

# Wyoming Basin Outlook Report

## June 1, 2011



Grassy Lake SNOTEL

# Basin Outlook Reports

## And Federal - State - Private Cooperative Snow Surveys

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### *How forecasts are made*

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be either above or below, the predicted value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast is. 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

The snow water equivalent (SWE) across Wyoming is well above average for June 1<sup>st</sup> at 327%. May precipitation for the basins varied from 130-245% of average. Year-to-date precipitation for Wyoming basins varied from 123-164% of average. Forecasted runoff varies from 157-387% of average across the Wyoming basins for an overall average of 197%. Basin reservoir levels for Wyoming vary from 34-170% of average for an overall average of 92%.

## Snowpack

Snow water equivalent (SWE), across Wyoming is well above average for this time of year at 327%. SWE in the NW portion of Wyoming is now about 260% of average (256% of last year). NE Wyoming SWE is currently about 451% of average (263% of last year). The SE Wyoming SWE is currently about 285% of average (235% of last year). The SW Wyoming SWE is about 392% of average (357% of last year).

## Precipitation

Last month's precipitation was well above average across Wyoming. The Wind River Basin had the highest precipitation for the month at 245% of average. The Upper Bear River Basin had the lowest precipitation amount but still 130% of average. The following table displays the major river basins and their departure from average for this month.

Basin	Departure from average	Basin	Departure from average
Snake River	+60%	Upper North Platte River	+36%
Yellowstone & Madison	+61%	Lower North Platte	+48%
Wind River	+145%	Little Snake River	+54%
Big Horn	+110%	Upper Green River	+45%
Shoshone & Clarks Fork	+70%	Lower Green River	+59%
Powder & Tongue River	+122%	Upper Bear River	+30%
Belle Fourche & Cheyenne	+103%		

## Streams

Stream flow yield for June to September is expected to be well above average across Wyoming. Most probable yield for the entire State of Wyoming is forecast to be about 199% (varying from 157-387% of average). The Snake River and Upper Yellowstone & Madison River Basins are expected to yield about 171% and 157% of average, respectively; 144-227% of average for the various forecast points in the basins. Yields from the Wind and Bighorn River Basins are expected to be about 181% and 219% of average, respectively; varying from 141-246% of average in the basins. Yields from the Shoshone and Clarks Fork River Basins of Wyoming are expected to yield about 204% and 174% of average, respectively; varying from 167-204% of average. Yields from the Tongue & Powder River Basins are expected to be about 235% and 277% of average, respectively; varying from 197-305% of average. Yields for the Belle Fourche & Cheyenne River Basins are expected to be about 300% and 343% of average, respectively. Yields for the Upper and Lower North Platte River of Wyoming are expected to be about 308% and 332% of average, respectively; varying from 156-340% of average. Yields for the Little Snake, Green River, and Little Bear of Wyoming are expected to be 301%, 192%, and 387% of average respectively; yield estimates vary from 141-387% of average.

## Reservoirs

Reservoir storage varies widely across the state however reservoir storage is at 92% of average for the entire state. Reservoirs on the North Platte River are average at 100%. Reservoirs in the northeast are above average in storage at 118%. Reservoirs in the Wind River Basin are below average at 74%. Reservoirs on the Big Horn are below average at 96%. The Buffalo Bill Reservoir on the Shoshone is below average at 79%. Reservoirs on the Green River are average at 100%. See the following table for further information about reservoir storage.

### Major Reservoirs in Wyoming June 1, 2011

<b>BASIN AREA RESERVOIR</b>	<b>CURRENT AS % CAPACITY</b>	<b>LAST YR AS % CAPACITY</b>	<b>AVERAGE AS % CAPACITY</b>	<b>CURRENT AS % AVERAGE</b>	<b>CURRENT AS % LAST YR</b>
<b>WYOMING AND SURROUNDING STATES</b>					
ALCOVA	98	98	97	101	100
ANGOSTURA	89	92	96	93	97
BELLE FOURCHE	98	95	85	114	103
BIG SANDY	73	69	77	95	106
BIGHORN LAKE	71	71	64	110	99
BOYSEN	71	90	95	75	79
BUFFALO BILL	49	60	61	79	81
BULL LAKE	42	63	63	67	66
DEERFIELD	103	102	89	115	101
ENNIS LAKE	79	89	86	92	89
FLAMING GORGE	83	85	81	103	98
FONFENELLE	35	34	53	66	103
GLENDO	100	108	99	100	93
GRASSY LAKE	99	101	95	105	99
GUERNSEY	60	60	79	76	101
HEBGEN LAKE	79	91	83	94	86
JACKSON LAKE	43	87	68	64	49
KEYHOLE	88	58	61	143	150
PACTOLA	107	104	88	121	103
PALISADES	37	81	74	49	45
PATHFINDER	102	90	76	134	114
PILOT BUTTE	66	90	77	86	73
SEMINOE	43	79	65	66	54
SHADEHILL	107	100	84	127	107
TONGUE RIVER	103	103	61	170	100
VIVA NAUGHTON RES	64	107	92	70	60
WHEATLAND #2	21	76	60	34	27
WOODRUFF NARROWS	82	100	70	117	82
<b>TOTAL 28 RESERVOIRS</b>	<b>70</b>	<b>82</b>	<b>75</b>	<b>92</b>	<b>85</b>

Raw KAF Tot Current=9253 Last Year=10900 Average=10028 Capacity=13288

**BASIN SUMMARY OF  
SNOTEL and SNOW COURSE DATA  
June 2011**

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
BALD MOUNTAIN SNOTEL	9380	6/01/11	105	41.1	18.3	16.7
BASE CAMP SNOTEL	7030	6/01/11	---	9.6	.0	.0
BATTLE MTN. SNOTEL	7440	6/01/11	---	.0	.0	.0
BEARTOOTH LK. SNOTEL	9280	6/01/11	88	33.6	16.4	20.1
BEAR TRAP SNOTEL	8200	6/01/11	21	7.5	.0	.0
BIG GOOSE SNOTEL	7760	6/01/11	36	13.2	5.6	2.7
BIG SANDY SNOTEL	9080	6/01/11	38	13.9	.0	1.4
BLACKHALL MT SNOTEL	9820	6/01/11	103	49.3	28.2	--
BLACKWATER SNOTEL	9780	6/01/11	104	43.1	21.7	24.7
BLIND BULL SNOTEL	8900	6/01/11	86	41.9	17.3	17.8
BONE SPGS. SNOTEL	9350	6/01/11	81	33.2	12.2	8.2
BROOKLYN LK. SNOTEL	10220	6/01/11	90	39.3	15.3	11.6
BURGESS JCT. SNOTEL	7880	6/01/11	44	15.5	7.6	2.6
BURROUGHS CRK SNOTEL	8750	6/01/11	58	20.3	5.5	3.4
CANYON SNOTEL	8090	6/01/11	36	13.9	.0	1.3
CASPER MTN. SNOTEL	7850	6/01/11	7	3.7	3.9	4.2
CASTLE CREEK SNOTEL	8400	6/01/11	0	.0	--	--
CHALK CK #1 SNOTEL	9100	6/01/11	83	40.5	15.6	12.0
CHALK CK #2 SNOTEL	8200	6/01/11	47	16.4	.0	.8
CINNABAR PARK SNOTEL	9690	6/01/11	78	27.9	13.4	1.5
CLOUD PEAK SNOTEL	9850	6/01/11	73	27.7	15.0	7.7
COLE CANYON SNOTEL	5910	6/01/11	0	.0	.0	.0
COLD SPRINGS SNOTEL	9630	6/01/11	31	10.5	1.8	1.1
COTTONWOOD CR SNOTEL	7700	6/01/11	---	29.0	7.4	5.1
CROW CREEK SNOTEL	8830	6/01/11	---	.0	.0	.0
DEER PARK SNOTEL	9700	6/01/11	68	25.4	17.9	8.0
DIVIDE PEAK SNOTEL	8860	6/01/11	40	21.1	3.9	3.7
DOME LAKE SNOTEL	8880	6/01/11	49	20.4	6.1	3.2
EAST RIM DIV SNOTEL	7930	6/01/11	---	.0	.0	1.5
ELKHART PARK SNOTEL	9400	6/01/11	---	13.0	.0	3.3
EVENING STAR SNOTEL	9200	6/01/11	105	42.5	18.0	26.7
GRAND TARGHEE SNOTEL	9260	6/01/11	151	70.9	46.8	--
GRANITE CRK SNOTEL	6770	6/01/11	---	13.0	.0	.8
GRASSY LAKE SNOTEL	7270	6/01/11	77	35.5	11.5	14.0
GRAVE SPRINGS SNOTEL	8550	6/01/11	36	12.4	4.1	1.8
GROS VENTRE SNOTEL	8750	6/01/11	40	15.3	.3	3.7
HANSEN S.M. SNOTEL	8360	6/01/11	23	7.4	.0	.2
HAMS FORK SNOTEL	7840	6/01/11	0	.0	.0	.0
HOBBS PARK SNOTEL	10100	6/01/11	68	25.8	23.3	10.1
INDIAN CREEK SNOTEL	9430	6/01/11	---	38.7	17.7	14.7
KELLEY R.S. SNOTEL	8180	6/01/11	---	17.0	1.3	1.4
KENDALL R.S. SNOTEL	7740	6/01/11	5	1.7	.0	.0
KIRWIN SNOTEL	9550	6/01/11	49	18.6	7.4	5.5
LA PRELE SNOTEL	8380	6/01/11	5	2.3	.0	.8
LARSEN CREEK SNOTEL	9020	6/01/11	21	8.0	--	--
LEWIS LAKE SNOTEL	7850	6/01/11	89	44.4	11.8	17.9
LITTLE GOOSE SNOTEL	8870	6/01/11	49	17.7	--	--
LITTLE WARM SNOTEL	9370	6/01/11	44	15.7	3.5	1.9
LOOMIS PARK SNOTEL	8240	6/01/11	---	14.2	.0	2.3
MARQUETTE SNOTEL	8760	6/01/11	33	14.6	9.1	4.2
MIDDLE POWDER SNOTEL	7760	6/01/11	32	12.1	3.6	2.6
NEW FORK SNOTEL	8340	6/01/11	4	2.8	.0	.0

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
NORTH FRENCH SNOTEL	10130	6/01/11	140	64.0	37.3	23.9
OLD BATTLE SNOTEL	9920	6/01/11	129	58.6	37.4	25.6
OLD FAITHFUL	7400	5/30/11	16	6.2	--	--
OWL CREEK SNOTEL	8980	6/01/11	5	1.8	.0	.5
PARKERS PEAK SNOTEL	9400	6/01/11	127	41.6	16.1	18.5
PHILLIPS BNCH SNOTEL	8200	6/01/11	75	37.3	9.3	14.0
POCKET CREEK SNOTEL	9350	6/01/11	49	14.4	5.5	--
POWDER RVR.PASS SNTL	9480	6/01/11	63	22.8	3.9	2.3
RENO HILL SNOTEL	8500	6/01/11	26	10.9	6.4	3.4
SAGE CK BASIN SNTL	7850	6/01/11	0	.0	.0	2.1
SALT RIVER SNOTEL	7600	6/01/11	---	8.9	.0	.0
SAND LAKE SNOTEL	10050	6/01/11	---	52.0	34.7	25.8
SANDSTONE RS SNOTEL	8150	6/01/11	17	5.6	.0	.0
SHELL CREEK SNOTEL	9580	6/01/11	90	29.5	14.2	10.4
SNAKE RV STA SNOTEL	6920	6/01/11	---	3.8	.0	.0
SNIDER BASIN SNOTEL	8060	6/01/11	22	10.1	.0	.0
SOLDIER PARK SNOTEL	8780	6/01/11	34	10.9	--	--
SOUTH BRUSH SNOTEL	8440	6/01/11	23	10.5	.0	1.7
SOUTH PASS SNOTEL	9040	6/01/11	55	20.5	11.7	6.3
SPRING CRK. SNOTEL	9000	6/01/11	93	42.7	18.8	15.0
ST LAWRENCE ALT SNTL	8620	6/01/11	7	1.7	.0	.7
SUCKER CREEK SNOTEL	8880	6/01/11	68	24.0	12.3	3.6
SYLVAN LAKE SNOTEL	8420	6/01/11	65	28.1	10.0	11.4
SYLVAN ROAD SNOTEL	7120	6/01/11	0	.0	.0	.0
THUMB DIVIDE SNOTEL	7980	6/01/11	36	15.7	.0	1.9
TIE CREEK SNOTEL	6870	6/01/11	8	2.9	.0	.0
TIMBER CREEK SNOTEL	7950	6/01/11	6	1.6	.0	.5
TOGWOTEE PASS SNOTEL	9580	6/01/11	---	42.6	22.3	21.9
TOWNSEND CRK SNOTEL	8700	6/01/11	23	7.6	7.4	1.7
TRIPLE PEAK SNOTEL	8500	6/01/11	70	33.2	8.7	4.8
TWO OCEAN SNOTEL	9240	6/01/11	---	54.3	24.6	25.2
WEBBER SPRING SNOTEL	9250	6/01/11	63	28.3	13.5	6.5
WHISKEY PARK SNOTEL	8950	6/01/11	83	39.4	17.9	13.6
WILLOW CREEK SNOTEL	8450	6/01/11	86	42.3	17.5	14.3
WINDY PEAK SNOTEL	7900	6/01/11	0	.0	.0	.1
WOLVERINE SNOTEL	7650	6/01/11	7	2.4	.0	.0
YOUNTS PEAK SNOTEL	8350	6/01/11	49	20.4	5.5	7.0

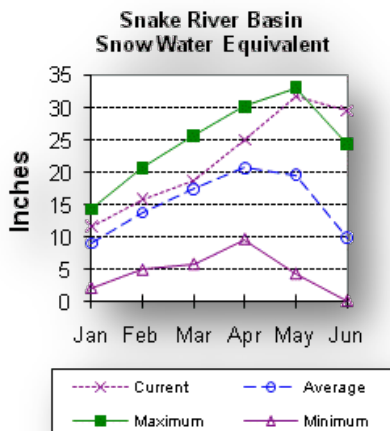
NOTE: Missing snow depth entries indicate the site has no snow depth sensor or the sensor is malfunctioning. Missing data under Last Year and Average 71-00 indicates the site is new.



# Snake River Basin

## Snow

The Snake River Basin snow water equivalent (SWE) is above average at 298%. SWE in the Snake River Basin above Jackson Lake is 261% of average. Pacific Creek Basin SWE is 254% of average. Gros Ventre River Basin SWE is 277% of average. SWE in the Hoback River drainage is 323% of average. SWE in the Greys River drainage is 299% of average. In the Salt River area SWE is 413% of average. SWE in the Snake River Basin above Palisades is 298% of average. See the "Basin Summary of Snow Course Data" at the beginning of this report for a detailed listing of snow course information.



## Precipitation

Precipitation across the basin was well above average last month. Monthly precipitation for the basin was 160% of average (134% of last year). Last month's percentages range from 112-222% of average for the 16 reporting stations. Water-year-to-date precipitation is 131% of average for the Snake River Basin (175% of last year). Year-to-date percentages range from 116-142% of average.

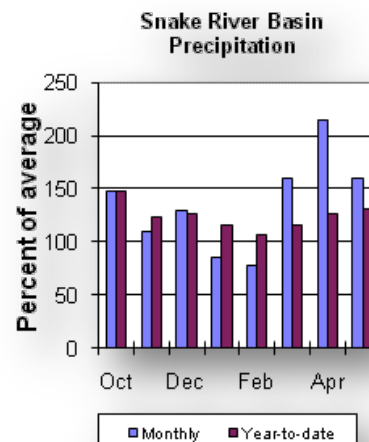
## Reservoir

Current reservoir storage is 55% of average for the 3 storage reservoirs in the basin. Grassy Lake storage is about 105% of

average (15,100 ac-ft compared to 15,300 last year). Jackson Lake storage is 49% of average (366,800 ac-ft compared to 741,100 ac-ft last year). Palisades Reservoir storage is about 49% of average (511,600 ac-ft compared to 1,137,900 ac-ft 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 50% exceedance forecasts for June through September are above average for the basin. The Snake near Moran is 965,000 ac-ft (166% of average). Snake River above reservoir near Alpine is 2,960,000 ac-ft (161% of average). The Snake near Irwin is 4,280,000 ac-ft (171% of average). The Snake near Heise is 4,530,000 ac-ft (171% of average). Pacific Creek near Moran is 210,000 ac-ft (198% of average). Buffalo Fork above Lava near Moran is 490,000 ac-ft (183% of average). Gros Ventre River at Kelly is 295,000 ac-ft (180% of average). Greys River above Palisades Reservoir is 455,000 ac-ft (186% of average). Salt River near Etna is 545,000 ac-ft (227% of average). See the following page for detailed runoff volumes.





## Snake River Basin

### Streamflow Forecasts - June 1, 2011

Forecast Pt	<=== Drier ===		Future Conditions		=== Wetter ===>		
Forecast	Chance of Exceeding * =====						30 Yr Avg
Period	90%	70%	50%	30%	10%	(1000AF)	
	(1000AF)		(1000AF)	(% AVG.)	(1000AF)		(1000AF)
Snake R nr Moran (1,2)							
JUN-JUL	730	800	835	170	870	940	490
JUN-SEP	835	925	965	166	1010	1090	580
Snake R ab Res nr Alpine (1,2)							
JUN-JUL	2190	2370	2450	167	2530	2710	1470
JUN-SEP	2620	2850	2960	161	3070	3300	1840
Snake R nr Irwin (1,2)							
JUN-JUL	3080	3350	3470	178	3590	3860	1950
JUN-SEP	3840	4140	4280	171	4420	4720	2500
Snake R nr Heise (2)							
JUN-JUL	3320	3510	3640	178	3770	3960	2050
JUN-SEP	4150	4380	4530	171	4680	4910	2650
Pacific Ck at Moran							
JUN-JUL	162	181	194	194	205	225	100
JUN-SEP	177	197	210	198	225	245	106
Buffalo Fork ab Lava nr Moran							
JUN-JUL	355	380	400	178	420	445	225
JUN-SEP	435	470	490	183	510	545	268
Gros Ventre R at Kelly							
JUN-JUL	143	177	210	177	225	255	119
JUN-SEP	230	270	295	180	320	360	164
Greys R nr Alpine							
JUN-JUL	340	355	365	194	375	390	188
JUN-SEP	420	440	455	186	470	490	245
Salt R nr Etna							
JUN-JUL	350	380	405	250	430	460	162
JUN-SEP	470	515	545	227	575	620	240

\* 90%, 70%, 50%, 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.
- (3) - Median value used in place of average.

#### SNAKE RIVER BASIN

##### Reservoir Storage (1000AF) End of May

Reservoir	Usable Capacity	***** This Year	Usable Storage Last Year	***** Average
GRASSY LAKE	15.2	15.1	15.3	14.4
JACKSON LAKE	847.0	366.8	741.1	572.6
PALISADES	1400.0	511.6	1137.9	1033.6

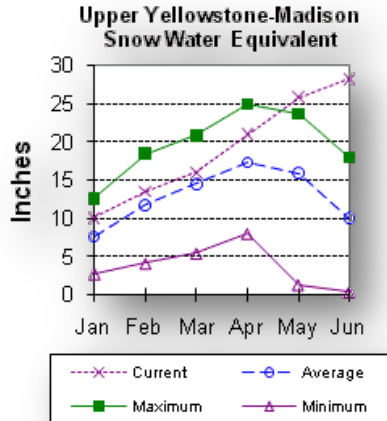
##### Watershed Snowpack Analysis - June 1, 2011

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
SNAKE above Jackson Lake	5	321	261
PACIFIC CREEK	2	260	254
GROS VENTRE RIVER	3	264	277
HOBACK RIVER	5	480	323
GREYS RIVER	4	256	299
SALT RIVER	3	322	413
SNAKE above Palisades	18	318	298

# Upper Yellowstone & Madison River Basins

## Snow

Snowfall in these basins has been well above average so far this year. Snow water equivalent (SWE) is at 326% of average in the Madison drainage. SWE in the Yellowstone drainage is at 238% of average. See the "Basin Summary of Snow Course Data" at the front of this report for details.



## Precipitation

Last month precipitation in the Madison and Yellowstone drainage was about 161% of average (151% of last year). The 5 reporting stations percentages range from 128-214% of average. Water-year-to-date precipitation is about 143% of average (184% of last year's amount). Year to date percentage ranges from 125-181%.

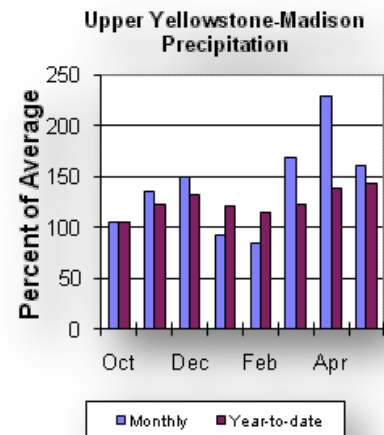
## Reservoir

Ennis Lake is storing about 32,500 ac-ft of water (79% of capacity, 92% of average or 89% of

last year's volume). Hebgen Lake is storing about 297,000 ac-ft of water (79% of capacity, 94% of average or 86% of last year's volume). Detailed reservoir data is shown on the following page and on the reservoir storage summary at the beginning of this report.

## Streamflow

The 50% exceedance forecasts for June through September are above average for the basins. Yellowstone at Lake Outlet is 1,100,000 ac-ft (158% of average). Yellowstone at Corwin Springs will yield around 2,330,000 ac-ft (160% of average). Yellowstone near Livingston will yield around 2,660,000 ac-ft (157% of average). Hebgen Reservoir inflow is 445,000 ac-ft (144% of average). See the following page for detailed runoff volumes.



## Upper Yellowstone & Madison River Basins

### Streamflow Forecasts - June 1, 2011

Forecast Pt	<=== Drier === Future Conditions === Wetter ===>						30 Yr Avg
Forecast Period	Chance of Exceeding * (%)						(1000AF)
Forecast Period	90% (1000AF)	70% (1000AF)	50% (1000AF)	30% (1000AF)	10% (1000AF)	10% (1000AF)	(1000AF)
Yellowstone R at Yellowstone Lake							
JUN-JUL	730	775	805	166	835	880	485
JUN-SEP	990	1060	1100	158	1140	1210	695
Yellowstone R at Corwin Springs							
JUN-JUL	1670	1800	1880	165	1960	2090	1140
JUN-SEP	2060	2220	2330	160	2440	2600	1460
Yellowstone R at Livingston							
JUN-JUL	1900	2050	2150	164	2250	2400	1310
JUN-SEP	2330	2530	2660	157	2790	2990	1700
Hebgen Reservoir Inflow (2)							
JUN-JUL	255	285	300	150	315	345	200
JUN-SEP	395	425	445	144	465	495	310

\* 90%, 70%, 50%, 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.
- (3) - Median value used in place of average.

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

Reservoir	Usable Capacity	***** This Year	***** Usable Storage Last Year	***** Average
ENNIS LAKE	41.0	32.5	36.6	35.3
HEBGEN LAKE	377.5	297.0	345.0	314.7

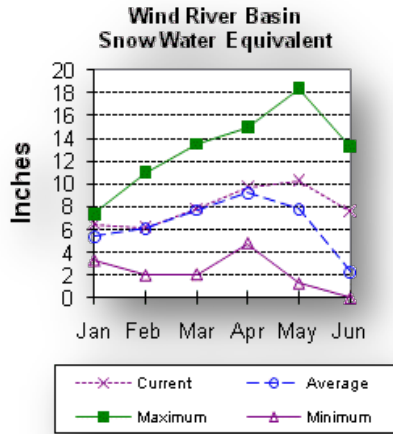
#### UPPER YELLOWSTONE & MADISON RIVER BASINS Watershed Snowpack Analysis - June 1, 2011

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
MADISON RIVER in WY	5	347	301
YELLOWSTONE RIVER in WY	8	271	238

# Wind River Basin

## Snow

The Wind River Basin above Boysen Reservoir has above average snow water equivalent (SWE 331%) for this time of the year. SWE in the Wind River above Dubois is 328% of average. The Little Wind SWE is 255% of average, and the Popo Agie drainage SWE is about 304% of average. See the "Basin Summary of Snow Course Data" at the front of this report for details.



## Precipitation

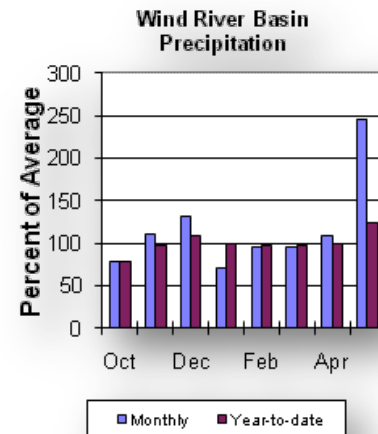
Last month's precipitation in the basin varied from 187-323% of average. Precipitation, for the basin, was about 245% of average from the 8 reporting stations; that is about 138% of last year's amount. Water year-to-date precipitation is 123% of average and about 121% of last year at this time. Year-to-date percentages range from 101-142% of average.

## Reservoirs

Current storage varies from 67-86% of average. Current storage in Bull Lake is about 63,400 ac-ft (67% of average) - the reservoir is at 66% of last year. Boysen Reservoir is storing about 75% of average (423,200 ac-ft) - the reservoir is about 79% of last year. Pilot Butte is at 86% of average (20,700 ac-ft) - the reservoir is at 73% of 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 50% exceedance forecasts for the June through September runoff period for the basin are above average. Dinwoody Creek near Burris is 113,000 ac-ft (141% of average). The Wind River above Bull Lake Creek is 675,000 ac-ft (163% of average). Bull Lake Creek near Lenore is 245,000 ac-ft (161% of average). Wind River at Riverton will yield around 830,000 ac-ft (166% of average). Little Popo Agie River near Lander is around 58,000 ac-ft (161% of average). South Fork of Little Wind near Fort Washakie will yield around 104,000 ac-ft (160% of average). Little Wind River near Riverton will yield around 400,000 ac-ft (178% of average). Boysen Reservoir inflow will yield around 1,100,000 ac-ft (181% of average). See the following page for detailed runoff volumes.



## Wind River Basin

Streamflow Forecasts - June 1, 2011

Forecast Pt	<=== Drier === Future Conditions === Wetter ===>						
Forecast Period	Chance of Exceeding *						30 Yr Avg
	90%	70%	50%	30%	10%		(1000AF)
	(1000AF) (% AVG.)						(1000AF)
Dinwoody Ck nr Burris							
JUN-JUL	69	74	78	147	82	87	53
JUN-SEP	100	108	113	141	118	126	80
Wind R ab Bull Lake Ck (2)							
JUN-JUL	440	495	535	170	575	630	315
JUN-SEP	565	630	675	163	720	785	415
Bull Lake Ck nr Lenore (2)							
JUN-JUL	171	185	195	165	205	220	118
JUN-SEP	215	230	245	161	260	275	152
Wind R at Riverton (2)							
JUN-JUL	575	630	670	168	710	765	400
JUN-SEP	715	785	830	166	875	945	500
Little Popo Agie R nr Lander							
JUN-JUL	45	48	51	176	54	57	29
JUN-SEP	51	55	58	161	61	65	36
SF Little Wind R nr Fort Washakie							
JUN-JUL	72	82	89	165	96	106	54
JUN-SEP	85	96	104	160	112	123	65
Little Wind R nr Riverton							
JUN-JUL	250	305	340	181	375	430	188
JUN-SEP	295	360	400	178	440	505	225
Boysen Reservoir Inflow (2)							
JUN-JUL	755	865	940	182	1010	1120	516
JUN-SEP	870	1010	1100	181	1190	1330	609

\* 90%, 70%, 50%, 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.

(3) - Median value used in place of average.

### WIND RIVER BASIN Reservoir Storage (1000AF) End of May

Reservoir	Usable Capacity	***** This Year	***** Usable Storage Last Year	***** Average
BULL LAKE	151.8	63.4	96.2	95.3
BOYSEN	596.0	423.2	538.5	566.0
PILOT BUTTE	31.6	20.7	28.3	24.2

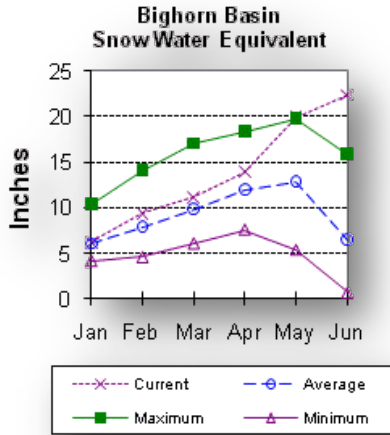
### WIND RIVER BASIN Watershed Snowpack Analysis - June 1, 2011

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
WIND RIVER above Dubios	4	258	328
LITTLE WIND	2	118	255
POPO AGIE	4	132	304
WIND above Boysen Resv	8	200	331

# Bighorn River Basin

## Snow

The Bighorn River Basin SWE above Bighorn Reservoir is well above average at 344%. The Nowood River is at 712% of average. The Greybull River SWE is at 337% of average. Shell Creek SWE is 294% of average. See the "Basin Summary of Snow Course Data" at the front of this report for details.



## Precipitation

Last month's precipitation was 210% of average (126% of last year). Sites ranged from 174-294% of average for the month. Year-to-date precipitation is 135% of average; that is 143% of last year at this time. Year-to-date percentages, from the 10 reporting stations, range from 112-156%.

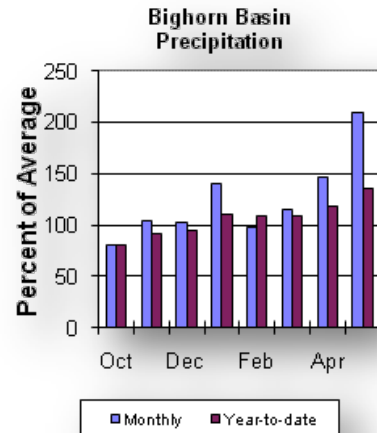
## Reservoir

Boysen Reservoir is currently storing 423,200 ac-ft (75% of average). Bighorn Lake is now at 110% of average (956,300 ac-ft). Boysen is currently storing 79% of last year

volume at this time and Big Horn Lake is storing 99% of last year's volume. Detailed reservoir data is shown on the following page and on the reservoir storage summary at the beginning of this report.

## Streamflow

The 50% exceedance forecasts for the June through September runoffs are anticipated to be above average. Boysen Reservoir inflow should yield 1,100,000 ac-ft (181% of average); the Greybull River near Meeteetse should yield around 230,000 ac-ft (141% of average); Shell Creek near Shell should yield around 128,000 ac-ft (246% of average) and the Bighorn River at Kane should yield around 1,720,000 ac-ft (219% of average). See the following page for detailed runoff volumes.



## Bighorn River Basin

### Streamflow Forecasts - June 1, 2011

Forecast Pt	<=== Drier === Future Conditions === Wetter ===>						
Forecast Period	Chance of Exceeding *						30 Yr Avg
	90%	70%	50%	30%	10%		
	(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)
Boysen Reservoir Inflow (2)							
JUN-JUL	755	865	940	182	1010	1120	516
JUN-SEP	870	1010	1100	181	1190	1330	609
Greybull R nr Meeteetse							
JUN-JUL	137	152	162	147	172	187	110
JUN-SEP	197	215	230	141	245	265	163
Shell Ck nr Shell							
JUN-JUL	92	98	102	255	106	112	40
JUN-SEP	117	123	128	246	133	139	52
Bighorn R at Kane (2)							
JUN-JUL	1200	1340	1440	213	1540	1680	675
JUN-SEP	1420	1600	1720	219	1840	2020	785

\* 90%, 70%, 50%, 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.
- (3) - Median value used in place of average.

#### BIGHORN RIVER BASIN Reservoir Storage (1000AF) End of May

Reservoir	Usable Capacity	***** This Year	***** Usable Storage Last Year	***** Average
BOYSEN	596.0	423.2	538.5	566.0
BIGHORN LAKE	1356.0	956.3	962.3	867.1

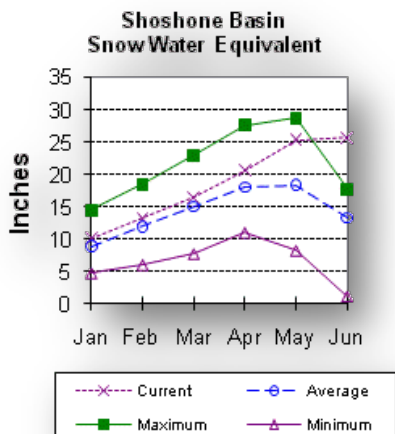
#### BIGHORN RIVER BASIN Watershed Snowpack Analysis - June 1, 2011

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
NOWOOD RIVER	2	465	712
GREYBULL RIVER	2	273	337
SHELL CREEK	3	232	294
BIGHORN (Boysen-Bighorn)	7	267	344

## Shoshone and Clarks Fork River Basin

### Snow

Snowpack in these basins is well above average for this time of year. Snow Water Equivalent (SWE) is 201% of average in the Shoshone River Basin. The Clarks Fork River Basin SWE is 184% of average. See the "Basin Summary of Snow Course Data" at the front of this report for details.



### Precipitation

Precipitation for last month was 170% of average (151% of last year). Monthly percentages range from 116-233% of average. The basin year-to-date precipitation is now 139% of average (174% of last year). Year-to-date percentages range from 112-181% of average for the 8 reporting stations.

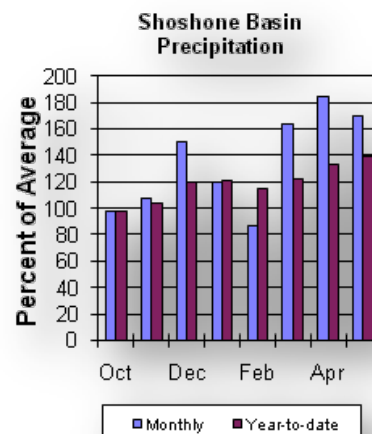
### Reservoir

Current storage in Buffalo Bill Reservoir is about 79% of average (81% of last year's storage) - the reservoir is at

about 49% of capacity. Currently, about 313,900 ac-ft are stored in the reservoir compared to 387,300 ac-ft 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 50% exceedance forecasts for the June through September period are expected to be well above average for the basin. The North Fork Shoshone River at Wapiti is 665,000 ac-ft (182% of average). The South Fork of the Shoshone River near Valley is 350,000 ac-ft (167% of average), and the South Fork above Buffalo Bill Reservoir runoff is 355,000 ac-ft (204% of average). The Buffalo Bill Reservoir inflow is expected to yield around 1,030,000 ac-ft (173% of average). The yield for the Clarks Fork of the Yellowstone near Belfry, Montana is expected to be around 775,000 ac-ft (174% of average). See the following page for detailed runoff volumes.





**Shoshone & Clarks Fork River Basins**  
Streamflow Forecasts - June 1, 2011

```

=====
| <=== Drier === Future Conditions === Wetter ===> |
|===== Chance of Exceeding * =====|
Forecast Pt | 90% 70% | 50% | 30% 10% | 30 Yr Avg
Forecast | (1000AF) (1000AF) | (1000AF) (% AVG.) | (1000AF) (1000AF) | (1000AF)
Period |-----|-----|-----|-----|-----|-----|
NF Shoshone R at Wapiti
JUN-JUL 520 555 580 190 605 640 305
JUN-SEP 595 635 665 182 695 735 365

SF Shoshone R nr Valley
JUN-JUL 270 285 295 172 305 320 172
JUN-SEP 315 335 350 167 365 385 210

SF Shoshone R ab Buffalo Bill Res
JUN-JUL 285 315 330 203 345 375 163
JUN-SEP 305 335 355 204 375 405 174

Buffalo Bill Reservoir Inflow (2)
JUN-JUL 720 785 910 177 865 930 515
JUN-SEP 815 890 1030 173 1000 1080 595

Clarks Fk Yellowstone R nr Belfry
JUN-JUL 615 655 680 174 705 745 390
JUN-SEP 690 740 775 174 810 860 445
=====

```

\* 90%, 70%, 50%, 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.  
(3) - Median value used in place of average.

SHOSHONE & CLARKS FORK RIVER BASINS  
Reservoir Storage (1000AF) End of May

```

=====
Reservoir          Usable ***** Usable Storage *****
                   Capacity This Year Last Year Average
=====
BUFFALO BILL          646.6      313.9      387.3      395.7
=====

```

SHOSHONE & CLARKS FORK RIVER BASINS  
Watershed Snowpack Analysis - June 1, 2011

```

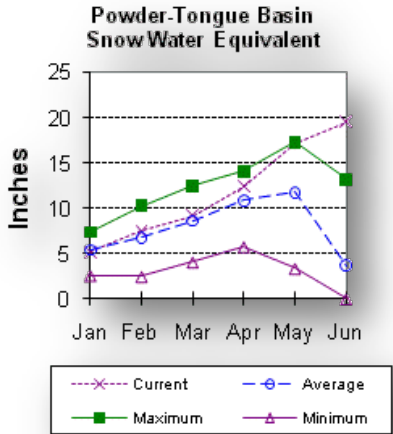
=====
Watershed          Number of          This Year as Percent of
                   Data Sites          Last Year          Average
=====
SHOSHONE RIVER          6          231          201
CLARKS FORK in WY          7          221          184
=====

```

# Powder and Tongue River Basins

## Snow

Snow water equivalent (SWE) in the Upper Tongue River drainage is 452% of average. The Goose Creek drainage is 569% of average. SWE in the Clear Creek drainage is 444% of average. Crazy Woman Creek drainage is 991% of average. Upper Powder River drainage SWE is 865% of average. Powder River Basin SWE in Wyoming is 605% of average. For more information see "Basin Summary of Snow Course Data" at the beginning of this report.



## Precipitation

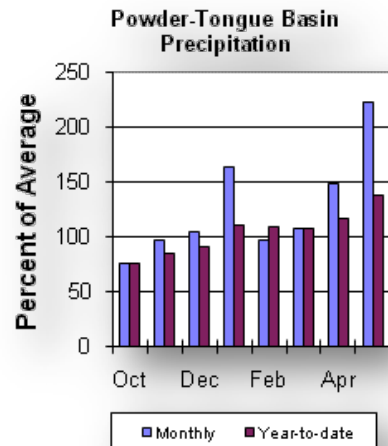
Last month's precipitation was 222% of average for the 9 reporting stations (129% of last year). Monthly percentages range from 180-294% of average. Year-to-date precipitation is 137% of average in the basin; this is 138% of last year at this time. Precipitation for the year ranges from 112-156% of average.

## Reservoir

The Tongue River Reservoir currently is storing 170% of average (81,600 ac-ft) compared to 100% at this time last year.

## Streamflow

The 50% exceedance forecasts for the June through September period are expected to be well above average for the basins. The yield for Tongue River near Dayton is 145,000 ac-ft (204% of average). Big Goose Creek near Sheridan is 92,000 ac-ft (209% of average). Little Goose Creek near Bighorn is 58,000 ac-ft (200% of average). The Tongue River Reservoir Inflow is 360,000 ac-ft (235% of average). The Middle Fork of the Powder River near Barnum is 13,600 ac-ft (197% of average). The North Fork of the Powder River near Hazelton should yield around 18,000 ac-ft (305% of average). Rock Creek near Buffalo will yield about 36,000 ac-ft (226% of average), and Piney Creek at Kearny should yield about 71,000 ac-ft (222% of average). The Powder River at Moorehead is 340,000 ac-ft (266% of average). The Powder River near Locate is 390,000 ac-ft (277% of average). See the following page for detailed runoff volumes.



## Powder & Tongue River Basins

Streamflow Forecasts - June 1, 2011

Forecast Pt	<=== Drier ===		Future Conditions		=== Wetter ===>		
Forecast	Chance of Exceeding * =====						
Period	90%	70%	50%	30%	10%	30 Yr Avg	
	(1000AF)	(1000AF)	(1000AF) (% AVG.)	(1000AF)	(1000AF)	(1000AF)	
Tongue R nr Dayton (2)							
JUN-JUL	109	119	125	216	131	141	58
JUN-SEP	126	137	145	204	153	164	71
Big Goose Ck nr Sheridan							
JUN-JUL	74	79	83	237	87	92	35
JUN-SEP	82	88	92	209	96	102	44
Little Goose Ck nr Bighorn							
JUN-JUL	42	45	47	224	49	52	21
JUN-SEP	52	55	58	200	61	64	29
Tongue River Reservoir Inflow (2)							
JUN-JUL	275	300	320	254	340	365	126
JUN-SEP	305	340	360	235	380	415	153
MF Powder R nr Barnum							
JUN-JUL	7.9	10.5	12.2	207	13.9	16.5	5.9
JUN-SEP	9.2	11.8	13.6	197	15.4	18.0	6.9
NF Powder R nr Hazelton							
JUN-JUL	14.4	15.7	16.6	326	17.5	18.8	5.1
JUN-SEP	15.6	17.0	18.0	305	19.0	20	5.9
Rock Ck nr Buffalo							
JUN-JUL	24	26	28	233	30	32	12.0
JUN-SEP	31	34	36	226	38	41	15.9
Piney Ck at Kearny							
JUN-JUL	55	61	66	228	71	77	29
JUN-SEP	58	66	71	222	76	84	32
Powder R at Moorhead							
JUN-JUL	240	275	295	281	315	350	105
JUN-SEP	275	315	340	266	365	405	128
Powder R nr Locate							
JUN-JUL	265	305	335	289	365	405	116
JUN-SEP	300	355	390	277	425	480	141

\* 90%, 70%, 50%, 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.

(3) - Median value used in place of average.

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

Reservoir	Usable Capacity	***** This Year	***** Usable Storage Last Year	***** Average
TONGUE RIVER	79.1	81.6	81.8	48.0

### Watershed Snowpack Analysis - June 1, 2011

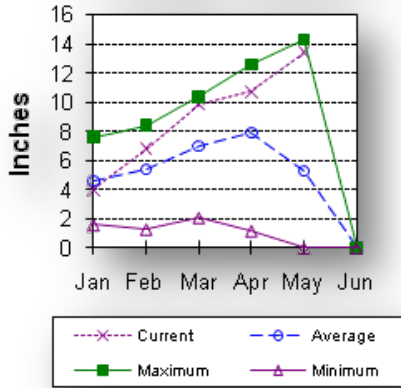
Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
UPPER TONGUE RIVER	7	239	452
GOOSE CREEK	2	287	569
CLEAR CREEK	2	234	444
CRAZY WOMAN CREEK	1	585	991
UPPER POWDER RIVER	3	565	865
POWDER RIVER in WY	5	344	605

# Belle Fourche and Cheyenne River Basins

## Snow

The Belle Fourche River Basin SWE is melted out at this time of year. For more information see "Basin Summary of Snow Course Data" at the beginning of this report.

**Belle Fourche - Cheyenne Basin  
Snow Water Equivalent**



## Precipitation

Precipitation for last month was 203% of average or 119% of last year in the Black Hills. There were 2 reporting stations. Monthly percentages range from 155-285%. Year-to-date precipitation is 164% of average and 136% of last year's amount. Yearly percentages range from 156-175% of average.

## Reservoir

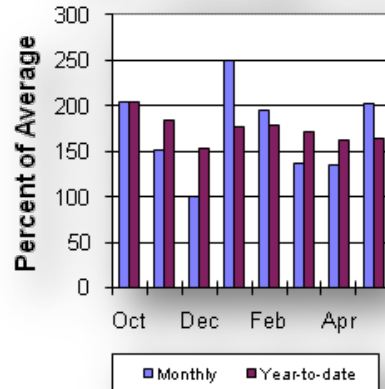
Current reservoir storage is about 118% of average in the basin. Angostura is currently storing 93% of average (109,000 ac-ft), about 89% of capacity. Belle Fourche reservoir is storing 114% of

average (174,200 ac-ft), about 98% of capacity. Deerfield reservoir is storing 115% of average (15,700 ac-ft), about 103% of capacity. Keyhole reservoir is storing 143% of average (169,600 ac-ft), about 88% of capacity. Pactola reservoir is storing 121% of average (58,600 ac-ft), about 107% of capacity. Shadehill reservoir is storing 127% of average (87,500 ac-ft), about 107% 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 runoff values are the 50% exceedance forecasts for the June through July period. The Deerfield Reservoir Inflow is expected to be 6,900 ac-ft (300% of average). Pactola Reservoir Inflow is expected to yield around 37,000 ac-ft (343% of average). See the following page for detailed runoff volumes.

**Belle Fourche - Cheyenne Basin  
Precipitation**



## Belle Fourche & Cheyenne River Basins

Streamflow Forecasts - June 1, 2011

```

=====
<=== Drier === Future Conditions === Wetter ===>
Forecast Pt | ===== Chance of Exceeding * ===== |
Forecast    | 90%      70%      | 50%      | 30%      10%      | 30 Yr Avg
Period      | (1000AF) (1000AF) | (1000AF) (% AVG.) | (1000AF) (1000AF) | (1000AF)
=====
Deerfield Reservoir Inflow (2)
JUN-JUL     3.7      5.6      6.9      300      8.2      10.1      2.3

Pactola Reservoir Inflow (2)
JUN-JUL     21       30       37       343      44       53       10.8
    
```

```

=====
* 90%, 70%, 50%, 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.
(3) - Median value used in place of average.
    
```

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

```

=====
Usable          ***** Usable Storage *****
Capacity        This Year   Last Year   Average
Reservoir
=====
ANGOSTURA      122.1      109.0      112.8      117.2
BELLE FOURCHE  178.4      174.2      169.7      152.3
DEERFIELD      15.2       15.7       15.5       13.6
KEYHOLE        193.8      169.6      112.7      118.9
PACTOLA        55.0       58.6       57.1       48.6
SHADEHILL     81.4       87.5       81.6       68.7
    
```

BELLE FOURCHE & CHEYENNE RIVER BASINS  
Watershed Snowpack Analysis - June 1, 2011

```

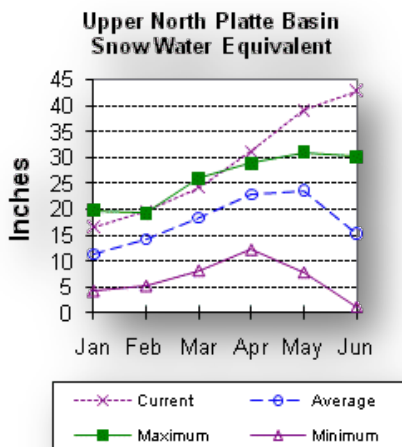
=====
Number of          This Year as Percent of
Data Sites        Last Year         Average
Watershed
=====
BELLE FOURCHE    2                0                0
    
```

# Upper North Platte River Basin

## Snow

The SNOTELS above Seminoe Reservoir are showing about 279% of average (SWE) for this time of the year. SWE in the drainage area above Northgate is 280% of average at this time. SWE in the Encampment River drainage is about 276% of average. Brush Creek SWE for the year is about 291% of average. Medicine Bow and Rock Creek drainages SWE are about

244% of average. For more information see "Basin Summary of Snow Course Data" at the beginning of this report.



## Precipitation

Eight reporting stations show last month's precipitation at 136% of average or 101% of last year's amount. Precipitation varied from 91-172% of average last month. Total water-year-to-date precipitation is about 150% of average for the basin, which is about 129% of last year's amount. Year to date percentage ranges from 112-222% of average.

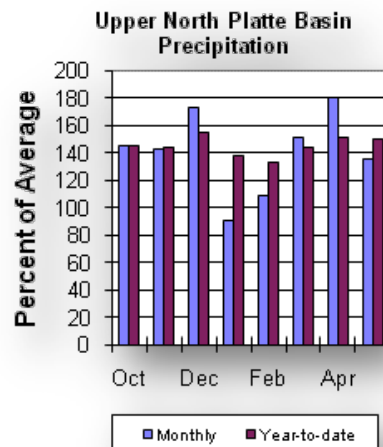
## Reservoirs

Seminoe Reservoir is estimated to be storing 433,600 ac-ft or 73% of capacity.

Seminoe Reservoir is also storing about 66% of average for this time of the year and 54% of 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 following yields are the 50% exceedance forecasts for the June through September period and are expected to be well above average for the Upper North Platte River Basin. Yield for the North Platte River near Northgate will be around 515,000 ac-ft (324% of average). The Encampment River near Encampment is 225,000 ac-ft (208% of average). Rock Creek near Arlington is 90,000 ac-ft (220% of average). The Sweetwater River near Alcova forecast is for 61,000 ac-ft (156% of average). Seminoe Reservoir inflow should be around 1,540,000 ac-ft (308% of average). See the following table for more detailed information on projected runoff.



## Upper North Platte River Basin

Streamflow Forecasts - June 1, 2011

Forecast Pt Forecast Period	<=== Drier === Future Conditions === Wetter ===>					30 Yr Avg (1000AF)	
	90% (1000AF)	70% (1000AF)	50% (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
North Platte R nr Northgate							
JUN-JUL	390	415	435	327	455	480	133
JUN-SEP	460	495	515	324	535	570	159
Encampment R nr Encampment							
JUN-JUL	185	200	210	212	220	235	99
JUN-SEP	198	215	225	208	235	250	108
Rock Ck nr Arlington							
JUN-JUL	78	82	85	224	88	92	38
JUN-SEP	82	87	90	220	93	98	41
Sweetwater R nr Alcova							
JUN-JUL	42	49	54	164	59	66	33
JUN-SEP	47	55	61	156	67	75	39
Seminole Reservoir Inflow (2)							
JUN-JUL	1230	1310	1370	315	1430	1510	435
JUN-SEP	1360	1470	1540	308	1610	1720	500

\* 90%, 70%, 50%, 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.
- (3) - Median value used in place of average.

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

Reservoir	Usable Capacity	***** This Year	Usable Storage Last Year	***** Average
SEMINOE	1016.7	433.6	805.1	658.3

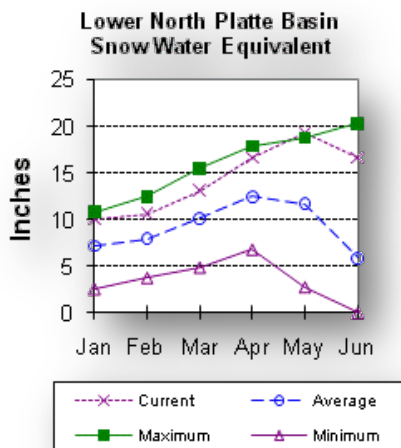
### UPPER NORTH PLATTE RIVER BASIN Watershed Snowpack Analysis - June 1, 2011

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
N PLATTE above Northgate	5	305	283
ENCAMPMENT RIVER	3	184	276
BRUSH CREEK	2	200	291
MEDICINE BOW & ROCK CREEKS	2	183	244
N PLATTE above Seminoe	13	227	280

# Lower North Platte River Basin

## Snow

SWE for the North Platte River Basin is at 281% of average. The Sweetwater drainage SWE is currently at 321% of average. Deer and LaPrele Creek SWE are at 314% of average. SWE for the North Platte above the Laramie River drainage is 283% of average. SWE for the Laramie River above Laramie is 367% of average. SWE for the Little Laramie River is 513% of average. The Laramie River above mouth, SWE is 360% of average. For more information see "Basin Summary of Snow Course Data" at the beginning of this report.



## Precipitation

Last month's precipitation was 148% of average or 124% of last year's amount. Of the 8 reporting stations, percentages for the month range from 107-279%. The water year-to-date precipitation for the basin is currently 127% of average (114% of last year). Year-to-date percentages range from 97-203% of average.

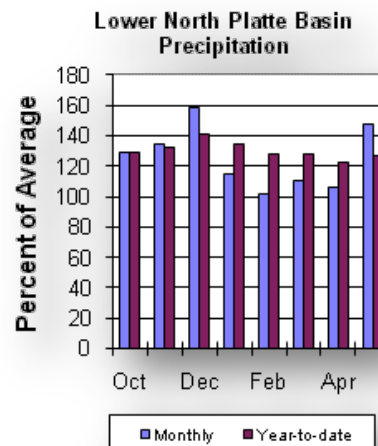
## Reservoir

The Lower North Platte River basin reservoir storage is average at 100%. Reservoir storage is as follows: Alcova 180,600 ac-ft (101% of average); Glendo 505,300 ac-ft (100% of average); Guernsey 27,400 ac-ft (76% of average); Pathfinder

1,037,800 ac-ft (134% of average); Seminoe 433,600 ac-ft (66% of average); and Wheatland #2 20,300 ac-ft (34% of average):

## Streamflow

The following yields are based on the 50% exceedance forecasts for the June through September period. The Sweetwater River near Alcova is forecast to yield about 61,000 ac-ft (156% of average). Deer Creek at Glenrock is forecast to yield 17,600 ac-ft (289% of average). LaPrele Creek above the reservoir is forecast to yield 13,900 ac-ft (267% of average). North Platte - Alcova to Orin Gain is forecast to yield 98,000 ac-ft (297% of average). North Platte River below Glendo Reservoir is 1,600,000 ac-ft (340% of average), and below Guernsey Reservoir is anticipated to yield around 1,660,000 ac-ft (332% of average). Laramie River near Woods Landing should yield around 230,000 ac-ft (258% of average). The Little Laramie near Filmore should produce about 109,000 ac-ft (232% of average). See the following table for more detailed information on projected runoff.





## Lower North Platte, Sweetwater & Laramie River Basins

Streamflow Forecasts - June 1, 2011

<=== Drier === Future Conditions === Wetter ===>							
Forecast Pt	Chance of Exceeding *						30 Yr Avg
Forecast Period	90% (1000AF)	70% (1000AF)	50% (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
Sweetwater R nr Alcova							
JUN-JUL	42	49	54	164	59	66	33
JUN-SEP	47	55	61	156	67	75	39
Deer Ck at Glenrock							
JUN-JUL	9.8	14.2	17.1	311	20	24	5.5
JUN-SEP	10.9	14.9	17.6	289	20	24	6.1
La Prele Ck ab La Prele Reservoir							
JUN-JUL	9.2	11.7	13.4	274	15.1	17.6	4.9
JUN-SEP	9.8	12.2	13.9	267	15.6	18.0	5.2
North Platte R-Alcova to Orin Gain							
JUN-JUL	49	70	85	340	100	121	25
JUN-SEP	62	84	98	297	112	134	33
North Platte R bl Glendo Res (2)							
JUN-JUL	1360	1420	1470	334	1520	1580	440
JUN-SEP	1480	1550	1600	340	1650	1720	470
North Platte R bl Guernsey Res (2)							
JUN-JUL	1400	1480	1530	340	1580	1660	450
JUN-SEP	1510	1600	1660	332	1720	1810	500
Laramie R nr Woods							
JUN-JUL	178	191	200	260	210	220	77
JUN-SEP	205	220	230	258	240	255	89
Little Laramie R nr Filmore							
JUN-JUL	88	93	97	231	101	106	42
JUN-SEP	98	105	109	232	113	120	47

\* 90%, 70%, 50%, 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.
- (3) - Median value used in place of average.

### LOWER NORTH PLATTE, SWEETWATER & LARAMIE RIVER BASINS

Reservoir Storage (1000AF) End of May

Reservoir	Usable Capacity	***** This Year	***** Usable Storage Last Year	***** Average
ALCOVA	184.3	180.6	179.9	178.8
GLENDO	506.4	505.3	545.6	503.4
GUERNSEY	45.6	27.4	27.2	36.2
PATHFINDER	1016.5	1037.8	911.8	775.1
SEMINOE	1016.7	433.6	805.1	658.3
WHEATLAND #2	98.9	20.3	74.8	59.0

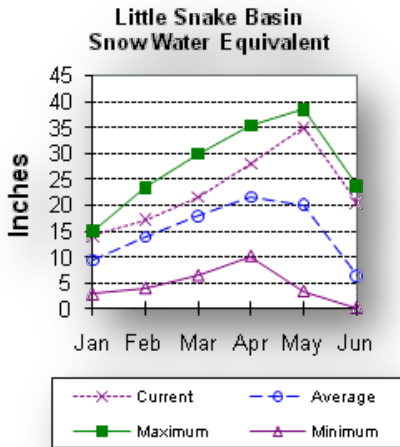
Watershed Snowpack Analysis - June 1, 2011

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
SWEETWATER	2	155	321
DEER & LaPRELE CREEKS	2	206	314
N PLATTE abv Laramie R.	17	219	284
LARAMIE RIVER abv Laramie	5	215	367
LITTLE LARAMIE RIVER	2	234	513
LARAMIE RIVER above mouth	6	223	360
NORTH PLATTE	17	218	282

# Little Snake River Basin

## Snow

Currently, snow water equivalent (SWE) in the Little Snake River drainage is 316% of average. For more information see "Basin Summary of Snow Course Data" at the beginning of this report.



## Precipitation

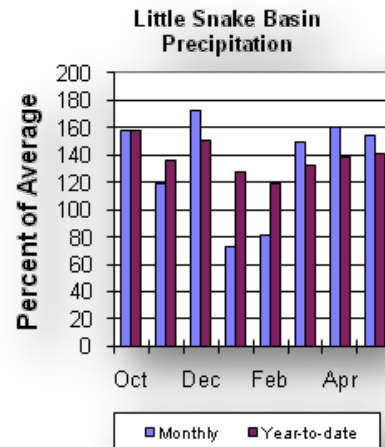
Precipitation across the basin was 154% of average (104% of last year) for the 5 reporting stations. Last month's precipitation ranged from 129-184% of average. The Little Snake River basin water-year-to-date precipitation is currently 141% of average (131% of last year). Year-to-date percentages range from 124-157% of average.

## Reservoir

High Savery Dam -Pending

## Streamflow

The 50% exceedance forecast for the June through July time frame on the Little Snake River drainage is expected to be well above average this year. The Little Snake River near Slater should yield around 220,000 ac-ft (310% of average). The Little Snake River near Dixon is estimated to yield around 400,000 ac-ft (301% of average). See the following table for more detailed information on projected runoff.



## Little Snake River Basin

Streamflow Forecasts - June 1, 2011

```

=====
<=== Drier === Future Conditions === Wetter ===>
Forecast Pt |===== Chance of Exceeding * =====|
Forecast    | 90%    70%    | 50%    | 30%    10%    | 30 Yr Avg
Period      |(1000AF) (1000AF) |(1000AF) (% AVG.)|(1000AF) (1000AF) |(1000AF)
=====
Little Snake R nr Slater
APR-JUL     310    330    345    217    360    385    159
JUN-JUL     182    205    220    310    235    260    71

Little Snake R nr Dixon
APR-JUL     650    700    740    224    780    845    330
JUN-JUL     310    360    400    301    440    505    133
=====

```

```

=====
* 90%, 70%, 50%, 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.
(3) - Median value used in place of average.
=====

```

LITTLE SNAKE RIVER BASIN  
Watershed Snowpack Analysis - June 1, 2011

```

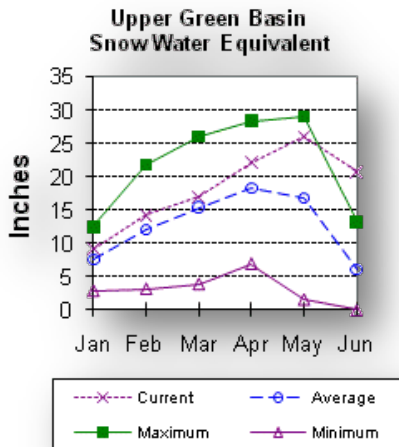
=====
Watershed          Number of          This Year as Percent of
                   Data Sites          Last Year          Average
=====
LITTLE SNAKE RIVER          6          236          316
=====

```

# Upper Green River Basin

## Snow

SWE in the Green River Basin above Warren Bridge is about 466% of average. SWE for the West Side of Upper Green River Basin is about 319% of average. Newfork River Basin SWE is now about 479% of average. Big Sandy-Eden Valley Basin is 993% of average. SWE in the Green River Basin above Fontenelle Reservoir is about 339% of average. For more information see "Basin Summary of Snow Course Data" at the beginning of this report.



## Precipitation

The 11 reporting precipitation sites in the basin were 145% of average last month (119% of last year). Last month's precipitation varied from 92-185% of average. Water year-to-date precipitation is about 128% of average (175% of last year). Year to date percentage of average ranges from 106-

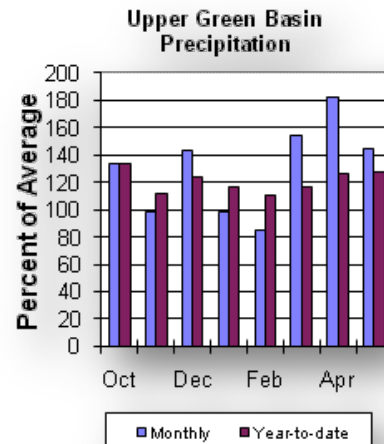
148% for the reporting stations.

## Reservoir

Storage in Big Sandy Reservoir is 27,900 ac-ft or 73% of capacity. This is 95% of average. Eden Reservoir - No Report. Fontenelle Reservoir is 119,400 ac-ft or 35% of capacity; 66% of average. This is 70% of average for the Upper Green River basin. Detailed reservoir data is shown on the following page and on the reservoir storage summary at the beginning of this report.

## Streamflow

The 50% exceedance forecasts for the June through July runoff period in the Upper Green River Basin are forecast to be above average. The yield on the Green River at Warren Bridge is 300,000 ac-ft (161% of average). Pine Creek above Fremont Lake is 120,000 ac-ft (143% of average). New Fork River near Big Piney is 470,000 ac-ft (160% of average). Fontenelle Reservoir Inflow is estimated to be 975,000 ac-ft (171% of average), and Big Sandy near Farson is expected to be around 55,000 ac-ft (141% of average). See the following table for more detailed information on projected runoff.



## Upper Green River Basin

Streamflow Forecasts - June 1, 2011

```

=====
<=== Drier === Future Conditions === Wetter ===>
Forecast Pt | ===== Chance of Exceeding * ===== |
Forecast    | 90%    70%    | 50%    | 30%    10%    | 30 Yr Avg
Period      |(1000AF) (1000AF) |(1000AF) (% AVG.) |(1000AF) (1000AF) |(1000AF)
=====
Green R at Warren Bridge
APR-JUL     315    335    350    132    365    390    265
JUN-JUL     265    285    300    161    315    340    186

Pine Ck ab Fremont Lake
APR-JUL     113    119    128    123    137    143    104
JUN-JUL     105    111    120    143    129    135    84

New Fork R nr Big Piney
APR-JUL     455    505    535    135    570    620    395
JUN-JUL     390    440    470    160    505    555    293

Fontenelle Reservoir Inflow (2)
APR-JUL     1020   1140   1230   143    1310   1450   860
JUN-JUL     770    890    975    171    1060   1200   570

Big Sandy R nr Farson
APR-JUL     52     60     66     114    72     82     58
JUN-JUL     41     49     55     141    61     71     39
=====

```

- \* 90%, 70%, 50%, 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.
  - (3) - Median value used in place of average.

UPPER GREEN RIVER BASIN  
Reservoir Storage (1000AF) End of May

```

=====
Usable ***** Usable Storage *****
Capacity This Year Last Year Average
=====
Reservoir
=====
BIG SANDY          38.3      27.9      26.4      29.4
FONTENELLE        344.8     119.4     116.2     181.9
=====

```

UPPER GREEN RIVER BASIN  
Watershed Snowpack Analysis - June 1, 2011

```

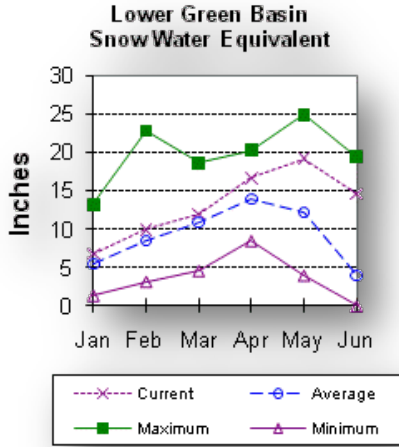
=====
Number of This Year as Percent of
Data Sites Last Year Average
=====
Watershed
=====
GREEN above Warren Bridge      5      596      466
UPPER GREEN (West Side)        5      267      319
NEWFORK RIVER                   2      549      479
BIG SANDY/EDEN VALLEY          1         0      993
GREEN above Fontenelle         11     334      339
=====

```

# Lower Green River Basin

## Snow

SWE in the Green River Basin above Flaming Gorge is 364% of average. SWE in the Hams Fork Basin is 346% of average. Blacks Fork Basin SWE is currently 324% of average. In the Henrys Fork drainage SWE is 0%. For more information see "Basin Summary of Snow Course Data" at the beginning of this report.



## Precipitation

Precipitation for the 3 reporting stations during last month was at 159% of average or 94% of last year. Precipitation ranged from 148-177% of average for the month. The basin year-to-date precipitation is currently 125% of average (158% of last year). Year-to-date percentages range from 118-135% of average.

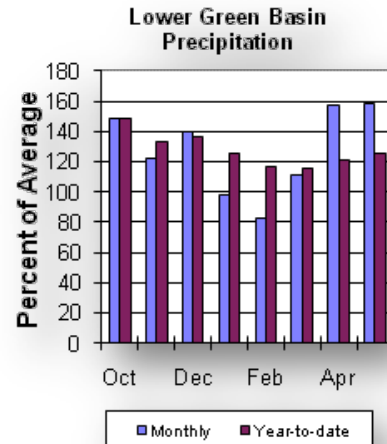
## Reservoirs

Fontenelle Reservoir is currently storing 119,400 ac-ft; this is 66% of average (103% of last year). Flaming Gorge is currently

storing 3,130,000 ac-ft; this is 103% of average (98% of last year). Viva Naughton is currently storing 27,200 ac-ft, 70% of average or 64% 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 50% exceedance forecasts for the June through July runoff period in the Lower Green River Basin are forecast to be above average. The Green River near Green River is forecast to yield about 1,020,000 ac-ft (176% of average). The Blacks Fork near Robertson is forecast to yield 130,000 ac-ft (194% of average). East Fork of Smiths Fork near Robertson is forecast to yield 45,000 ac-ft (214% of average). Hams Fork below Pole Creek near Frontier is forecast to be 80,000 ac-ft (242% of average). The Hams Fork Inflow to Viva Naughton Reservoir is forecast to be 90,000 ac-ft (246% of average). The Flaming Gorge Reservoir inflow will be about 1,400,000 ac-ft (192% of average). See the following table for more detailed information on projected runoff.



## Lower Green River Basin

Streamflow Forecasts - June 1, 2011

```

=====
<=== Drier === Future Conditions === Wetter ===>
Forecast Pt | ===== Chance of Exceeding * ===== |
Forecast    | 90%    70%    | 50%    | 30%    10%    | 30 Yr Avg
Period      | (1000AF) (1000AF) | (1000AF) (% AVG.) | (1000AF) (1000AF) | (1000AF)
=====
Green R nr Green River, WY (2)
  APR-JUL    1050    1170    1270    145    1360    1500    875
  JUN-JUL    805     925    1020    176    1110    1250    580
Blacks Fk nr Robertson
  APR-JUL    131     144     153    161    163    177    95
  JUN-JUL    108     121     130    194    140    154    67
EF of Smiths Fork nr Robertson (2)
  APR-JUL    40      46      50     172    54     61    29
  JUN-JUL    35      41      45     214    49     56    21
Hams Fk bl Pole Ck nr Frontier
  APR-JUL    96      104     110    169    116    124    65
  JUN-JUL    66      74      80     242    86     95    33
Viva Naughton Reservoir Inflow (2)
  APR-JUL    140     152     162    182    172    186    89
  JUN-JUL    68      81      90     246    100    115    37
Flaming Gorge Reservoir Inflow (2)
  APR-JUL    1620    1780    1890    159    2010    2180    1190
  JUN-JUL    1130    1290    1400    192    1520    1690    730
=====

```

\* 90%, 70%, 50%, 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.
- (3) - Median value used in place of average.

=====
  
LOWER GREEN RIVER BASIN
  
Reservoir Storage (1000AF) End of May
  
=====

```

=====
Reservoir          Usable          ***** Usable Storage *****
                  Capacity      This Year      Last Year      Average
=====
FONTENELLE         344.8          119.4          116.2          181.9
FLAMING GORGE     3749.0          3130.0          3191.0          3040.0
VIVA NAUGHTON RES  42.4           27.2           45.3           39.0
=====

```

=====
  
LOWER GREEN RIVER BASIN
  
Watershed Snowpack Analysis - June 1, 2011
  
=====

```

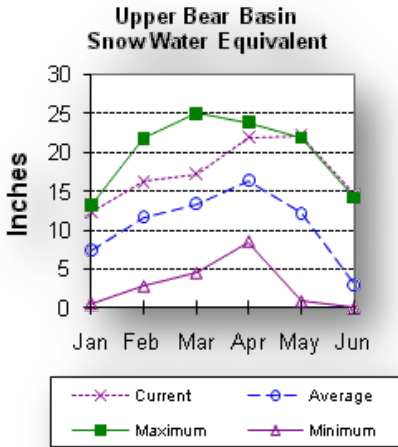
=====
Watershed          Number of      This Year as Percent of
                  Data Sites    Last Year      Average
=====
HAMS FORK RIVER    3             293           346
BLACKS FORK        2             221           324
HENRYS FORK        2             0             0
GREEN above Flaming Gorge 18           341           364
=====

```

# Upper Bear River Basin

## Snow

Snow water equivalent (SWE) in the Upper Bear River Basin in Utah is estimated to be 486% of average. SWE in the Wyoming portion of the Bear River drainage (Smiths and Thomas Forks) is at 401% of average. Bear River Basin SWE, above the Idaho State line, is 486% of average. For more information see "Basin Summary of Snow Course Data" at the beginning of this report.



## Precipitation

Precipitation for last month was 130% of average for the 2 reporting stations; this is 99% of the precipitation received last year. The year-to-date precipitation, for the basin, is 126% of average; this is 170% of last year's

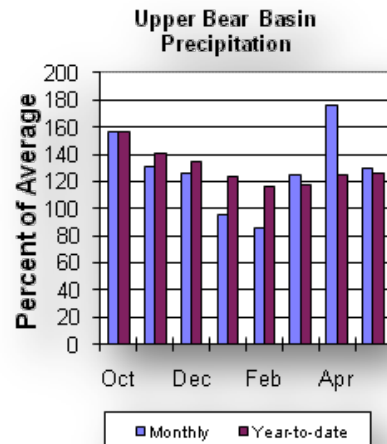
amount.

## Reservoir

Storage in Woodruff Narrows reservoir is 47,000 ac-ft (117% of average). Current reservoir storage is about 82% of capacity. Reservoir storage last year at this time was 57,300 ac-ft.

## Streamflow

The following 50% exceedance forecasts are for the June through September period. The Bear River near the Utah-Wyoming State Line is 220,000 ac-ft (268% of average). The Bear River above Reservoir near Woodruff is 275,000 ac-ft (387% of average). The Smiths Fork River near Border is 158,000 ac-ft (205% of average). See the following table for more detailed information on projected runoff.





## Upper Bear River Basin

Streamflow Forecasts - June 1, 2011

```

=====
<=== Drier === Future Conditions === Wetter ===>
Forecast Pt | ===== Chance of Exceeding * ===== |
Forecast    | 90%    70%    | 50%    | 30%    10%    | 30 Yr Avg
Period      |(1000AF) (1000AF) |(1000AF) (% AVG.) |(1000AF) (1000AF) |(1000AF)
=====
Bear R nr UT-WY State Line
APR-JUL     205    215    225    199    235    245    113
APR-SEP     230    245    255    204    265    280    125
JUN-JUL     174    183    190    271    197    205    70
JUN-SEP     200    210    220    268    230    240    82

Bear R ab Res nr Woodruff
APR-JUL     330    345    360    265    375    390    136
APR-SEP     365    380    395    278    410    425    142
JUN-JUL     220    230    240    375    250    260    64
JUN-SEP     255    265    275    387    285    295    71

Smiths Fk nr Border
APR-JUL     153    161    167    162    173    181    103
APR-SEP     185    195    200    165    210    220    121
JUN-JUL     111    119    125    205    131    139    61
JUN-SEP     143    153    158    205    168    178    77
    
```

\* 90%, 70%, 50%, 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.
- (3) - Median value used in place of average.

UPPER BEAR RIVER BASIN  
Reservoir Storage (1000AF) End of May

```

=====
Usable ***** Usable Storage *****
Reservoir Capacity This Year Last Year Average
=====
WOODRUFF NARROWS          57.3          47.0          57.3          40.3
=====
    
```

UPPER BEAR RIVER BASIN  
Watershed Snowpack Analysis - June 1, 2011

```

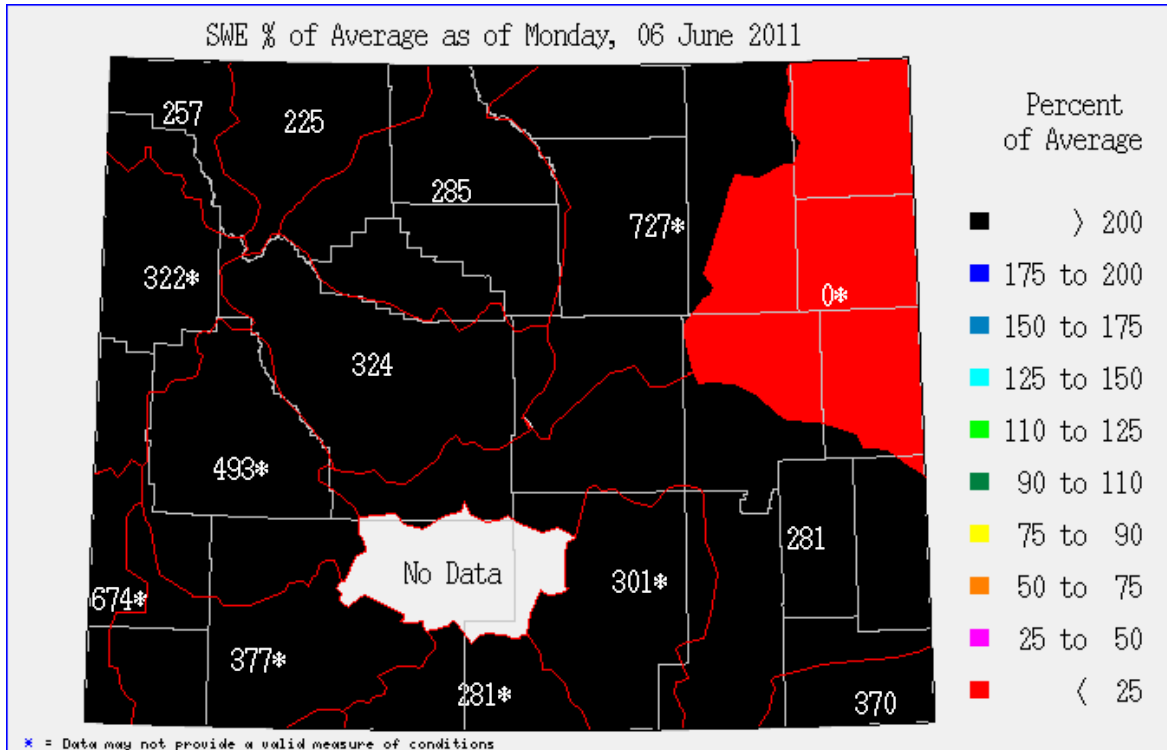
=====
Number of This Year as Percent of
Watershed Data Sites Last Year Average
=====
UPPER BEAR RIVER in Utah          5          521          486
SMITHS & THOMAS FORKS             3          340          401
BEAR RIVER abv ID line            6          474          486
NORTHWEST                        48          256          260
NORTHEAST                         11          263          451
SOUTHEAST                         20          235          285
SOUTHWEST                         26          357          392
=====
    
```

Issued by

Dave White (Chief)  
U.S. Department of Agriculture  
Natural Resources Conservation Service  
Washington D.C.

Released by

J Xavier Montoya  
State Conservationist  
N R C S  
Casper, Wyoming



**The Following Agencies and Organizations Cooperate with the Natural Resources Conservation Service on the Snow Survey Work.**

**FEDERAL:**

United States Department of the Interior (National Park Service)

United States Department of Agriculture (Forest Service)

United States Department of the Interior (Bureau of Reclamation)

United States Department of Commerce NOAA (National Weather Service)

**State:**

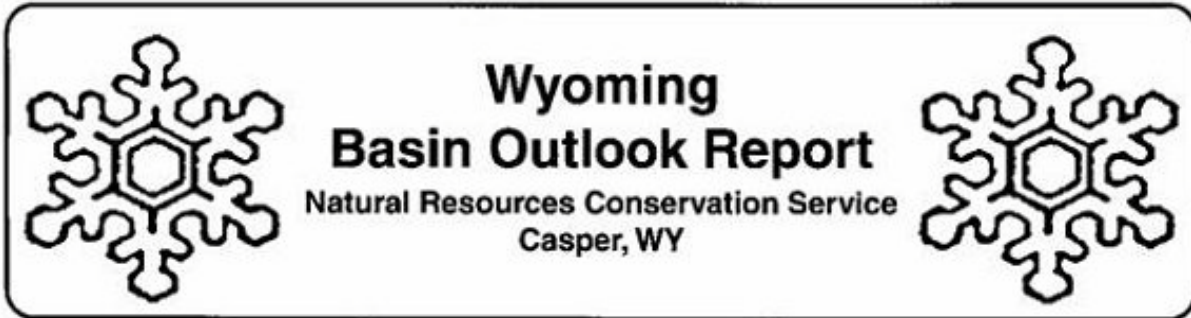
The Wyoming State Engineer's Office

The University of Wyoming

**Local:**

The City of Cheyenne

The City of Rawlins



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