	16.9	21			
	JUN-SEP	10.5	15.5	18.8	65	22	27	29			
TONGUE RIVER RESERVOIR Inflow (2)	JUN-JUL	4.0	24	44	35	64	93	126			
IONGOE RIVER RESERVOIR INFIOW (2)	JUN-SEP	7.0	43	67	44	91	127	153			
	OON DEI	/.0	15			21	127	100			
MIDDLE FORK POWDER nr Barnum	JUN-JUL	0.29	1.18	1.80	31	3.37	5.67	5.90			
	JUN-SEP	0.34	1.38	2.10	30	3.78	6.18	6.90			
NORTH FORK POWDER nr Hazelton	JUN-JUL	0.25	1.11	2.00	39	2.90	4.20	5.10			
NORTH FORK FOWDER III Hazercon	JUN-SEP	0.29	1.11	2.30	39	3.30	4.80				
	JUN-SEP	0.29	1.27	2.30	39	3.30	4.80	5.90			
CLEAR CREEK nr Buffalo	JUN-JUL	0.7	4.2	7.7	35	10.7	16.7	22			
	JUN-SEP	0.8	5.8	9.8	35	13.8	19.8	28			
				ĺ	Í						
ROCK CREEK nr Buffalo	JUN-JUL	0.2	1.6	3.6	30	5.6	8.5	12.0			
	JUN-SEP	0.3	2.5	4.8	30	7.1	10.6	15.9			
PINEY CREEK at Kearny	JUN-JUL	0.9	3.8	8.5	29	13.2	20	29			
ringi onden do nourny	JUN-SEP	0.6	3.8	10.0	31	16.2	26	32			
POWDER RIVER at Moorehead	JUN-JUL	3.0	19.0	25	24	51	90	105			
	JUN-SEP	4.0	16.0	35	27	62	102	128			
POWDER RIVER near Locate	JUN-JUL	2.0	11.0	23	20	35	53	116			
TOWER RIVER MEET LOCale	JUN-SEP	3.0	13.0	23	20	43	65	141			
	JON DEF	5.0	10.0	23	20		00				
				==============							
POWDER & TONG	THE RIVER BA	STNS		1	POWDER	& TONGUE RIN	VER BASINS				

POWDER & Reservoir Storage	POWDER & TONGUE RIVER BASINS Watershed Snowpack Analysis - June 1, 2004							
Reservoir	Usable   Capacity  	*** Usabl This Year	e Storage Last Year	e *** Avg	Watershed	Number of Data Sites		r as % of ======= Average
TONGUE RIVER		NO REPORT			UPPER TONGUE RIVER	7	88	24
					GOOSE CREEK	2	0	0
					CLEAR CREEK	2	0	0
					CRAZY WOMAN CREEK	1	0	0
					UPPER POWDER RIVER	3	0	0
					POWDER RIVER in WY	5	0	0

## Belle Fourche and Cheyenne River Basins (7)

#### Snow.

The Belle Fourche River Basin is melted out as of April 1. See Basin summary of Snow Course Data at the beginning of this report for a detailed listing.



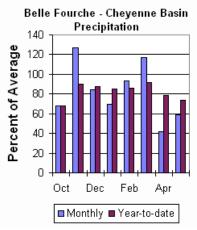
## Precipitation.

Precipitation, for last month was 59 percent of average in the Black Hills. Monthly percentages range from 28 to 69 percent. Year-to-date precipitation is 74 percent of average and 85 percent of last year's amount.

#### Reservoir.

Usable reservoir storage is generally near average in the basin. Angostura is currently storing 69 percent of average

(80,600-acre feet), about 66 percent of capacity. Belle Fourche reservoir is storing 80 percent of average (122,600-acre feet), about 69 percent of capacity. Deerfield reservoir is storing 110 percent of average (14,900-acre feet), about 98 percent of capacity. Keyhole reservoir is storing 93 percent of average (111,100-acre feet), 57 percent of capacity. Pactola reservoir is storing 98 percent of average (47,600-acre feet), 87 percent



of capacity. Shadehill reservoir is storing 95 percent of average (65,000-acre feet), 80 percent of capacity.

## Streamflow

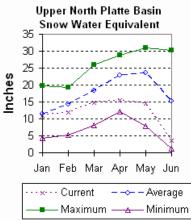
Water supply is estimated to be below normal this year. The following values reflect the 50 percent chance yields for the June through July runoff period. Deerfield Reservoir inflow is forecast at 900 acre feet (50 percent of average). Pactola is forecast at 4,500 acre feet (50 percent of average).

	1	BELLE FOUR	CHE & CHE	YENNE	RIVER BAS	INS			
					June 1, 20				
		<<=====	= Drier =		Future C	onditions =:	===== Wetter	====>>	
Forecast Point	Forecast Period	=======   90%				Exceeding * : Probable)		10%	30-Yr Avg.
	Period	90%   (1000AF)				(% AVG.)	(1000AF)		(1000AF)
		(1000AF)	(1000AF			(% AVG.)	(1000AF)	(1000AF)	(1000AF)
DEERFIELD RESERVOIR Inflow	JUN-JUL	0.04	0.35		0.90	50	1.46	2.26	1.80
DEERTHED REDERVOIR INFIOW	CON COL	0.01	0.55		0.50	50	1.10	2.20	1.00
PACTOLA RESERVOIR Inflow	JUN-JUL	0.54	2.70	i	4.50	50	8.00	13.20	9.00
				i			i		
BELLE FOURCHE &							RCHE & CHEYENNE		
Reservoir Storage (1		· · ·					nowpack Analysi		
	Usable		le Storag	e ***	1		Number		Year as % of
Reservoir	Capacity	This	Last		Wate:	rshed	of		
		Year	Year	Avg			Data Sit		Yr Average
ANGOSTURA	122.1		102.0	117.2		E FOURCHE	2	 0	0
ANGOSIURA	122.1	80.0	102.0	11/.2		E FOURCHE	2	0	U
BELLE FOURCHE	178.4	122.6	151.9	152.3	3				
	1/011		10110						
DEERFIELD	15.2	14.9	15.2	13.6	5				
KEYHOLE	193.8	111.1	131.4	118.9	θİ				
PACTOLA	55.0	47.6	55.1	48.6	5				
					_				
SHADEHILL	81.4	65.0	40.8	68.7	7				

## **Upper North Platte River Basin (8)**

## Snow

The snow courses above Seminoe Reservoir have about 37 percent of average snow water equivalent (SWE) recorded for this time of the year (67 percent of last year). SWE in the drainage area above Northgate is about 41 percent of average and 110 percent of last year at this time. SWE in the Encampment River drainage is about 46 percent of normal and 75 percent of last year. Brush Creek SWE for the year is about 21 percent of normal and 27 percent of last year's SWE. Medicine Bow and Rock Creek drainage SWE is about 32 percent of average and 46 percent of last year at this time. For more information see Basin Summary of Snow Courses at the beginning of this report.



## Precipitation

Eight reporting stations indicate last month's precipitation was 55 percent of average and about 61 percent of last year's amount. Precipitation varied from 16 to 84 percent of average last month. Total water-year-to-date precipitation is about 80 percent of average for the basin, which is about 80 percent of last year's amount. Year to date percentage ranges from 66 to 88 percent of average.

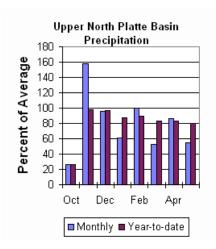
## Reservoirs

Seminoe Reservoir is currently storing about 50 percent of average for this time of the year. Currently, the reservoir is storing 122 percent of last year's amount. Seminoe Reservoir is estimated to be storing 331,400 acre-feet (33 percent of capacity). Last year, at this time, the reservoir had 272,200 acre-feet in storage.

## 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 53,000 acre-feet (33 percent of

average). Encampment River near Encampment is estimated to yield 54,000 acre-feet (50 percent of normal). Rock Creek near Arlington is estimated to yield 9,800 acre-feet (24 percent of average). Seminoe Reservoir inflow should be about (187,000 acre-feet (37 percent of normal). See the following table for more detailed information on projected runoff.



			NORTH PLATTI							
			w Forecasts							
		<<=====	= Drier ====	=== F	uture Co	onditions	===== We	etter =	>	
Forecast Point	Forecast	   ======		== Cha	nce Of E	xceeding *				
	Period	90%	70%			Probable)	30%	-	10%	30-Yr Avg.
		1 4 5 5 7	(1000AF)			(% AVG.)			(1000AF)	(1000AF)
NORTH PLATTE RIVER nr Northgate	JUN-JUL	26 26	35	= ====	41	31	1	====== 18	59	133
	JUN-SEP	20	40	i	53	33	6	6	86	159
			20	!		-1			=0	
ENCAMPMENT RIVER nr Encampment	JUN-JUL JUN-SEP	22 23	39 41	-	50 54	51 50		51 57	78 85	99 108
	UON-SEF	25	41	1	54	50		,,	05	100
ROCK CREEK nr Arlington	JUN-JUL	6.4	7.5	i	8.2	22	j 9.	0	10.2	38
	JUN-SEP	7.9	9.0	1	9.8	24	10.	6	12.0	41
SWEETWATER RIVER nr Alcova	JUN-JUL	7.5	13.4	-	17.5	53		22	28	33
SWEETWATER RIVER III AICOVA	JUN-SEP	12.9	17.7	1	21	54		24	29	39
				i			i			
SEMINOE RESERVOIR Inflow	JUN-JUL JUN-SEP	49 110	112 156	-	155 187	36 37	19	-	260 265	435 500
	UON-SEF	110	150	1	107	57	1 24	.0	205	500
UPPER NORTH P							NORTH PLAT			
Reservoir Storage (10		· · ·		 ======			Snowpack Ar			
	Usable	*** Usah	le Storage	***			1	lumber	This	Year as % of
Reservoir	Capacity	This	Last	Í	Water	shed		of		
	I	Year		Avg				a Site		
SEMINOE	1016.7	331.4		58.3		ATTE above		5	110	41
							<u> </u>			
					ENCAM	IPMENT RIVE	R	3	75	46
					BRUSH	I CREEK		2	27	21
					MEDIC	CINE BOW &	ROCK CREEK	2	46	32
					N PLA	ATTE above	Seminoe	13	67	37
				1						

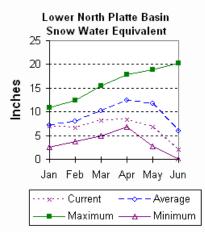
The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
The value is natural volume - actual volume may be affected by upstream water management.

20

## Lower North Platte River Basin (9)

## Snow

SWE for the North Platte River basin in Wyoming averages 35 percent of normal (65 % of last year). The Sweetwater drainage SWE is currently 33 percent (783 percent of last year). Deer and LaPrele Creek SWE is 0 percent of average (0 percent of last year). SWE for the North Platte above the Laramie River drainage is 36 percent of average (71 % of last year). SWE for the Laramie River above Laramie is 24 percent of average (27 % of last year). SWE for the Little Laramie River is 0 percent of average (0 percent of last year). The Laramie River above mouth, SWE is 18 percent of average (26% of last year). For more information see Basin Summary of Snow Courses at beginning of report.



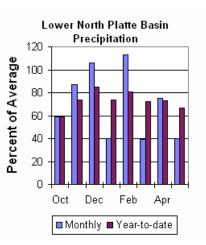
## Precipitation

Of the 6 reporting stations, percentages for the month range from 22 to 100. Last month's precipitation for the basin was 40 percent of average (55 percent of last year). The water year-to-date precipitation for the basin is currently 67 percent of average (79 percent of last year). Year-to-date percentages range from 58 to 86.

#### Reservoir

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

reservoirs. Reservoir storage is as follows: Alcova 176,300 acre feet (99 percent of average); Glendo 355,300 acre feet (71 percent of average); Guernsey 28,700 acre feet (79 percent of average); Pathfinder 267,200 acre feet (34 percent of average); Seminoe 331,400 acre feet (50 percent of average), and Wheatland No.2 24,200 acre feet (41 percent of average).



## Streamflow

Yields from 13 to 83 percent are expected in the basin during the forecast period. The following yields are based on the fifty percent chance probability runoff for the June through September forecast period. The Sweetwater near Alcova is forecast to yield about 21,000 acre-feet (54% of average). Deer Creek at Glenrock is expected to yield about 5,500 acre feet (16% of average). LaPrele Creek above the reservoir is estimated to yield 2,300 acre-feet (44% of average). North Platte River below Guernsey Reservoir is expected to yield about 145,000 acre-feet (29% of normal), and below Glendo Reservoir is anticipated to yield about 119,000 acre-feet (25% of average). Laramie River near Woods Landing should yield about 44,000 acre-feet (49% of average). The Little Laramie near Filmore should produce about 14,100 acre-feet (30 percent of average).

LOWER NORTH PLATTE, SWEETWATER & LARAMIE RIVER BASINS	

		Streamflow	Forecasts ·	- June 1, 200	04			
		<<======	Drier =====	== Future Co	onditions ==	===== Wetter	====>>	
		ļ						
Forecast Point	Forecast	1						
	Period	90%	70%	50% (Most		30%	10%	30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)
SWEETWATER RIVER nr Alcova	JUN-JUL	7.5	13.4	17.5	53 54	22	28 29	33
	JUN-SEP	12.9	17.7	21	54	24	29	39
LaPRELE CREEK aby Reservoir	JUN-JUL	0.25	0.98	2.20	45	3.89	6.33	4.90
LAPRELE CREEK ADV RESELVOII	JUN-SEP	0.25	1.04	2.20	45	4.00	6.47	5.20
	JON-SEP	0.20	1.04	2.30		4.00	0.4/	5.20
NORTH PLATTE - Alcova to Orin Gain	JUN-JUL	1.5	7.5	5.0	20	13.7	27	25
NORTH THATTE ALCOVE CO OF IN GUIN	JUN-SEP	1.3	9.2	6.6	20	16.0	30	33
	UON-BEF	1.5	5.2	0.0	20	10.0	50	55
NORTH PLATTE RIVER blw Glendo Res	JUN-JUL	5.0	72	117	27	162	230	440
	JUN-SEP	5.0	71	119	25	167	235	470
NORTH PLATTE RIVER blw Guernsey Res	JUN-JUL	4.0	76	130	29	184	265	450
-	JUN-SEP	5.0	86	145	29	205	290	500
				İ				
LARAMIE RIVER nr Woods	JUN-JUL	10.0	26	37	48	48	64	77
	JUN-SEP	14.8	32	44	49	56	73	89
LITTLE LARAMIE RIVER nr Filmore	JUN-JUL	4.6	9.4	12.6	30	15.8	21	42
	JUN-SEP	5.3	10.6	14.1	30	17.6	23	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, 2004

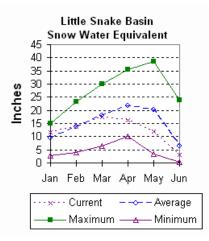
		============						
Reservoir	Usable   Capacity  	*** Usa This Year	ble Storag Last Year	ge *** Avg	   Watershed	Number of Data Sites		r as % of ====== Average
			==========			============		
ALCOVA	184.3	176.3	180.5	178.8	SWEETWATER	2	783	33
GLENDO	506.4	355.3	389.6	503.4	   DEER & LaPRELE CREEKS	2	0	0
GUERNSEY	45.6	28.7	29.3	36.2	   N PLATTE abv Laramie R.	17	71	36
PATHFINDER	1016.5	267.2	349.8	775.1	   LARAMIE RIVER abv Laram. 	ie 5	27	24
SEMINOE	1016.7	331.4	272.2	658.3	LITTLE LARAMIE RIVER	2	0	0
WHEATLAND #2	98.9	24.2	21.0	59.0	LARAMIE RIVER above mou	th 6	26	18
					NORTH PLATTE	17	65	35

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

## Little Snake River Basin (10)

## Snow

Currently, snow water equivalent (SWE) in the Little Snake River drainage is 48 percent of average (75 percent of last year at this time). For more information see Basin Summary of Snow Courses at beginning of this report.



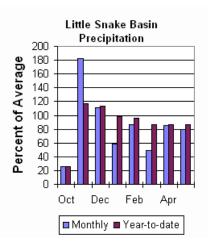
## Precipitation

Precipitation across the basin was below average this past month. Last Month's precipitation was 79 percent of average (90 percent of last year) for the 5 reporting stations. Last month's precipitation ranged from 47 to 98 percent of average. The Little Snake River basin water-year-todate precipitation is currently 86 percent of average (88 percent of last year). Year-to-date percentages range from 80 to 90 percent of average.

## Streamflow

Runoff yield in the Little Snake River drainage is

expected to be much below normal this year. Stream yield is based on the 50 percent probability for the April through July forecast period. The Little Snake River near Slater should yield about 88,000 acre-feet (55 percent of normal). Little Snake River near Dixon is estimated to yield 175,000 acre-feet (53 percent of normal).

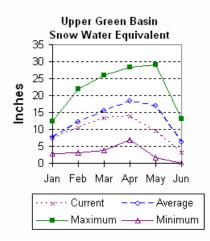


			LE SNAKE RIV					
		Streamilow	Forecasts -	June 1, 20	004			
		<<=====	Drier =====	= Future (	conditions ==	===== Wetter	=====>>	
Forecast Point	Forecast							
	Period	90%	70%		Probable)		10%	30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)
Little Snake River nr Slater	APR-JUL	64	74	88	55	103	128	159
LITTLE SNAKE R nr Dixon	APR-JUL	116	133	175	53	218	278	330
LITTLE SNAKE R HF DIXON	APR-JUL	110	133	1/5	53	210	278	330
			ا 					
LITTLE SNAK	PTVER BAS	 TN				LE SNAKE RIVE	P BASTN	
Reservoir Storage (1000						nowpack Analys		2004
	Usable	*** Usabl	e Storage **	**		Numbe	r This	Year as % of
Reservoir	Capacity	This	Last	Wate	ershed	of	=====	
		Year	Year Av	rg l		Data Si	tes Last	Yr Average
				j liti	LE SNAKE RIVE	SR 6	75	48
				i				

## **Upper Green River Basin (11)**

## Snow.

Snow water equivalent (SWE) is below normal in the upper Green River drainage this year. The Green River basin SWE above Warren Bridge is 0 percent of normal (0 percent of last year). SWE on the west side of the Upper Green River basin is about 61 percent of normal, 219 percent of this time last year. Newfork River SWE is now about 0 percent of normal (0 percent of last year). Big Sandy-Eden Valley SWE is about 0 percent of average (0 percent of last year). SWE in the Green River above Fontenelle Reservoir is about 51 percent of average (219 percent of last year). For more information see the Basin Summary of Snow Courses at the beginning of this report.



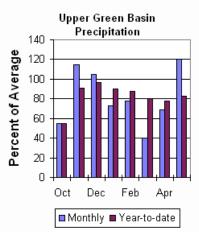
## Precipitation.

The 10 reporting precipitation sites in the basin were 120 percent of average last month (185 percent of last year at this time). Last month's precipitation varied from 49 to 139 percent of average. Water year-to-date precipitation is about 83 percent of average (103 percent of last year). Year to date percentage of average ranges from 73 to 92 percent for the reporting stations.

#### Reservoir.

Usable storage in Big Sandy Reservoir is currently about 18,700 acre feet (64 percent of

average) -- 106 percent of last year and 49 percent of capacity. Eden Reservoir is too low to measure. Fontenelle Reservoir is storing 193,200 acre-feet (106 percent of average and 56 percent of the total capacity). Detailed reservoir data is shown on the following page and on the reservoir storage summary at the beginning of this report.



## Streamflow

The fifty-percent chance April through July runoff in the Upper Green River basin is forecast below average. Green River at Warren Bridge is expected to yield about 150,000 acre-feet (57 percent of normal). Pine Creek above Fremont Lake is expected to yield 67,000 acre-feet (64 percent of normal). New Fork River near Big Piney is expected to yield about 180,000 acre-feet (46 percent of normal). Fontenelle Reservoir Inflow is estimated to be 360,000 acre-feet (42 percent of average), and Big Sandy near Farson is expected to be about 35,000 acre-feet (60 percent of normal).

UPPER GREEN RIVER BASIN
Streamflow Forecasts - June 1, 2004

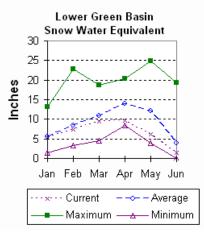
		Streamilow	v Forecasts	- June 1, 20	04				
			Drier ====	== Future C	onditions =:	===== Wetter	· =====>>		
Forecast Point	Forecast								
	Period	90%	70%	1	Probable)	30%	10%	30-Yr Avg.	
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)	
				============		=============			
Green River at Warren Bridge	APR-JUL	115	136	150	57	164	185	265	
Pine Creek abv Fremont Lake	APR-JUL	54	62	67	64	72	80	104	
	JUN-JUL	29	38	45	55	52	61	82	
				i		İ			
New Fork River nr Big Piney	APR-JUL	115	155	180	46	205	245	395	
				i		İ			
Fontenelle Reservoir Inflow	APR-JUL	282	327	360	42	J 394	448	860	
Big Sandy River nr Farson	APR-JUL	27	32	35	60	38	43	58	
UPPER GREEN RIVER BASIN UPPER GREEN RIVER BASIN									
		1	OFFER GREEN RIVER BASIN						

Reservoir Storage (1000 AF) - End of May					Watershed Snowpack Analysis - June 1, 2004					
	Usable	*** Usał	ole Storag	ge ***		Number	This Year	as % of		
Reservoir	Capacity	This	Last		Watershed	of				
		Year	Year	Avg	I	Data Sites	Last Yr	Average		
BIG SANDY	38.3	18.7	17.7	29.4	GREEN above Warren Bridg	je 4	0	0		
EDEN		NO REPOR	RT		UPPER GREEN (West Side)	5	219	61		
FONTENELLE	344.8	193.2	142.3	181.9	NEWFORK RIVER	2	0	0		
					BIG SANDY/EDEN VALLEY	1	0	0		
							01.0			
					GREEN above Fontenelle	11	219	51		

## Lower Green River Basin (12)

## Snow

The Henrys Fork drainage SWE is currently 0 percent of average (0% of last year). SWE in the Hams Fork is 70 percent of average (419% of last year). Blacks Fork SWE is currently 44 percent of average (89 percent of last year). SWE in the basin, as a whole, is 48 percent of average (181 percent of last year). For more information see Basin Summary of Snow Courses at beginning of this report.



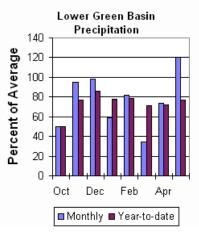
## Precipitation

Precipitation was above average for the 3 reporting stations during last month (120 percent of average). Precipitation ranged from 22 to 122 percent of average for the month. The basin year-to-date precipitation is currently 77 percent of average (106 percent of last year). Year-to-date percentages range from 75 to 81.

## Reservoir

Fontenelle Reservoir is currently storing 193,200 acre feet; this is 106 percent of

average (136 percent of last year). Flaming Gorge is currently storing 2,600,000 acre feet, this is 86 percent of average (98 percent of last year). Viva Naughton is currently storing 42,400 acre feet, this is 109 percent of average (112 percent of last year).



## Streamflow

Expected yields vary from 35 to 57 percent of average across the basin.

The following forecast values are based on a 50 percent chance probability for the April through July forecast period. Green River near Green River is forecast to yield about 365,000-acre feet (42 percent of average). Blacks Fork near Robertson is forecast to yield 54,000-acre feet (57 percent of average). East Fork of Smiths Fork near Robertson is estimated to yield 16,800 acre-feet (54 percent of average). The estimated yield for Hams Fork near Frontier is 32,000-acre feet (49 percent of average). Flaming Gorge Reservoir inflow will be about 410,000-acre feet (35 percent of average).

#### \_\_\_\_\_ LOWER GREEN RIVER BASIN Streamflow Forecasts - June 1, 2004

StreamILOW ForeCasts - June 1, 2004											
Forecast Point	Forecast			= Chance Of 1	Exceeding * :	===== Wetter					
	Period	90%   (1000AF)	70% (1000AF)		Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)			
Green River nr Green River, WY	APR-JUL	225	310	365	42	420	505 <u>5</u> 05	875			
Blacks Fork nr Robertson	APR-JUL	42	49	54	57	59	66	95			
EF of Smiths Fork nr Robertson	APR-JUL	14.8	16.0	16.8	54	17.7	19.1	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	22	28	36	40	44	55	89			
Flaming Gorge Reservoir Inflow	APR-JUL	220	335	410	35	485	600	1190			
LOWER GREEN RIVER BASIN   LOWER Reservoir Storage (1000 AF) - End of May   Watershed Snow							R BASIN is - June 1	, 2004			

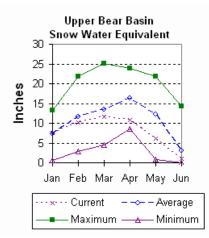
Reservoir	Usable   Capacity  	*** Usa This Year	ble Storag Last Year	ge *** Avg	Watershed	Number of Data Sites	This Year  Last Yr	r as % of Average
FONTENELLE	344.8	193.2	142.3	181.9	HAMS FORK RIVER	3	419	70
VIVA NAUGHTON RES	42.4	42.4	37.9	39.0	BLACKS FORK	2	89	44
					HENRYS FORK	2	0	0
					GREEN above Flaming Gor	rge 18	181	48

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

# **Upper Bear River Basin (13)**

## Snow

Snow water equivalent (SWE) in the upper Bear River basin in Utah is estimated to be 0 percent of average; that is about 0 percent of last year at this time. SWE in the Wyoming portion of the Bear River drainage (Smiths and Thomas Forks) is estimated at 70 percent of average (419 percent of last year at this time.). Bear River basin SWE, above the Idaho State line, is 33 percent of average (419 percent of last year). See the Basin Summary of Snow Course Data at the beginning of this report for more detailed information.



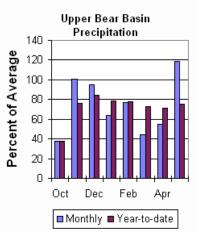
## Precipitation

Precipitation for last month was 119 percent of average for the 2 reporting stations; this is 265 percent of the precipitation received last year. The year-to-date precipitation, for the basin, is 75 percent of average; this is 115 percent of last year's amount.

## Reservoir

Usable storage, in Woodruff Narrows reservoir, is about 31,000 acre feet (77 percent of average). Current reservoir storage is about 54 percent of

capacity. Reservoir storage last year at this time was 23,800 acre feet at this time.



## Streamflow

The following 50 percent chance stream flow yields are for the June

through September period. Smiths Fork near Border is estimated to yield 30,000 acre-feet (39 percent of normal. Bear River above the Utah-Wyoming State Line is expected to yield about 20,000 acre feet (24 percent of average)

UPPER BEAR RIVER BASIN										
		Streamflow	Forecasts	June 1, 2	2004					
	<<=====	<<===== Drier ===== Future Conditions ====== Wetter ====>>								
		i						i		
Forecast Point	Forecast	======================================								
	Period	90%	70%	50% (Mos	t Probable	.)	30%	10%	30-Yr Avg.	
		(1000AF)	(1000AF)	(1000A)	') (% AVG.	) (1	L000AF)	(1000AF)	(1000AF)	
		============		==========						
Smiths Fork nr Border	JUN-JUL	14.9	19.0	j 21	34	i	23	27	61	
	JUN-SEP	22	27	j 30	39	i	33	38	77	
				ĺ		Í				
Bear River nr UT-WY State Line	JUN-JUL	10.7	12.4	13.5	19	i	19.5	28	70	
	JUN-SEP	16.0	18.4	20	24	Í	27	36	82	
				ĺ		Í				
UPPER BEAR RIVER BASIN					UPPER BEAR RIVER BASIN					
Reservoir Storage (1000 AF) - End of May Watershed S						d Snowpack	Analysi	s - June 1	, 2004	
	Usable		e Storage *					This	Year as % of	
Reservoir	Capacity	This	Last	Wat		of				
		Year	Year Av	5	1				Yr Average	
				UPI	UPPER BEAR RIVER in Utah			0	0	
SMITHS & THOMAS FORKS						3	419	70		
				ļ						
				BEA	R RIVER at	ov ID line	6	419	33	
				ļ						
				NO	THWEST		47	91	56	
					THEST		11	85	34	
				i soi	THEAST		20	67	31	
				1 501	THWEST		25	116	38	
					11111101		25	110	50	