

# Wyoming Basin Outlook Report

Feb 1, 2011



# 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 above average for February 1<sup>st</sup> at 119%. December precipitation for the basins varied from 70-250% of average. Year-to-date precipitation for Wyoming basins varied from 99-176% of average. Forecasted runoff varies from 81-146% of average across the Wyoming basins for an overall average of 111%. Basin reservoir levels for Wyoming vary from 82-228% of average for an overall average of 108%.

## Snowpack

Snow water equivalent (SWE), across Wyoming is above average for this time of year at 119%. SWE in the NW portion of Wyoming is now about 112% of average (181% of last year). NE Wyoming SWE is currently about 114% of average (156% of last year). The SE Wyoming SWE is currently about 131% of average (162% of last year). The SW Wyoming SWE is about 121% of average (184% of last year).

## Precipitation

Last month's precipitation was above average across Wyoming. The Belle Fourche & Cheyenne River Basins had the highest precipitation for the month at 250% of average. The Wind River Basins had the lowest precipitation amount at 70% 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	-14%	Upper North Platte River	-10%
Yellowstone & Madison	-08%	Lower North Platte	+15%
Wind River	-30%	Little Snake River	-27%
Big Horn	+41%	Upper Green River	-02%
Shoshone & Clarks Fork	+20%	Lower Green River	-02%
Powder & Tongue River	+63%	Upper Bear River	-05%
Belle Fourche & Cheyenne	+150%		

## Streams

Stream flow yield for April to September is expected to be above average across Wyoming. Most probable yield for the entire State of Wyoming is forecast to be about 111% (varying from 81-146% of average). The Snake River and Upper Yellowstone & Madison River Basins are expected to yield about 111 and 105% of average, respectively; 98-113% of average for the various forecast points in the basins: Yields from the Wind and Bighorn River Basins are expected to be about 93% and 94% of average, respectively; varying from 93-104% of average in the basins: Yields from the Shoshone and Clarks Fork River Basins of Wyoming are expected to yield about 112% of average; varying from 102-119% of average: Yields from the Powder & Tongue River Basins are expected to be about 102 and 92% of average, respectively; varying from 80-138% of average: Yields for the Belle Fourche & Cheyenne River Basins are expected to be about 211% of average. Yields for the Upper and Lower North Platte River of Wyoming are expected to be about 137 and 139% of average, respectively; varying from 81-146% of average: Yields for the Little Snake, Green River, and Little Bear of Wyoming are expected to be 121, 100, and 134% of average respectively; yield estimates vary from 99-136% of average:

## Reservoirs

Reservoir storage for April varies widely across the state however reservoir storage is at 108% of average for the entire state. Reservoirs on the North Platte River are above average at 125% of average. Reservoirs in the northeast are above average in storage at 115%. Reservoirs in the Wind River Basin are below average at 95%. Reservoirs on the Big Horn are near average at 99%. The Buffalo Bill Reservoir on the Shoshone is above average at 108%. Reservoirs on the Green River are above average at 105%. See the following table for further information about reservoir storage.

### Major Reservoirs in Wyoming

BASIN AREA RESERVOIR	CURRENT AS %CAPACITY	LAST YR AS %CAPACITY	AVERAGE AS %CAPACITY	CURRENT AS %AVERAGE	CURRENT AS %LAST YR
WYOMING AND SURROUNDING STATES					
ALCOVA	85	85	84	101	100
ANGOSTURA	79	60	80	98	131
BELLE FOURCHE	84	76	57	148	110
BIG SANDY	46	51	49	95	90
BIGHORN LAKE	64	68	63	101	94
BOYSEN	95	95	99	96	100
BUFFALO BILL	69	68	64	108	101
BULL LAKE	47	53	57	82	88
DEERFIELD	97	93	84	115	104
EDEN			NO REPORT		
ENNIS LAKE	68	72	76	89	94
FLAMING GORGE	83	86	79	105	97
FONTENELLE	53	57	53	100	92
GLENDO	77	54	66	117	144
GRASSY LAKE	86	84	78	110	102
GUERNSEY	32	37	20	160	87
HEBGEN LAKE	80	80	71	113	100
JACKSON LAKE	78	74	58	135	105
KEYHOLE	57	52	53	107	108
PACTOLA	96	98	83	116	98
PALISADES	62	80	74	83	78
PATHFINDER	77	72	67	116	107
PILOT BUTTE	79	84	63	125	94
SEMINOE	83	67	56	148	125
SHADEHILL	60	62	60	99	96
TONGUE RIVER	65	62	29	228	106
VIVA NAUGHTON RES	73	74	71	102	98
WHEATLAND #2	58	43	46	126	135
WOODRUFF NARROWS	73	81	44	167	91
TOTAL 28 RESERVOIRS	75	75	70	108	100

Raw KAF Tot Current=10012 Last Year=10014 Average=9262 Capacity=13288

## BASIN SUMMARY OF SNOTEL and SNOW COURSE DATA

February 2011

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
-----						
WYOMING Snow Course and SNOTEL Stations						
ALBANY	9400	1/28/11	45	13.2	7.9	9.5
ASTER CREEK	7750	2/02/11	59	21.6	9.7	19.6
BALD MOUNTAIN SNOTEL	9380	2/01/11	61	16.0	8.9	13.5
BASE CAMP SNOTEL	7030	2/01/11	---	14.1	6.5	12.7
BATTLE MTN. SNOTEL	7440	2/01/11	37	6.7	6.2	7.8
BEARTOOTH LK. SNOTEL	9280	2/01/11	60	17.3	10.3	16.2
BEAR TRAP SNOTEL	8200	2/01/11	26	5.5	2.8	3.5
BIG GOOSE SNOTEL	7760	2/01/11	25	5.2	4.5	6.0
BIG PARK	8620	1/28/11	53	17.4	8.2	12.3
BIG SANDY SNOTEL	9080	2/01/11	41	9.8	6.2	9.5
BLACKWATER SNOTEL	9780	2/01/11	58	17.9	11.4	16.6
BLIND BULL SNOTEL	8900	2/01/11	66	20.3	10.2	18.4
BLIND PARK SNOTEL	6870	2/01/11	30	6.0	4.0	5.2
BLUE RIDGE	9620	1/31/11	30	8.0	4.9	7.7
BONE SPGS. SNOTEL	9350	2/01/11	50	12.9	7.7	10.6
BROOKLYN LK. SNOTEL	10220	2/01/11	69	20.5	13.2	15.3
BURGESS JCT. SNOTEL	7880	2/01/11	34	6.7	6.6	7.4
BURROUGHS CRK SNOTEL	8750	2/01/11	41	10.1	5.7	10.1
CANYON SNOTEL	8090	2/01/11	42	11.0	6.1	8.9
CASPER MTN. SNOTEL	7850	2/01/11	32	7.6	5.9	9.0
CASTLE CREEK	8400	1/26/11	19	3.3	.9	3.3
CCC CAMP	7000	1/27/11	39	10.8	4.1	8.4
CHALK CK #1 SNOTEL	9100	2/01/11	65	20.9	10.9	15.3
CHALK CK #2 SNOTEL	8200	2/01/11	44	14.0	5.8	9.9
CINNABAR PARK SNOTEL	9690	2/01/11	68	18.0	12.8	13.2
CLOUD PEAK SNOTEL	9850	2/01/11	42	10.2	7.2	8.1
COLE CANYON SNOTEL	5910	2/01/11	22	5.5	3.3	4.5
COLD SPRINGS SNOTEL	9630	2/01/11	25	5.8	3.7	6.0
COTTONWOOD CR SNOTEL	7700	2/01/11	---	19.4	10.2	14.2
CROW CREEK SNOTEL	8830	2/01/11	27	7.8	6.6	5.1
DARBY CANYON	8250	1/31/11	55	17.9	9.8	15.9
DEER PARK SNOTEL	9700	2/01/11	47	14.1	9.2	11.7
DITCH CREEK	6870	1/26/11	18	3.5	1.3	2.8
DIVIDE PEAK SNOTEL	8860	2/01/11	---	14.3	10.7	13.0
DOMELAKE SNOTEL	8880	2/01/11	30	7.4	4.8	7.9
DU NOIR	8760	1/25/11	25	5.4	3.2	5.8
EAST RIM DIV SNOTEL	7930	2/01/11	---	9.8	3.4	8.5
ELBO RANCH	7100	1/28/11	36	10.2	4.1	8.0
ELKHART PARK SNOTEL	9400	2/01/11	---	8.7	5.5	8.8
EVENING STAR SNOTEL	9200	2/01/11	77	22.5	13.3	19.7
FOUR MILE MEADOWS	7860	2/01/11	34	9.6	4.6	8.7
FOXPARK	9060	1/27/11	30	7.0	4.6	4.9
GEYSER CREEK	8500	1/25/11	19	3.5	2.7	4.8
GLADE CREEK	7040	2/03/11	52	18.2	9.5	16.1
GRAND TARGHEE SNOTEL	9260	2/01/11	101	33.6	23.8	--
GRANITE CRK SNOTEL	6770	2/01/11	---	13.7	6.2	12.4
GRANNIER MEADOWS	8860	1/31/11	35	9.3	7.0	9.1
GRASSY LAKE SNOTEL	7270	2/01/11	76	24.5	14.9	23.0
GRAVE SPRINGS SNOTEL	8550	2/01/11	23	5.1	5.0	5.7
GROS VENTRE SNOTEL	8750	2/01/11	38	10.2	5.1	9.5
GROVER PARK DIVIDE	7000	1/27/11	32	7.6	4.8	7.5

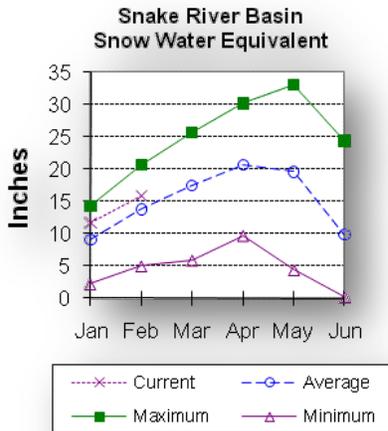
SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
HAIRPIN TURN	9480	1/31/11	53	16.2	8.8	11.1
HANSEN S.M. SNOTEL	8360	2/01/11	22	4.7	2.8	4.2
HAMS FORK SNOTEL	7840	2/01/11	40	11.2	4.2	8.4
HASKINS CREEK	8980	1/27/11	84	25.8	17.6	19.6
HOBACK GS	6640	1/26/11	28	6.6	3.4	--
HOBBS PARK SNOTEL	10100	2/01/11	34	9.5	7.9	9.8
HUCKLEBERRY DIVIDE	7300	2/02/11	49	15.9	7.5	14.2
INDIAN CREEK SNOTEL	9430	2/01/11	---	22.1	11.6	17.6
JACKPINE CREEK	7350	1/31/11	51	14.2	10.5	14.7
KELLEY R.S. SNOTEL	8180	2/01/11	---	14.5	6.5	10.7
KENDALL R.S. SNOTEL	7740	2/01/11	35	8.8	3.8	9.8
KIRWIN SNOTEL	9550	2/01/11	31	7.8	5.1	7.7
LAKE CAMP	7780	2/01/11	---	7.5E	4.4	6.5
LA PRELE SNOTEL	8380	2/01/11	39	8.0	4.9	7.3
LARSEN CREEK	9020	1/25/11	34	7.5	3.2	8.4
LARSEN CREEK SNOTEL	9020	2/01/11	33	9.4	--	--
LEWIS LAKE SNOTEL	7850	2/01/11	73	23.8	12.1	23.1
LIBBY LODGE	8750	1/31/11	43	11.9	5.6	7.8
LITTLE BEAR RUN	6240	1/26/11	21	4.1	1.5	2.6
LITTLE WARM SNOTEL	9370	2/01/11	36	8.1	4.3	7.8
LOOMIS PARK SNOTEL	8240	2/01/11	---	12.8	5.3	11.2
LUPINE CREEK	7380	2/01/11	---	6.4E	2.2	6.0
MALLO	6420	1/26/11	32	6.9	3.4	5.2
MARQUETTE SNOTEL	8760	2/01/11	11	2.0	3.7	5.9
MEDICINE LODGE LAKES	9340	1/26/11	48	11.0	5.6	7.5
MIDDLE FORK	7420	1/31/11	15	2.7	3.2	3.8
MIDDLE POWDER SNOTEL	7760	2/01/11	26	6.4	6.1	7.2
MORAN	6750	2/03/11	34	10.0	4.7	9.3
MOSS LAKE	9800	1/28/11	75	23.6	14.0	15.3
NEW FORK SNOTEL	8340	2/01/11	32	8.3	3.3	7.7
NORRIS BASIN	7500	1/28/11	33	8.4	4.4	7.6
NORTH BARRETT CREEK	9400	1/28/11	68	21.6	15.3	12.8
NORTH FRENCH SNOTEL	10130	2/01/11	101	29.5	21.2	18.4
NORTH RAPID CK SNTL	6130	2/01/11	26	5.8	6.1	5.0
NORTH TONGUE	8450	1/26/11	40	8.9	5.9	8.4
OLD BATTLE SNOTEL	9920	2/01/11	93	28.9	19.5	20.0
OLD FAITHFUL	7400	1/30/11	35	10.7	4.1	9.5
ONION GULCH	8780	1/27/11	27	6.1	2.7	5.2
OWL CREEK SNOTEL	8980	2/01/11	15	3.2	3.7	3.4
PARKERS PEAK SNOTEL	9400	2/01/11	75	19.6	12.5	14.8
PHILLIPS BNCH SNOTEL	8200	2/01/11	63	20.9	11.6	18.5
POCKET CREEK	9350	1/25/11	34	8.4	3.4	8.6
POCKET CREEK SNOTEL	9350	2/01/11	38	7.7	8.2	--
POLE MOUNTAIN	8700	1/27/11	32	8.5	6.6	6.1
POWDER RVR.PASS SNTL	9480	2/01/11	42	10.0	5.0	7.2
PURGATORY GULCH	8970	1/27/11	39	10.4	6.8	7.1
RANGER CREEK	8120	1/26/11	36	7.8	3.6	6.2
RENO HILL SNOTEL	8500	2/01/11	38	9.2	7.8	8.4
ROWDY CREEK	8300	1/26/11	53	14.9	6.6	14.6
RYAN PARK	8400	1/28/11	40	11.0	6.4	7.4
SAGE CK BASIN SNTL	7850	2/01/11	48	12.4	7.0	7.5
SALT RIVER SNOTEL	7600	2/01/11	---	11.5	5.6	9.2
SAND LAKE SNOTEL	10050	2/01/11	---	24.2	18.7	19.9
SANDSTONE RS SNOTEL	8150	2/01/11	---	9.4	5.9	9.7
SAWMILL DIVIDE	9260	1/28/11	40	8.4	5.9	8.8
SHELL CREEK SNOTEL	9580	2/01/11	55	11.7	8.0	9.9
SHERIDAN R.S.	7750	1/25/11	19	2.8	1.0	4.1

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
SNAKE RIVER STATION	6920	2/02/11	47	15.0	7.1	14.1
SNAKE RV STA SNOTEL	6920	2/01/11	27	12.8	6.5	12.6
SNIDER BASIN SNOTEL	8060	2/01/11	47	14.1	6.0	9.8
SOLDIER PARK	8780	1/31/11	18	2.6	1.5	3.5
SOUR DOUGH	8460	1/27/11	21	4.1	2.8	4.2
SOUTH BRUSH SNOTEL	8440	2/01/11	43	11.6	7.6	7.4
SOUTH PASS SNOTEL	9040	2/01/11	43	11.6	8.1	11.4
SPRING CRK. SNOTEL	9000	2/01/11	75	24.1	11.0	17.4
ST LAWRENCE ALT SNTL	8620	2/01/11	19	3.7	3.2	4.8
SUCKER CREEK SNOTEL	8880	2/01/11	40	8.6	7.1	7.2
SYLVAN LAKE SNOTEL	8420	2/01/11	54	16.1	9.0	15.2
SYLVAN ROAD SNOTEL	7120	2/01/11	40	10.8	4.8	8.8
T CROSS RANCH	7900	1/26/11	23	4.5	.1	5.3
TETON PASS W.S.	7740	1/31/11	58	19.8	10.7	18.5
THUMB DIVIDE SNOTEL	7980	2/01/11	44	13.9	6.1	11.8
THUMB DIVIDE	7980	2/02/11	39	12.9	5.0	12.2
TIE CREEK SNOTEL	6870	2/01/11	20	4.3	1.1	4.0
TIMBER CREEK SNOTEL	7950	2/01/11	15	2.7	1.8	3.6
TOGWOTEE PASS SNOTEL	9580	2/01/11	69	20.0	11.2	16.9
TOWNSEND CRK SNOTEL	8700	2/01/11	25	5.5	5.5	5.6
TRIPLE PEAK SNOTEL	8500	2/01/11	67	21.4	12.0	16.6
TURPIN MEADOWS	6900	2/01/11	38	10.9	3.6	7.6
TWO OCEAN SNOTEL	9240	2/01/11	68	23.0	14.5	19.0
TYRELL RANGER STA.	8300	1/27/11	30	7.0	1.7	5.2
UPPER SPEARFISH	6500	1/27/11	29	6.4	3.4	4.4
WEBBER SPRING SNOTEL	9250	2/01/11	67	20.1	13.1	16.1
WHISKEY PARK SNOTEL	8950	2/01/11	76	22.8	15.8	18.5
WILLOW CREEK SNOTEL	8450	2/01/11	68	22.9	13.8	20.2
WINDY PEAK SNOTEL	7900	2/01/11	30	6.4	4.0	4.5
WOLVERINE SNOTEL	7650	2/01/11	40	11.4	5.2	8.6
WOOD ROCK G.S.	8440	1/28/11	30	6.1	4.5	6.5
YOUNTS PEAK SNOTEL	8350	2/01/11	41	11.8	6.8	12.0

# Snake River Basin

## Snow

The Snake River Basin snow water equivalent (SWE) is above average at 115%. SWE in the Snake River Basin above Jackson Lake is 110% of average. Pacific Creek Basin SWE is 115% of average. Gros Ventre River Basin SWE is 119% of average. SWE in the Hoback River drainage is 111% of average. SWE in the Greys River drainage is 124% of average. In the Salt River area SWE is 121% of average. SWE in the Snake River Basin above Palisades is 115% 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 below average last month. Monthly precipitation for the basin was 86% of average (123% of last year). Last month's percentages range from 50-127% of average for the 16 reporting stations. Water-year-to-date precipitation is 115% of average for the Snake River Basin (175% of last year). Year-to-date percentages range from 96-130% of average.

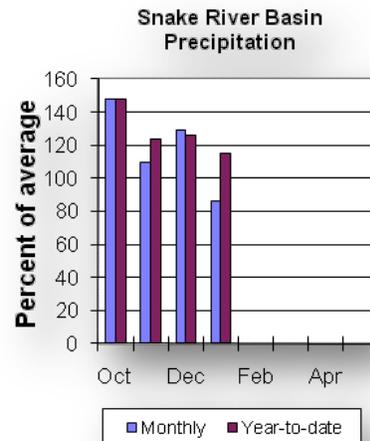
## Reservoir

Current reservoir storage is 100% of average for the 3 storage reservoirs in the basin. Grassy Lake storage is about

110% of average (13,000 ac-ft compared to 12,700 last year). Jackson Lake storage is 135% of average (661,000 ac-ft compared to 629,200 ac-ft last year). Palisades Reservoir storage is about 83% of average (867,500 ac-ft compared to 1,118,300 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 April through September are above average for the basin. The Snake near Moran is 980,000 ac-ft (108% of average). Snake River above reservoir near Alpine is 2,870,000 ac-ft (105% of average). The Snake near Irwin is 4,260,000 ac-ft (110% of average). The Snake near Heise is 4,600,000 ac-ft (115% of average). Pacific Creek near Moran is 190,000 ac-ft (107% of average). Buffalo Fork above Lava near Moran is 370,000 ac-ft (108% of average). Gros Ventre River at Kelly is 280,000 ac-ft (115% of average). Greys River above Palisades Reservoir is 490,000 ac-ft (124% of average). Salt River near Etna is 525,000 ac-ft (125% of average). See the following page for detailed runoff volumes.



## Snake River Basin

Streamflow Forecasts - February 1, 2011

Forecast Pt Forecast Period	<=== Drier ===		Future Conditions		=== Wetter ===>		30 Yr Avg (1000AF)
	90% (1000AF)	70% (1000AF)	Chance of Exceeding * (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Snake R nr Moran (1,2)							
APR-JUL	695	820	880	108	940	1070	815
APR-SEP	770	915	980	108	1050	1190	905
Snake R ab Res nr Alpine (1,2)							
APR-JUL	1970	2340	2510	106	2680	3050	2370
APR-SEP	2250	2680	2870	105	3060	3490	2730
Snake R nr Irwin (1,2)							
APR-JUL	2910	3440	3680	111	3920	4450	3330
APR-SEP	3390	3990	4260	110	4530	5130	3870
Snake R nr Heise (2)							
APR-JUL	3280	3670	3940	111	4210	4600	3560
APR-SEP	3850	4300	4600	111	4900	5350	4160
Pacific Ck at Moran							
APR-JUL	138	163	180	105	197	220	171
APR-SEP	146	172	190	107	210	235	178
Buffalo Fork ab Lava nr Moran							
APR-JUL	260	295	320	106	345	380	301
APR-SEP	305	345	370	108	395	435	344
Gros Ventre R at Kelly							
APR-JUL	168	205	230	115	255	290	200
APR-SEP	210	250	280	115	310	350	244
Greys R nr Alpine							
APR-JUL	320	375	410	121	445	500	340
APR-SEP	385	450	490	124	530	595	395
Salt R nr Etna							
APR-JUL	300	385	440	129	495	580	340
APR-SEP	360	460	525	125	590	690	420

\* 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 January

Reservoir	Usable Capacity	***** This Year *****	Usable Storage Last Year	***** Average *****
GRASSY LAKE	15.2	13.0	12.7	11.8
JACKSON LAKE	847.0	661.0	629.2	490.1
PALISADES	1400.0	867.5	1118.3	1040.3

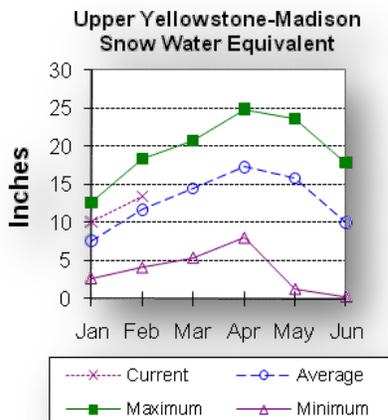
### SNAKE RIVER BASIN Watershed Snowpack Analysis - February 1, 2011

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
SNAKE above Jackson Lake	9	191	110
PACIFIC CREEK	3	183	115
GROS VENTRE RIVER	4	205	119
HOBACK RIVER	5	221	111
GREYS RIVER	4	192	124
SALT RIVER	5	188	121
SNAKE above Palisades	28	200	115

# Upper Yellowstone & Madison River Basins

## Snow

Snowfall in these basins has been above average so far this year. Snow water equivalent (SWE) is at 114% of average in the Madison drainage. SWE in the Yellowstone drainage is at 116% 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 92% of average (147% of last year). The 5 reporting stations percentages range from 50-131% of average. Water-year-to-date precipitation is about 122% of average (171% of last year's amount). Year to date percentage ranges from 104-161%.

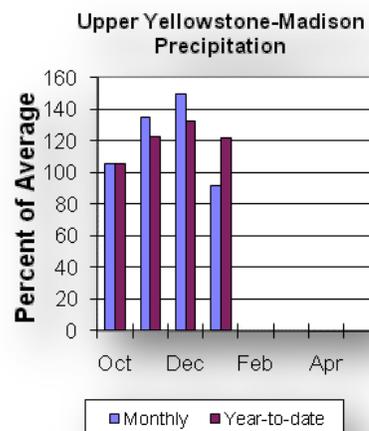
## Reservoir

Ennis Lake is storing about 27,800 ac-ft of water (68% of capacity, 89% of average or 94% of

last year's volume). Hebgen Lake is storing about 301,900 ac-ft of water (80% of capacity, 113% of average or 100% 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 April through September are above average for the basins. Yellowstone at Lake Outlet is 860,000 ac-ft (107% of average). Yellowstone at Corwin Springs will yield around 2,220,000 ac-ft (113% of average). Yellowstone near Livingston will yield around 2,530,000 ac-ft (111% of average). Hebgen Reservoir inflow is 495,000 ac-ft (98% of average). See the following page for detailed runoff volumes.



## Upper Yellowstone & Madison River Basins

Streamflow Forecasts - February 1, 2011

Forecast Pt	<=== Drier === Future Conditions === Wetter ===>						30 Yr Avg
Forecast Period	Chance of Exceeding *						(1000AF)
	90%	70%	50%	30%	10%		
	(1000AF)	(1000AF)	(1000AF) (% AVG.)	(1000AF)	(1000AF)		(1000AF)
<b>Yellowstone R at Yellowstone Lake</b>							
APR-JUL	550	615	655	111	695	760	590
APR-SEP	725	805	860	107	915	995	805
<b>Yellowstone R at Corwin Springs</b>							
APR-JUL	1640	1790	1900	115	2010	2160	1650
APR-SEP	1910	2090	2220	113	2350	2530	1970
<b>Yellowstone R at Livingston</b>							
APR-JUL	1850	2040	2170	114	2300	2490	1900
APR-SEP	2150	2380	2530	111	2680	2910	2280
<b>Hebgen Reservoir Inflow (2)</b>							
APR-JUL	320	360	390	99	420	460	395
APR-SEP	410	460	495	98	530	580	505

\* 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 January

Reservoir	Usable Capacity	***** This Year	***** Usable Storage Last Year	***** Average
ENNIS LAKE	41.0	27.8	29.6	31.3
HEBGEN LAKE	377.5	301.9	302.3	266.5

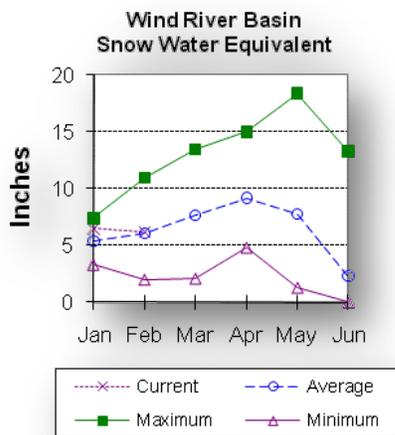
### UPPER YELLOWSTONE & MADISON RIVER BASINS Watershed Snowpack Analysis - February 1, 2011

Watershed	Number of Data Sites	This Year as Percent of Last Year	Percent of Average
MADISON RIVER in WY	8	182	114
YELLOWSTONE RIVER in WY	12	183	116

# Wind River Basin

## Snow

The Wind River Basin above Boysen Reservoir has above average snow water equivalent (SWE 102%) for this time of the year. SWE in the Wind River above Dubois is 105% of average. The Little Wind SWE is 90% of average, and the Popo Agie drainage SWE is about 103% of average. See the "Basin Summary of Snow Course Data" at the front of this report for details.



## Precipitation

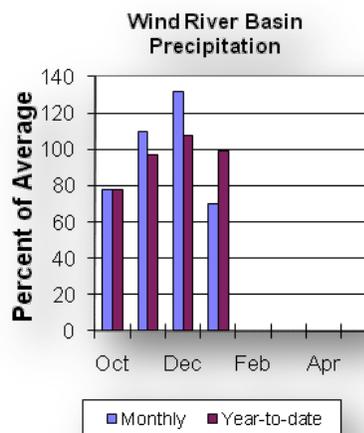
Last month's precipitation in the basin varied from 33-108% of average. Precipitation, for the basin, was about 70% of average from the 8 reporting stations; that is about 148% of last year's amount. Water year-to-date precipitation is 99% of average and about 143% of last year at this time. Year-to-date percentages range from 79-126% of average.

## Reservoirs

Current storage varies from 82-125% of average. Current storage in Bull Lake is about 70,600 ac-ft (82% of average) - the reservoir is at 88% of last year. Boysen Reservoir is storing about 96% of average (568,800 ac-ft) - the reservoir is about 100% of last year. Pilot Butte is at 125% of average (24,900 ac-ft) - the reservoir is at 94% 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 April through September runoff period for the basin are slightly below average. Dinwoody Creek near Burris is 97,000 ac-ft (103% of average). The Wind River above Bull Lake Creek is 530,000 ac-ft (99% of average). Bull Lake Creek near Lenore is 171,000 ac-ft (94% of average). Wind River at Riverton will yield around 605,000 ac-ft (95% of average). Little Popo Agie River near Lander is around 50,000 ac-ft (94% of average). South Fork of Little Wind near Fort Washakie will yield around 80,000 ac-ft (95% of average). Little Wind River near Riverton will yield around 290,000 ac-ft (92% of average). Boysen Reservoir inflow will yield around 755,000 ac-ft (93% of average). See the following page for detailed runoff volumes.



## Wind River Basin

Streamflow Forecasts - February 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)	30 Yr Avg (1000AF)	30 Yr Avg (1000AF)
Dinwoody Ck nr Burris							
APR-JUL	55	63	69	103	75	83	67
APR-SEP	80	90	97	103	104	114	94
Wind R ab Bull Lake Ck (2)							
APR-JUL	300	380	435	100	490	570	435
APR-SEP	390	475	530	99	585	670	535
Bull Lake Ck nr Lenore							
APR-JUL	108	127	140	95	153	172	148
APR-SEP	130	155	171	94	187	210	182
Wind R at Riverton (2)							
APR-JUL	340	445	515	95	585	690	545
APR-SEP	410	525	605	95	685	800	640
Little Popo Agie R nr Lander							
APR-JUL	21	34	43	94	52	65	46
APR-SEP	27	41	50	94	59	73	53
SF Little Wind R nr Fort Washakie							
APR-JUL	48	62	71	97	80	94	73
APR-SEP	54	69	80	95	91	106	84
Little Wind R nr Riverton							
APR-JUL	104	197	260	93	325	415	280
APR-SEP	121	220	290	92	360	460	315
Boysen Reservoir Inflow (2)							
APR-JUL	275	515	680	95	845	1080	717
APR-SEP	320	580	755	93	930	1190	809

\* 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 January

Reservoir	Usable Capacity	***** This Year	***** Usable Storage Last Year	***** Average
BULL LAKE	151.8	70.6	80.5	85.9
BOYSEN	596.0	568.8	569.0	592.0
PILOT BUTTE	31.6	24.9	26.4	20.0

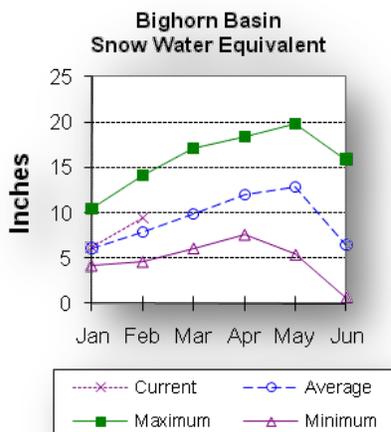
### WIND RIVER BASIN Watershed Snowpack Analysis - February 1, 2011

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
WIND RIVER above Dubios	8	201	105
LITTLE WIND	2	119	90
POPO AGIE	7	133	103
WIND above Boysen Resv	15	162	102

# Bighorn River Basin

## Snow

The Bighorn River Basin SWE above Bighorn Reservoir is above average at 119%. The Nowood River is at 125% of average. The Greybull River SWE is at 93% of average. Shell Creek SWE is 120% of average. See the "Basin Summary of Snow Course Data" at the front of this report for details.



## Precipitation

Last month's precipitation was 141% of average (256% of last year). Sites ranged from 67-200% of average for the month. Year-to-date precipitation is 110% of average; that is 161% of last year at this time. Year-to-date percentages, from the 9 reporting stations, range from 76-141%.

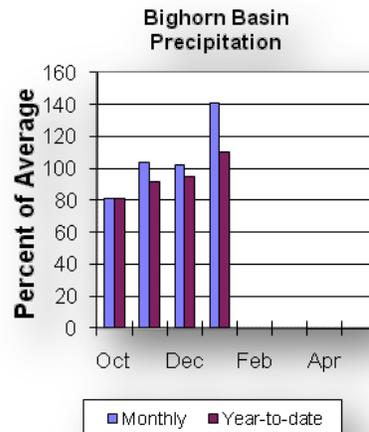
## Reservoir

Boysen Reservoir is currently storing 568,800 ac-ft (96% of average). Bighorn Lake is now at 101% of average (870,500 ac-ft). Boysen is currently storing 100% of last year volume at this

time and Big Horn Lake is storing 94% 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 April through September runoffs are anticipated to be slightly below average. Boysen Reservoir inflow should yield 755,000 ac-ft (93% of average); the Greybull River near Meeteetse should yield around 176,000 ac-ft (88% of average); Shell Creek near Shell should yield around 75,000 ac-ft (104% of average) and the Bighorn River at Kane should yield around 1,040,000 ac-ft (94% of average). See the following page for detailed runoff volumes.



## Bighorn River Basin

Streamflow Forecasts - February 1, 2011

Forecast Pt Forecast Period	<=== Drier === Future Conditions === Wetter ===>					30 Yr Avg (1000AF)
	Chance of Exceeding *					
	90% (1000AF)	70% (1000AF)	50% (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)	
Boysen Reservoir Inflow (2)						
APR-JUL	275	515	680	95	845	1080
APR-SEP	320	580	755	93	930	1190
Greybull R nr Meeteetse						
APR-JUL	93	114	128	87	142	163
APR-SEP	133	159	176	88	193	220
Shell Ck nr Shell						
APR-JUL	48	57	63	105	69	78
APR-SEP	59	68	75	104	82	91
Bighorn R at Kane (2)						
APR-JUL	430	740	950	95	1160	1470
APR-SEP	485	815	1040	94	1260	1600

\* 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 January

Reservoir	Usable	***** Usable Storage *****		Average
	Capacity	This Year	Last Year	
BOYSEN	596.0	568.8	569.0	592.0
BIGHORN LAKE	1356.0	870.5	922.8	859.5

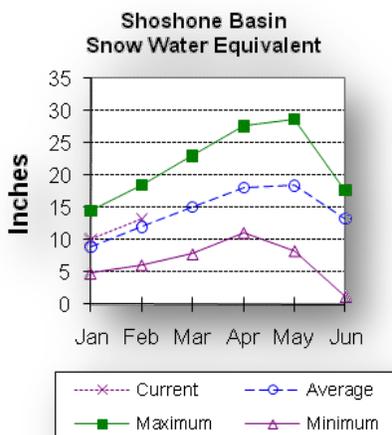
### BIGHORN RIVER BASIN Watershed Snowpack Analysis - February 1, 2011

Watershed	Number of	This Year as Percent of	
	Data Sites	Last Year	Average
NOWOOD RIVER	5	192	125
GREYBULL RIVER	2	152	93
SHELL CREEK	4	172	120
BIGHORN (Boysen-Bighorn)	11	177	119

# Shoshone and Clarks Fork River Basin

## Snow

Snowpack in these basins is above average for this time of year. Snow Water Equivalent (SWE) is 104% of average in the Shoshone River Basin. The Clarks Fork River Basin SWE is 116% of average. See the "Basin Summary of Snow Course Data" at the front of this report for details.



## Precipitation

Precipitation for last month was 120% of average (205% of last year). Monthly percentages range from 63-170% of average. The basin year-to-date precipitation is now 121% of average (174% of last year). Year-to-date percentages range from 74-161% of average for the 8 reporting stations.

## Reservoir

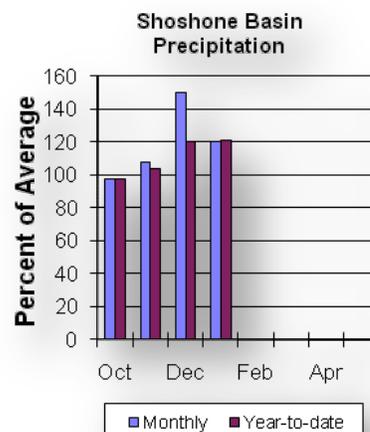
Current storage in Buffalo Bill Reservoir is about 108% of average (101% of last year's storage) - the reservoir is at about 69% of capacity.

Currently, about

446,100 ac-ft are stored in the reservoir compared to 440,800 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 April through September period are expected to be above average for the basin. The North Fork Shoshone River at Wapiti is 620,000 ac-ft (119% of average). The South Fork of the Shoshone River near Valley is 270,000 ac-ft (102% of average), and the South Fork above Buffalo Bill Reservoir runoff is 245,000 ac-ft (109% of average). The Buffalo Bill Reservoir inflow is expected to yield around 860,000 ac-ft (107% of average). The yield for the Clarks Fork of the Yellowstone near Belfry, Montana is expected to be around 695,000 ac-ft (117% of average). See the following page for detailed runoff volumes.



## Shoshone & Clarks Fork River Basins

Streamflow Forecasts - February 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)		
=====							
NF Shoshone R at Wapiti							
APR-JUL	470	520	555	121	590	640	460
APR-SEP	530	585	620	119	655	710	520
SF Shoshone R nr Valley							
APR-JUL	193	220	235	104	250	275	225
APR-SEP	225	250	270	102	290	315	265
SF Shoshone R ab Buffalo Bill Res							
APR-JUL	167	205	235	109	265	305	215
APR-SEP	173	215	245	109	275	315	225
Buffalo Bill Reservoir Inflow (2)							
APR-JUL	640	725	780	108	835	920	720
APR-SEP	710	800	860	107	920	1010	805
Clarks Fk Yellowstone R nr Belfry							
APR-JUL	540	595	630	117	665	720	540
APR-SEP	600	655	695	117	735	790	595

\* 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 January

Reservoir	Usable Capacity	***** Usable Storage *****		
		This Year	Last Year	Average
BUFFALO BILL	646.6	446.1	440.8	414.3

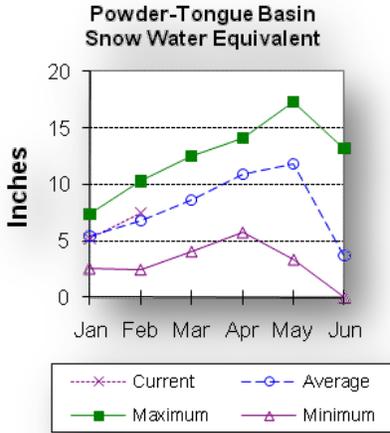
### SHOSHONE & CLARKS FORK RIVER BASINS Watershed Snowpack Analysis - February 1, 2011

Watershed	Number of Data Sites	This Year as Percent of	
		Last Year	Average
SHOSHONE RIVER	6	166	104
CLARKS FORK in WY	7	167	116

# Powder and Tongue River Basins

## Snow

Snow water equivalent (SWE) in the Upper Tongue River drainage is 105% of average. The Goose Creek drainage is 93% of average. SWE in the Clear Creek drainage is 108% of average. Crazy Woman Creek drainage is 122% of average.



Upper Powder River drainage SWE is 121% of average. Powder River Basin SWE in Wyoming is 115% of average. For more information see "Basin Summary of Snow Course Data" at the beginning of this report.

## Precipitation

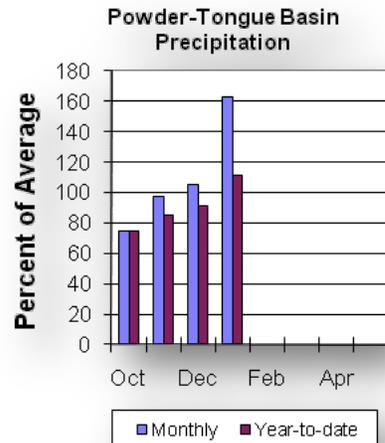
Last month's precipitation was 163% of average for the 9 reporting stations (319% of last year). Monthly percentages range from 107-200% of average. Year-to-date precipitation is 111% of average in the basin; this is 153% of last year at this time. Precipitation for the year ranges from 94-141% of average.

## Reservoir

The Tongue River Reservoir is at 65% of capacity; 228% of average; and 106% of last year at 51,700 ac-ft.

## Streamflow

The 50% exceedance forecasts for the June through September period are expected to be slightly below average for the basins. The yield for Tongue River near Dayton is 102,000 ac-ft (94% of average). Big Goose Creek near Sheridan is 57,000 ac-ft (95% of average). Little Goose Creek near Bighorn is 41,000 ac-ft (98% of average). The Tongue River Reservoir Inflow is 230,000 ac-ft (92% of average). The Middle Fork of the Powder River near Barnum is 14,900 ac-ft (80% of average). The North Fork of the Powder River near Hazelton should yield around 14,300 ac-ft (138% of average). Rock Creek near Buffalo will yield about 24,000 ac-ft (100% of average), and Piney Creek at Kearny should yield about 51,000 ac-ft (98% of average). The Powder River at Moorehead is 235,000 ac-ft (102% of average). The Powder River near Locate is 265,000 ac-ft (102% of average). See the following page for detailed runoff volumes.



## Powder & Tongue River Basins

Streamflow Forecasts - February 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)							
APR-JUL	59	77	90	94	103	121	96
APR-SEP	69	89	102	94	115	135	109
Big Goose Ck nr Sheridan							
APR-JUL	30	41	49	94	57	68	52
APR-SEP	37	49	57	95	65	77	60
Little Goose Ck nr Bighorn							
APR-JUL	21	28	33	97	38	45	34
APR-SEP	28	36	41	98	46	54	42
Tongue River Reservoir Inflow (2)							
APR-JUL	98	162	205	93	250	310	220
APR-SEP	118	185	230	92	275	340	250
MF Powder R nr Barnum							
APR-JUL	8.3	11.7	14.0	79	16.3	19.7	17.8
APR-SEP	9.0	12.5	14.9	80	17.3	21	18.7
NF Powder R nr Hazelton							
APR-JUL	10.7	12.2	13.2	138	14.2	15.7	9.6
APR-SEP	11.7	13.2	14.3	138	15.4	16.9	10.4
Rock Ck nr Buffalo							
APR-JUL	14.0	17.6	20	101	22	26	19.9
APR-SEP	17.5	21	24	100	27	30	24
Piney Ck at Kearny							
APR-JUL	26	39	48	98	57	70	49
APR-SEP	29	42	51	98	60	73	52
Powder R at Moorhead							
APR-JUL	110	169	210	102	250	310	205
APR-SEP	132	193	235	102	275	340	230
Powder R nr Locate							
APR-JUL	116	190	240	102	290	365	235
APR-SEP	132	210	265	102	320	400	260

\* 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.

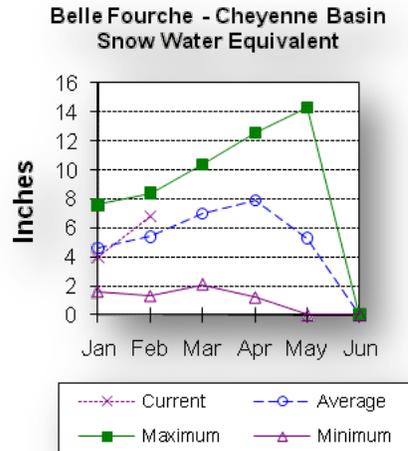
POWDER & TONGUE RIVER BASINS				
Reservoir Storage (1000AF) End of January				
Reservoir	Usable Capacity	***** This Year	***** Usable Storage Last Year	***** Average
TONGUE RIVER	79.1	51.7	48.9	22.7

POWDER & TONGUE RIVER BASINS			
Watershed Snowpack Analysis - February 1, 2011			
Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
UPPER TONGUE RIVER	10	143	105
GOOSE CREEK	3	138	93
CLEAR CREEK	4	151	108
CRAZY WOMAN CREEK	3	192	122
UPPER POWDER RIVER	4	169	121
POWDER RIVER in WY	8	161	115

# Belle Fourche and Cheyenne River Basins

## Snow

The Belle Fourche River Basin SWE is 126% of average at this time of year. For more information see "Basin Summary of Snow Course Data" at the beginning of this report.



## Precipitation

Precipitation for last month was 250% of average or 346% of last year in the Black Hills. There were 3 reporting stations. Monthly percentages range from 200-300%. Year-to-date precipitation is 176% of average and 155% of last year's amount. Yearly percentages range from 160-193% of average.

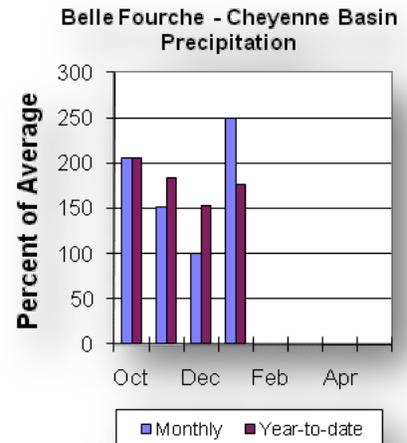
## Reservoir

Current reservoir storage is about 115% of average in the basin. Angostura is currently storing 98% of average (96,400 ac-ft), about 79% of capacity. Belle

Fourche reservoir is storing 148% of average (150,300 ac-ft), about 84% of capacity. Deerfield reservoir is storing 115% of average (14,700 ac-ft), about 97% of capacity. Keyhole reservoir is storing 107% of average (109,700 ac-ft), about 57% of capacity. Pactola reservoir is storing 116% of average (52,900 ac-ft), about 96% of capacity. Shadehill reservoir is storing 99% of average (48,500 ac-ft), about 60% 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 April through July period. The Deerfield Reservoir Inflow is expected to be 10,500 ac-ft (206% of average). Pactola Reservoir Inflow is expected to yield around 50,000 ac-ft (217% of average). See the following page for detailed runoff volumes.



## Belle Fourche & Cheyenne River Basins

Streamflow Forecasts - February 1, 2011

<=== Drier === Future Conditions === Wetter ===>							
Forecast Pt	Chance of Exceeding *						30 Yr Avg
Forecast Period	90%	70%	50%	30%	10%		
	(1000AF)	(1000AF)	(1000AF) (% AVG.)	(1000AF)	(1000AF)	(1000AF)	
Deerfield Reservoir Inflow (2)							
MAR-JUL	8.1	10.5	12.2	200	13.9	16.3	6.1
APR-JUL	6.6	8.8	10.5	206	12.4	15.4	5.1
Pactola Reservoir Inflow (2)							
MAR-JUL	35	46	54	208	62	73	26
APR-JUL	28	40	50	217	61	79	23

\* 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 January

Reservoir	Usable Capacity	***** This Year	***** Usable Storage Last Year	***** Average
ANGOSTURA	122.1	96.4	73.4	98.1
BELLE FOURCHE	178.4	150.3	136.4	101.4
DEERFIELD	15.2	14.7	14.2	12.8
KEYHOLE	193.8	109.7	101.3	102.3
PACTOLA	55.0	52.9	53.8	45.8
SHADEHILL	81.4	48.5	50.6	49.1

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

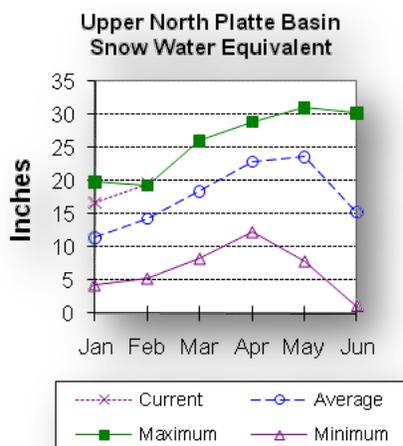
Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
BELLE FOURCHE	6	148	127

# Upper North Platte River Basin

## Snow

The SNOTELS and snow courses above Seminoe Reservoir are showing about 137% of average (SWE) for this time of the year. SWE in the drainage area above Northgate is 133% of average at this time. SWE in the Encampment River drainage is about 133% of average. Brush Creek SWE for the year is about 159% of average.

Medicine Bow and Rock Creek drainages SWE are about 135% of average. For more information see "Basin Summary of Snow Course Data" at the beginning of this report.



## Precipitation

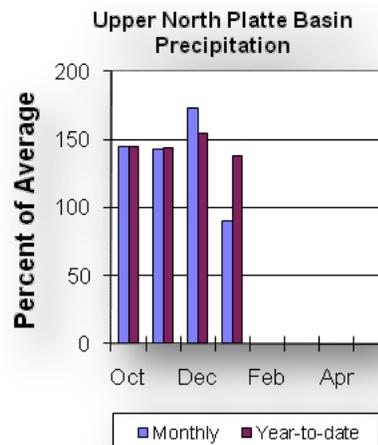
Eight reporting stations show last month's precipitation at 90% of average or 121% of last year's amount. Precipitation varied from 43-166% of average last month. Total water-year-to-date precipitation is about 138% of average for the basin, which is about 134% of last year's amount. Year to date percentage ranges from 119-170% of average.

## Reservoirs

Seminoe Reservoir is estimated to be storing 848,400 ac-ft or 83% of capacity. Seminoe Reservoir is also storing about 148% of average for this time of the year and 125% 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 April through September period and are expected to be above average for the Upper North Platte River Basin. Yield for the North Platte River near Northgate will be around 395,000 ac-ft (146% of average). The Encampment River near Encampment is 220,000 ac-ft (133% of average). Rock Creek near Arlington is 67,000 ac-ft (118% of average). The Sweetwater River near Alcova forecast is for 65,000 ac-ft (81% of average). Seminoe Reservoir inflow should be around 1,180,000 ac-ft (137% of average). See the following table for more detailed information on projected runoff.



## Upper North Platte River Basin

Streamflow Forecasts - February 1, 2011

Forecast Pt Forecast Period	<=== Drier === Future Conditions === Wetter ===>					30 Yr Avg (1000AF)	
	Chance of Exceeding * (1000AF) (1000AF) (1000AF) (% AVG.) (1000AF) (1000AF)						
North Platte R nr Northgate							
APR-JUL	240	310	355	145	400	470	245
APR-SEP	265	345	395	146	445	525	270
Encampment R nr Encampment							
APR-JUL	164	191	210	135	230	255	156
APR-SEP	172	200	220	133	240	270	165
Rock Ck nr Arlington							
APR-JUL	46	56	63	119	70	80	53
APR-SEP	49	60	67	118	74	85	57
Sweetwater R nr Alcova							
APR-JUL	25	46	61	82	76	97	74
APR-SEP	26	49	65	81	81	104	80
Seminole Reservoir Inflow (2)							
APR-JUL	680	925	1090	136	1260	1500	800
APR-SEP	740	1000	1180	137	1360	1620	860

\* 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 January

Reservoir	Usable Capacity	***** Usable Storage *****		
		This Year	Last Year	Average
SEMINOE	1016.7	848.4	680.5	573.2

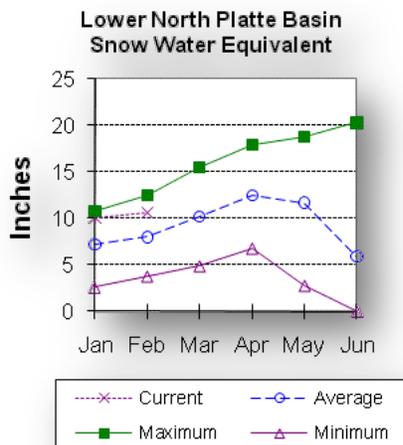
### UPPER NORTH PLATTE RIVER BASIN Watershed Snowpack Analysis - February 1, 2011

Watershed	Number of Data Sites	This Year as Percent of	
		Last Year	Average
N PLATTE above Northgate	7	184	133
ENCAMPMENT RIVER	4	149	133
BRUSH CREEK	5	151	159
MEDICINE BOW & ROCK CREEKS	3	149	135
N PLATTE above Seminole	19	158	137

# Lower North Platte River Basin

## Snow

SWE for the North Platte River Basin is at 133% of average. The Sweetwater drainage SWE is currently at 105% of average. Deer and LaPrele Creek SWE are at 110% of average. SWE for the North Platte above the Laramie River drainage is 132% of average. SWE for the Laramie River above Laramie is 136% of average. SWE for the Little Laramie River is 140% of average. The Laramie River above mouth, SWE is 137% of average. For more information see "Basin Summary of Snow Course Data" at the beginning of this report.



## Precipitation

Last month's precipitation was 115% of average or 191% of last year's amount. Of the 8 reporting stations, percentages for the month range from 33-228%. The water year-to-date precipitation for the basin is currently 134% of average (131% of last year). Year-to-date percentages range from 84-216% of average.

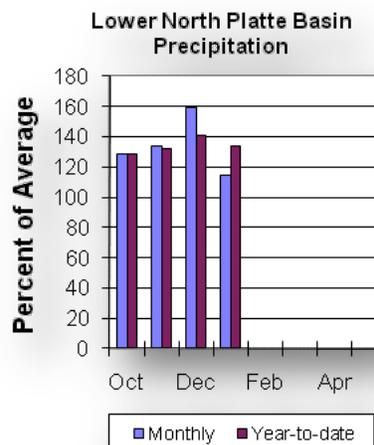
## Reservoir

The Lower North Platte River basin reservoir storage is above average at 125%. Reservoir storage is as follows: Alcova 156,400 ac-ft (101% of average); Glendo 390,300 ac-ft (117% of average); Guernsey 14,600 ac-ft (160% of average);

Pathfinder 784,600 ac-ft (116% of average); Seminole 848,400 ac-ft (148% of average); and Wheatland #2 57,100 ac-ft (126% of average):

## Streamflow

The following yields are based on the 50% exceedance forecasts for the April through September period. The Sweetwater River near Alcova is forecast to yield about 92,000 ac-ft (115% of average). Deer Creek at Glenrock is forecast to yield 36,000 ac-ft (97% of average). LaPrele Creek above the reservoir is forecast to yield 27,000 ac-ft (113% of average). North Platte - Alcova to Orin Gain is forecast to yield 174,000 ac-ft (108% of average). North Platte River below Glendo Reservoir is 1,420,000 ac-ft (143% of average), and below Guernsey Reservoir is anticipated to yield around 1,480,000 ac-ft (147% of average). Laramie River near Woods Landing should yield around 179,000 ac-ft (133% of average). The Little Laramie near Filmore should produce about 84,000 ac-ft (131% of average). See the following table for more detailed information on projected runoff.



## Lower North Platte, Sweetwater & Laramie River Basins

Streamflow Forecasts - February 1, 2011

Forecast Pt	<=== Drier ===		Future Conditions		=== Wetter ===>		
Forecast	Chance of Exceeding * =====						
Period	90%	70%	50%	30%	10%	10%	30 Yr Avg
	(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)
Sweetwater R nr Alcova							
APR-JUL	25	46	61	82	76	97	74
APR-SEP	26	49	65	81	81	104	80
Deer Ck at Glenrock							
APR-JUL	14.4	17.9	36	97	54	81	37
APR-SEP	14.8	18.8	37	100	55	82	37
La Prele Ck ab La Prele Reservoir							
APR-JUL	6.8	18.2	26	108	34	45	24
APR-SEP	6.7	18.2	26	108	34	45	24
North Platte R-Alcova to Orin Gain							
APR-JUL	53	121	168	111	215	285	152
APR-SEP	60	132	181	112	230	300	161
North Platte R bl Glendo Res (2)							
APR-JUL	1040	1190	1300	135	1410	1560	960
APR-SEP	1070	1240	1350	136	1460	1630	990
North Platte R bl Guernsey Res (2)							
APR-JUL	1010	1210	1340	138	1470	1670	970
APR-SEP	1060	1260	1400	139	1540	1740	1010
Laramie R nr Woods							
APR-JUL	116	139	155	126	171	194	123
APR-SEP	129	154	171	127	188	215	135
Little Laramie R nr Filmore							
APR-JUL	60	71	79	134	87	98	59
APR-SEP	66	79	87	136	95	108	64

\* 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 January

Reservoir	Usable Capacity	***** This Year	***** Usable Storage Last Year	***** Average
ALCOVA	184.3	156.6	155.9	155.0
GLENDO	506.4	390.3	271.3	334.9
GUERNSEY	45.6	14.6	16.8	9.1
PATHFINDER	1016.5	784.6	731.9	678.3
SEMINOE	1016.7	848.4	680.5	573.2
WHEATLAND #2	98.9	57.1	42.4	45.3

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

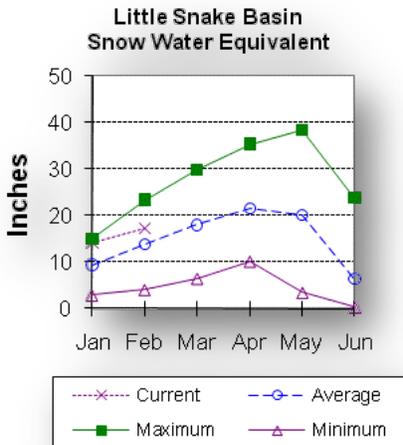
Watershed Snowpack Analysis - February 1, 2011

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
SWEETWATER	4	155	105
DEER & LaPRELE CREEKS	2	135	110
N PLATTE abv Laramie R.	25	157	132
LARAMIE RIVER abv Laramie	10	157	136
LITTLE LARAMIE RIVER	5	165	140
LARAMIE RIVER above mouth	13	161	137
NORTH PLATTE	31	158	133

# Little Snake River Basin

## Snow

Currently, snow water equivalent (SWE) in the Little Snake River drainage is 124% of average. For more information see "Basin Summary of Snow Course Data" at the beginning of this report.



## Precipitation

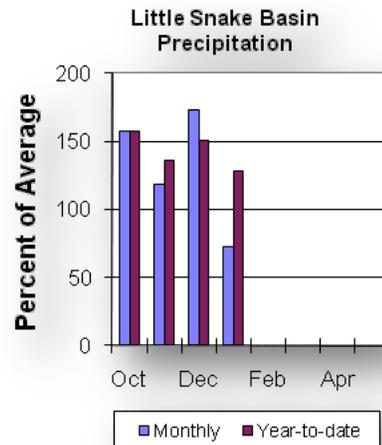
Precipitation across the basin was 73% of average (101% of last year) for the 5 reporting stations. Last month's precipitation ranged from 44-98% of average. The Little Snake River basin water-year-to-date precipitation is currently 128% of average (140% of last year). Year-to-date percentages range from 103-139% of average.

## Reservoir

High Savery Dam -Pending

## Streamflow

The 50% exceedance forecast for the April through July time frame on the Little Snake River drainage is expected to be above average this year. The Little Snake River near Slater should yield around 190,000 ac-ft (120% of average). The Little Snake River near Dixon is estimated to yield around 400,000 ac-ft (121% of average). See the following table for more detailed information on projected runoff.



## Little Snake River Basin

Streamflow Forecasts - February 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     140      169      190      120      215      250      159
Little Snake R nr Dixon
APR-JUL     275      345      400      121      455      545      330
=====

```

\* 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 - February 1, 2011
=====

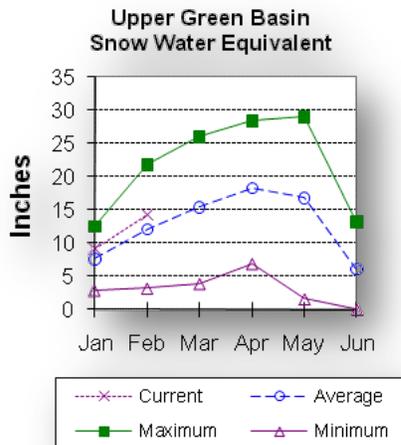
```

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
LITTLE SNAKE RIVER	8	145	124

# Upper Green River Basin

## Snow

SWE in the Green River Basin above Warren Bridge is about 110% of average. SWE for the West Side of Upper Green River Basin is about 126% of average. Newfork River Basin SWE is now about 101% of average. Big Sandy-Eden Valley Basin is 97% of average. SWE in the Green River Basin above Fontenelle Reservoir is about 118% 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 98% of average last month (142% of last year). Last month's precipitation varied from 58-127% of average. Water year-to-date precipitation is about 117% of average (187% of last year). Year to date

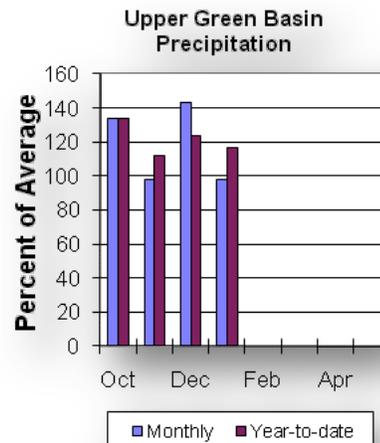
percentage of average ranges from 96-141% for the reporting stations.

## Reservoir

Storage in Big Sandy Reservoir is 17,600 ac-ft or 46% of capacity. This is 95% of average. Eden Reservoir - No Report. Fontenelle Reservoir is 182,500 ac-ft or 53% of capacity; 100% of average. This is 100% 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 April through July runoff period in the Upper Green River Basin are forecast to be about average. The yield on the Green River at Warren Bridge is 270,000 ac-ft (102% of average). Pine Creek above Fremont Lake is 105,000 ac-ft (101% of average). New Fork River near Big Piney is 390,000 ac-ft (99% of average). Fontenelle Reservoir Inflow is estimated to be 850,000 ac-ft (99% of average), and Big Sandy near Farson is expected to be around 58,000 ac-ft (100% of average). See the following table for more detailed information on projected runoff.



## Upper Green River Basin

Streamflow Forecasts - February 1, 2011

Forecast Pt Forecast Period	Future Conditions					30 Yr Avg (1000AF)
	<=== Drier ===>	Chance of Exceeding *			=== Wetter ===>	
	90% (1000AF)	70% (1000AF)	50% (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)	
Green R at Warren Bridge						
APR-JUL	215	245	270	102	295	335
Pine Ck ab Fremont Lake						
APR-JUL	88	98	105	101	112	124
New Fork R nr Big Piney						
APR-JUL	275	340	390	99	440	520
Fontenelle Reservoir Inflow (2)						
APR-JUL	530	710	850	99	1000	1240
Big Sandy R nr Farson						
APR-JUL	41	51	58	100	66	79

\* 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 January

Reservoir	Usable Capacity	***** This Year	Usable Storage Last Year	***** Average
BIG SANDY	38.3	17.6	19.6	18.6
EDEN		NO REPORT		
FONTENELLE	344.8	182.5	197.8	182.2

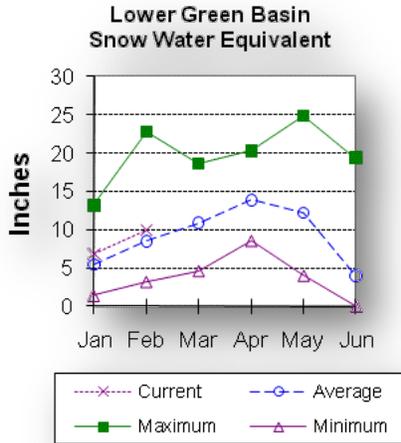
### UPPER GREEN RIVER BASIN Watershed Snowpack Analysis - February 1, 2011

Watershed	Number of Data Sites	This Year as Percent of Last Year	Percent of Average
GREEN above Warren Bridge	5	235	110
UPPER GREEN (West Side)	7	205	126
NEWFORK RIVER	3	208	101
BIG SANDY/EDEN VALLEY	2	184	97
GREEN above Fontenelle	14	211	118

# Lower Green River Basin

## Snow

SWE in the Green River Basin above Flaming Gorge is 117% of average. SWE in the Hams Fork Basin is 133% of average. Blacks Fork Basin SWE is currently 117% of average. In the Henrys Fork drainage SWE is 107%. For more information see "Basin Summary of Snow Course Data" at the beginning of this report.



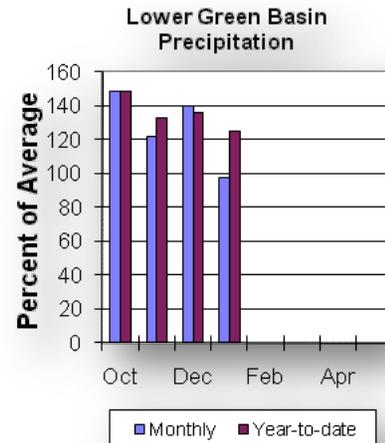
## Precipitation

Precipitation was near average for the 3 reporting stations during last month at 98% of average or 157% of last year. Precipitation ranged from 95-105% of average for the month. The basin year-to-date precipitation is currently 125% of average (196% of last year). Year-to-date percentages range from 121-135% of average.

## Reservoirs

Fontenelle Reservoir is currently storing 182,500 ac-ft; this is 100% of average (92% of last year). Flaming Gorge is currently

storing 3,111,000 ac-ft; this is 105% of average (97% of last year). Viva Naughton is currently storing 31,000 ac-ft, 102% of average or 73% 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 April through July runoff period in the Lower Green River Basin are forecast to be about average. The Green River near Green River is forecast to yield about 870,000 ac-ft (99% of average). The Blacks Fork near Robertson is forecast to yield 105,000 ac-ft (111% of average). East Fork of Smiths Fork near Robertson is forecast to yield 32,000 ac-ft (110% of average). Hams Fork below Pole Creek near Frontier is forecast to be 80,000 ac-ft (123% of average). The Hams Fork Inflow to Viva Naughton Reservoir is forecast to be 110,000 ac-ft (124% of average). The Flaming Gorge Reservoir inflow will be about 1,180,000 ac-ft (99% of average). See the following table for more detailed information on projected runoff.

## Lower Green River Basin

Streamflow Forecasts - February 1, 2011

Forecast Pt Forecast Period	<=== Drier === Future Conditions === Wetter ===>					30 Yr Avg (1000AF)	
	Chance of Exceeding * 90%      70%      50%      30%      10% (1000AF) (1000AF) (1000AF) (% AVG.) (1000AF) (1000AF)						
Green R nr Green River, WY (2)							
APR-JUL	605	760	870	99	980	1200	875
Blacks Fk nr Robertson							
APR-JUL	74	92	105	111	119	141	95
EF of Smiths Fork nr Robertson (2)							
APR-JUL	21	27	32	110	37	45	29
Hams Fk bl Pole Ck nr Frontier							
APR-JUL	52	68	80	123	93	114	65
Viva Naughton Reservoir Inflow (2)							
APR-JUL	69	94	110	124	126	151	89
Flaming Gorge Reservoir Inflow (2)							
APR-JUL	735	985	1180	99	1390	1730	1190

\* 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 January

Reservoir	Usable Capacity	***** This Year	Usable Storage Last Year	***** Average
FONTENELLE	344.8	182.5	197.8	182.2
FLAMING GORGE	3749.0	3111.0	3210.0	2966.0
VIVA NAUGHTON RES	42.4	31.0	31.5	30.3

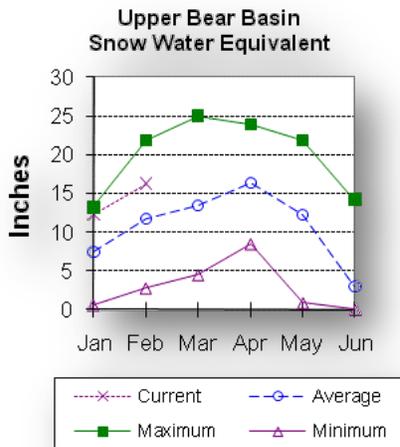
### LOWER GREEN RIVER BASIN Watershed Snowpack Analysis - February 1, 2011

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
HAMS FORK RIVER	4	214	133
BLACKS FORK	2	183	117
HENRYS FORK	2	138	107
GREEN above Flaming Gorge	22	206	117

# Upper Bear River Basin

## Snow

Snow water equivalent (SWE) in the Upper Bear River Basin in Utah is estimated to be 145% of average. SWE in the Wyoming portion of the Bear River drainage (Smiths and Thomas Forks) is estimated at 132% of average. Bear River Basin SWE, above the Idaho State line, is 139% of average. For more information see "Basin Summary of Snow Course Data" at the beginning of this report.



## Precipitation

Precipitation for last month was 95% of average for the 2 reporting stations; this is 131% of the precipitation received last year. The year-to-date precipitation, for the basin, is 124% of average; this is 204% of last year's

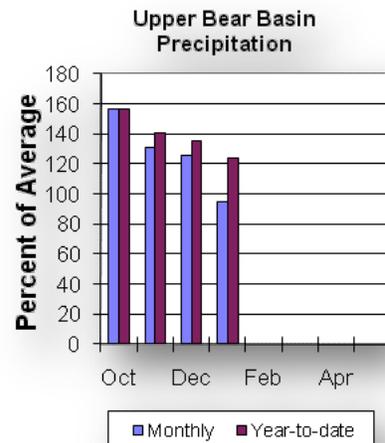
amount.

## Reservoir

Storage in Woodruff Narrows reservoir is 42,000 ac-ft (167% of average). Current reservoir storage is about 73% of capacity. Reservoir storage last year at this time was 46,200 ac-ft.

## Streamflow

The following 50% exceedance forecasts are for the April through September period. The Bear River near the Utah-Wyoming State Line is 170,000 ac-ft (136% of average). The Bear River above Reservoir near Woodruff is 190,000 ac-ft (134% of average). The Smiths Fork River near Border is 140,000 ac-ft (116% of average). See the following table for more detailed information on projected runoff.



## Upper Bear River Basin

Streamflow Forecasts - February 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     110      134      150      133      166      190      113
APR-SEP     125      152      170      136      188      215      125
Bear R abv Resv nr Woodruff
APR-JUL     86       142      180      132      220      275      136
APR-SEP     70       142      190      134      240      310      142
Smiths Fork nr Border
APR-JUL     86       108      122      118      136      158      103
APR-SEP     100      124      140      116      156      180      121
=====

```

\* 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 January
=====

```

```

Reservoir          Usable      ***** Usable Storage *****
                  Capacity    This Year   Last Year   Average
=====
WOODRUFF NARROWS          57.3        42.0        46.2        25.2
=====

```

```

=====
UPPER BEAR RIVER BASIN
Watershed Snowpack Analysis - February 1, 2011
=====

```

```

Watershed          Number of          This Year as Percent of
                  Data Sites        Last Year          Average
=====
UPPER BEAR RIVER in Utah          5          220          145
SMITHS & THOMAS FORKS            4          205          132
BEAR RIVER abv ID line           7          231          139
NORTHWEST                     75          181          112
NORTHEAST                       21          156          114
SOUTHEAST                       35          162          131
SOUTHWEST                       32          184          121
=====

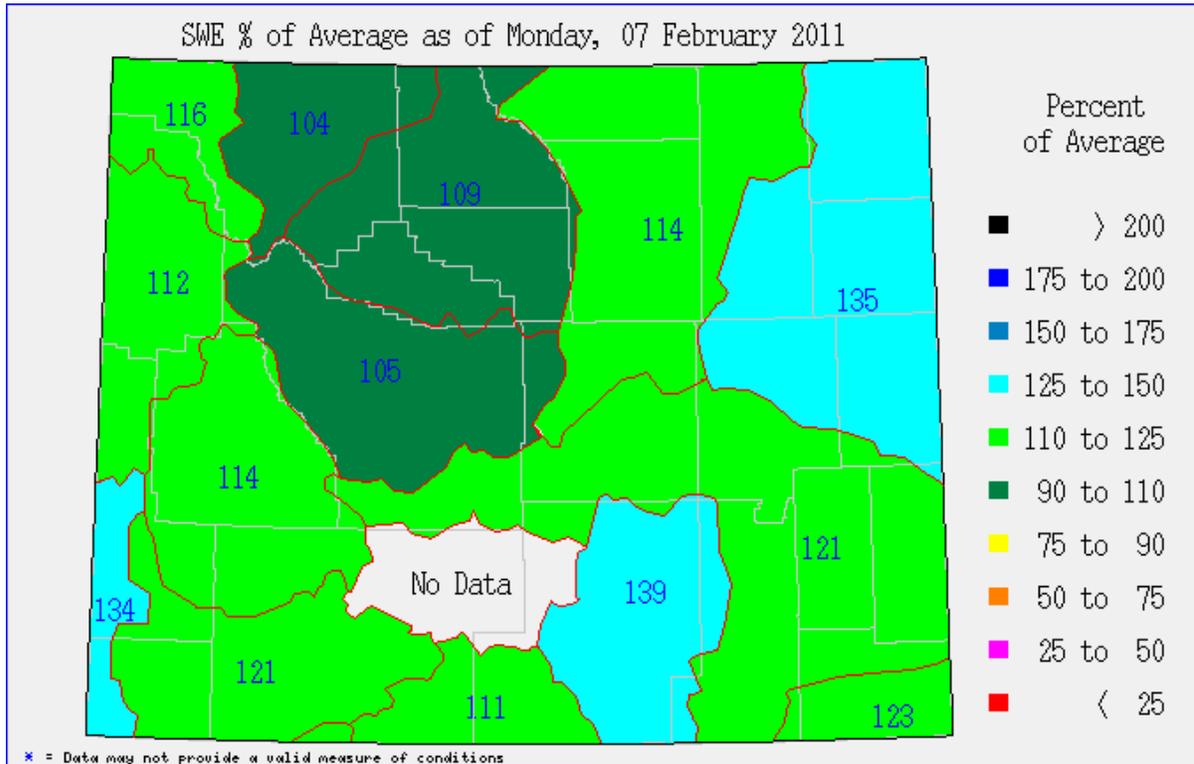
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Issued by

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N R C S  
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**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:**

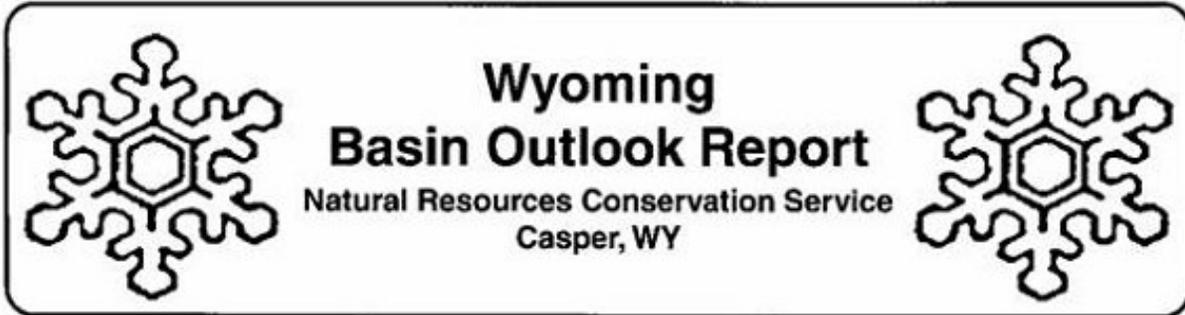
The Wyoming State Engineer's Office

The University of Wyoming

**Local:**

The City of Cheyenne

The City of Rawlins



**Wyoming**  
**Basin Outlook Report**  
Natural Resources Conservation Service  
Casper, WY



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«MailingListID»