

# RECLAMATION

*Managing Water in the West*

## Flaming Gorge Working Group Meeting

Hydrology and Forecasted  
Operations

August 26, 2010



U.S. Department of the Interior  
Bureau of Reclamation

# Flaming Gorge Working Group Meeting August 2010

- 2006 Record of Decision Operating Criteria
- Hydrologic Overview
- Spring and Summer Operations
- Projected Hydrology and Operations

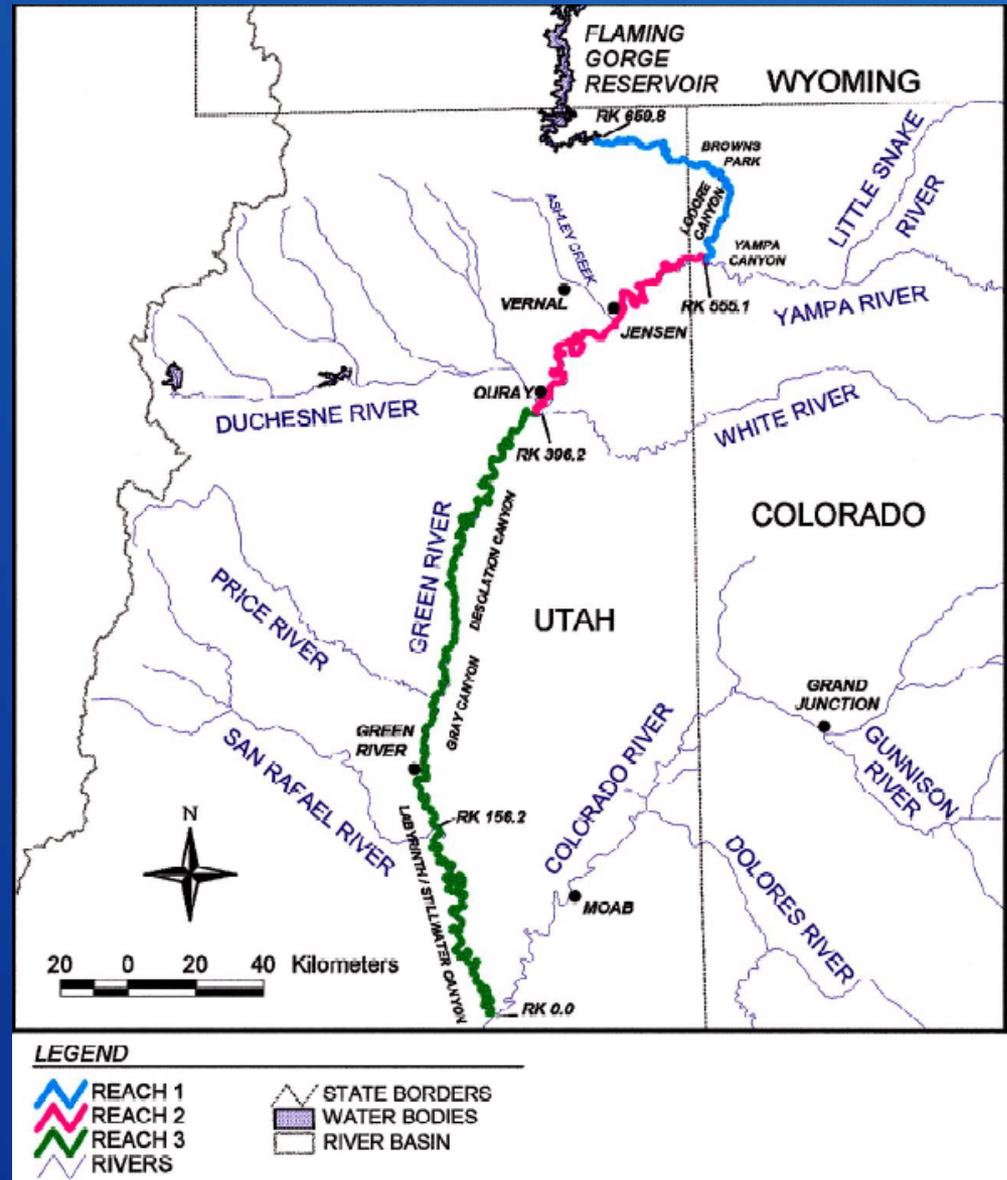
# Flaming Gorge Working Group Meeting August 2010

2006 Record of Decision  
Operating Criteria

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# Geographic Scope

- Reach 1
  - Flaming Gorge Dam to Yampa River Confluence
- Reach 2
  - Yampa River Confluence to White River confluence
- Reach 3
  - White River confluence to confluence of Green and Colorado Rivers



# Spring Flow Operations (May—July)

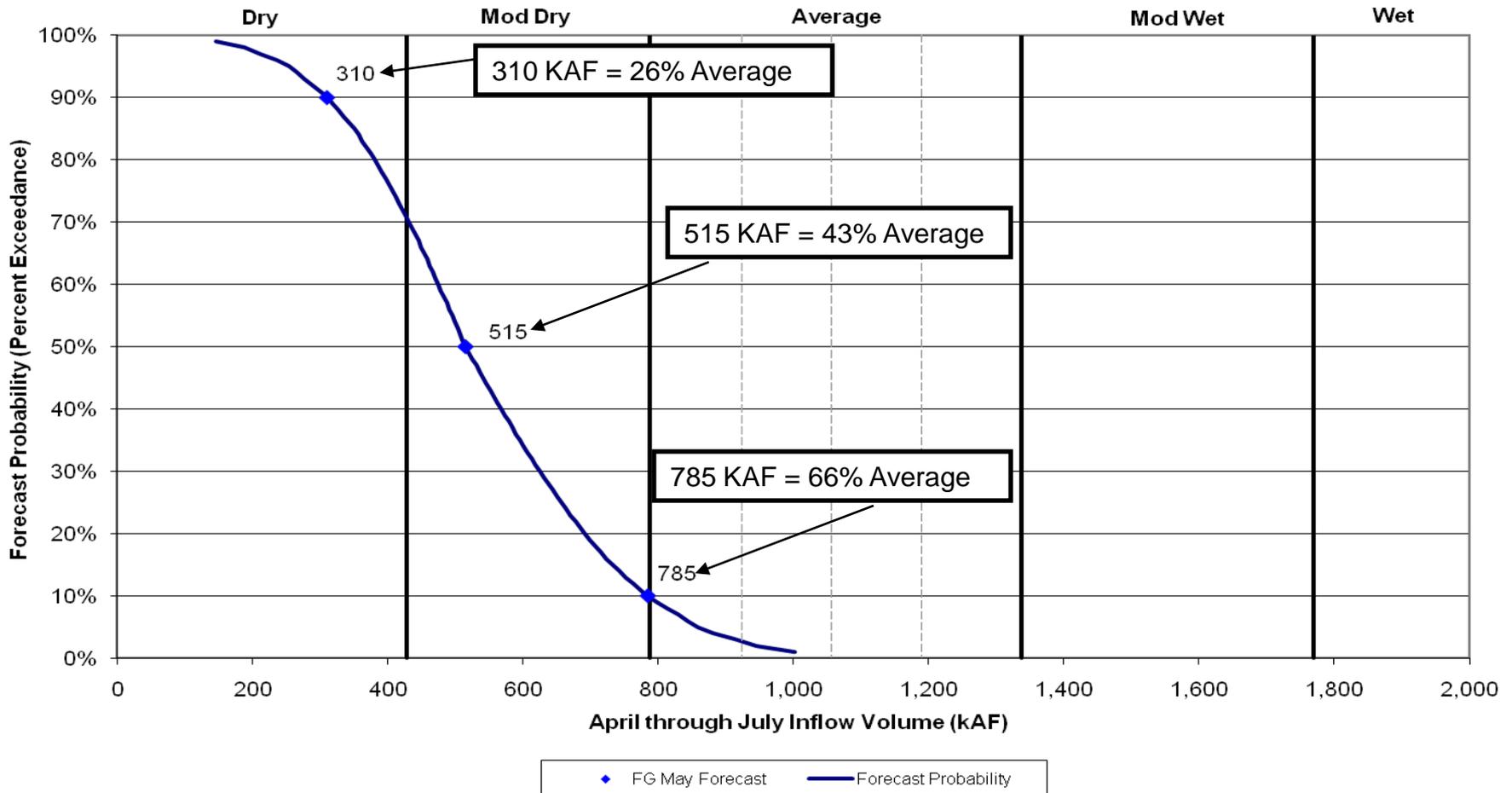
- Hydrologic Classification based on April through July unregulated inflow forecast into Flaming Gorge Reservoir
- Spring flow magnitudes and durations associated with each hydrologic category
- Releases timed coincident with the Yampa River peak and immediate post-peak period

**Percent Exceedances and Hydrologic Classifications**

<b>Hydrologic Classification</b>	<b>Percent Exceedance Range</b>
Wet	<10
Moderately Wet	30 to 10.1
Average	70 to 30.1
Moderately Dry	90 to 70.1
Dry	>90

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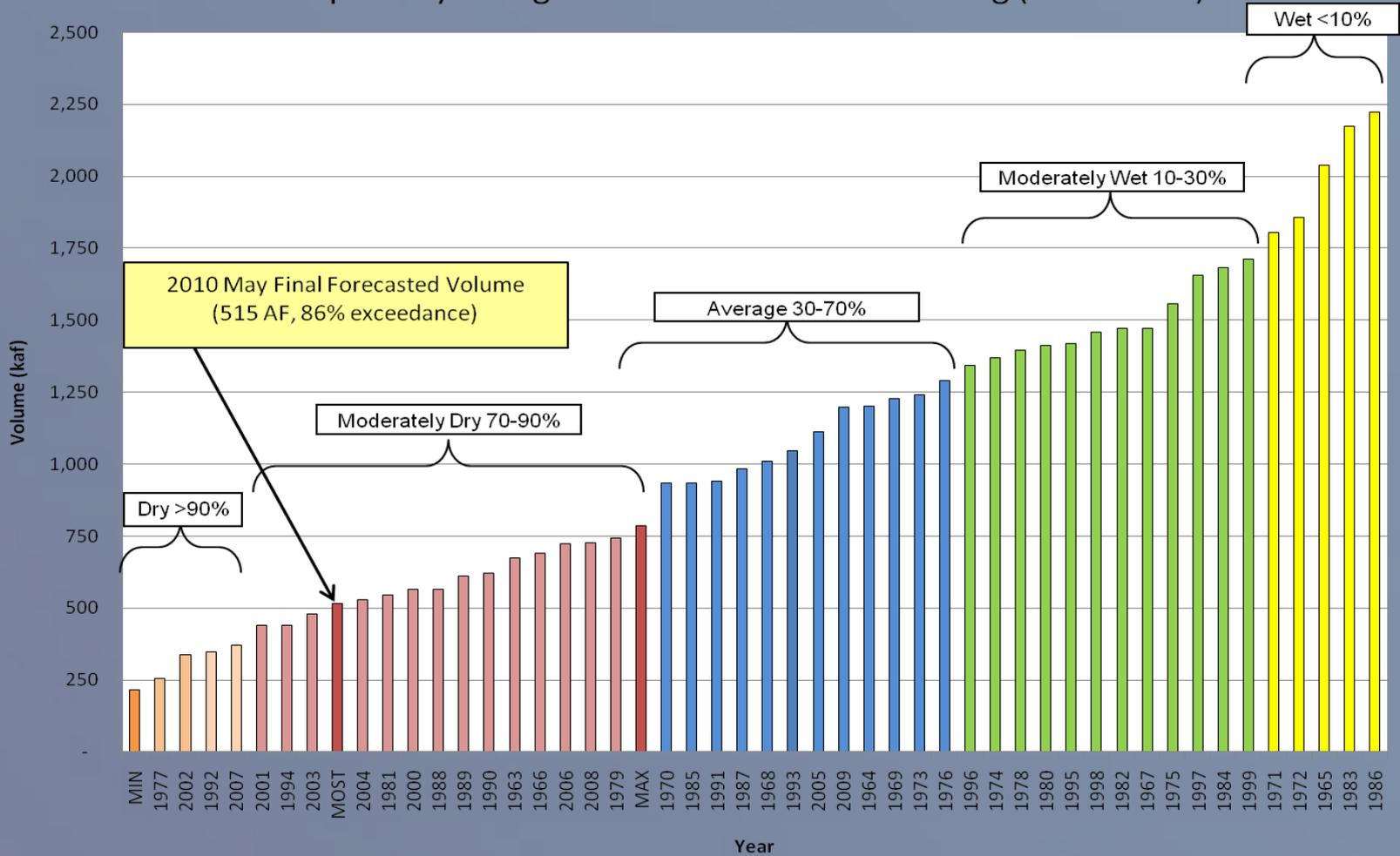
Flaming Gorge Reservoir  
April through July Historic Inflow (1963-2009)  
Related to Flow Recommendation Percent Exceedances



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## Flaming Gorge Reservoir

Historic April-July Unregulated Inflow Volume Ranking (1963-2009)



# Base Flow Flexibility

- Beginning about June-August and continuing through November
  - Variation of 40% around the annual mean base flow
- December through February
  - Variation of 25% around the annual mean base flow
- Consecutive daily change limited to 3%
- Hydropower generation at Flaming Gorge limited to produce no more than 0.1 meter daily stage change at Jensen, Utah

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## Hydrology Overview

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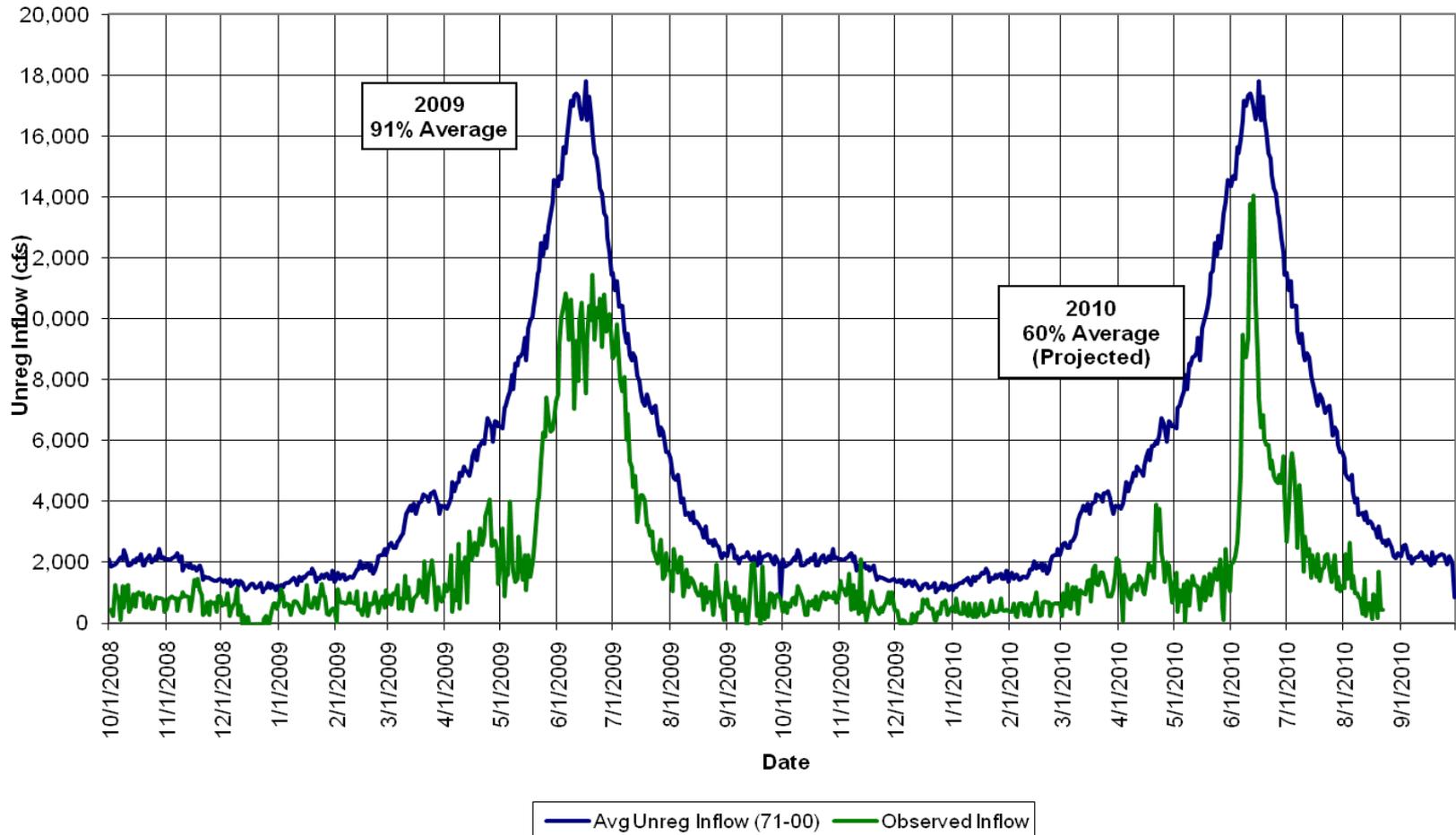
Water Year 2010

Spring and Summer Operation

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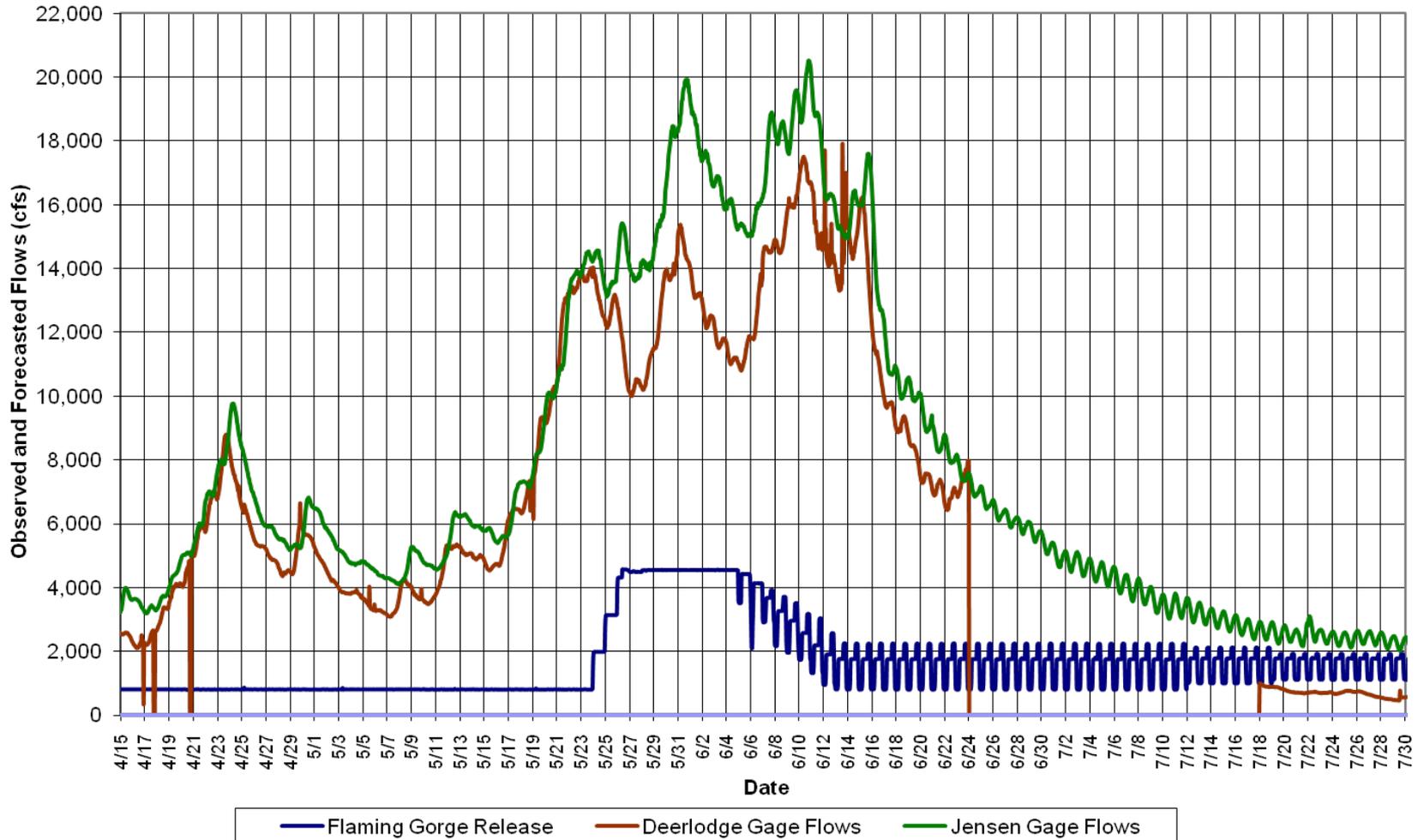
# Daily Unregulated Inflow

Flaming Gorge Unregulated Inflow  
Water Year 2009 and 2010

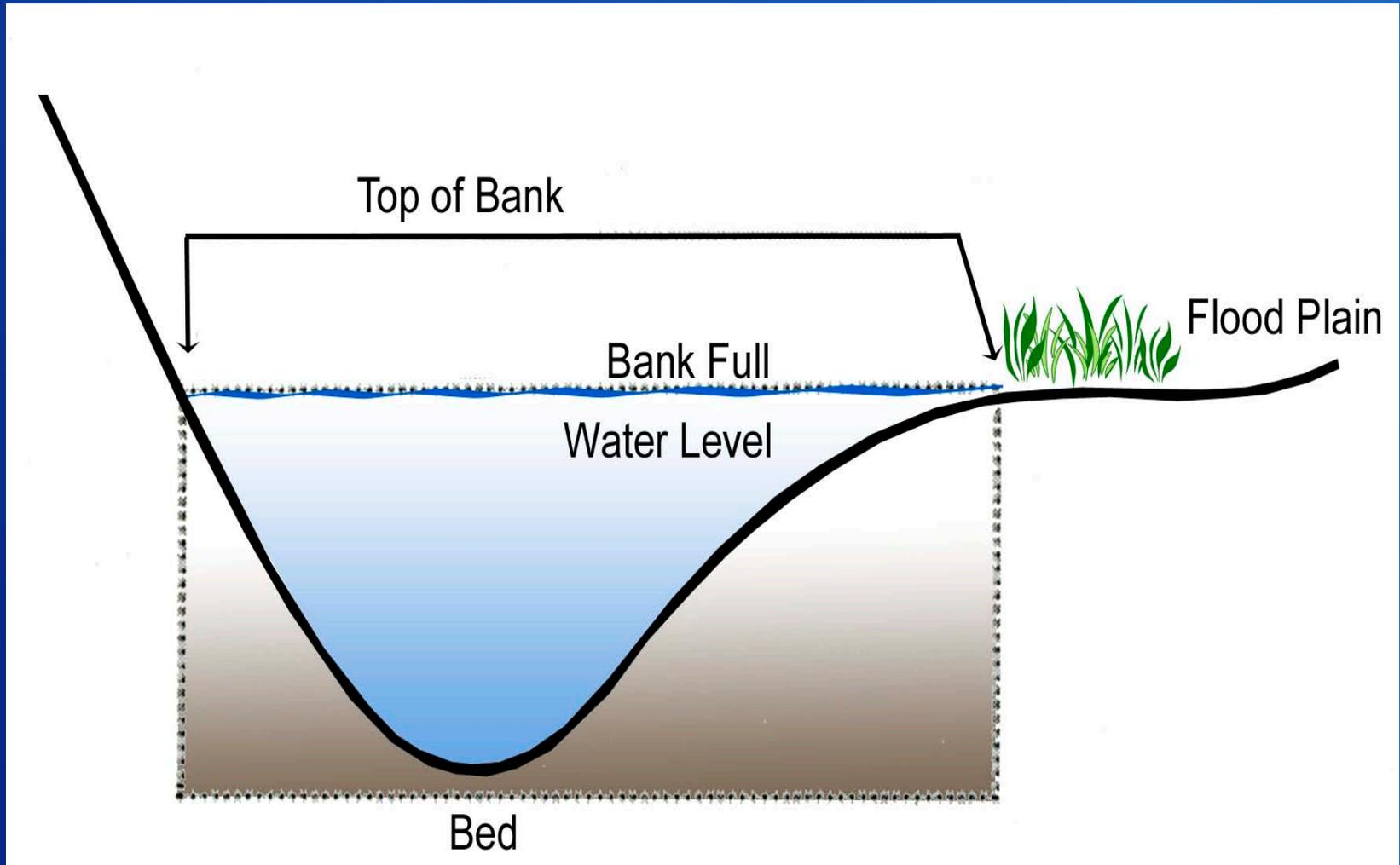


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## Flaming Gorge WY2010 Spring Operations



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Current Hydrology

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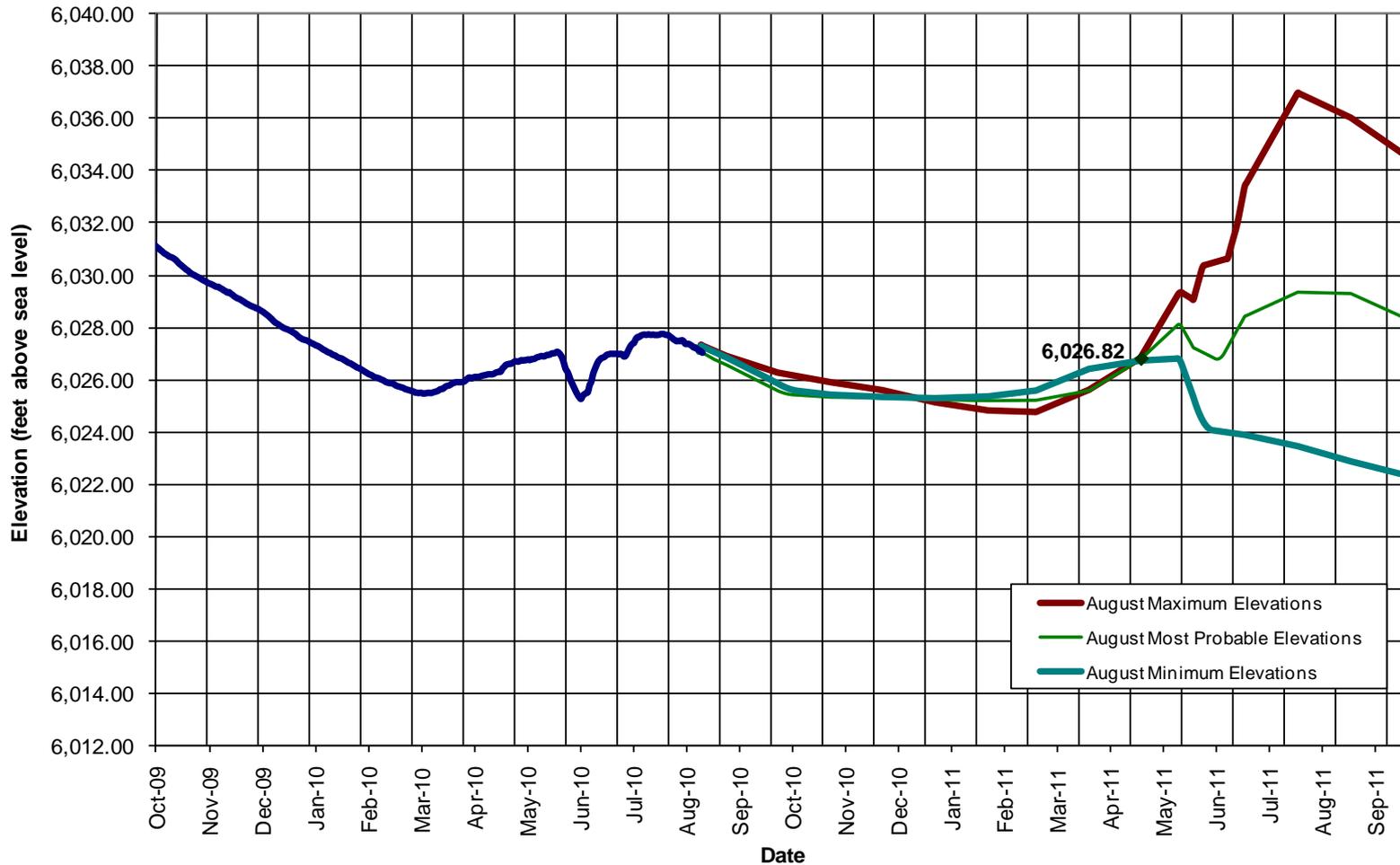
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Live Capacity	3.752	MAF
<u>Capacity on 8/25/10</u>	<u>3.227</u>	<u>MAF</u>
Available Space	.525	MAF
Percentage of Full	86	%
Reservoir Elev. (Min Power)	5908.00	feet
<u>Elevation on 8/25/09</u>	<u>6026.79</u>	<u>feet</u>
Elevation above (Min)	118.79	feet
Average Inflow	950	cfs
Average Release	1,800	cfs

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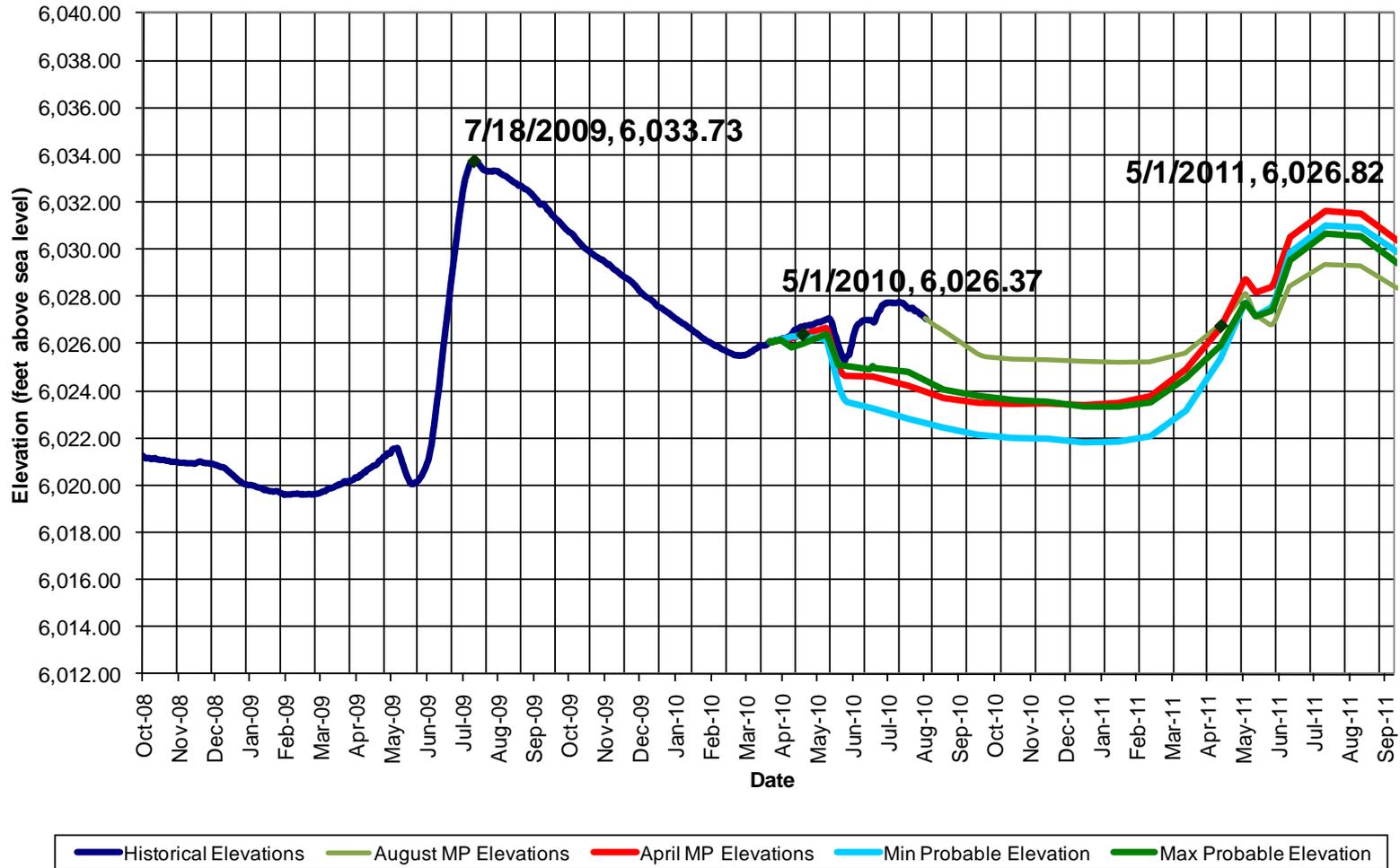
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Flaming Gorge Operations WY2010, 2011  
Most Probable Operations August 2010



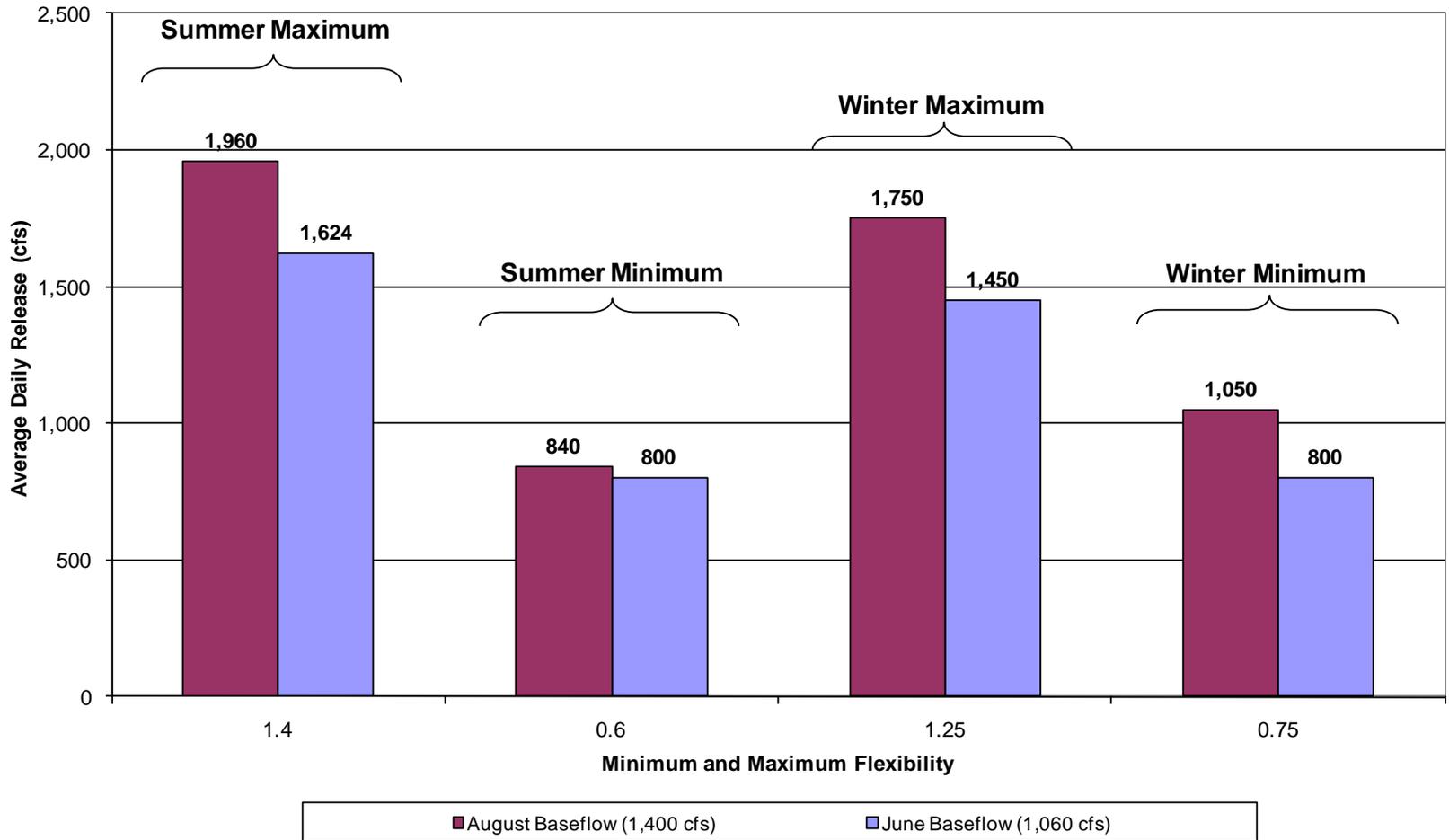
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Flaming Gorge Operations WY2009 through 2011  
August 2010 Final Forecast



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Base Flow Uncertainty in August 2010 Forecast vs. June 2010 Forecast  
Flexibility in Average Daily Base Flows during Summer and Winter



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	08/22/10 1,650 cfs daily	08/23/10 1,700 cfs daily	08/24/10 1,750 cfs daily	08/25/10 1,800 cfs daily
Time (MST)	Total Release (cfs)	Total Release (cfs)	Total Release (cfs)	Total Release (cfs)
0:00	1,260	1,290	1,350	1,350
1:00	1,260	1,290	1,350	1,350
2:00	1,260	1,290	1,350	1,350
3:00	1,260	1,290	1,350	1,350
4:00	1,260	1,290	1,350	1,350
5:00	1,260	1,290	1,350	1,350
6:00	1,840	1,840	1,870	1,870
7:00	1,840	1,840	1,870	1,870
8:00	1,840	1,840	1,870	1,870
9:00	1,840	1,840	1,870	1,870
10:00	1,840	1,840	1,870	1,870
11:00	1,840	1,840	1,870	1,870
12:00	1,840	1,840	1,870	1,870
13:00	1,840	1,840	1,870	1,870
14:00	1,840	1,840	1,870	1,870
15:00	1,840	1,840	1,870	1,870
16:00	1,960	2,140	2,210	2,270
17:00	1,960	2,140	2,210	2,270
18:00	1,960	2,140	2,210	2,270
19:00	1,960	2,140	2,210	2,270
20:00	1,960	2,140	2,210	2,270
21:00	1,380	1,410	1,500	2,270
22:00	1,260	1,290	1,350	1,470
23:00	1,260	1,290	1,350	1,350

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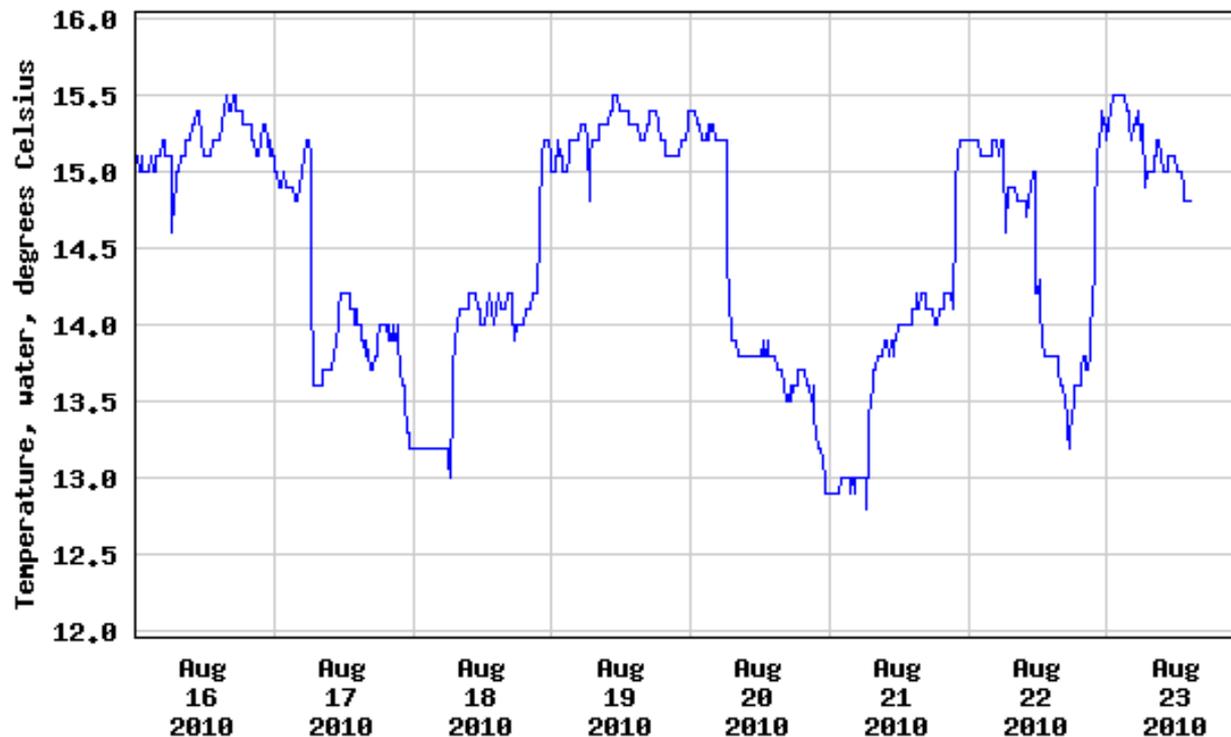
Temperature and Selective  
Withdrawal Structure

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USGS 09234500 GREEN RIVER NEAR GREENDALE, UT



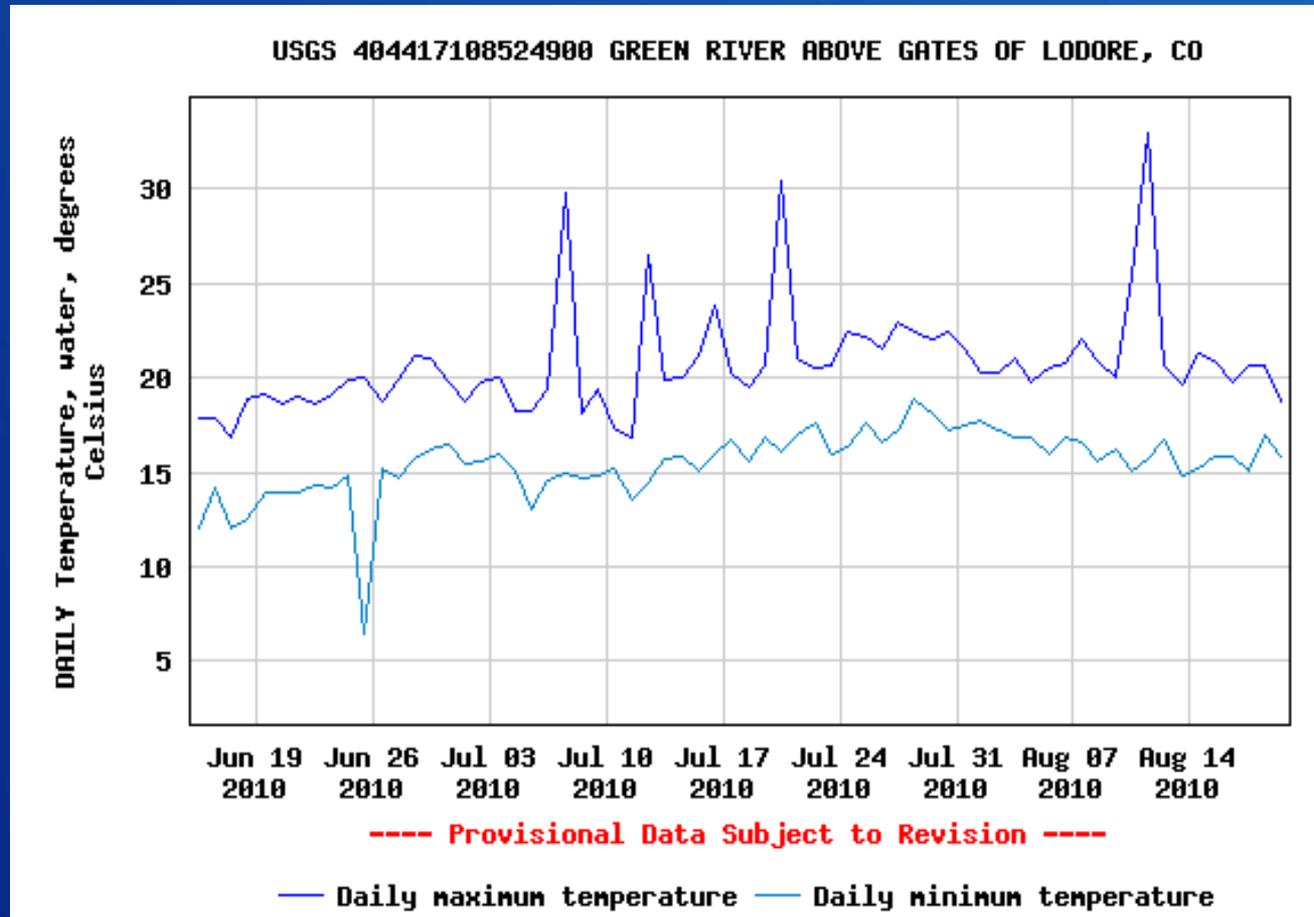
----- Provisional Data Subject to Revision -----

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Flaming Gorge Process

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## August 2010

- Questions?
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- [hpatno@usbr.gov](mailto:hpatno@usbr.gov)
- (801) 524-3883



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