

# United States Department of the Interior

BUREAU OF RECLAMATION

Great Plains Region Montana Area Office P.O. Box 30137 Billings, Montana 59107-0137 May 7, 2008



### Dear Interested Party:

We have experienced relatively cool weather during April and the mountain snowpack within the Bighorn Basin has continued to increase slightly. While favorable to the long-term outlook, these conditions have delayed the runoff and contributed to our April inflows being the 4<sup>th</sup> lowest of record. At the same time, a lack of low elevation precipitation created an earlier-than-anticipated irrigation requirement, which placed additional demands on reservoir storage. These conditions prompted us on April 21 to propose a reduction in releases (to the Bighorn River) from 1900 cubic feet per second (cfs) to 1650 cfs. Following a discussion with resource agency representatives and stakeholders, we agreed to delay the flow reduction for a period of two weeks to provide as much time as possible to help protect the brown trout spawn in the Bighorn River. It was further agreed that should conditions not improve during the two week period, releases would then be reduced from 1900 cfs to 1500 cfs for a period of time sufficient to make up the foregone volume of water.

Unfortunately, conditions did not improve appreciably, and following a conference call on May 6 with resource agency representatives and stakeholders, we made the decision to cut releases to the Bighorn River to 1500 cfs effective May 7. This reduction in releases to the Bighorn River is expected to have an impact on the river fishery, but the reductions must be made now to help preserve our ability to meet the long-term demands on the reservoir.

Under projected conditions, we still expect to have a relatively full reservoir pool during the summer and have adequate storage to meet multipurpose needs throughout the remainder of the year. However, due to the uncertainties involved in predicting the weather, we will continue to monitor conditions very closely and will make adjustments as necessary. Updates to the operations plan can be accessed through our Web site at <a href="https://www.usbr.gov/gp/mtao">www.usbr.gov/gp/mtao</a>.

We remain committed to continue exploring opportunities for enhancing benefits for all Yellowtail beneficiaries through collaborative efforts with interested parties and stakeholders from both Montana and Wyoming. I personally welcome your comments and feedback as this operational season progresses.

Sincerely,

Dan Jewell Area Manager

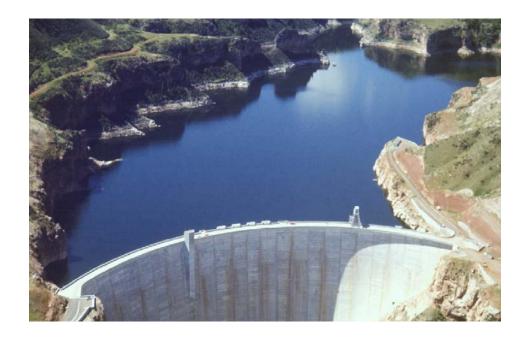
# RECLANIATION Managing Water in the West

May 1, 2008

#### Dear Customer:

Attached are the monthly water supply outlook and projected reservoir and river operating plans as prepared in May 2008. Storage in Bighorn Lake at the beginning of May was 2.8 feet lower than on May 1, 2007. Inflow to Bighorn Lake during April was 50 percent of average, making it the 4<sup>th</sup> lowest of record for April. With the mountain snow-water equivalent at 103 percent of average on May 1 and assuming normal spring precipitation to occur, the May-July inflow to Bighorn Lake is forecast at 786,600 acre-feet or about 83 percent of average. If you have any questions or concerns, please feel free to call me at (406) 247-7318.

Tim H. Felchle Reservoir and River Operations





U. S. Department of the Interior Bureau of Reclamation Montana Area Office River and Reservoir Operations

# YELLOWTAIL RESERVOIR OPERATIONS

Water Supply Forecasts and Reservoir Operations May 1, 2008

<b>Present Elevations &amp; Storages</b>	Present	<b>Elevations</b>	&	<b>Storages</b>
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<u>Reservoir</u>	<u>Elevation</u>	<u>Storage</u>	Percent of Normal
Boysen	4706.47	445,741	
Buffalo Bill	5365.83	438,336	
Bighorn Lake	3608.81	795,776	97

# **Actual Inflows (1,000 Acre-Feet):**

Month	<u>Inflow</u>	Percent of Normal
April-July, 2007	614.1	51
WY-2007 Total	1,364.2	54
October	138.7	76
November	95.8	63
December	66.3	48
January	66.3	50
February	68.0	50
March	86.1	51
April	80.9	50

# Actual Gains Between Boysen and Buffalo Bill to Yellowtail (1,000 Acre-Feet):

<u>Month</u>	<u>Gains</u>	Percent of Normal
April-July, 2007	188.2	60
WY-2007 Total	462.0	<i>64</i>
October	92.9	118
November	63.2	98
December	32.3	71
January	32.2	69
February	36.0	63
March	52.2	68
April	20.7	45

# May Forecast of May-July Runoff (1,000 Acre-Feet):

Agency	Gains	Percent of Normal
USBR	<b>233.1</b>	96
	Inflows	
USBR	786.6	83

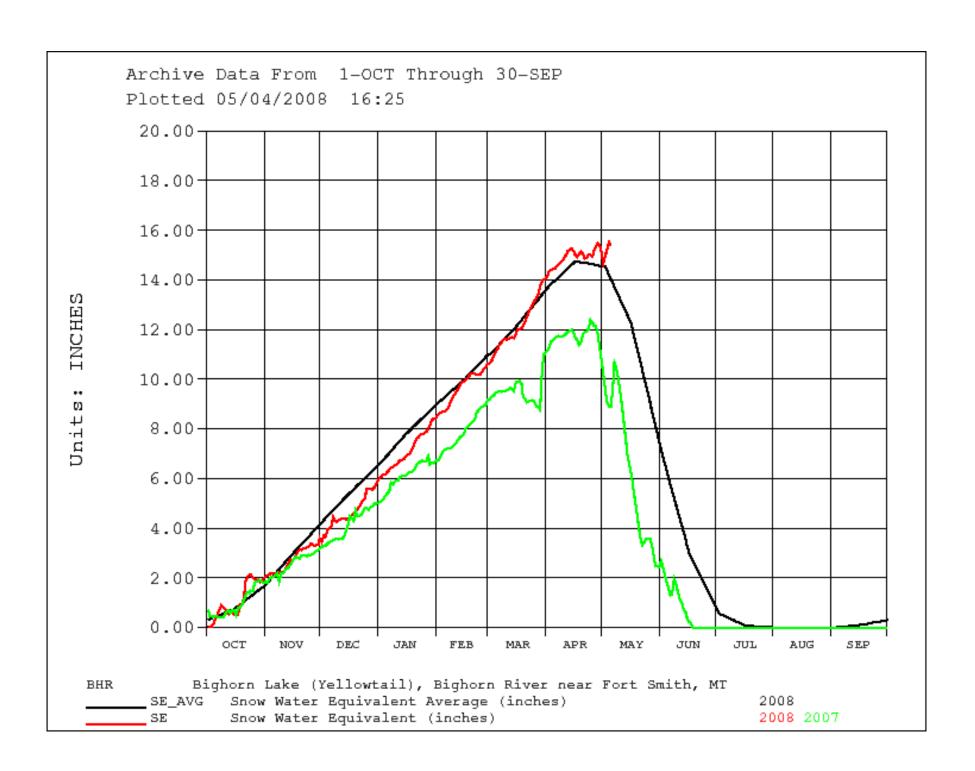
Snowpack Conditions:

SNOW - PRECIPITATION UPDATE

TO BE SNOTEL Sites Based on Mountain Data from NRCS SNOTEL Sites As of THURSDAY: MAY 1 , 2008

BASIN Data Site Name	ELEV. (Ft)	SNOW WAT	ER EQUIV	ALENT %	TOTAL PRECIPITATION			
		Current	Average	Avg	Current	Average	Avg	
UPPER YELLOWSTONE RIVER	BASIN							
BEARTOOTH LAKE	9360	28.0	25.9	108	26.6	23.5	113	
BOX CANYON	6670	9.4	6.0	157	16.3	14.9	109	
BRACKETT CREEK	7320	23.8	21.5	111	30.4	30.7	99	
BURNT MTN	5880	.0	1.0	0	10.7	20.2	53	
CANYON	7870	18.3	11.3	162	23.2	17.7	131	
COLE CREEK	7850	11.2	19.7	57	11.0	21.9	50	
EVENING STAR	9200	33.6	33.3	101	38.1	29.9	127	
FISHER CREEK	9100	44.7	37.8	118	42.7	41.9	102	
MONUMENT PEAK	8850	25.8	23.2	111	26.3	24.8	106	
NORTHEAST ENTRANCE	7350	9.1	7.1	128	15.3	14.8	103	
PARKER PEAK	9400	31.1	24.5	127	27.1	19.5	139	
PLACER BASIN	8830	20.8	19.8	105	22.5	23.5	96	

PORCUPINE SACAJAWEA	6500 6550	5.9 15.6	3.6 12.8	122	13.1 28.2	14.9 27.6	88 102		
SHOWER FALLS	8100	31.3	26.9		34.2	30.5	112		
S FORK SHIELDS SYLVAN LAKE	8100 8420	18.1 22.2	19.6 23.8	92 93	23.7 29.8	25.6 24.7	93 121		
SYLVAN LAKE SYLVAN ROAD	7120	10.5	8.1	130	23.4	24.7	114		
THUMB DIVIDE	7980	17.7	14.9		23.1	22.0	105		
TWO OCEAN PLATEAU		41.2	31.8	130	35.7	32.1	111		
WHITE MILL	8700	30.9	26.4		30.7	31.2	98		
WOLVERINE	7650	9.2	7.2						
YOUNTS PEAK	8350	18.7			15.6 19.6	18.8	104		
Basin WIND RIVER BASIN (WYOM				104					
		16.6	13.6	122	20.7	19.3	107		
COLD SPRINGS	8750 9630	4.2		88	11.8	13.9	85		
DEER PARK	9700	15.9	18.6	85	22.6	27.0	84		
HOBBS PARK	10100	15.2	18.0	84	17.4	16.9	103		
KIRWIN	9550	13.5	13.0	104	16.5	14.2	116		
LITTLE WARM	9370	10.0	11.1		16.0	16.8	95		
OWL CREEK	8975	1.3	4.0	32	8.3	8.2	101		
SOUTH PASS	9040	14.3	18.0	79	19.7		87		
ST. LAWRENCE ALT			6.1	74	9.7	12.1	80		
TOGWOTEE PASS	9580	30.3 8.1	27.9		33.4 14.2	29.0	115 92		
TOGWOTEE PASS TOWNSEND CREEK YOUNTS PEAK	8700 8350	18.7	9.1 18.1		14.2	15.5 18.8	92 104		
IOUNIS PEAK	6330	10.7	10.1	103	19.0	10.0			
Basin	94			98					
SHOSHONE RIVER BASIN ( BLACKWATER	9780	29.3	28.8	102	27.1	24.7	110		
EVENING STAR	9200	33.6	33.3		38.1	29.9	127		
MARQUETTE	8760	8.8		78	12.4		91		
SYLVAN LAKE	8420	22.2	23.8	93	29.8	24.7	121		
SYLVAN ROAD	7120	10 5	8 1				114		
YOUNTS PEAK	8350	18.7	18.1		23.4 19.6	18.8	104		
Pagin	wide perce	nt of an	orago	100			114		
BIGHORN RIVER BASIN (W				100			114		
BALD MTN.	9380	18.8			18.1				
BEAR TRAP MEADOW		7.4	2.5		11.4	10.9	105		
BLACKWATER	9780	29.3	28.8	102	27.1	24.7	110		
BONE SPRINGS DIV	9350	21.1	18.3	115	20.5	18.3	112		
EVENING STAR	9200	33.6	33.3	101	38.1	29.9	127		
GRAVE SPRINGS	8550	11.2	11.1	101	12.3	13.1	94		
KIRWIN MARQUETTE	9550 8760	13.5 8.8	13.0 11.3	104 78	16.5 12.4	14.2 13.7	116 91		
MIDDLE POWDER	7760	14.4	14.3	101	11.9	15.8	75		
OWL CREEK	8975	1.3	4.0	32	8.3	8.2	101		
POWDER RIVER PASS	9480	12.8	10.7	120	17.2	15.8	109		
SHELL CREEK	9580	18.5	16.8	110	18.4	16.8	110		
SYLVAN LAKE	8420	22.2	23.8	93	29.8	24.7	121		
SYLVAN ROAD	7120	10.5	8.1	130	23.4	20.5	114		
TIMBER CREEK	7950	4.7	4.8	98	10.1	10.5	96		
YOUNTS PEAK	8350	18.7	18.1	103	19.6	18.8	104		
Basin wide percent of average 102 1									

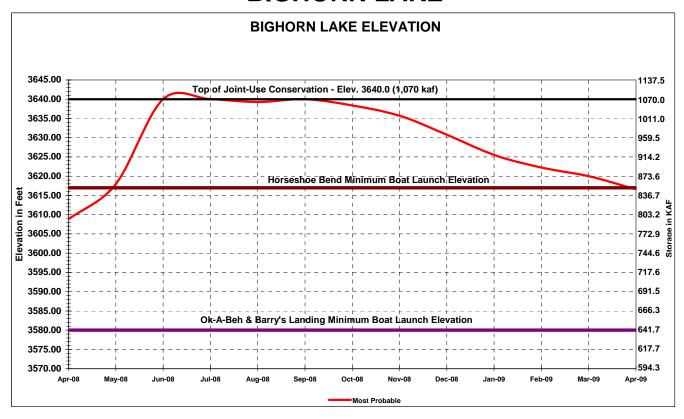


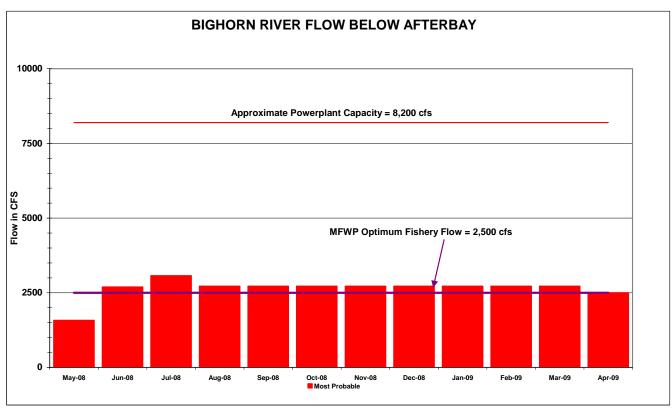
#### BHXAOP V1.12 Run: 06-May-2008 16:14 Based on Most Probable Inflow Forecast

#### BIGHORN LAKE MONTHLY OPERATIONS

Bighorn Reservoir	Ir	nitial Co		95.8 kaf 8.81 ft	Ма	aximum Co		28.4 kaf 7.00 ft	M	inimum C		93.6 kaf 7.00 ft	
2008	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
Boysen Release kaf	55.9	69.9	76.9	69.2	59.5	43.1	41.7	43.1	43.2	39.0	43.1	44.6	629.2
Boysen Release cfs	909	1175	1251	1125	1000	701	701	701	703	702	701	750	
Buffalo Bill Riv Flo kaf	71.7	136.8	128.8	101.9	78.6	24.9	20.8	21.5	21.5	19.4	21.5	24.4	671.8
Buffalo Bill Riv Flo cfs	1166	2299	2095	1657	1321	405	350	350	350	349	350	410	737.2
Station Gain kaf	51.9	188.1	6.6	9.9	47.3	79.0	64.7	46.7	49.9	61.5	80.9	50.7	
Monthly Inflow kaf	179.5	394.8	212.3	181.0	185.4	147.0	127.2	111.3	114.6	119.9	145.5	119.7	2038.2
Monthly Inflow cfs	2919	6635	3453	2944	3116	2391	2138	1810	1864	2159	2366	2012	
Turbine Release kaf	117.1	183.0	212.3	189.9	176.6	167.2	157.8	163.2	163.1	147.3	163.2	145.2	1985.9
Bypass/Spill/Waste kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Release kaf	117.1	183.0	212.3	189.9	176.6	167.2	157.8	163.2	163.1	147.3	163.2	145.2	1985.9
Total Release cfs	1904	3075	3453	3088	2968	2719	2652	2654	2653	2652	2654	2440	
Spring Flow kaf	4.3	4.2	4.3	4.3	4.2	4.3	4.2	4.3	4.3	3.9	4.3	4.2	50.8
Irrigation Reqmnt kaf	24.6	26.8	27.7	26.8	18.8	4.1	0.0	0.0	0.0	0.0	0.0	0.6	129.4
Afterbay Rels kaf	121.4	187.2	216.6	194.2	180.8	171.5	162.0	167.5	167.4	151.2	167.5	149.4	2036.7
Afterbay Rels cfs	1974	3146	3523	3158	3038	2789	2723	2724	2723	2723	2724	2511	2030.7
River Release kaf	96.8	160.4	188.9	167.4	162.0	167.4	162.0	167.5	167.4	151.2	167.5	148.8	1907.3
River Release cfs	1574	2696	3072	2723	2723	2723	2723	2724	2723	2723	2724	2501	1907.3
Min Release kaf	96.8	148.8	153.7	153.7	148.8	153.7	148.8	153.7	153.7	138.8	153.7	148.8	1753.0
MIII Kelease Kal	50.0	140.0	133.7	133.7	140.0	133.7	140.0	133.7	133.7	130.0	133.7	140.0	1733.0
End-Month Targets kaf		1070.0	1070.0								873.6		
End-Month Content kaf	858.2	1070.0	1070.0	1061.1	1069.9	1049.7	1019.1	967.2	918.7	891.3	873.6	848.1	
	3617.97					3638.35					3620.00	3616.59	
Net Change Content kaf	62.4	211.8	0.0	-8.9	8.8	-20.2	-30.6	-51.9	-48.5	-27.4	-17.7	-25.5	52.3
Yellowtail Power 2008	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
Turbine Release kaf	117.1	183.0	212.3	189.9	176.6	167.2	157.8	163.2	163.1	147.3	163.2	145.2	1985.9
Generation gwh	44.298	72.629	87.049	77.763	72.315	68.352	64.021	65.375	64.284	57.316	63.003	55.622	792.027
End-Month Power Cap mw	266.3	287.5	287.5	286.8	287.5	285.9	283.2	278.4	273.4	270.3	268.2	265.1	
% Max Gen	21	35	41	36	35	32	31	31	30	30	29	27	
Ave kwh/af	378	397	410	409	409	409	406	401	394	389	386	383	399
Upstream Generation gwh	28.061	28.233	30.227	29.536	27.679	11.556	9.244	9.558	9.542	8.590	9.506	11.490	213.222
Total Generation gwh	72.359	100.862	117.276	107.299	99.994	79.908	73.265	74.933	73.826	65.906	72.509	67.112	1005.249

# **BIGHORN LAKE**





WATER YEAR 2008