

RECLAMATION

Managing Water in the West

Flaming Gorge Working Group Meeting

April 16, 2008



U.S. Department of the Interior
Bureau of Reclamation

Flaming Gorge Working Group Meeting April 2008

Live Capacity	3,749,000	AF
<u>Capacity on 4/13/08</u>	<u>3,040,400</u>	<u>AF</u>
Available Space	708,600	AF
Percentage of Full	81	%

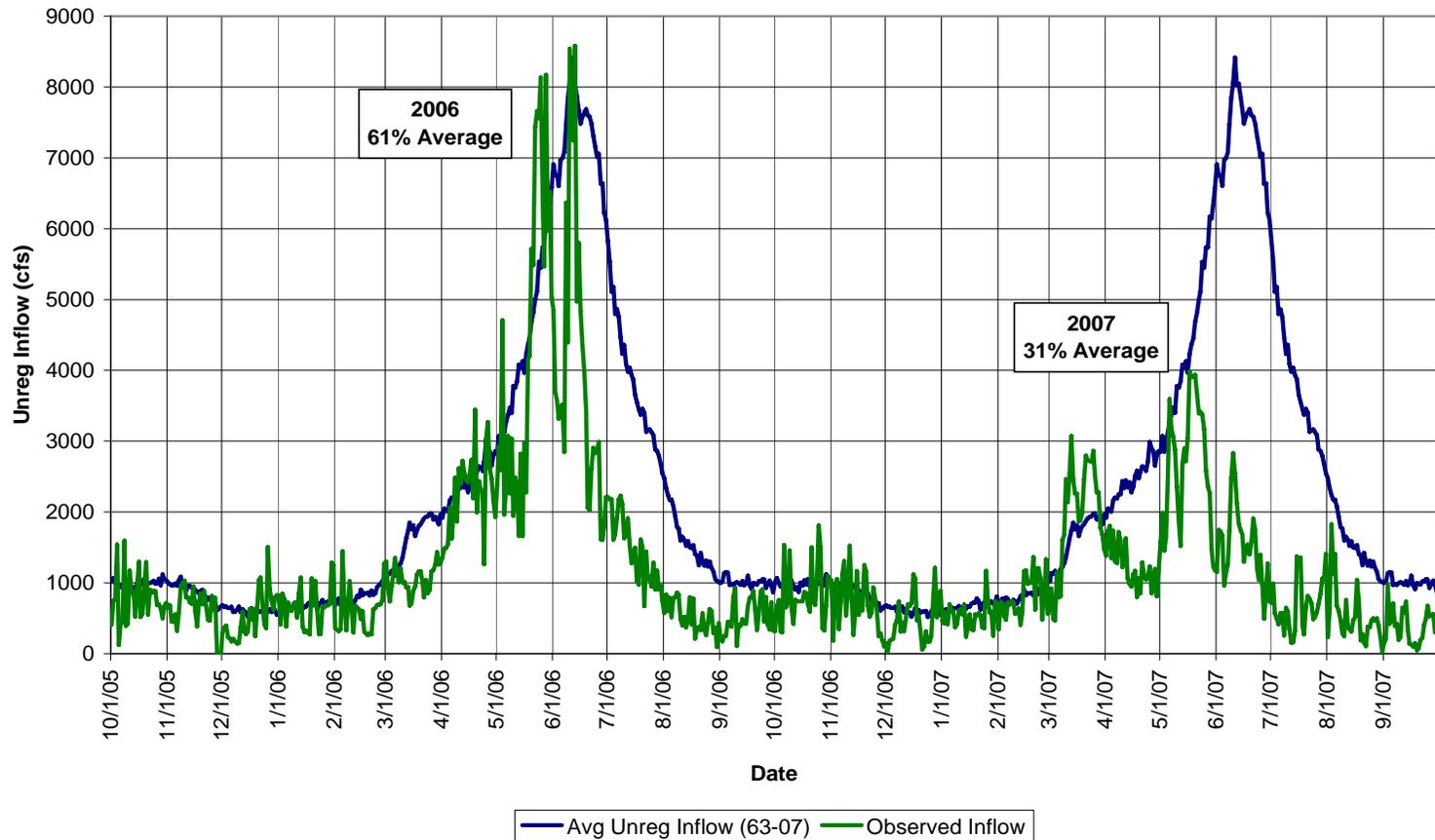
Reservoir Elev. (Min Power)	5908.00	feet
<u>Elevation on 4/15/07</u>	<u>6021.71</u>	<u>feet</u>
Elevation above (Min)	113.71	feet

Average Inflow	1,109	cfs
Average Release	818	cfs

RECLAMATION

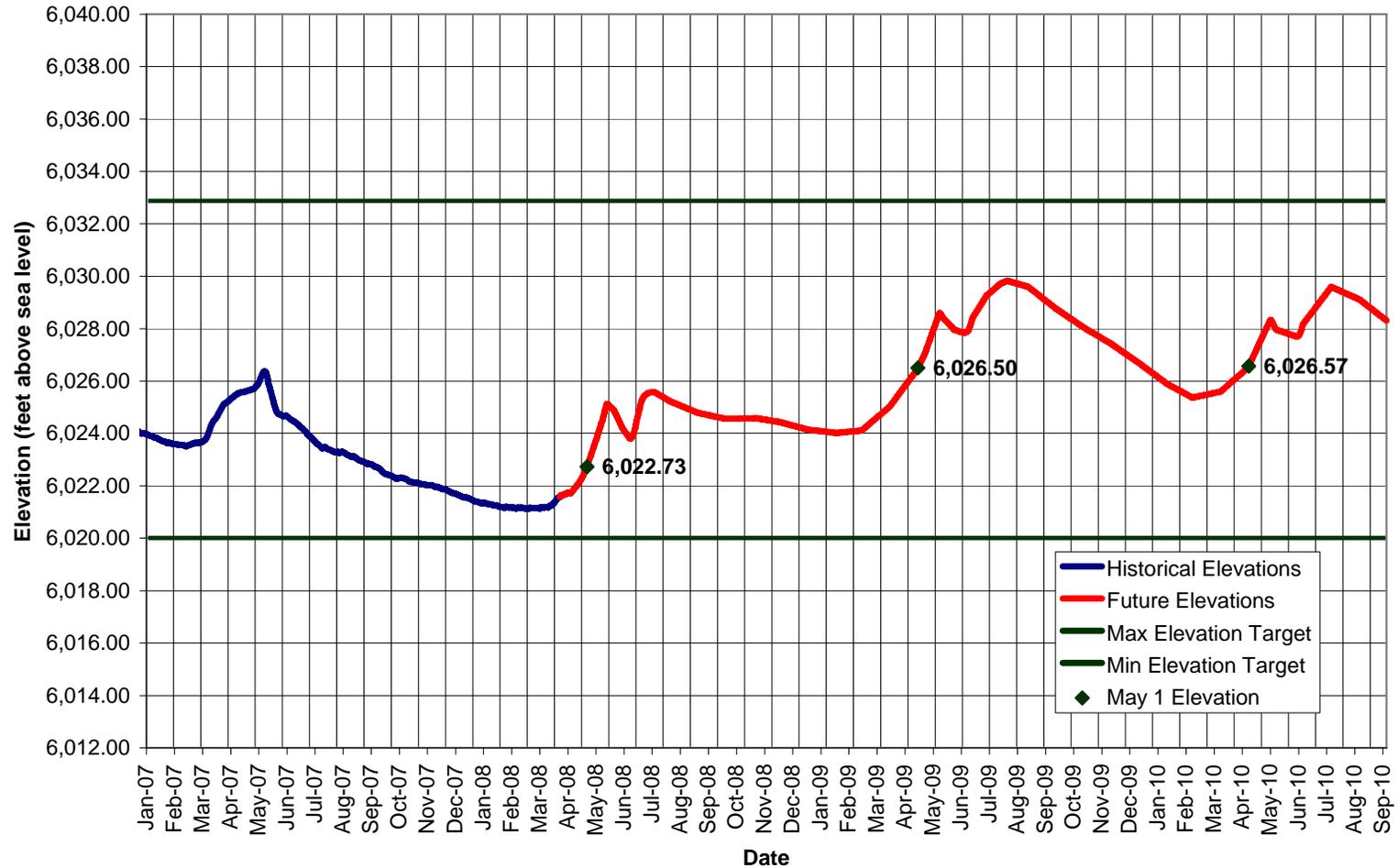
Flaming Gorge Working Group

Flaming Gorge Unregulated Inflow
Water Year 2006 and 2007

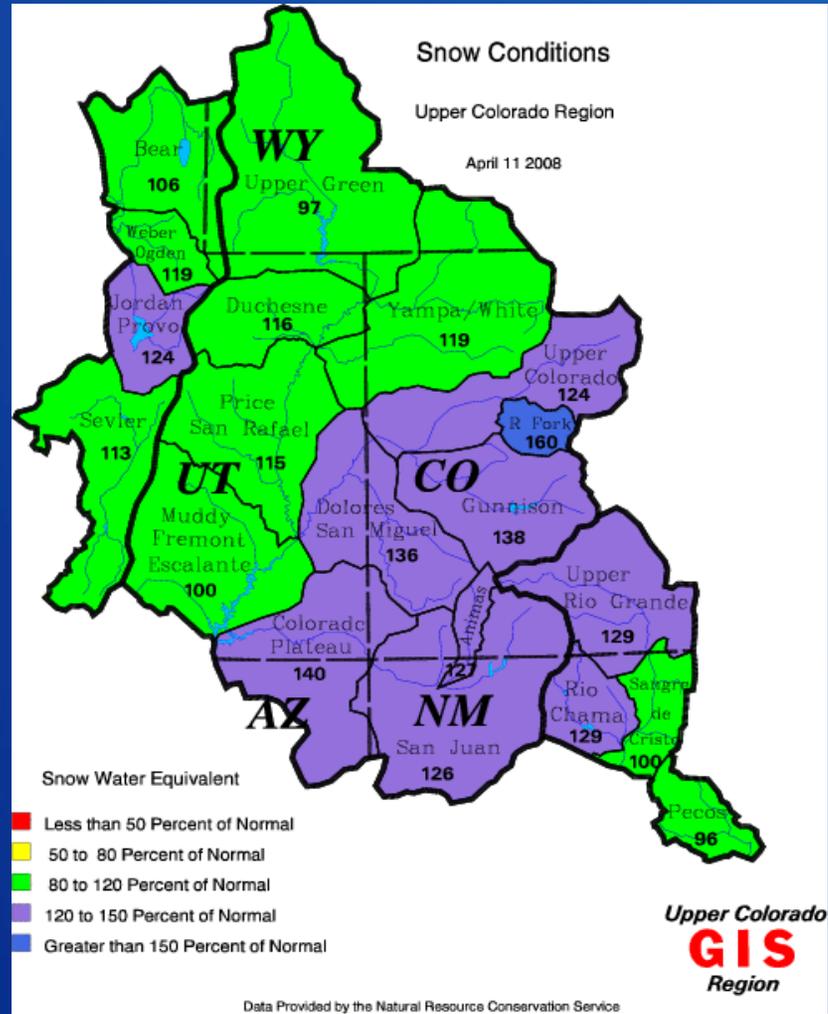


Flaming Gorge Working Group

Flaming Gorge Operations WY2008, 2009
Most Probable Operations April 2008

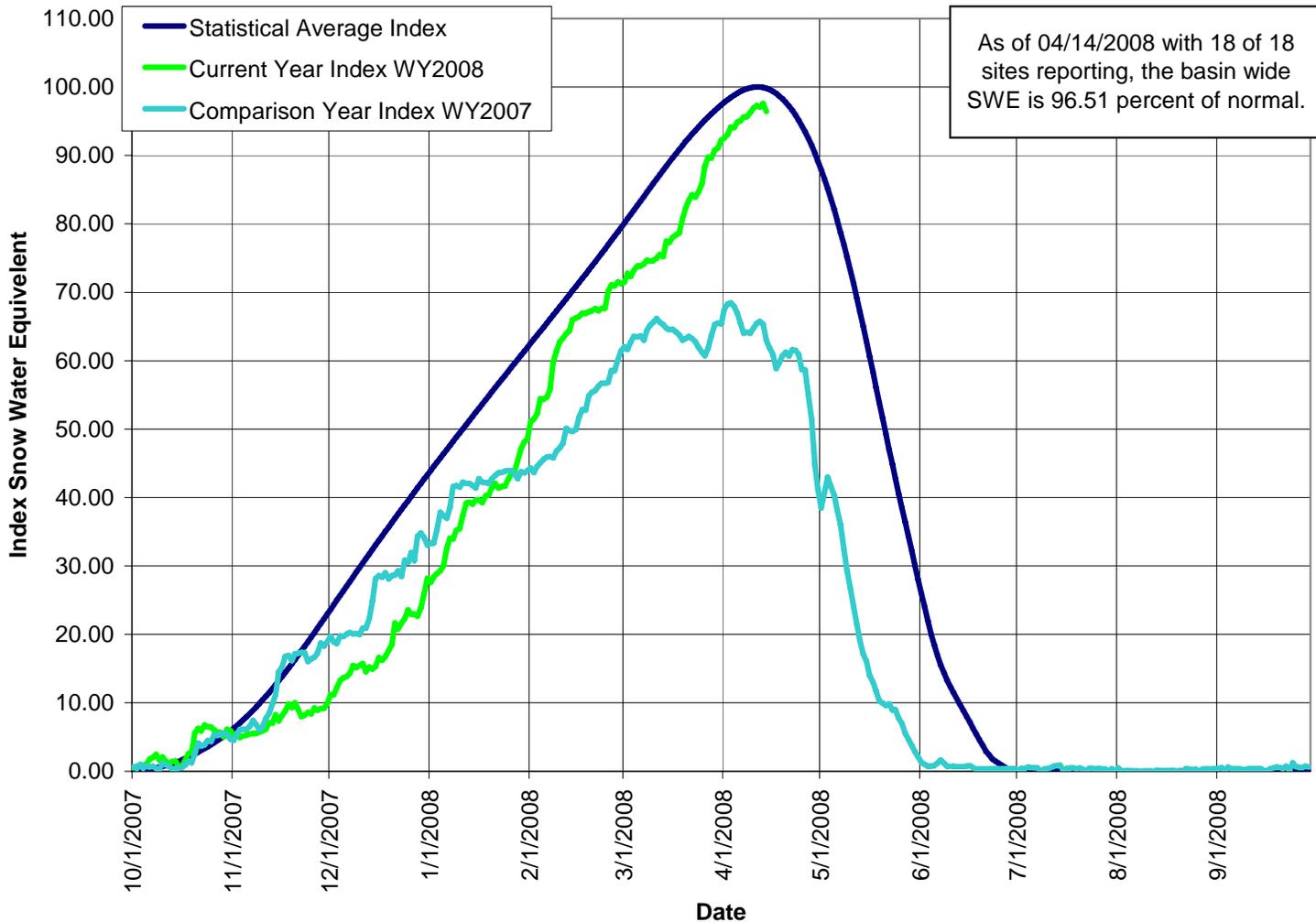


Flaming Gorge Working Group Meeting April 2008



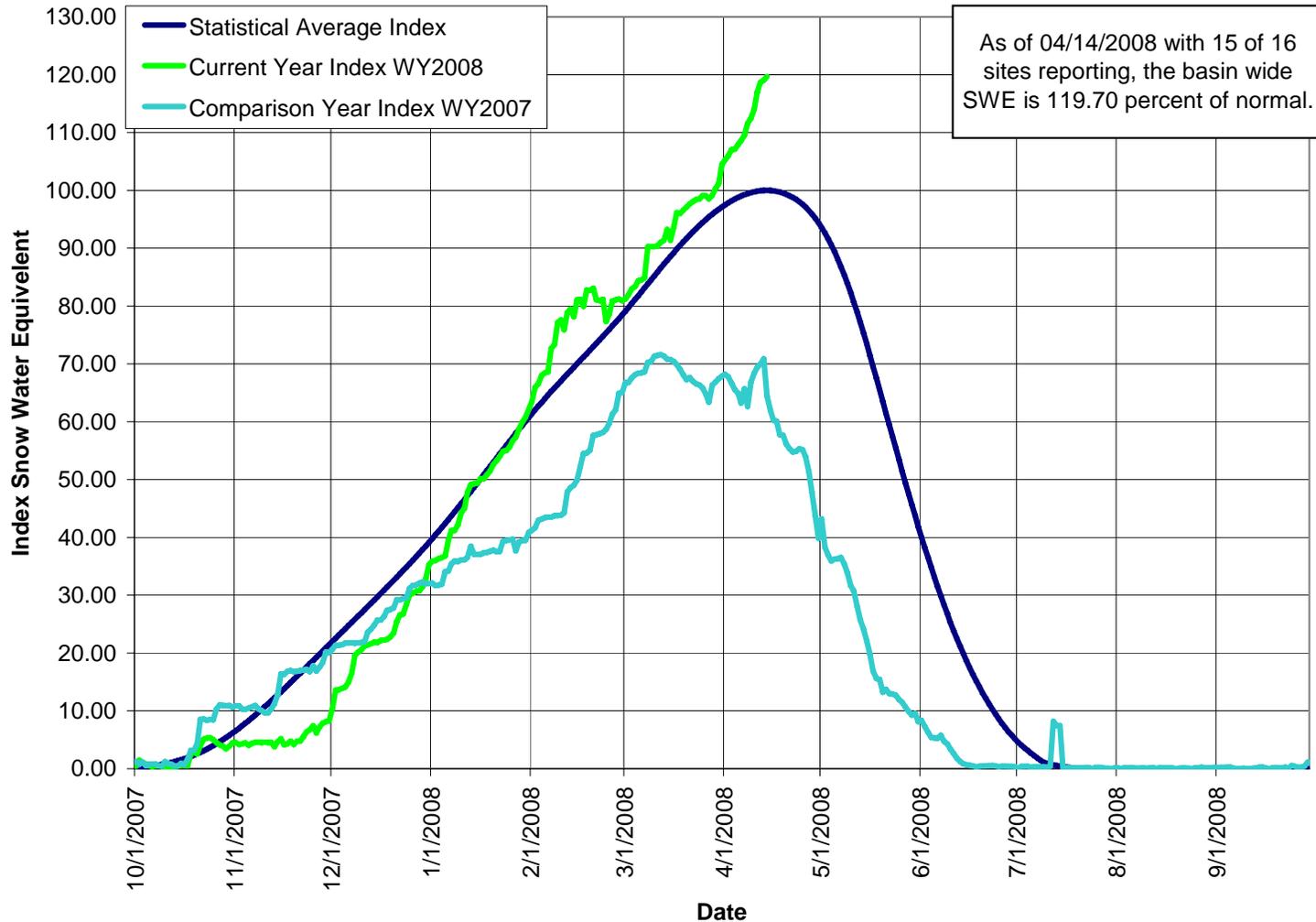
Flaming Gorge Working Group

Upper Green River Basin Snotel Tracking
Aggregate of 18 Snotel Sites above Flaming Gorge Reservoir



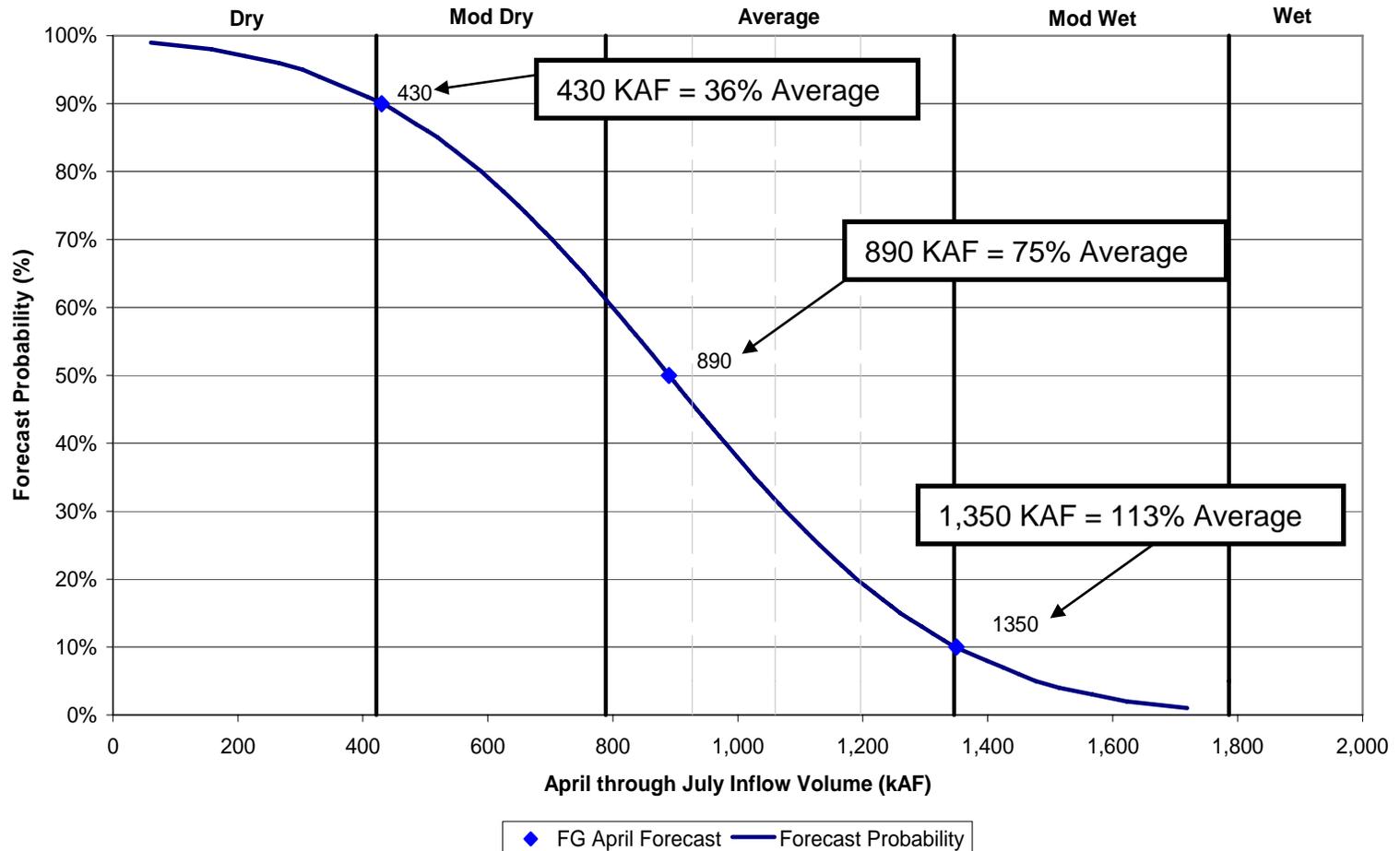
Flaming Gorge Working Group

Upper Yampa River Basin Snotel Tracking
Aggregate of 16 Snotel Sites above Green River Confluence



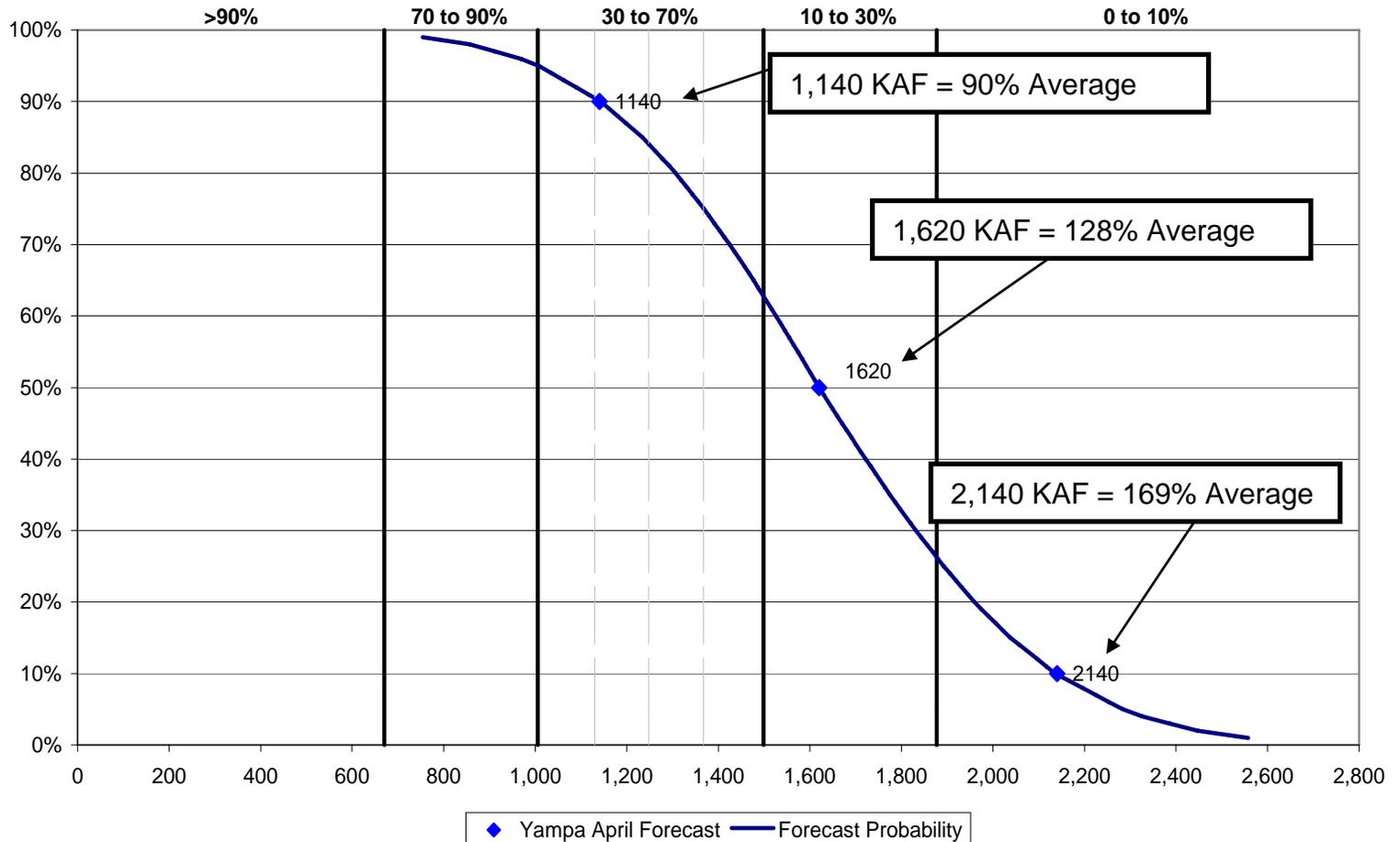
Flaming Gorge Working Group

Flaming Gorge Reservoir
April through July Historic Inflow (1963-2007)
Related to Flow Recommendation Percent Exceedances



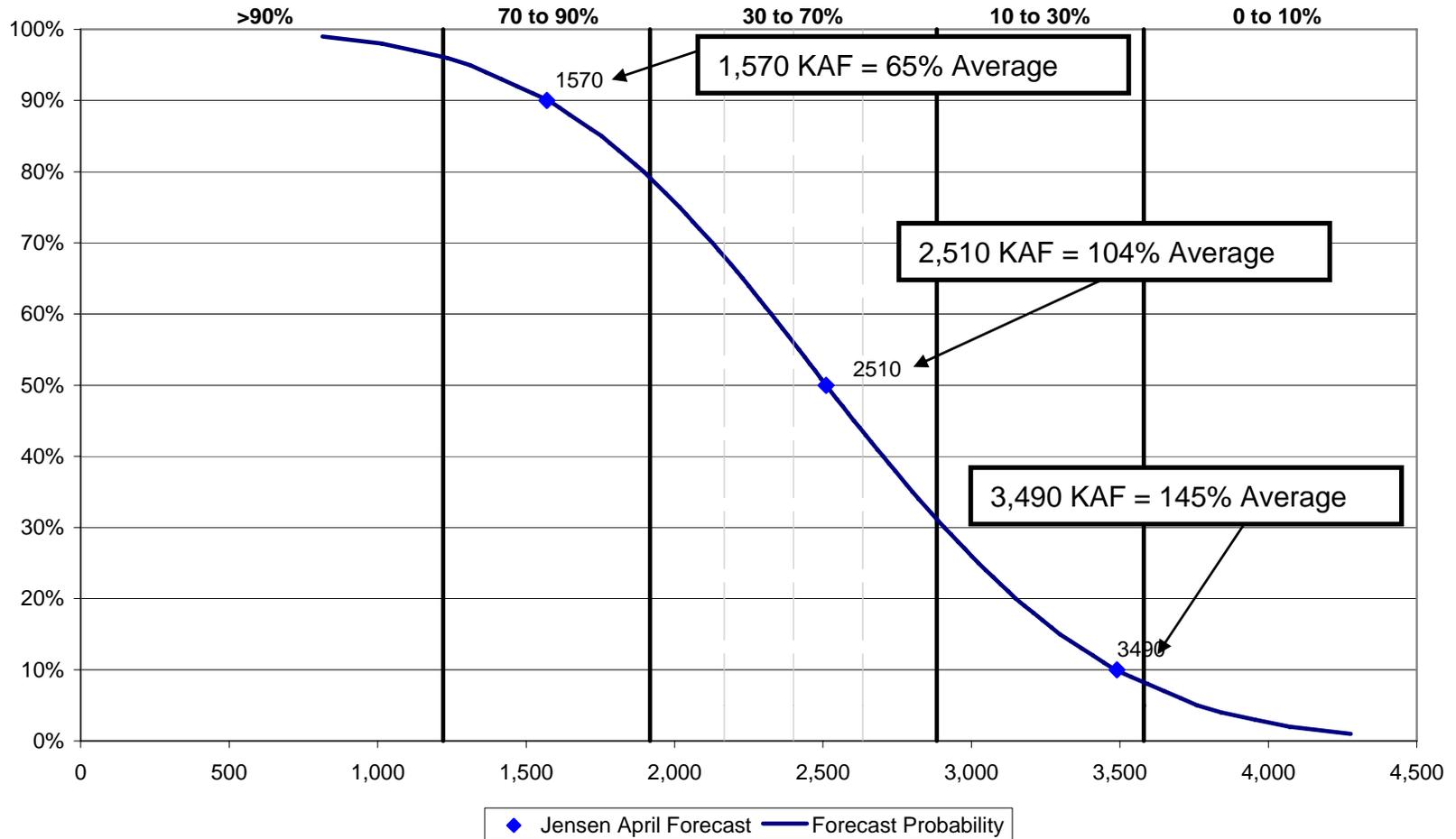
Flaming Gorge Working Group

Yampa River - Maybell Plus Lily
April through July Historic Inflow (1922-2006)
Related to Flow Recommendation Percent Exceedances



Flaming Gorge Working Group

Green River at Jensen, Utah
April through July Historic Inflow (1947-2006)
Related to Flow Recommendation Percent Exceedances



UC Recovery Implementation Program Flow Request

- Letter dated February 29, 2008 from UCRIP
- The Recovery Program will be assessing the emigration rates of previously stocked razorback sucker from the Stirrup floodplain to the main stem of the Green River.
- The flow request from the Recovery Program is 15,000 cfs, or greater, for a minimum of five consecutive days in Reach 2 of the Green River.

Flaming Gorge EIS Language

- The EIS states the expectation for spring operations is to follow the flow magnitudes and durations outlined in the Flow Recommendations. However, because other factors are also considered, “particularly runoff conditions in the Yampa River, there would be some years where the peak flows that occur in Reach 2 achieve the targets for either one or two classifications higher (wetter) or one classification lower (drier) than the actual classification established for the Green River.”

Proposed Flow and Temperature Objectives for Spring 2008

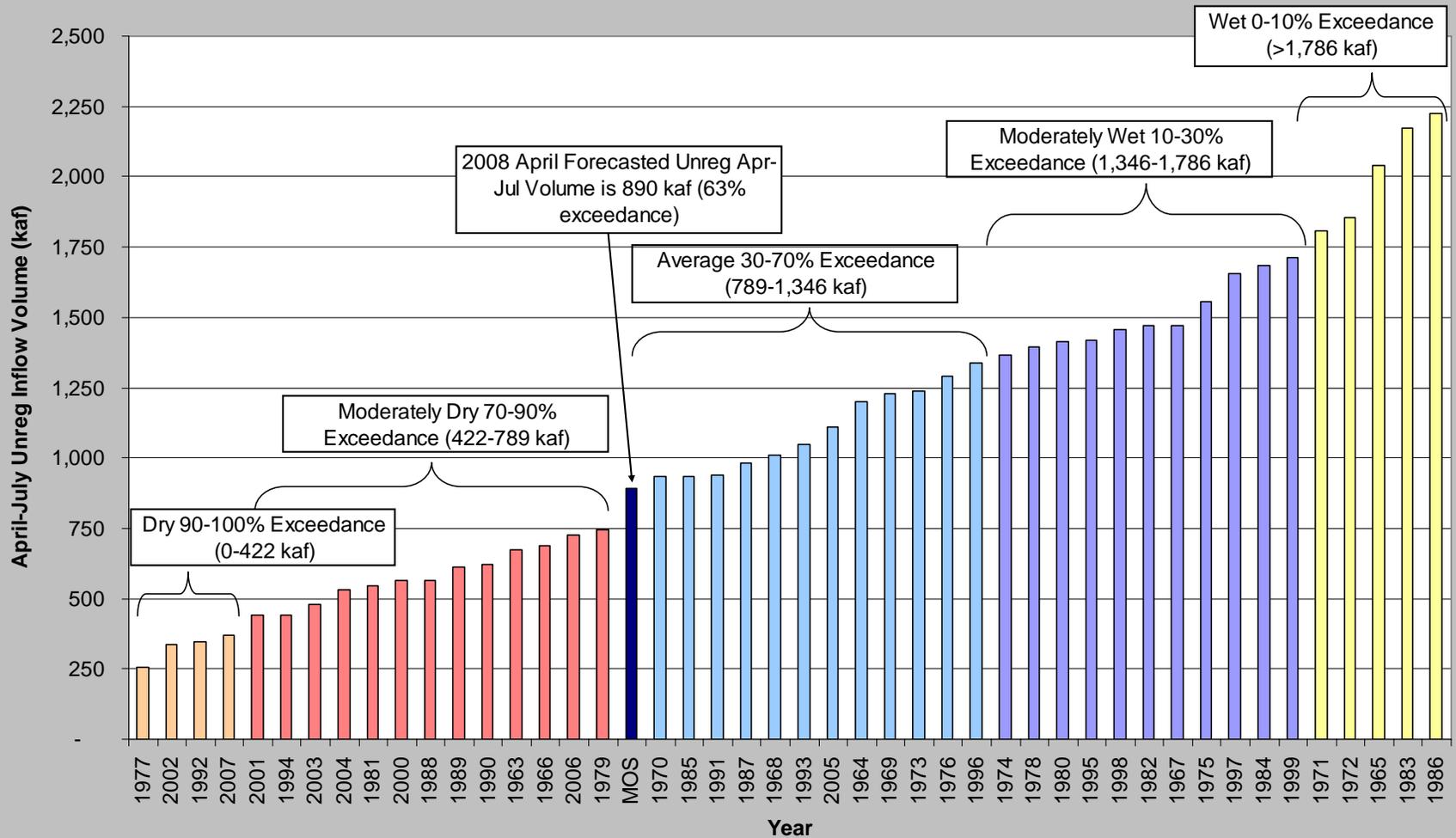
- If Flaming Gorge Reservoir (FG) spring runoff forecast remains above 789 kaf and below 1,346 kaf (average) or if FG forecast falls below 789 (moderately dry) and Yampa River Basin forecast remains at or above 1,248 KAF (46% exceedance)
 - Proposed Reach 1 flows should be managed to achieve a peak of 4,600 cfs or greater in order to meet the Recovery Program research request, timed coincident with the spring peak flows of the Yampa River.
 - To meet the Recovery Program research request, the flows in Reach 1 should be managed to achieve at least 15,000 cfs in Reach 2 for a minimum duration of five days.
 - There is a possibility that as a result of managing for the flow objectives described above flows in Reach 2 may achieve 18,600 cfs for ten days.
 - Flows in Reach 1 may be managed above 4,600 cfs with the objective of achieving flows of 18,600 cfs or greater for at least two weeks in Reach 2.
 - Reach 1 flows should be gradually reduced at a rate of 500 cfs/day to base flow levels once it is no longer reasonable to achieve flows of 14,000 cfs in Reach 2

Proposed Flow and Temperature Objectives for Spring 2008

- If Flaming Gorge Reservoir forecast falls below 789 KAF and the Yampa River Basin forecast falls below 1,248 KAF, it is proposed that flows in Reach 1 would be managed up to 4,600 cfs to achieve 8,300 cfs in Reach 2 for at least one week. In the event this occurs, it is unlikely that the Recovery Program research flow request could be met.

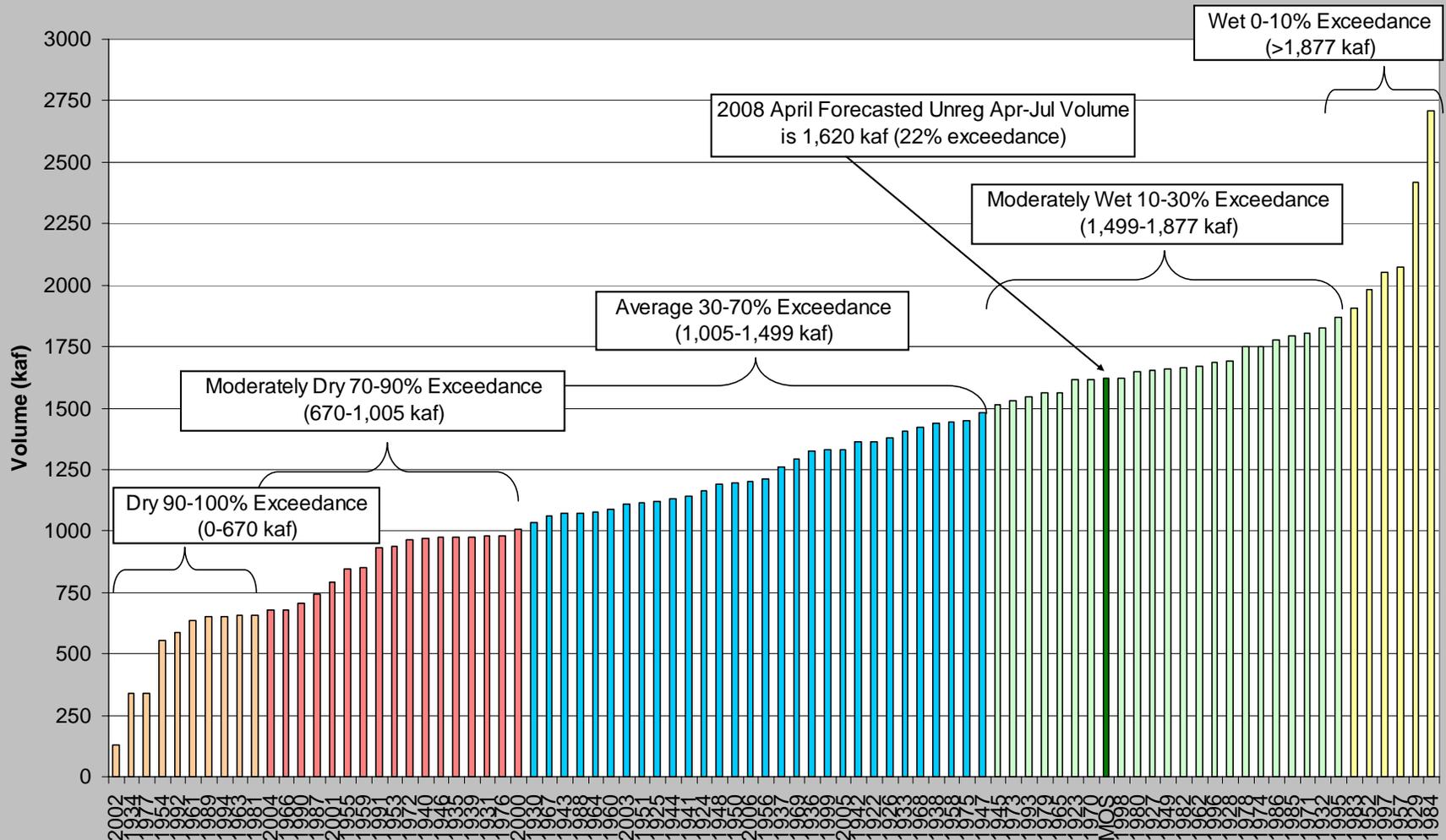
Flaming Gorge Working Group

Flaming Gorge Reservoir
Unregulated April-July Inflow Volume (1963-2007)



Flaming Gorge Working Group

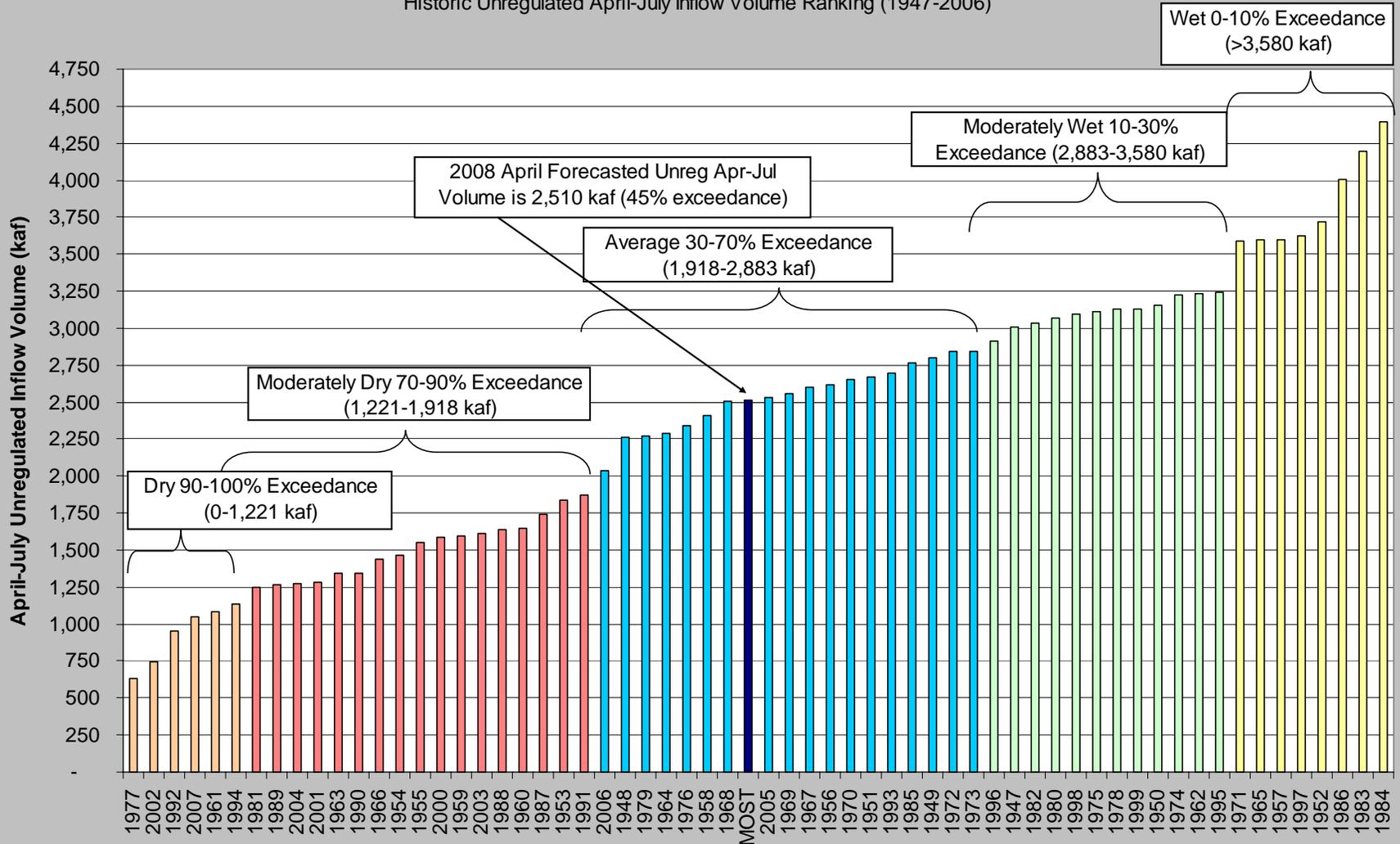
Yampa River Basin - Maybell Plus Lily
Historic Unregulated April-July Inflow Volume Ranking (1922-2006)



Flaming Gorge Working Group

Green River at Jensen, UT

Historic Unregulated April-July Inflow Volume Ranking (1947-2006)



Flaming Gorge Working Group Meeting April 2008

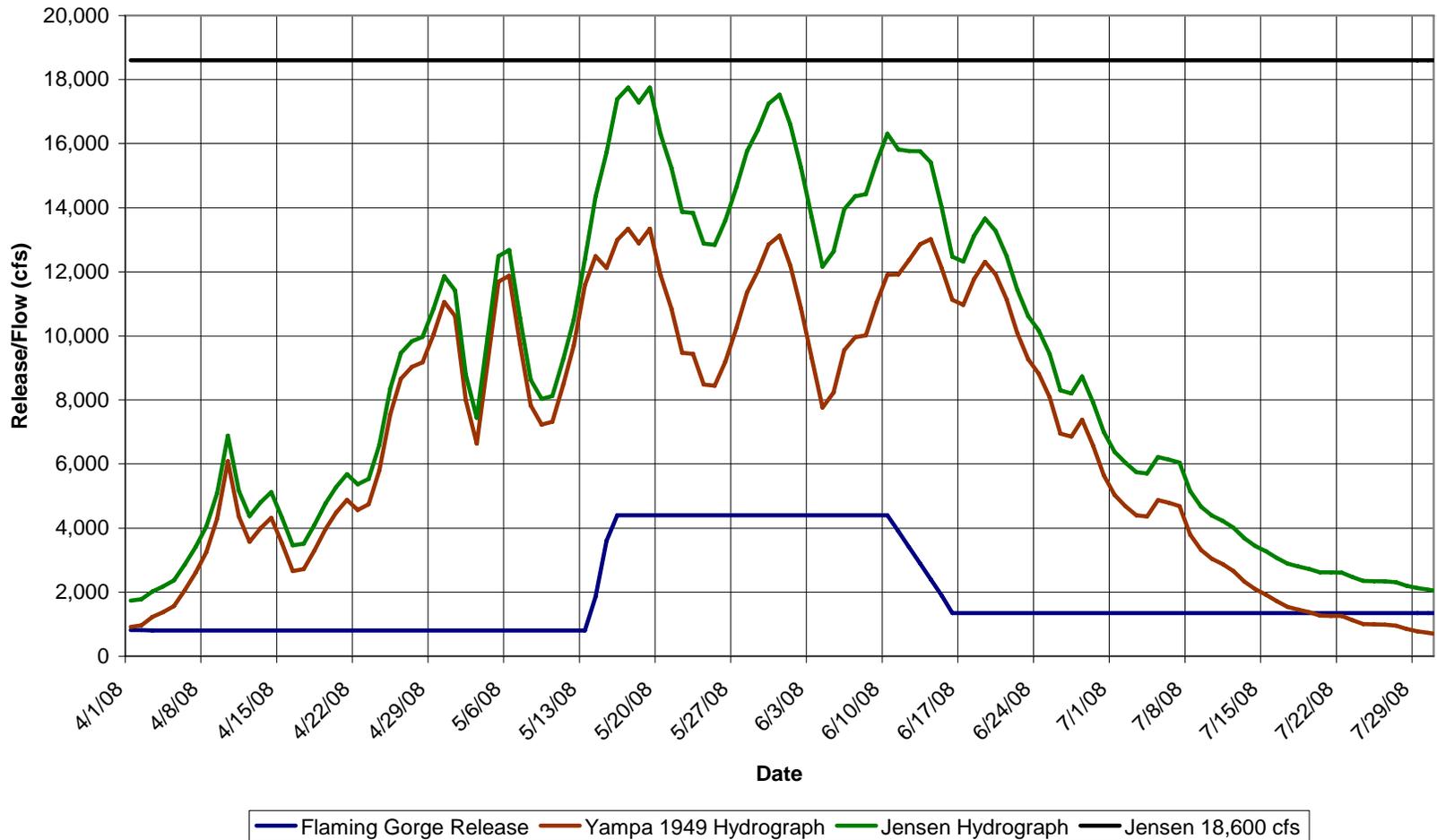
Spring Operations Objectives under 2006 Flaming Gorge Record of Decision (2006 ROD)

Flow Objectives for Average Years

- Reach 1 - Peak flow should be at least 4,600 cfs for a duration sufficient to achieve flow objectives for Reaches 2.
- Reach 2 - Peak flow should be at least 18,600 cfs in 50% all average years. Flows greater than 18,600 cfs should be maintained for at least 2 week in 25% of all average years.
- Reach 3 - It is assumed that the flows objectives in Reach 3 are met when flow objectives of Reach 2 are met.

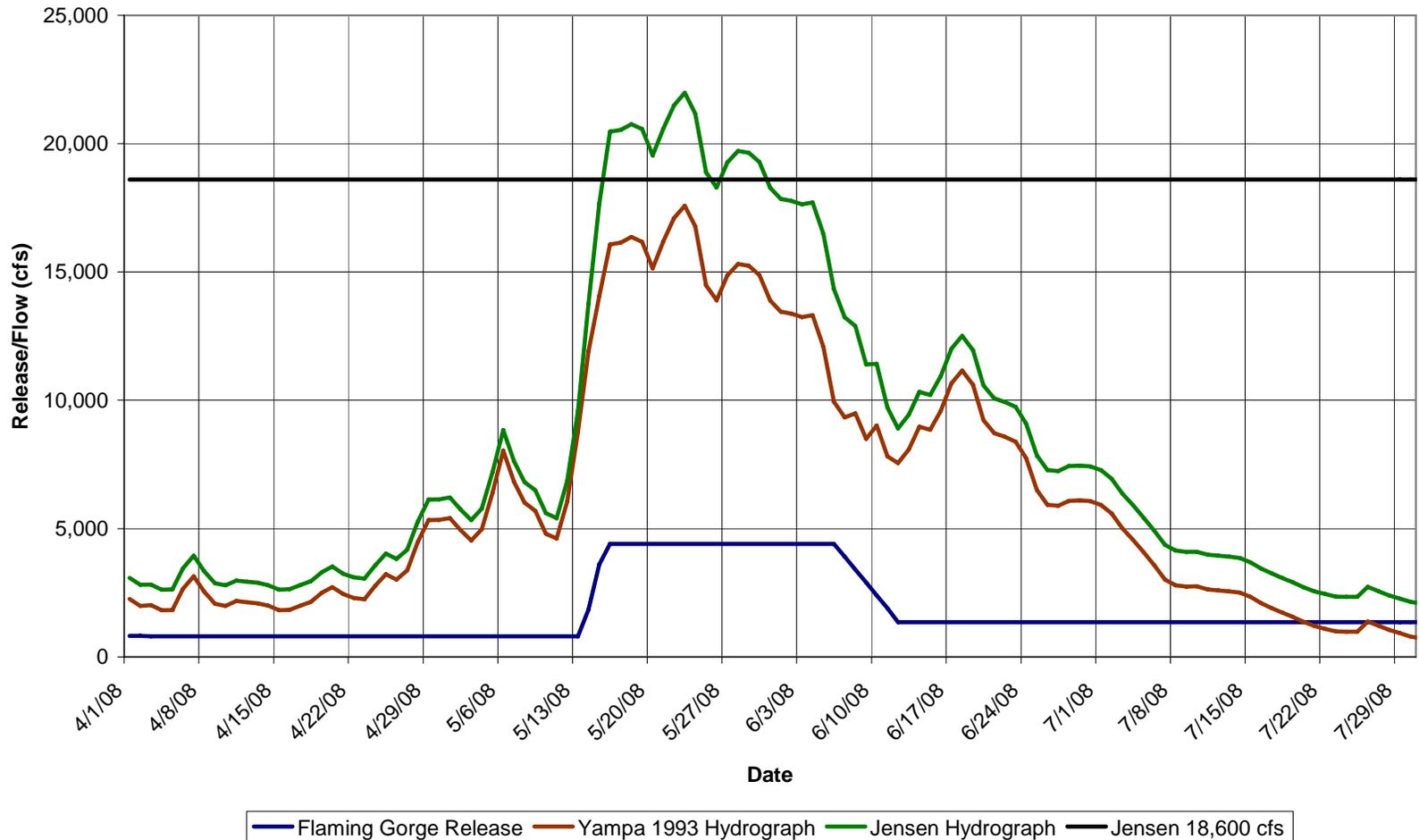
Flaming Gorge Working Group

Flaming Gorge Most Probable Operations
(1949 Hydrograph--Yampa April-July Inflow Volume 1,658 kaf)



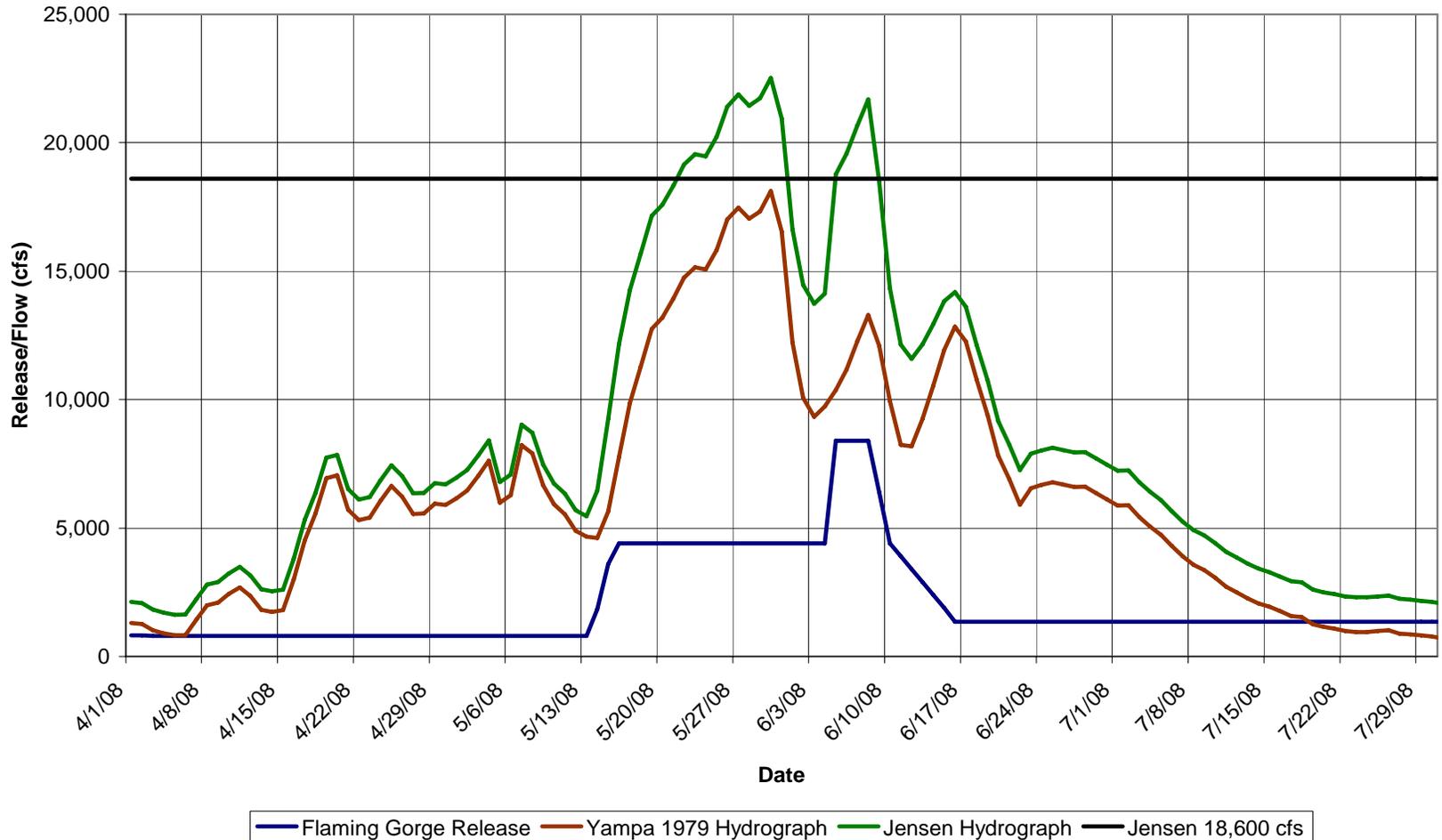
Flaming Gorge Working Group

Flaming Gorge Most Probable Operations
(1993 Hydrograph--Yampa April-July Inflow Volume 1,543 kaf)



Flaming Gorge Working Group

Flaming Gorge Most Probable Operations
(1979 Hydrograph--Yampa April-July Inflow Volume 1,562 kaf)



Flaming Gorge Working Group Meeting April 2008

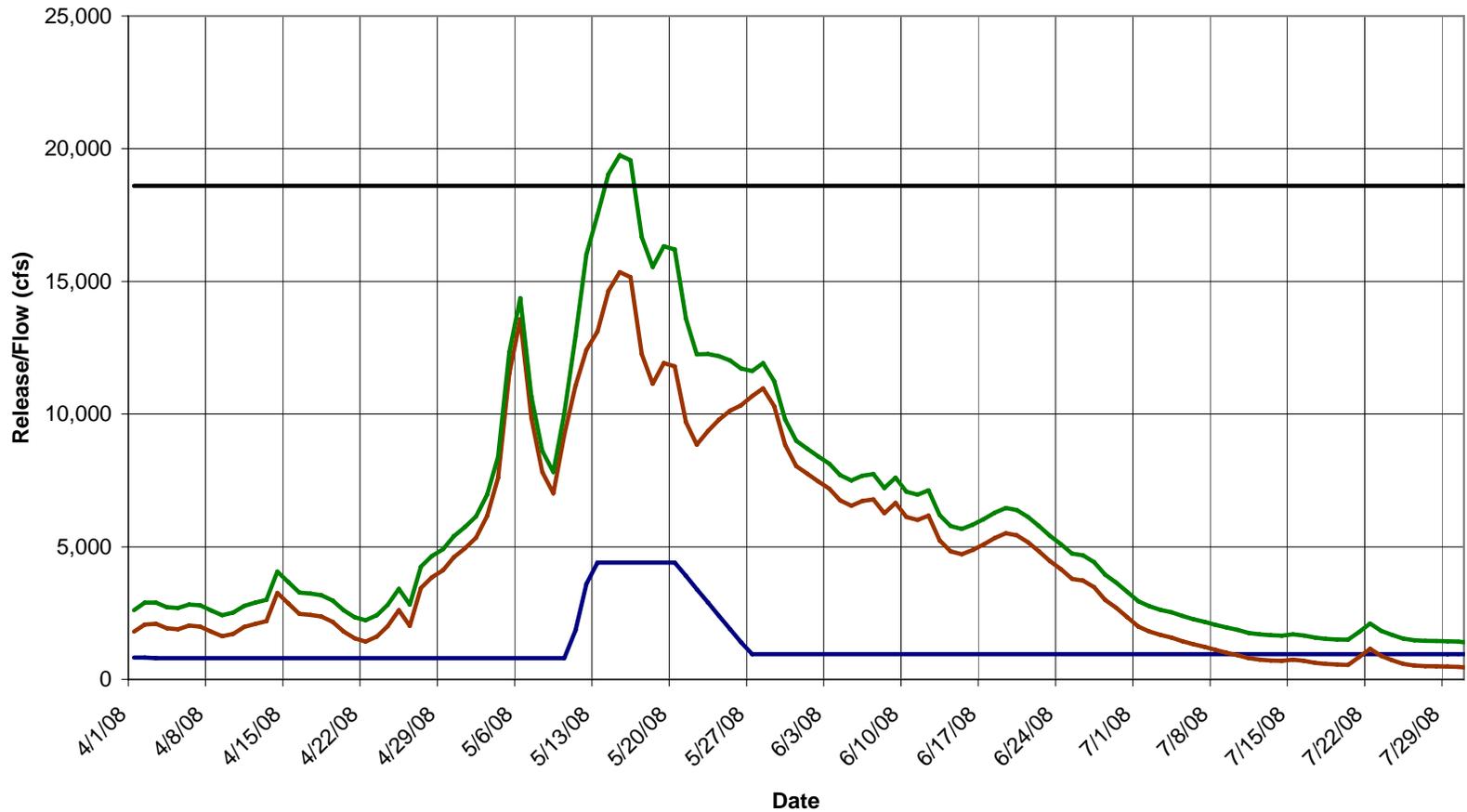
Spring Operations Objectives under 2006 Flaming Gorge Record of Decision (2006 ROD)

Flow Objectives for Moderately Dry Years

- Reach 1 - Peak flow should be at least 4,600 cfs for a duration sufficient to achieve flow objectives for Reaches 2.
- Reach 2 - Peak flow should be at least 8,300 cfs all moderately dry years. Flows greater than 8,300 cfs should be maintained for at least 1 week.
- Reach 3 - It is assumed that the flows objectives in Reach 3 are met when flow objectives of Reach 2 are met.

Flaming Gorge Working Group

Flaming Gorge Minimum Probable Operations
(1941 Hydrograph--Yampa April-July Inflow Volume 1,141 kaf)



— Flaming Gorge Release — Yampa 1941 Hydrograph — Jensen Hydrograph — Jensen 18,600 cfs

Flaming Gorge Working Group Meeting April 2008

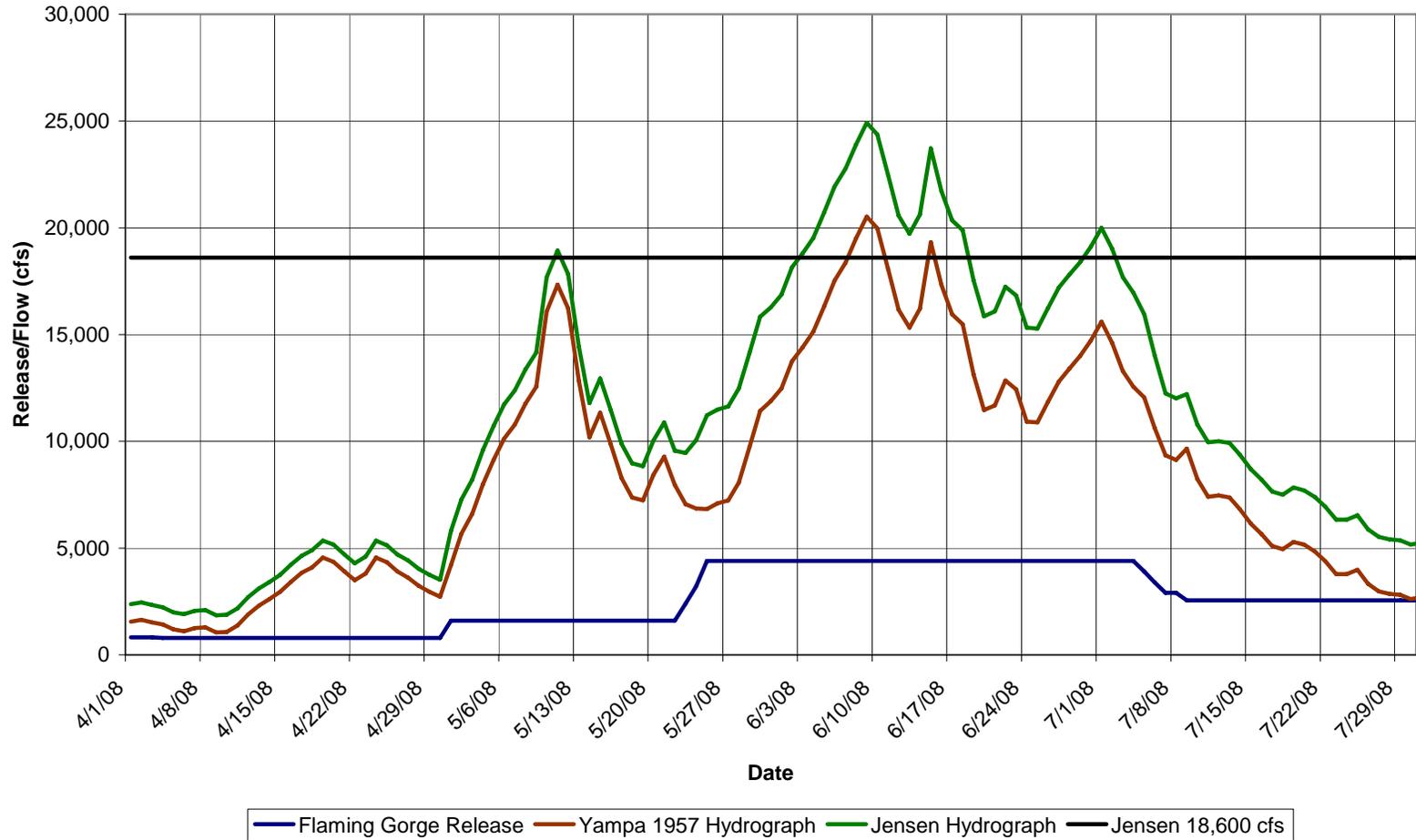
Spring Operations Objectives under 2006 Flaming Gorge Record of Decision (2006 ROD)

Flow Objectives for Moderately Wet Years

- Reach 1 - Peak flow should be at least 4,600 cfs for a duration sufficient to achieve flow objectives for Reaches 2.
- Reach 2 - Peak flow should be at least 20,300 cfs one day. Flows greater than or equal to 18,600 cfs should be maintained for at least 2 weeks.
- Reach 3 - It is assumed that the flows objectives in Reach 3 are met when flow objectives of Reach 2 are met.

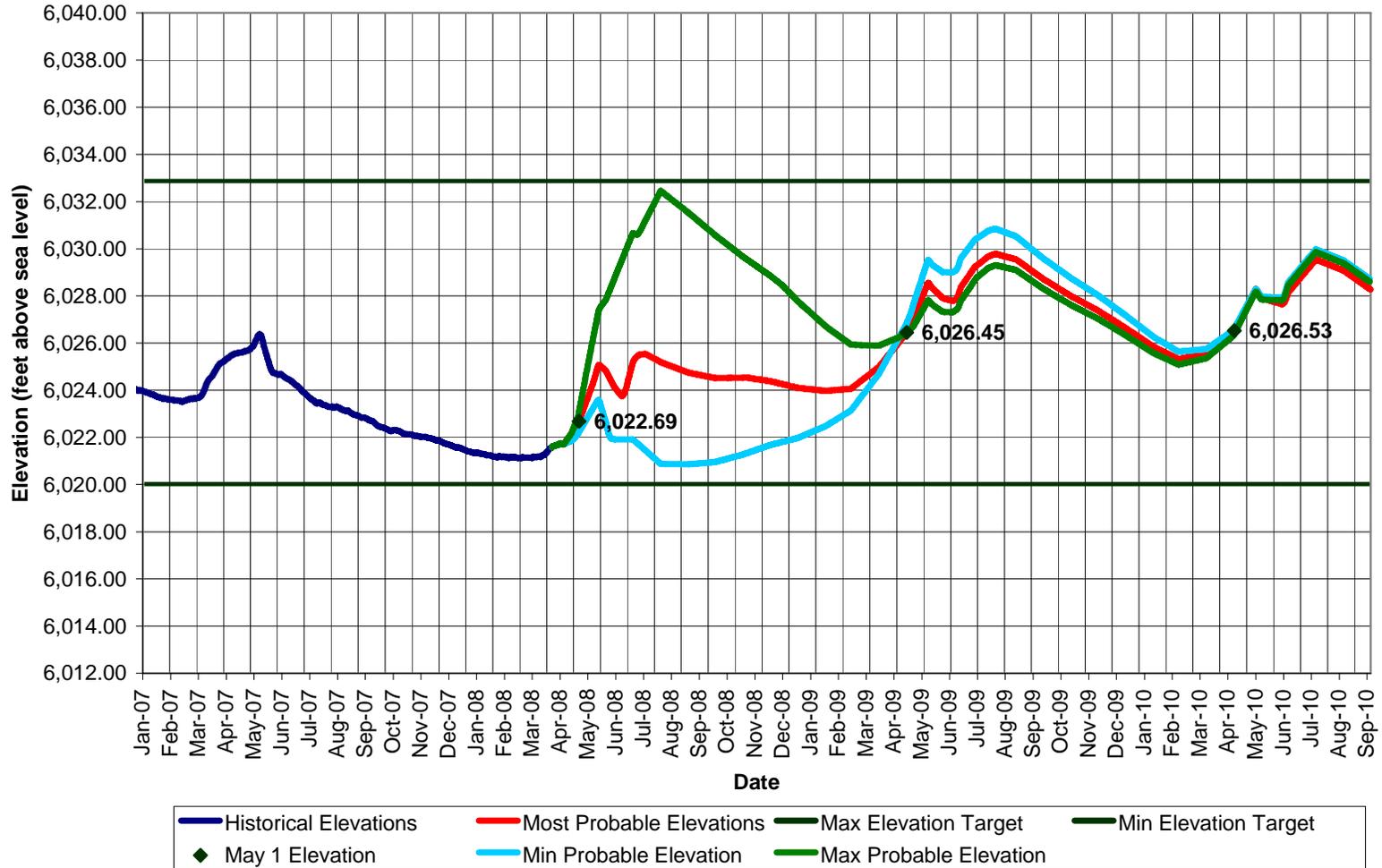
Flaming Gorge Working Group

Flaming Gorge Maximum Probable Operations
(1957 Hydrograph--Yampa April-July Inflow Volume 2,072 kaf)



Flaming Gorge Working Group

Flaming Gorge Operations WY2008, 2009
April 2008 Final Forecast



Flaming Gorge Working Group Meeting April 2008

Operations under the Record of Decision (2006 ROD)

Four Step Process for Decision Making

1. Recovery Program Request for Research Flows
2. Flaming Gorge Technical Working Group
3. Flaming Gorge Working Group
4. Reclamation makes the final decision of how to operate.

RECLAMATION