

**June 1, 2008**  
**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 Current Month or reports from the previous 12 months**

**BIGHORN RIVER BASIN INFLOW**

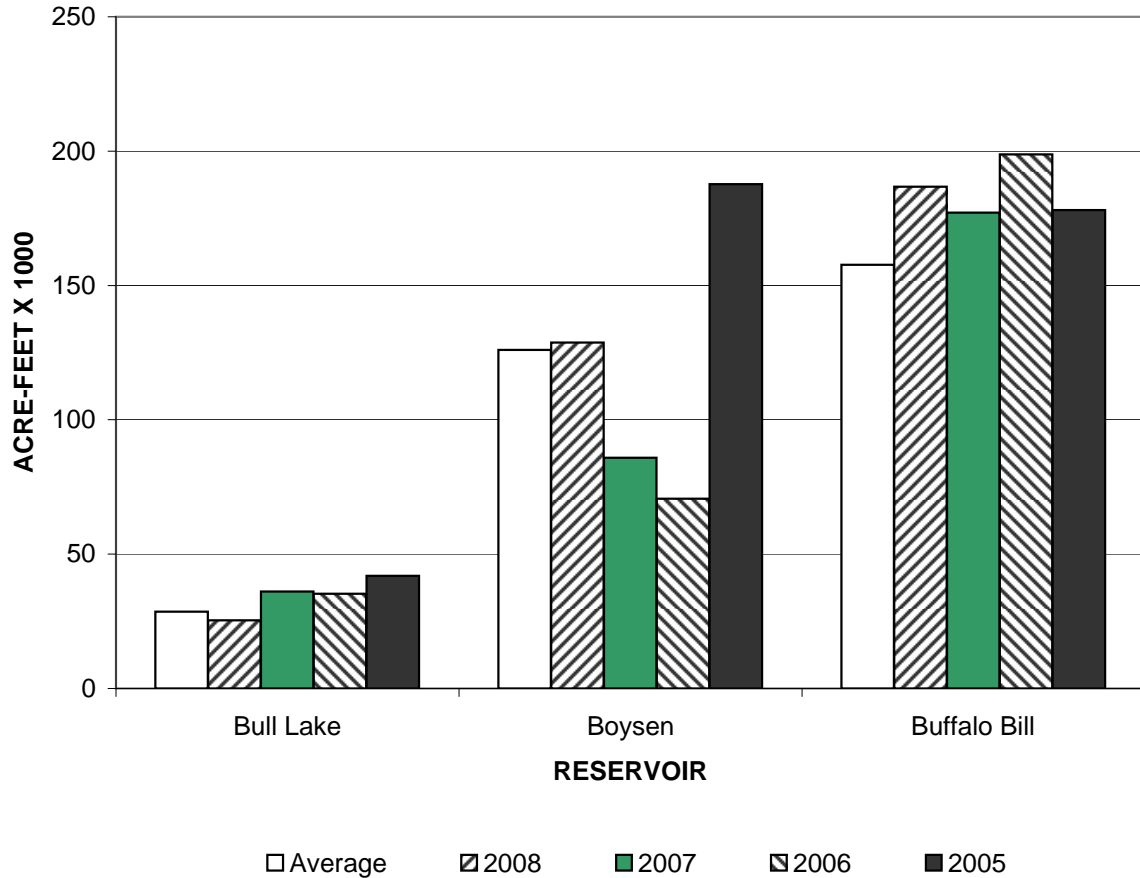
May inflow to Boysen and Buffalo Bill Reservoirs was above average.

(1000 acre-feet)

Reservoir	May Inflow			May Historical Inflow			Accumulated Inflow (October-May)		
	W. Yr. 2008	30 Yr. Avg. <sup>1</sup>	% of Avg.	W. Yr. 2007	W. Yr. 2006	W. Yr. 2005	W. Yr. 2008	30 Yr. Avg.	% of Avg.
Bull Lake	25.4	28.6	89	36.1	35.3	41.9	46.2	48.7	95
Boysen	128.8	126.0	102	85.9	70.6	187.7	361.6	448.5	81
Buffalo Bill	186.8	157.7	118	177.1	198.8	178.1	325.7	307.3	106

<sup>1</sup> Average is based on the 1978-2007 period.

**BIGHORN RIVER BASIN  
RESERVOIR INFLOW  
May**



## BIGHORN RIVER BASIN OUTFLOW

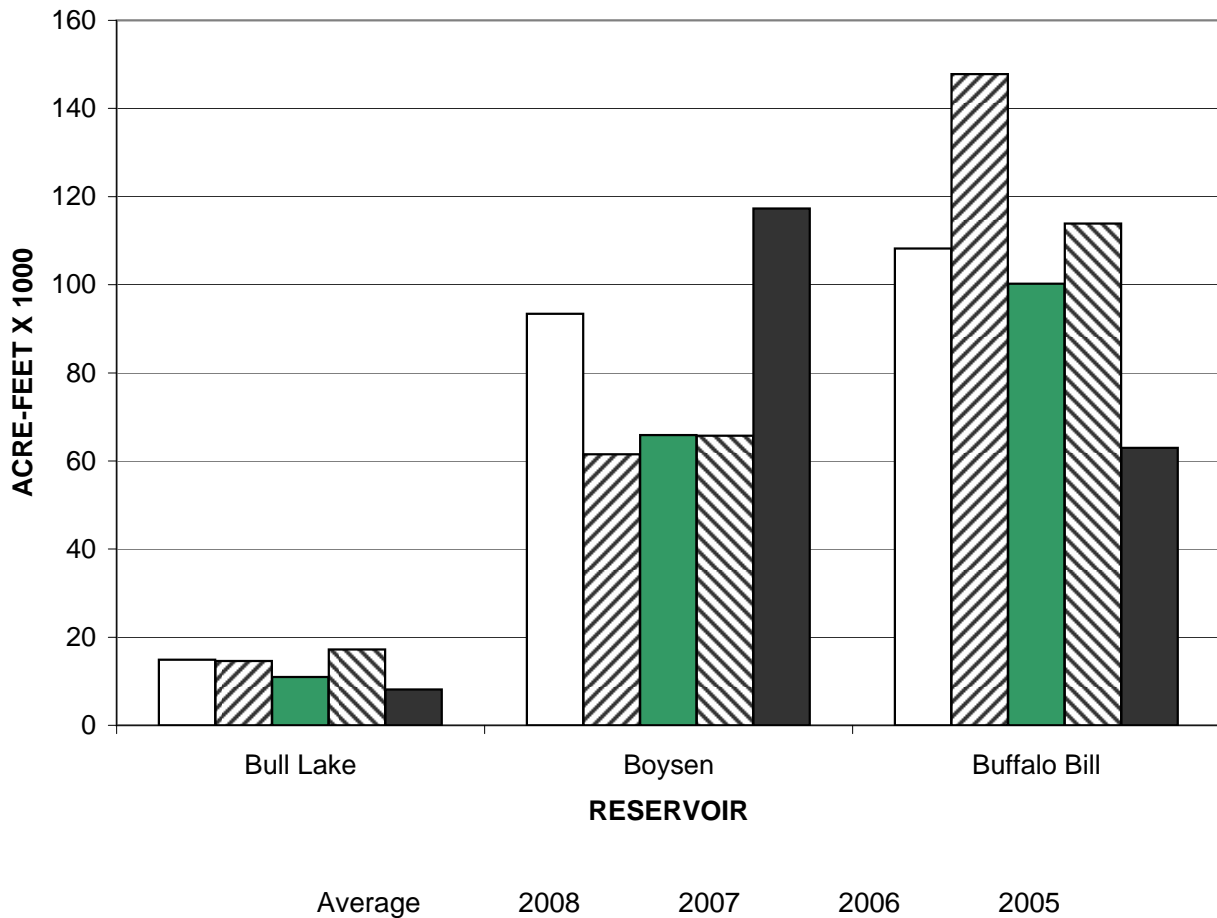
The release from Buffalo Bill Reservoir was above average during May.

(1000 acre-feet)

Reservoir	May Outflow			May Historical Outflow			Accumulated Outflow (October-May)		
	W. Yr. 2008	30 Yr. Avg. <sup>1</sup>	% of Avg.	W. Yr. 2007	W. Yr. 2006	W. Yr. 2005	W. Yr. 2008	30 Yr. Avg.	% of Avg.
Bull Lake	14.6	14.9	98	11.0	17.2	8.1	29.4	34.8	84
Boysen	61.5	93.4	66	65.9	65.7	117.3	238.1	500.2	48
Buffalo Bill	147.8	108.2	137	100.2	113.9	63.0	265.7	286.5	93

<sup>1</sup> Average is based on the 1978-2007 period.

### BIGHORN RIVER BASIN RESERVOIR OUTFLOW May



**BIGHORN RIVER BASIN STORAGE**

Storage at the end of May was below average at all reservoirs except Buffalo Bill Reservoir.

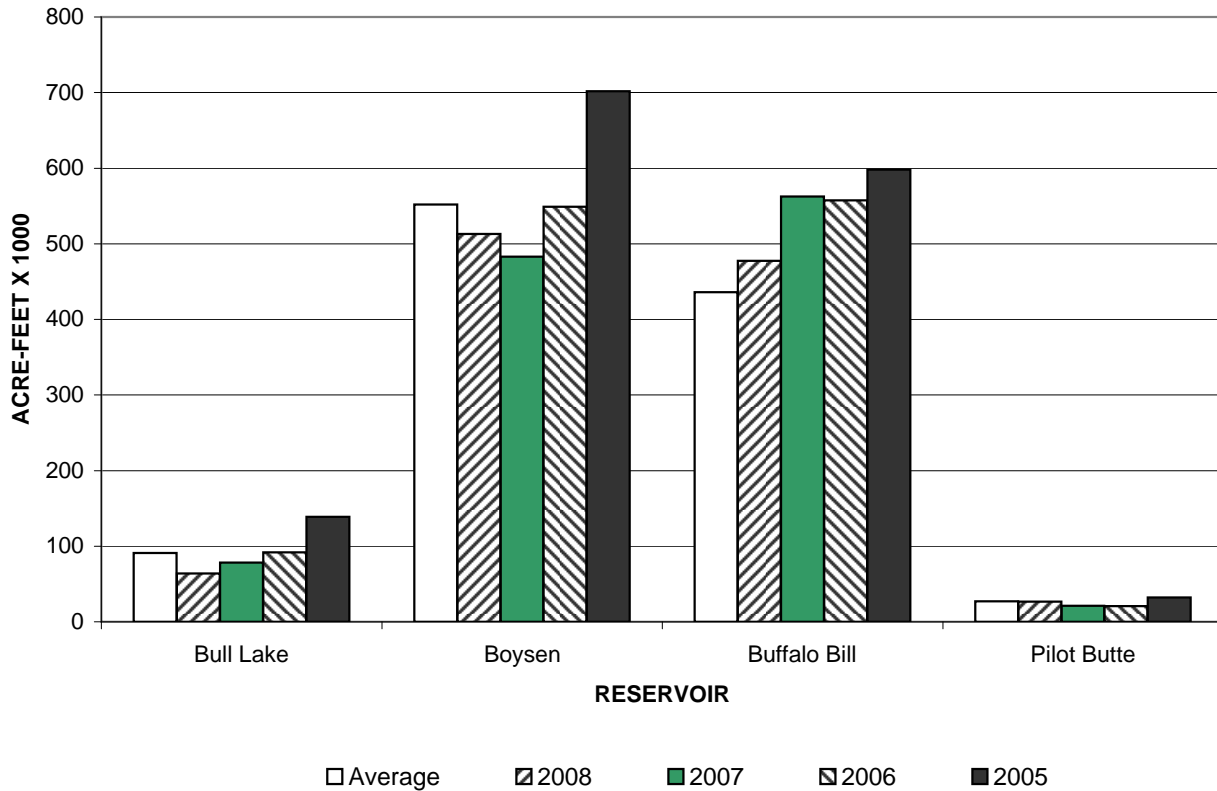
(1000 acre-feet)

Reservoir	Total Storage End of May			End of May Historical Storage			Total Conservation Storage Capacity	Percent of Capacity
	W. Yr. 2008	30 Yr. Avg. <sup>1</sup>	% of Avg.	W. Yr. 2007	W. Yr. 2006	W. Yr. 2005		
Bull Lake	64.1	90.8	71	78.2	91.7	139.0	152.5	42
Boysen	513.1	552.0	93	483.0	549.1	701.6	741.6	69
Buffalo Bill	477.3	436.1 <sup>2</sup>	109	562.5	557.5	598.3	646.6	74
Pilot Butte	26.5	27.3	97	21.2	20.7	32.0	33.7	79

<sup>1</sup> Average is based on the 1978-2007 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 2007.

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



**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	June 1 snow-water content			Comparative June 1 snow-water content		
	W. Yr. 2008	30 Yr. Avg. <sup>2</sup>	% of Avg.	W. Yr. 2007	W. Yr. 2006	W. Yr. 2005
Bull Lake Reservoir	5.07	5.10	99	0.3	0.0	4.0
Boysen Reservoir	10.56	7.36	143	0.9	2.3	4.4
Buffalo Bill Reservoir	18.10	13.70	132	2.6	5.7	5.5

**Boysen Reservoir Watershed**

SWE in inches <sup>1</sup>

Snotel Stations (Elevation)	Water Content	30 Yr. Avg. <sup>2</sup>
Burroughs Creek (8,750)	10.1	3.4
Hobbs Park (10,100)	15.2	10.1
Kirwin (9,800)	9.2	5.5
Little Warm (9,620)	0.0	1.9
Togwotee Pass (9,580)	28.5	21.9
Townsend Creek (8,700)	0.0	1.7
Younts Peak (8,350)	10.9	7.0
<b>Watershed Average</b>	<b>10.56</b>	<b>7.36</b>

**Buffalo Bill Reservoir Watershed**

SWE in inches <sup>1</sup>

Snotel Stations (Elevation)	Water Content	30 Yr. Avg. <sup>2</sup>
Blackwater (9,780)	31.2	24.7
Evening Star (9,200)	29.2	26.7
Marquette (8,760)	7.0	4.2
Sylvan Lake (8,420)	19.3	11.4
Sylvan Road (8,120)	0.0	0.0
Togwotee Pass (9,580)	28.5	21.9
Younts Peak (8,350)	10.9	7.0
<b>Watershed Average</b>	<b>18.01</b>	<b>13.70</b>

**Bull Lake Reservoir Watershed**

SWE in inches <sup>1</sup>

Snotel Stations (Elevation)	Water Content	30 Yr. Avg. <sup>2</sup>
Elkhart Park (8,400)	0.0	3.3
Hobbs Park (10,100)	15.2	10.1
Little Warm (9,620)	0.0	1.9
<b>Watershed Average</b>	<b>5.07</b>	<b>5.10</b>

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

<sup>2</sup> Average is based on the 1971-2000 period

**BIGHORN WATER SUPPLY FORECAST**

The June 1, 2008, water supply forecast indicates average April - July runoff can be expected to enter Bull Lake while above average April - July runoff is expected at all other forecast points.

(1000 acre-feet)

Forecast Points	June 1, 2008 Forecast of April-July Runoff <sup>3</sup>			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. 2007	W. Yr. 2006	W. Yr. 2005	W. Yr. 2004
Bull Lake Reservoir	120	140	160	139.7	100	103	121	155	117
Wind River above Bull Lake Creek	440	490	540	401.3	122	194	282	387	294
Boysen Reservoir	630	710	790	552.2	129	211	201	589	321
Buffalo Bill Reservoir	800	875	950	644.0	136	427	546	513	387

<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 1978-2007 period.

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

	April (kaf)	May (kaf)
Bull Lake	1.4	25.4
Wind River above Bull Lake Creek	15.1	71
Boysen	28.7	128.8
Buffalo Bill	21.3	186.8

(1000 acre-feet)

Forecast Points	June 1, 2008 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	120	132	140	100	148	160	139.7
Wind River above Bull Lake Creek	440	470	490	122	510	540	401.3
Boysen Reservoir	630	677	710	129	743	790	552.2
Buffalo Bill Reservoir	800	844	875	136	906	950	644.0

<sup>1</sup> Average is based on the 1978-2007 period.

## BIGHORN RIVER BASIN GENERATION

Generation was average or greater at Heart Mountain, Buffalo Bill, and Shoshone Powerplants.

(Energy in giga-watt hours)

Powerplant	May Gross Generation			May Historical Generation			Accumulated Gross Gen. (October-May)		
	W. Yr. 2008	Avg.	% of Avg.	W. Yr. 2007	W. Yr. 2006	W. Yr. 2005	W. Yr. 2008	Avg.	% of Avg.
Boysen <sup>1</sup>	4.6	6.7	69	5.0	5.4	8.6	15.5	39.1	40
Pilot Butte <sup>2</sup>	0.0	0.2	0	0.2	0.9	0.3	0.7	0.4	175
Heart Mtn. <sup>3</sup>	3.4	2.2	155	2.5	3.2	0.0	4.6	3.4	135
Buffalo Bill <sup>3</sup>	13.1	10.0	131	7.8	9.5	7.3	19.1	28.1	68
Shoshone <sup>3</sup>	2.0	2.0	100	2.7	2.2	2.1	12.4	12.3	101
Spirit Mtn. <sup>4</sup>	1.8	2.0	90	2.2	2.8	0.6	2.8	3.1	90

<sup>1</sup> Average is based on the 1978-2007 period.

<sup>2</sup> Average is based on the 1990-2007 period.

<sup>3</sup> Average is based on the 1993-2007 period.

<sup>4</sup> Average is based on the 1995-2007 period.

## BIGHORN RIVER BASIN GROSS GENERATION May

