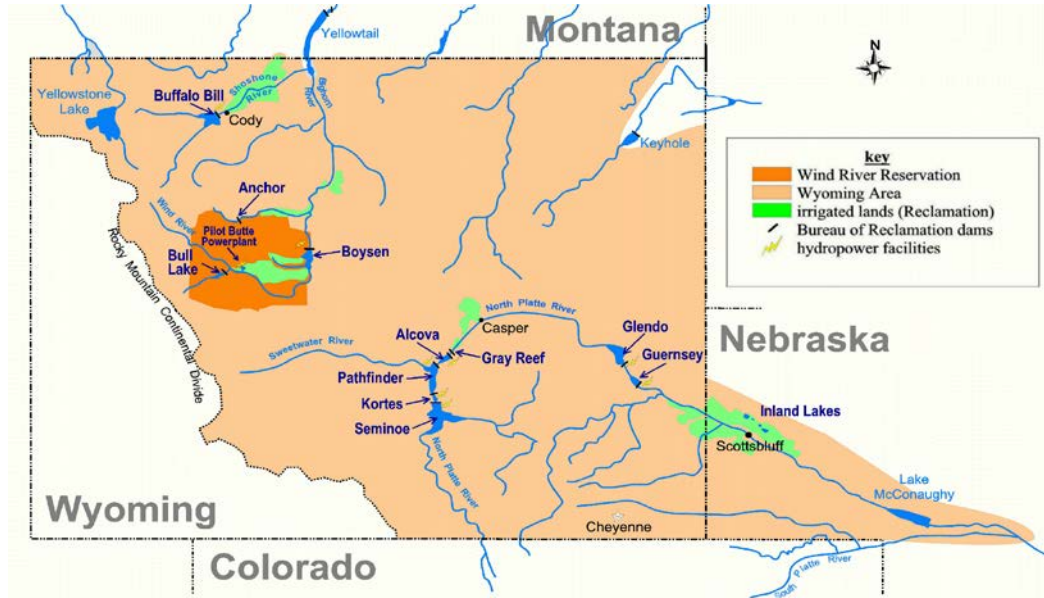


# RECLAMATION

*Managing Water in the West*

Bighorn Basin  
Water Supply and Utilization Report  
Wyoming Area Office  
Report for February 2016



The Wyoming Area Office of the Bureau of Reclamation is responsible for the operation of Reclamation reservoirs in Wyoming east of the Continental Divide except for Keyhole Reservoir. Four off-stream reservoirs in Nebraska commonly referred to as the Inland Lakes also fall within the Wyoming Area. The North Platte River Basin Reservoirs have a combined storage capacity of 2,800,000 acre-feet. The major reservoirs in the Shoshone and Wind/Bighorn Basins have a combined storage capacity of 1,600,000 acre-feet.



United States of America  
Department of the Interior  
Bureau of Reclamation  
Wyoming Area Office  
P.O. Box 1630  
Mills, Wyoming 82644-1630

**Report for February 2016  
WATER SUPPLY AND UTILIZATION REPORT  
BIGHORN RIVER BASIN  
WYOMING AREA OFFICE**

**This report concerns the operation of Reclamation facilities in the Shoshone and Wind/Bighorn River Basins.**

**Reclamation defines a water year as the time period of October 1 through September 30. Water year is abbreviated in this report as W. Yr.**

**Other organizations furnished information for the Water Supply and Utilization Report. Their cooperation is greatly appreciated.**

**This report is available on the Internet and can be accessed by following these steps:**

- 1. Log on to the Great Plains Home Page at <http://www.usbr.gov/gp>**
- 2. Select Water Operations.**
- 3. Select Water Management Information.**
- 4. Select Water Supply Report.**
- 5. Under Bighorn Basin, select the current report or reports from the previous 12 months**

## BIGHORN RIVER BASIN INFLOW

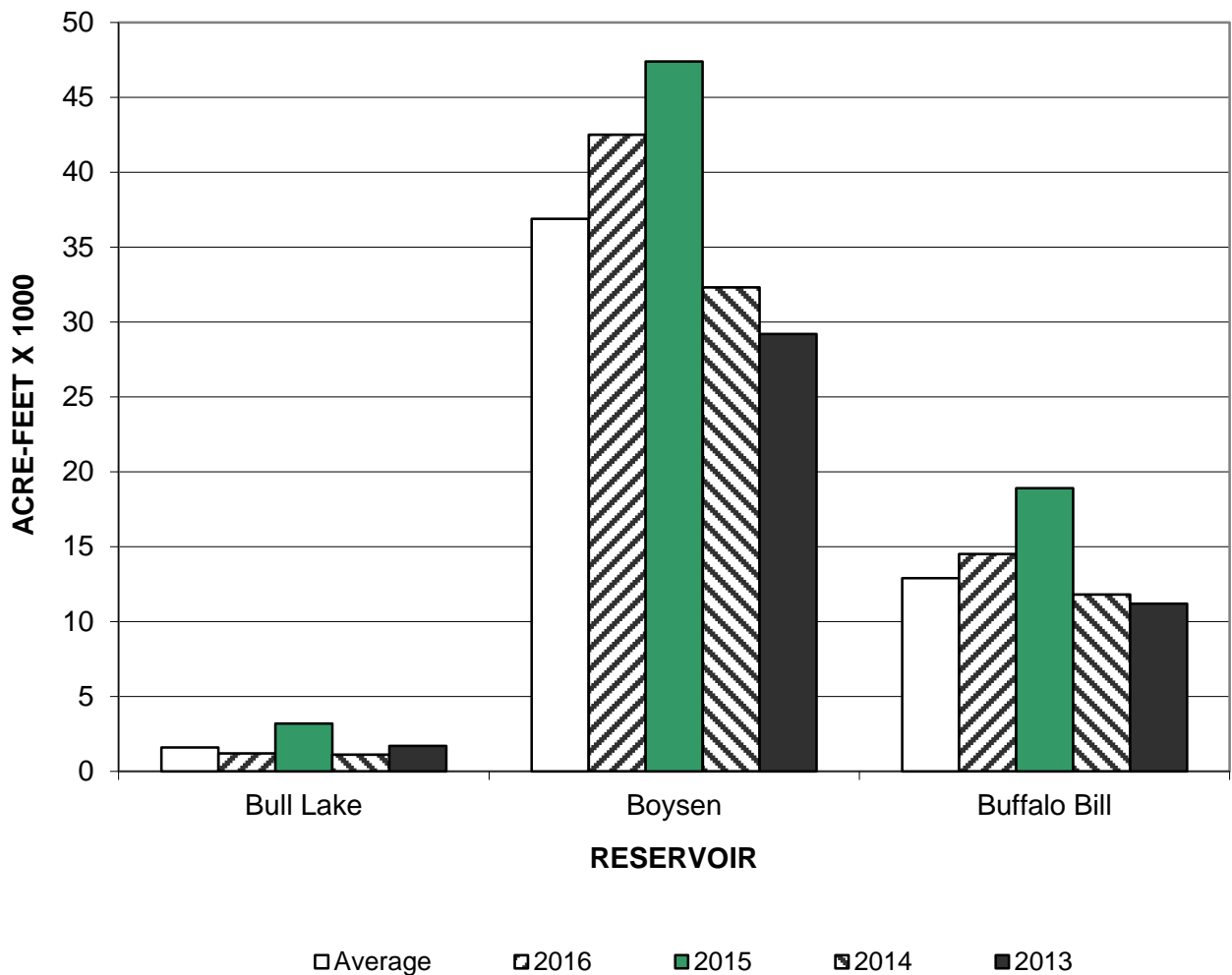
February inflow was above average at Boysen and Buffalo Bill Reservoirs. Inflow to Bull Lake was below average.

(1000 acre-feet)

Reservoir	February Inflow			February Historical Inflow			Accumulated Inflow (October-February)		
	W. Yr. 2016	30 Yr. Avg. <sup>1</sup>	% of Avg.	W. Yr. 2015	W. Yr. 2014	W. Yr. 2013	W. Yr. 2016	30 Yr. Avg.	% of Avg.
Bull Lake	1.2	1.6	75	3.2	1.1	1.7	15.0	14.8	101
Boysen	42.5	36.9	115	47.4	32.3	29.2	197.3	211.8	93
Buffalo Bill	14.5	12.9	112	18.9	11.8	11.2	98.9	89.7	110

<sup>1</sup> Average is based on the 1986-2015 period.

## BIGHORN RIVER BASIN RESERVOIR INFLOW February



## BIGHORN RIVER BASIN OUTFLOW

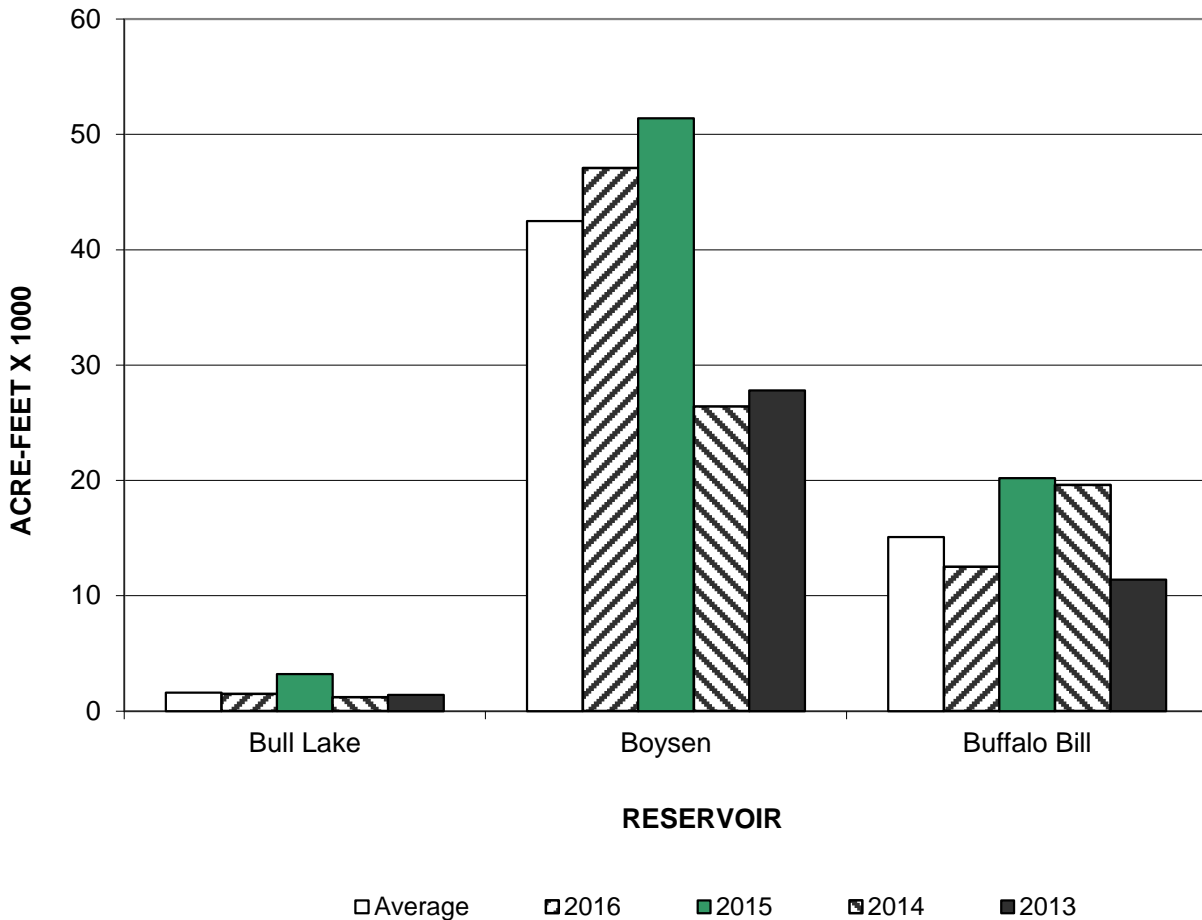
February releases were above average for Boysen Reservoir, and below average for Buffalo Bill and Bull Lake Reservoirs.

(1000 acre-feet)

Reservoir	February Outflow			February Historical Outflow			Accumulated Outflow (October-February)		
	W. Yr. 2016	30 Yr. Avg. <sup>1</sup>	% of Avg.	W. Yr. 2015	W. Yr. 2014	W. Yr. 2013	W. Yr. 2016	30 Yr. Avg.	% of Avg.
Bull Lake	1.5	1.6	94	3.2	1.2	1.4	7.8	13.7	57
Boysen	47.1	42.5	111	51.4	26.4	27.8	247.1	235.0	105
Buffalo Bill	12.5	15.1	83	20.2	19.6	11.4	99.2	101.3	98

<sup>1</sup> Average is based on the 1986-2015 period.

## BIGHORN RIVER BASIN RESERVOIR OUTFLOW February



**BIGHORN RIVER BASIN STORAGE**

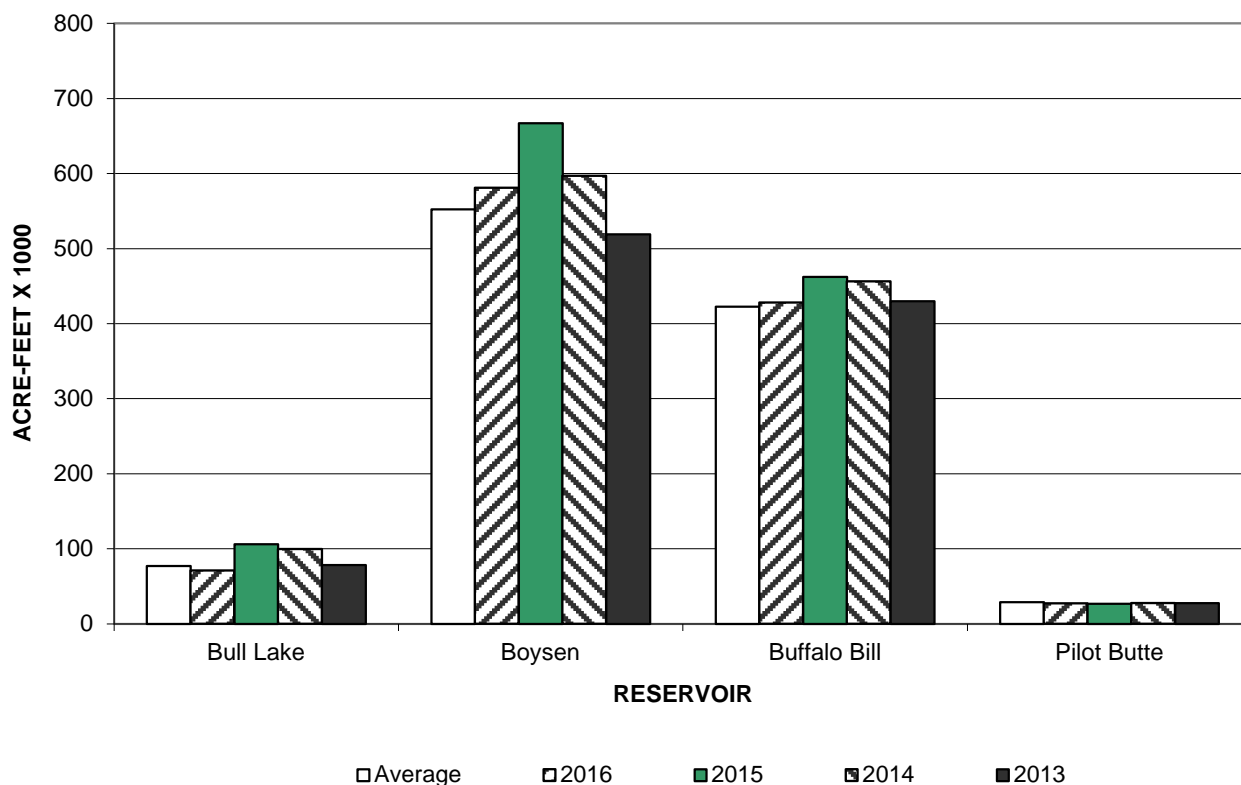
Storage at the end of February was above average for Buffalo Bill and Boysen Reservoir, and below average for Pilot Butte and Bull Lake.

Reservoir	Total Storage End of February			End of February Historical Storage			Total Conservation Storage Capacity	Percent of Capacity
	W. Yr.	30 Yr.	% of	W. Yr.	W. Yr.	W. Yr.		
	2016	Avg. <sup>1</sup>	Avg.	2015	2014	2013		
Bull Lake	71.1	76.9	92	106.0	99.7	78.3	152.5	47
Boysen	581.1	552.5	105	667.1	597.0	518.9	741.6	78
Buffalo Bill	428.1	422.4 <sup>2</sup>	101	462.3	456.2	430.0	646.6	66
Pilot Butte	27.4	28.7	95	26.9	27.7	27.4	33.7	81

<sup>1</sup> Average is based on the 1986-2015 period.

<sup>2</sup> This does not reflect a long term average because in 1992 the capacity of the reservoir was increased to approximately 646,565 acre-feet as a result of raising the dam. The average used here reflects data from 1993 through 2015.

**BIGHORN RIVER BASIN  
RESERVOIR STORAGE  
End of February**



**BIGHORN RIVER BASIN GENERATION**

Generation was above average at Boysen Powerplant in February.

(Energy in giga-watt hours)

Powerplant	February Gross Generation			February Historical Generation			Accumulated Gross Gen. (October-February)		
	W. Yr. 2016	Avg.	% of Avg.	W. Yr. 2015	W. Yr. 2014	W. Yr. 2013	W. Yr. 2016	Avg.	% of Avg.
Boysen <sup>1</sup>	4.1	3.1	132	4.6	0.0	2.2	21.5	17.8	121
Pilot Butte <sup>2</sup>	0.0	0.0	0	0.0	0.0	0.0	0.0	0.2	0
Heart Mtn. <sup>3</sup>	0.0	0.0	0	0.0	0.0	0.0	1.3	0.9	144
Buffalo Bill <sup>3</sup>	1.3	1.9	68	0.0	2.9	0.1	5.8	10.1	57
Shoshone <sup>3</sup>	0.3	1.0	30	0.1	1.3	1.4	5.4	7.3	74
Spirit Mtn. <sup>4</sup>	0.0	0.0	0	0.0	0.0	0.0	1.6	1.0	160

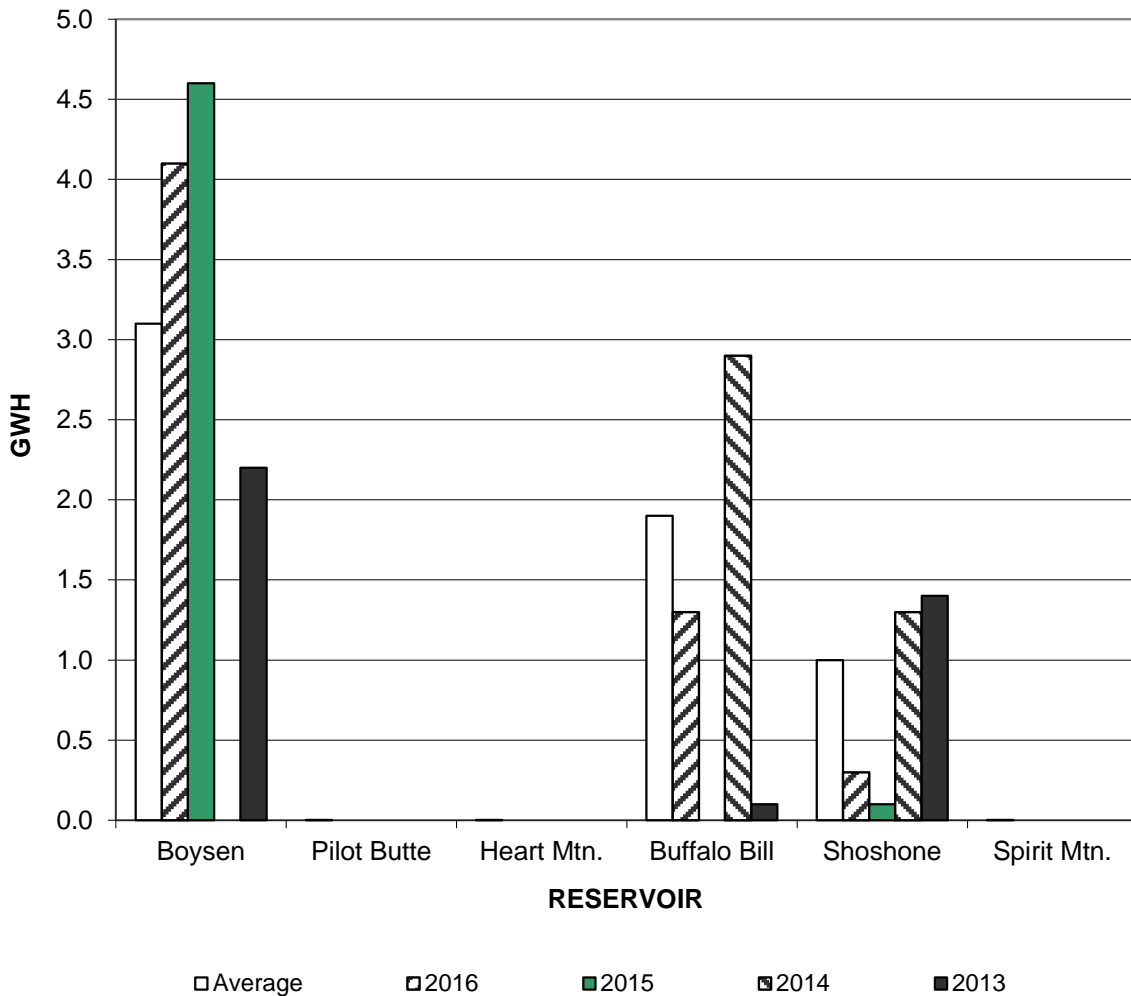
<sup>1</sup> Average is based on the 1986-2015 period.

<sup>2</sup> Average is based on the 1990-2015 period. Pilot Butte Powerplant is currently in "mothballed" status and does not generate electricity.

<sup>3</sup> Average is based on the 1993-2015 period.

<sup>4</sup> Average is based on the 1996-2015 period.

**BIGHORN RIVER BASIN  
GROSS GENERATION  
February**



**BIGHORN WATER SUPPLY FORECAST**

The March 1, 2016, water supply forecast indicates below average April - July runoff can be expected for all the Bighorn Basin.

(1000 acre-feet)

Forecast Points	March 1, 2016 Forecast of April-July Runoff			30 Yr. April-July Runoff Avg. <sup>2</sup>	Expected % of Avg.	Comparative Actual April - July Runoff			
	Reasonable Minimum <sup>1</sup>	Expected	Reasonable Maximum <sup>1</sup>			W. Yr. 2015	W. Yr. 2014	W. Yr. 2013	W. Yr. 2012
Bull Lake Reservoir	90	110	140	138.2	80	138	148	106	118
Wind River above Bull Lake Creek	200	300	400	409.5	73	529	580	283	314
Boysen Reservoir	200	350	600	548.3	64	750	695	216	219
Buffalo Bill Reservoir	450	600	800	686.3	87	696	1062	577	592

<sup>1</sup> The probability is estimated to be 9 chances in 10 that the actual volume will fall between the reasonable minimum and reasonable maximum.

<sup>2</sup> Average is based on the 1986-2015 period.

<sup>3</sup> Actual inflows are as follows:

(1000 acre-feet)

Forecast Points	March 1, 2016 Forecast of April-July Runoff						30 Yr. April-July Runoff Avg. <sup>1</sup>
	Chance of Exceeding						
	95%	75%	50%	% of Avg	25%	5%	
Bull Lake Reservoir	90	102	110	80	122	140	138.2
Wind River above Bull Lake Creek	200	259	300	73	341	400	409.5
Boysen Reservoir	200	289	350	64	452	600	548.3
Buffalo Bill Reservoir	450	539	600	87	682	800	686.3

<sup>1</sup> Average is based on the 1986-2015 period.

**BIGHORN SNOWPACK WATER CONTENT**

The tables shown below display the Snotel stations used in the development of the April - July snowmelt runoff forecasts displayed on page six of this report.

SWE in inches <sup>1</sup>

WATERSHED	March 1 snow-water content			Comparative March 1 snow-water content		
	W. Yr. 2016	30 Yr. Median <sup>2</sup>	% of Median	W. Yr. 2015	W. Yr. 2014	W. Yr. 2013
Bull Lake Reservoir	7.23	9.00	80	8.33	12.6	8.0
Boysen Reservoir	8.73	9.92	88	10.27	14.1	8.7
Buffalo Bill Reservoir	12.77	14.19	90	14.58	20.7	12.5

**Boysen Reservoir Watershed**

SWE in inches <sup>1</sup>

Snotel Stations (Elevation)	Water Content	30 Yr. Median <sup>2</sup>
Burroughs Creek (8,750)	8.9	10.7
Hobbs Park (10,100)	8.1	9.7
Kirwin (9,800)	7.1	7.0
Little Warm (9,620)	6.8	7.9
Togwotee Pass (9,580)	16.6	17.7
Townsend Creek (8,700)	4.9	6.5
Watershed Average	8.73	9.92

**Buffalo Bill Reservoir Watershed**

SWE in inches <sup>1</sup>

Snotel Stations (Elevation)	Water Content	30 Yr. Median <sup>2</sup>
Blackwater (9,780)	15.8	17.2
Evening Star (9,200)	20.5	19.1
Marquette (8,760)	2.9	5.9
Sylvan Lake (8,420)	13.3	15.9
Sylvan Road (8,120)	7.5	9.4
Togwotee Pass (9,580)	16.6	17.7
Watershed Average	12.77	14.19

**Bull Lake Reservoir Watershed**

SWE in inches <sup>1</sup>

Snotel Stations (Elevation)	Water Content	30 Yr. Median <sup>2</sup>
Elkhart Park (8,400)	6.8	9.4
Hobbs Park (10,100)	8.1	9.7
Little Warm (9,620)	6.8	7.9
Watershed Average	7.23	9.00

<sup>1</sup> SWE (Snow Water Content is the amount of water in the snowpack expressed in inches)

<sup>2</sup> Median for the 1981-2010 period