

RECLAMATION

Managing Water in the West

2012 Colorado River Annual Operating Plan

**Colorado River Management Work Group
Second Consultation
July 28, 2011**



U.S. Department of the Interior
Bureau of Reclamation

2012 Colorado River AOP Second Consultation Meeting

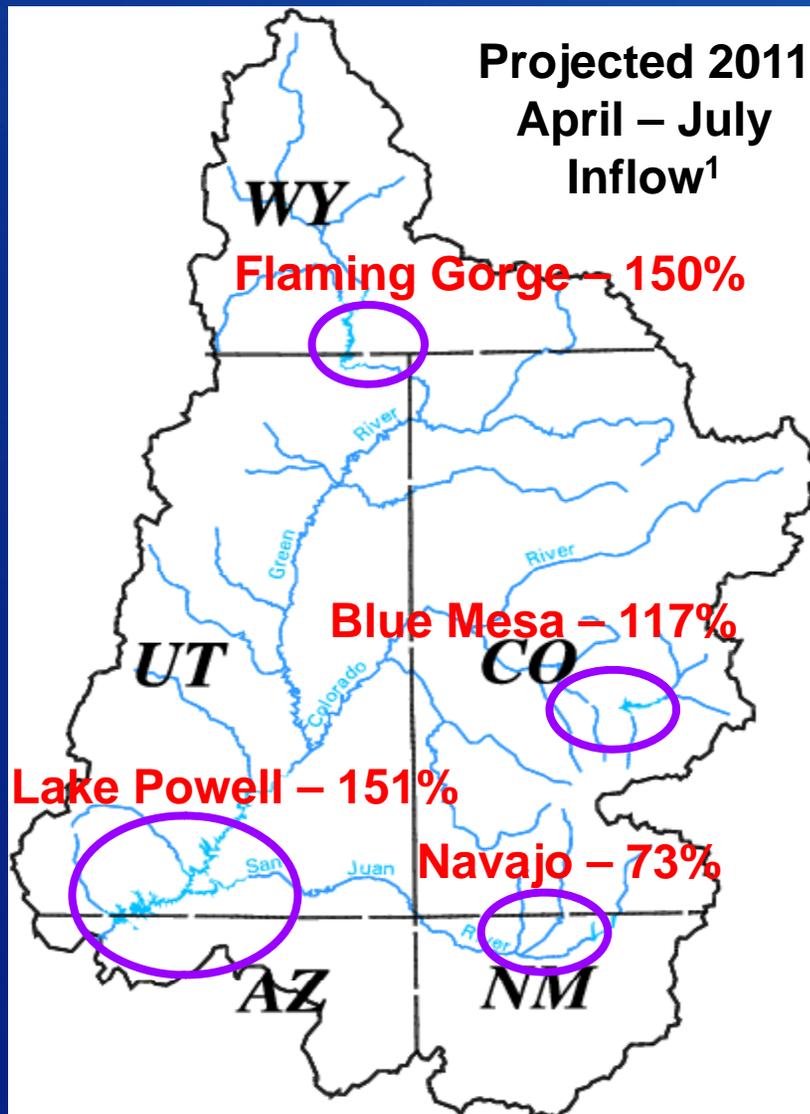
- Welcome and Introductions – *Steve Hvinden / Dave Trueman*
- Upper Basin Hydrology and Operations – *Rick Clayton*
- Lower Basin Hydrology and Operations – *Dan Bunk / Hong DeCorse*
- 2012 AOP Review Process – *Steve Hvinden / Dave Trueman*
- Review of Draft 2012 AOP - CRMWG
- Conclusion and Wrap-up, Upcoming Meeting Date
 - Final Consultation – Tuesday, August 30

Upper Colorado River Basin

Hydrology and Operations

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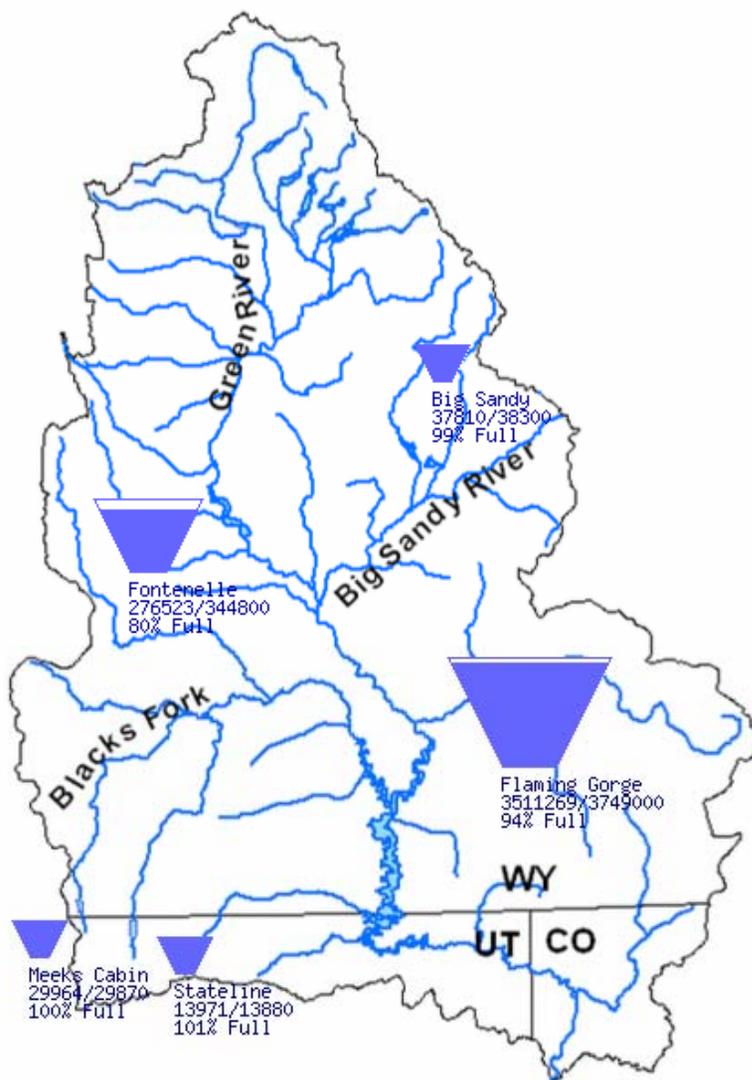
CBRFC Unregulated Inflow Forecasts issued July 5, 2011



Period in 2011	Unregulated Inflow into Powell (KAF)	Percent of Average ¹
June (observed)	5,408	175
July	3,530	226
August	950	155
September	670	141
April – July	12,000	151
Water Year Projection	16,200	135

Data Current as of:
07/17/2011

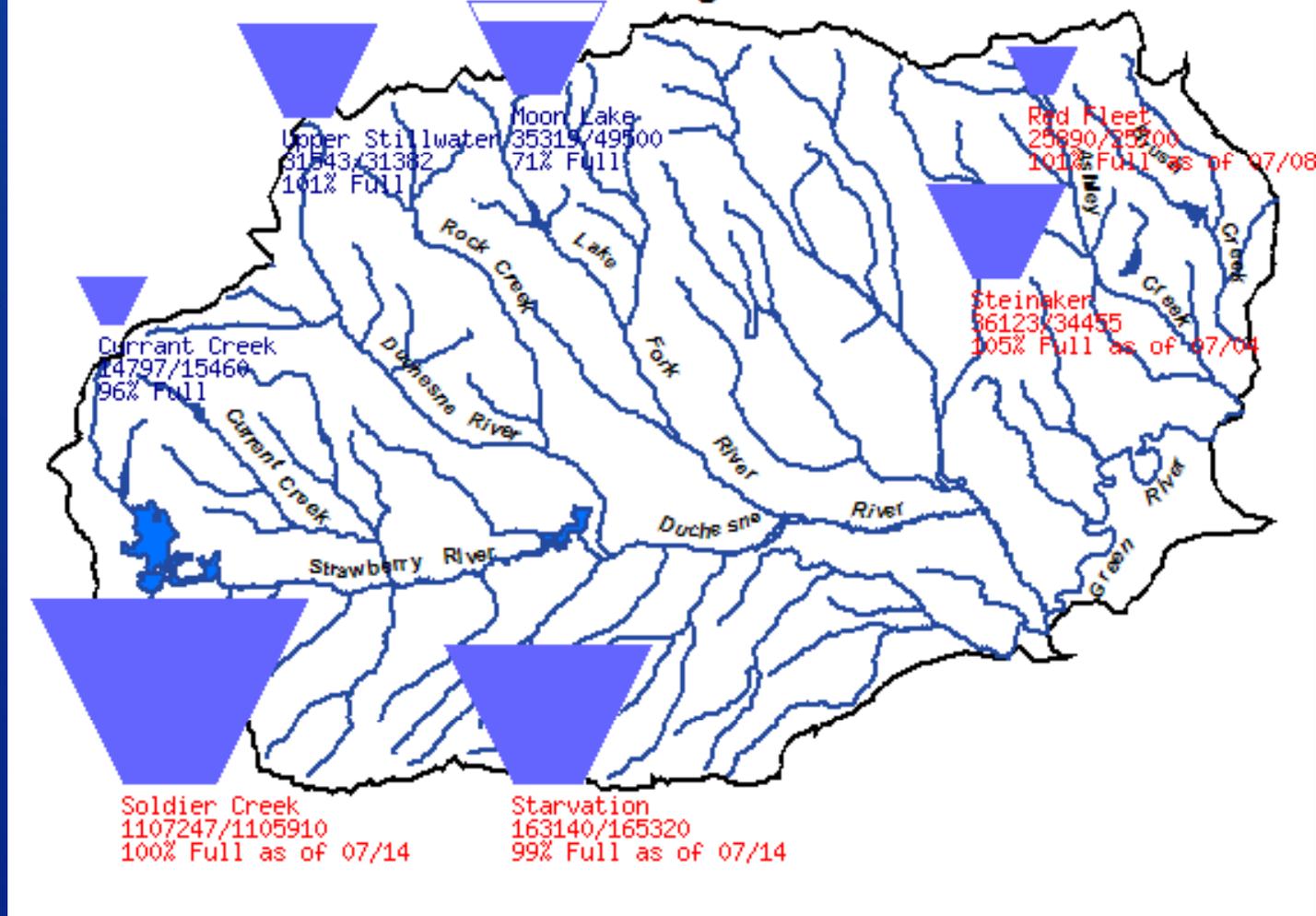
Upper Green River Basin



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Data Current as of:
07/17/2011

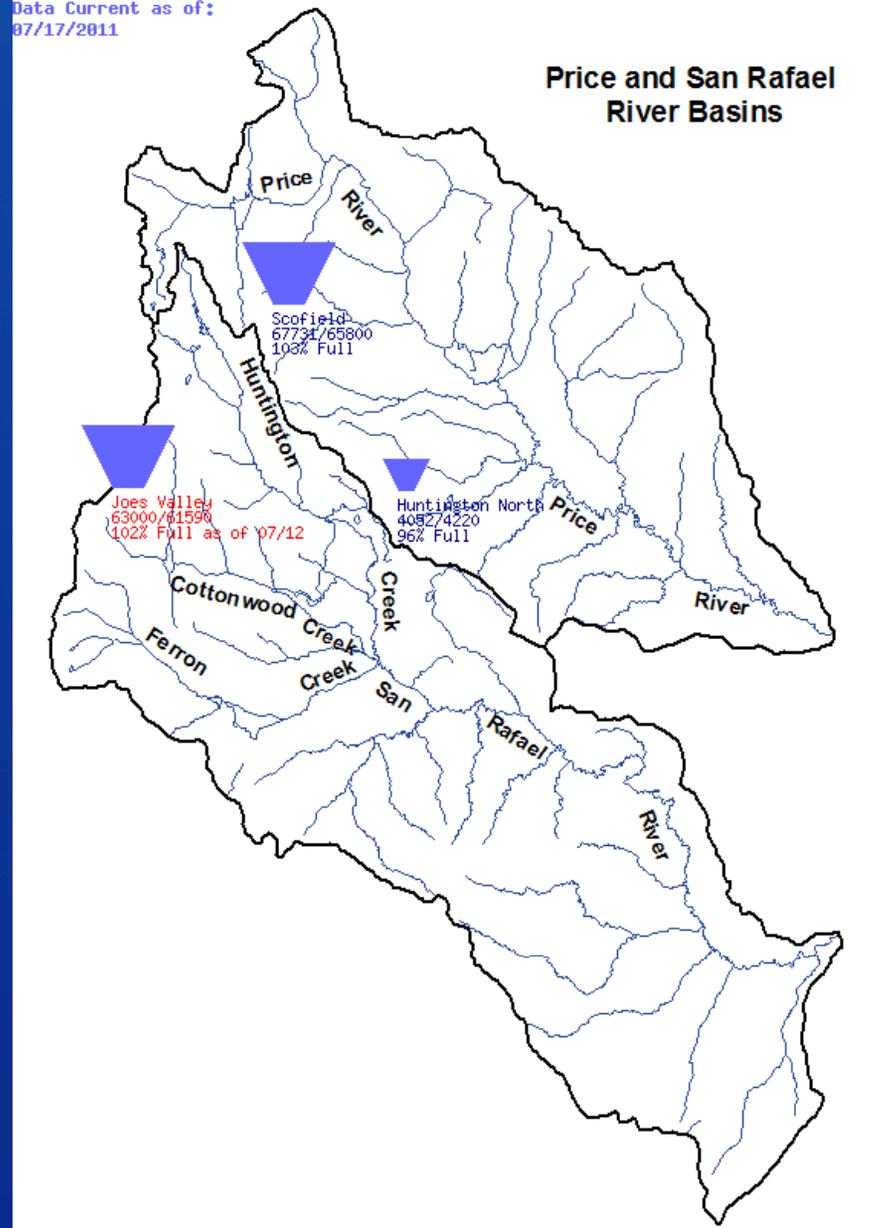
Uinta Drainage Basin



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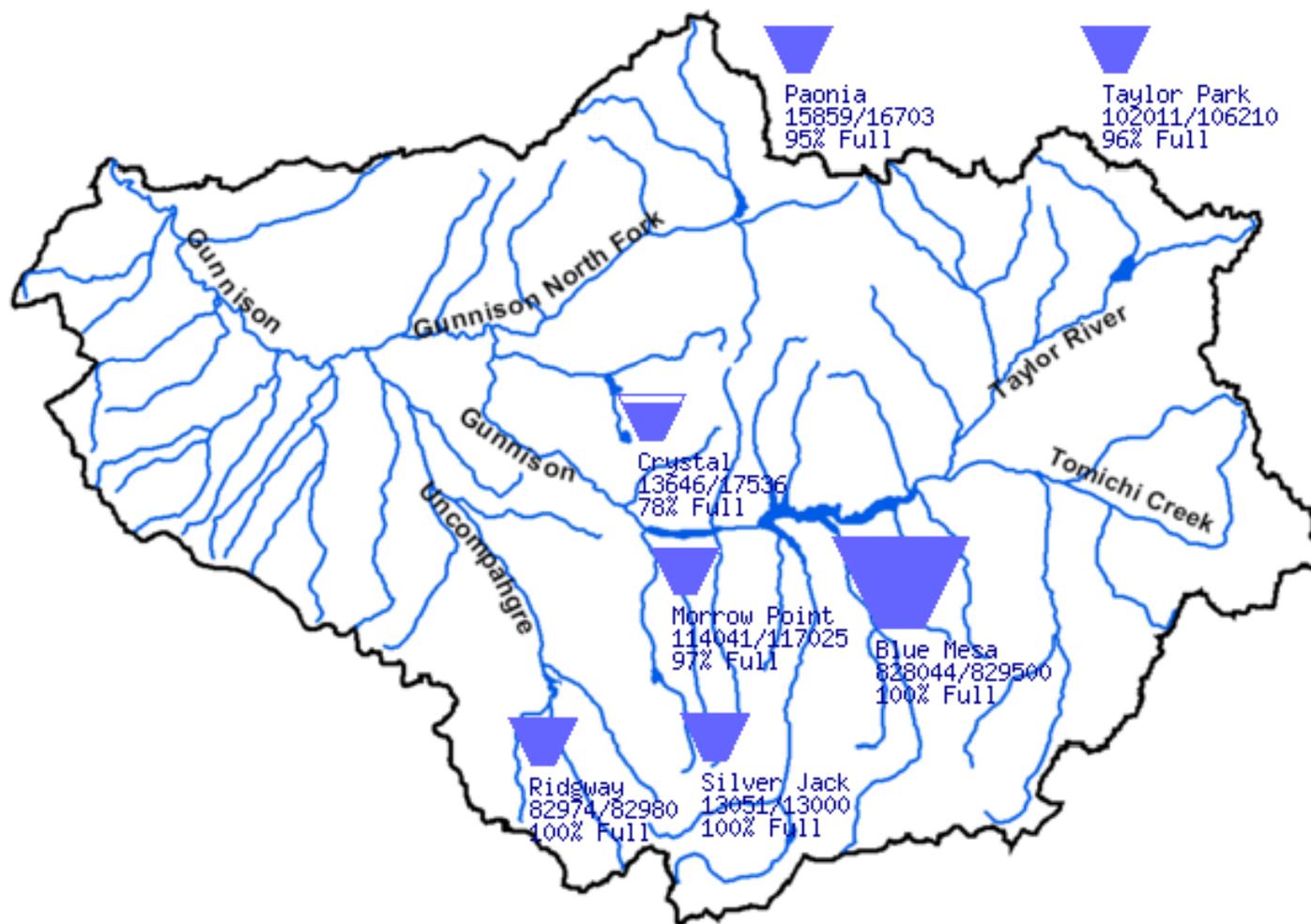
Price and San Rafael River Basins



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Data Current as of:
07/17/2011

Gunnison River Basin, CO



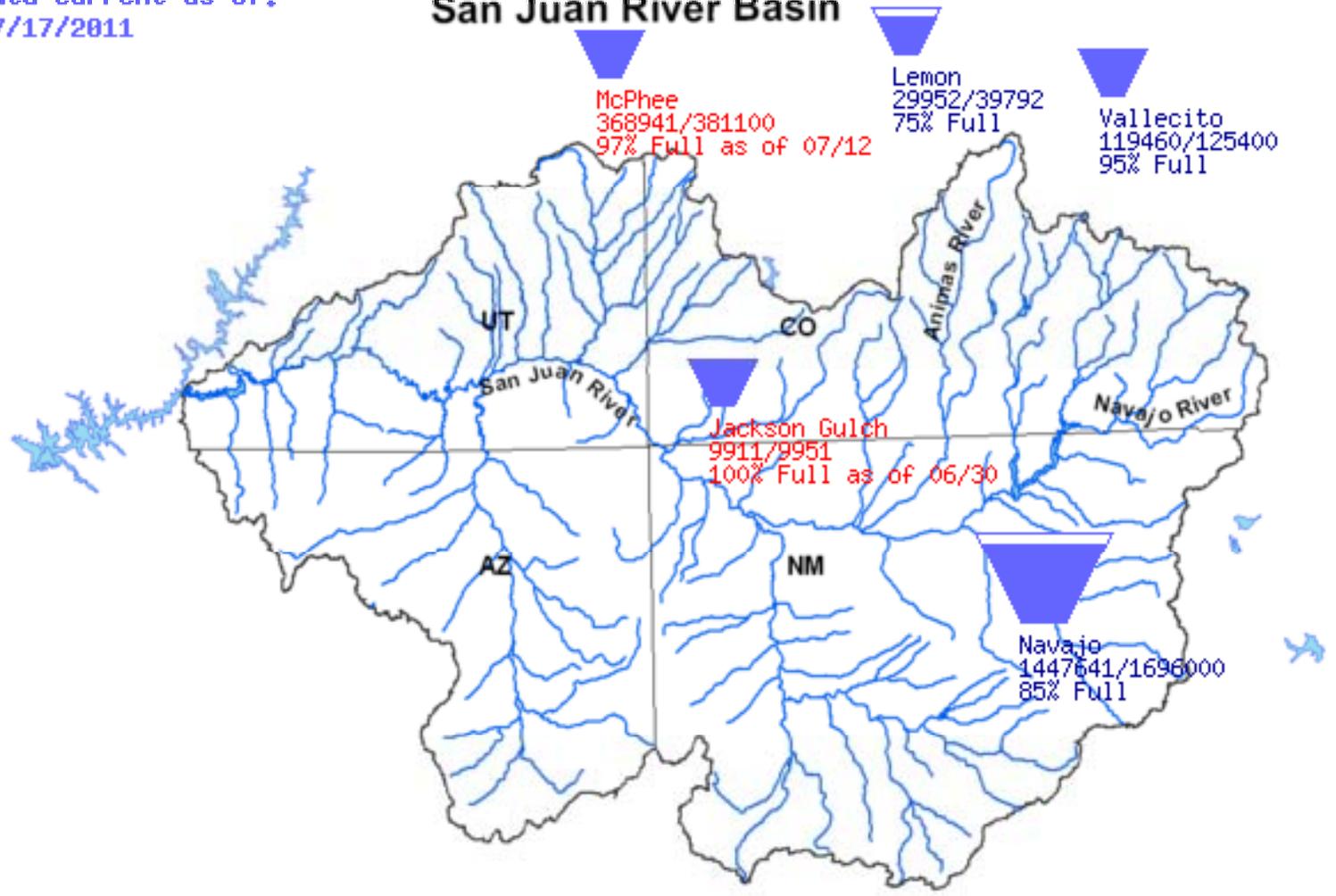
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Data Current as of:
07/17/2011

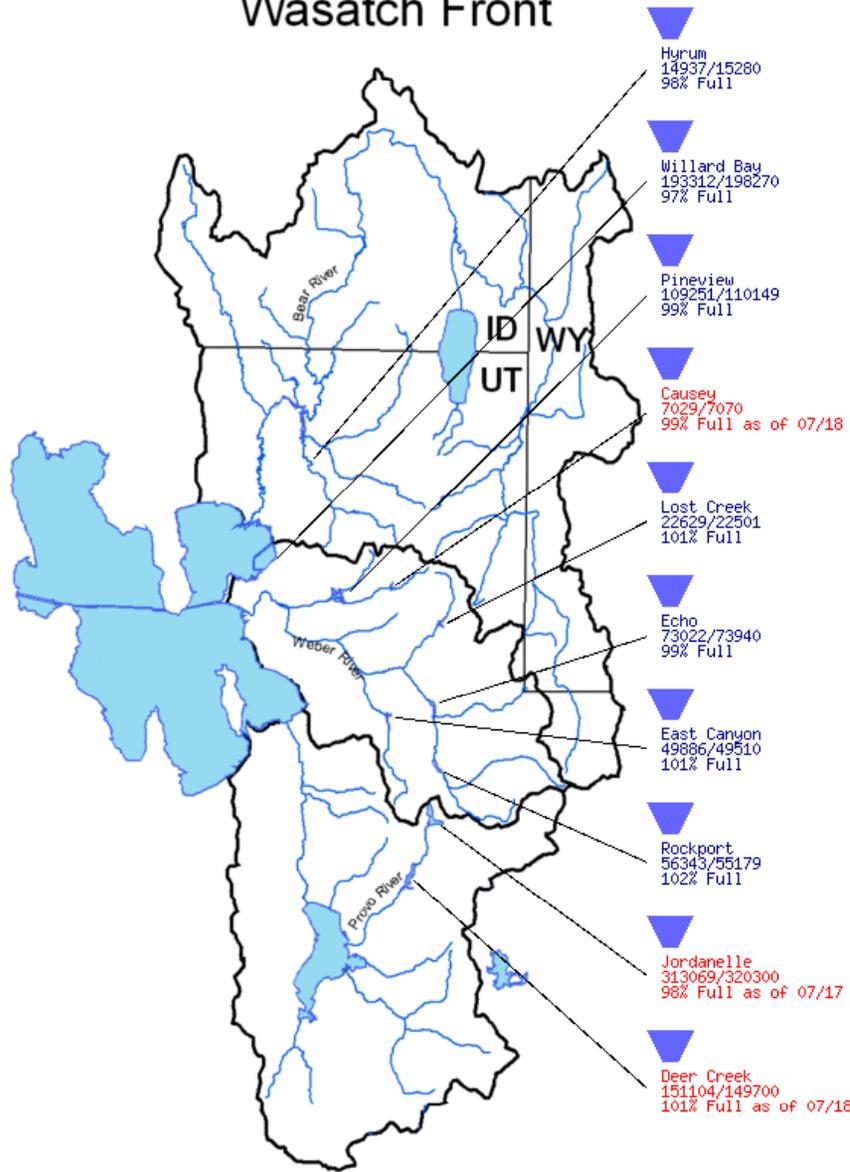
San Juan River Basin



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Data Current as of:
07/19/2018

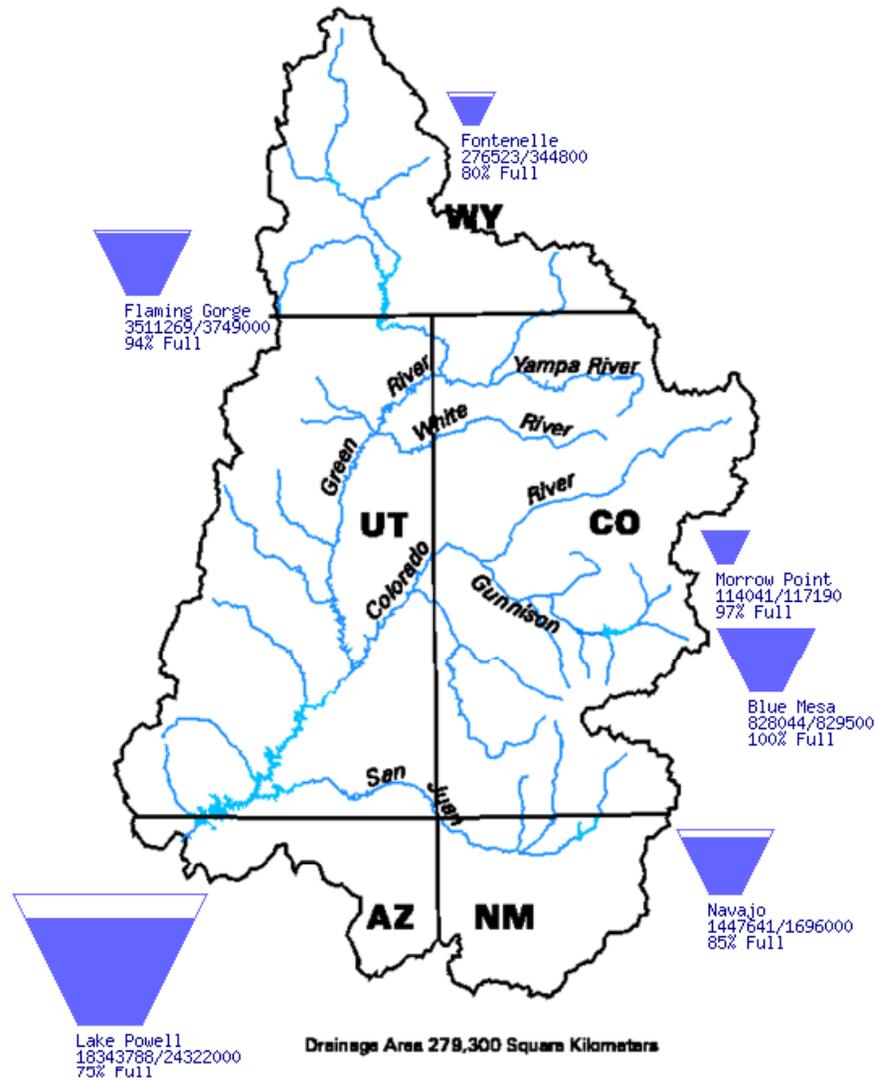
Bear, Weber, Provo River Basins Wasatch Front



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Data Current as of:
07/17/2011

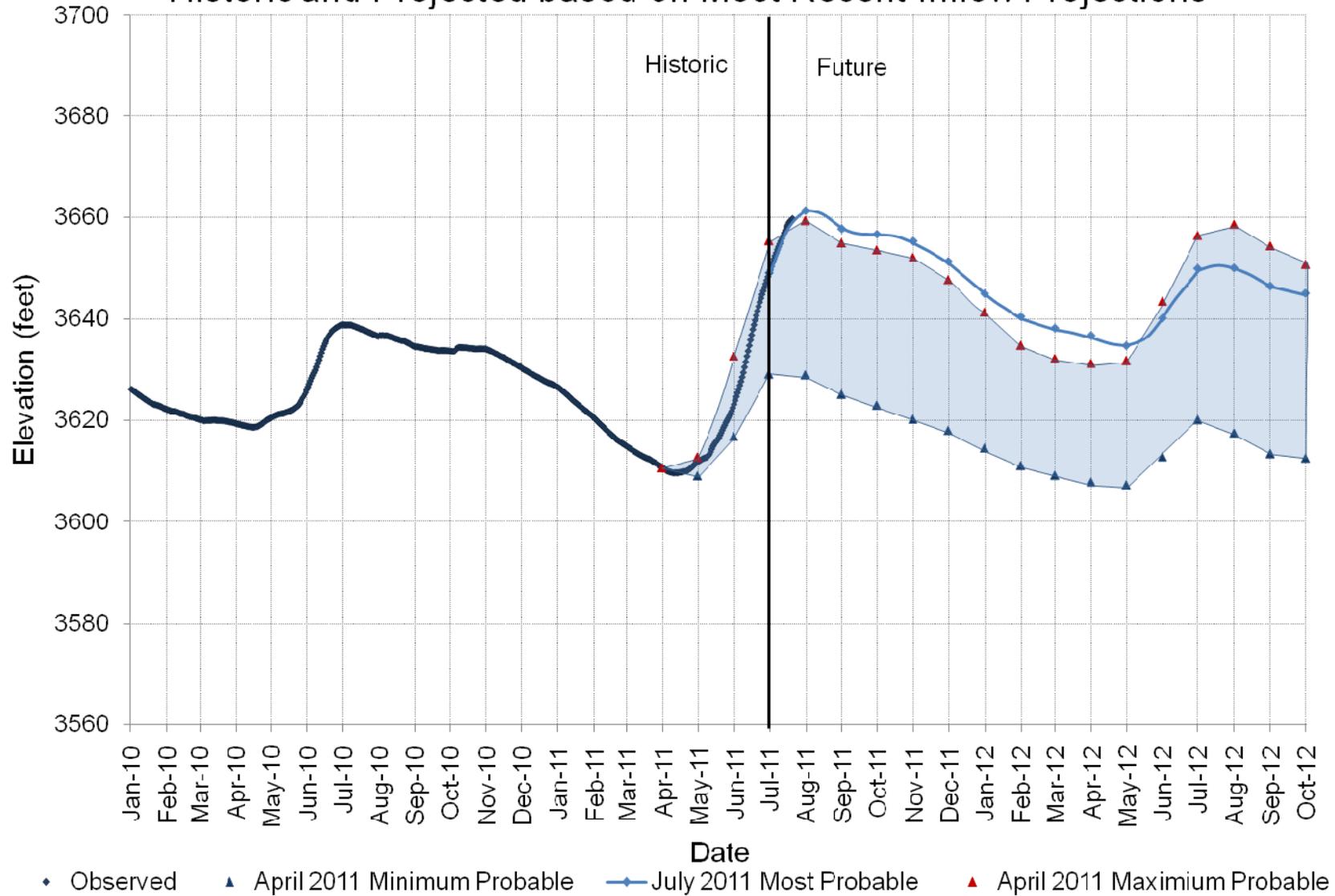
Upper Colorado River Drainage Basin



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Lake Powell Elevations

Historic and Projected based on Most Recent Inflow Projections



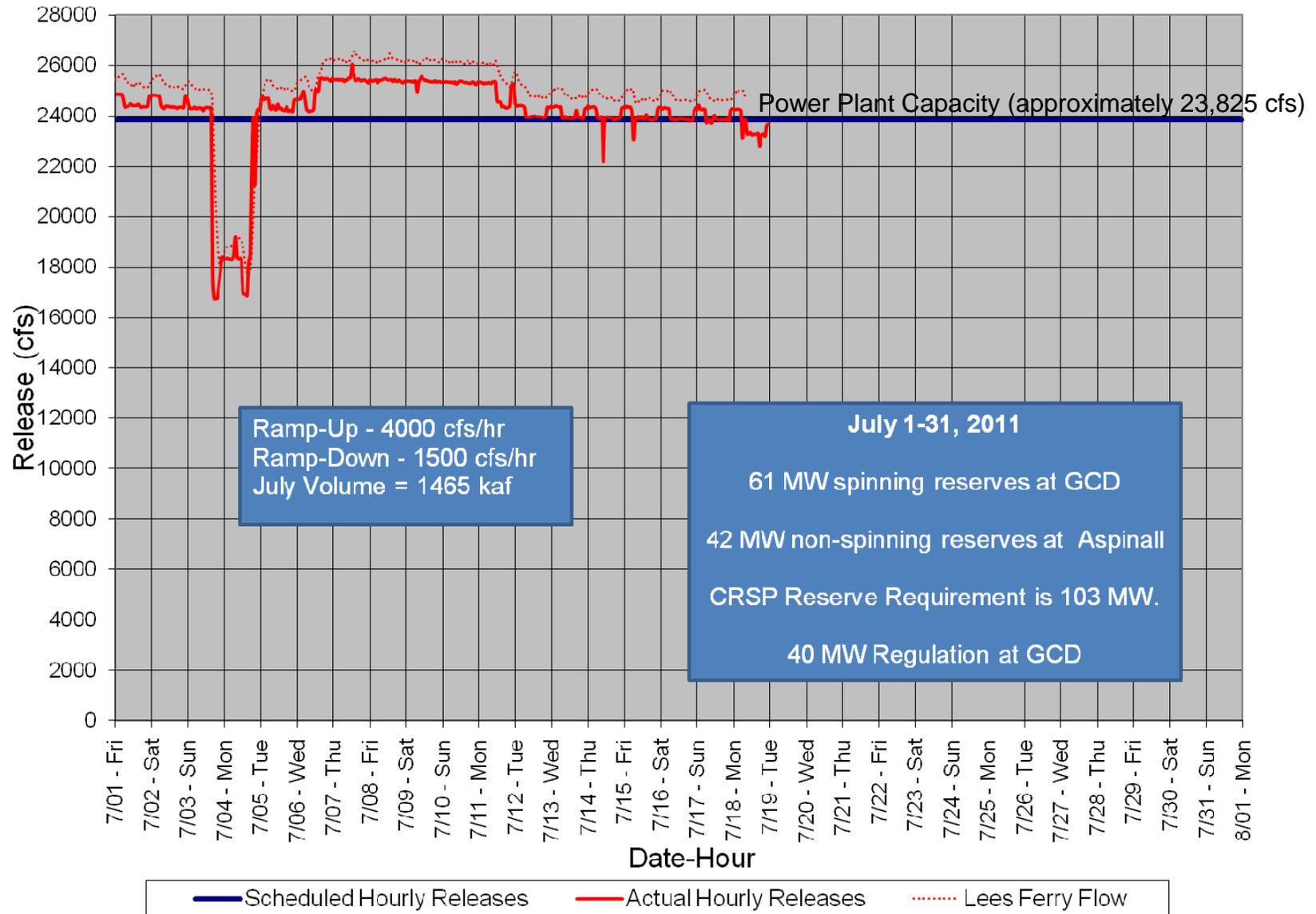
Projected Operations for the Remainder of WY 2011

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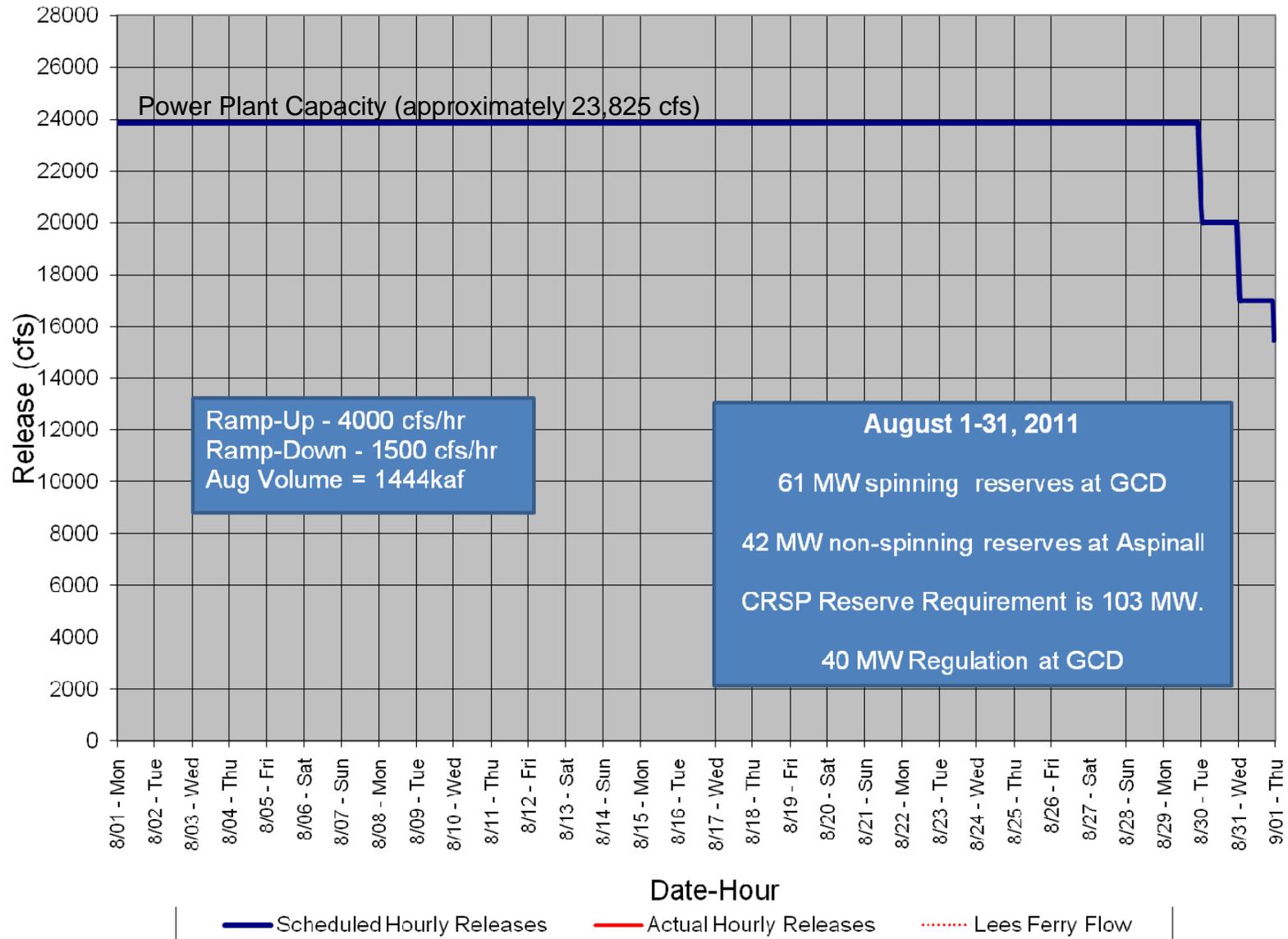
Glen Canyon Power Plant Planned Unit Outage Schedule for Water Year 2011 (updated 7-19-2011)

Unit Number	Oct 2010	Nov 2010	Dec 2010	Jan 2011	Feb 2011	Mar 2011	Apr 2011	May 2011	Jun 2011	Jul 2011	Aug 2011	Sep 2011
1												
2												
3												
4												
5												
6 (3/4 Unit)												
7												
8												
Units Available	4.75	5.75	6.75	6.75	4.75	4.75	4.75	4.75 6.75	6.75	6.75	6.75	5
Capacity (cfs)								22,380 23,825	22,380	23,825	23,825	14,840
Capacity (kaf/month)	990	1180	1350	1350	1080	1036	944	1195	1377	1465	1465	1030
Max (kaf)	495	810	847	997	964	1033	940	1171	1377	1465	1444	883
Most (kaf)	495	810	847	997	964	1033	940	1171	1377	1465	1444	883
Min (kaf)	495	810	847	997	964	1033	940	1171	1377	1465	1444	883

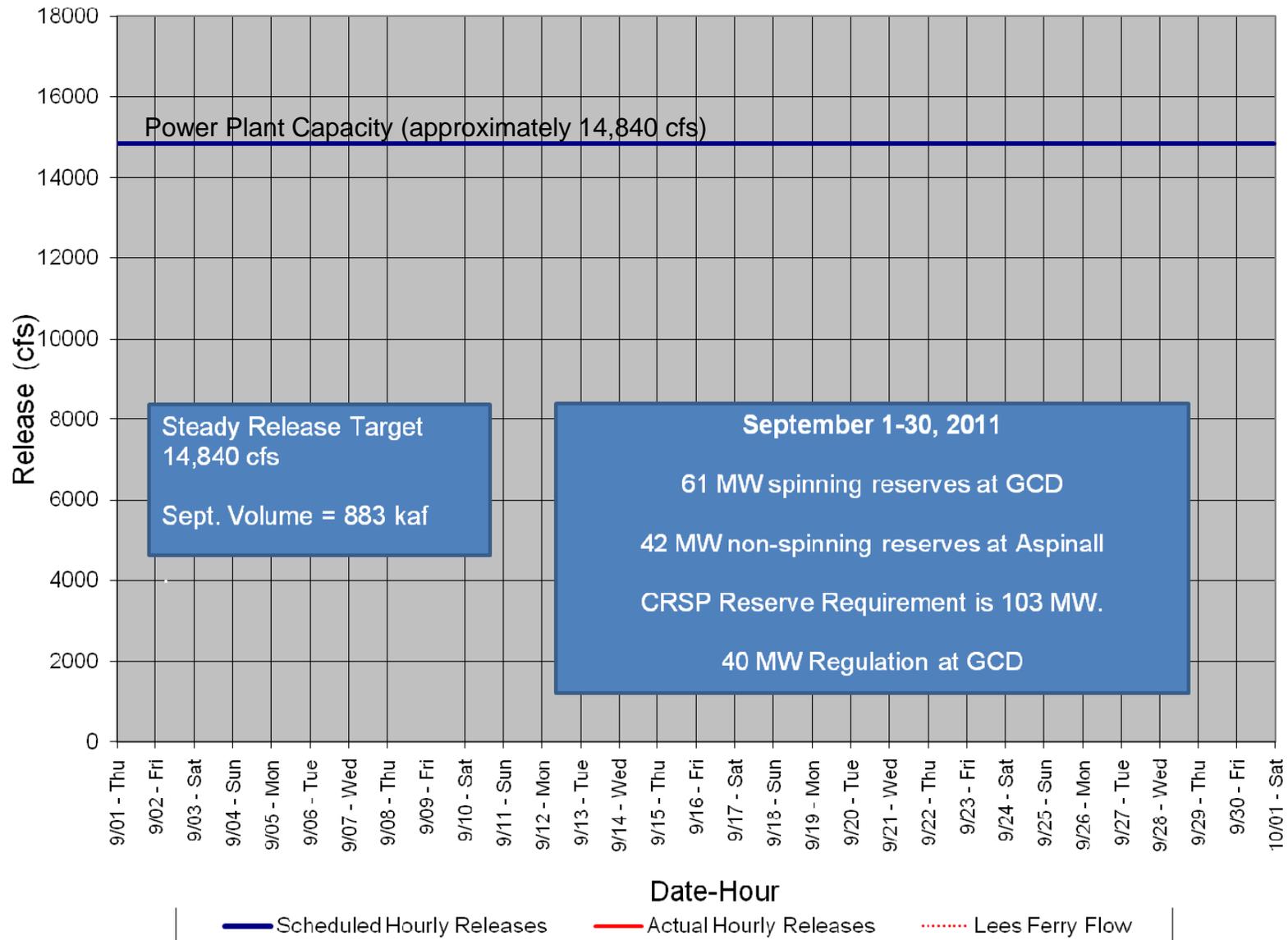
Glen Canyon Dam Hourly Release Pattern JUL 2011



Glen Canyon Dam Hourly Release Pattern AUG 2011



Glen Canyon Dam Hourly Release Pattern SEP 2011



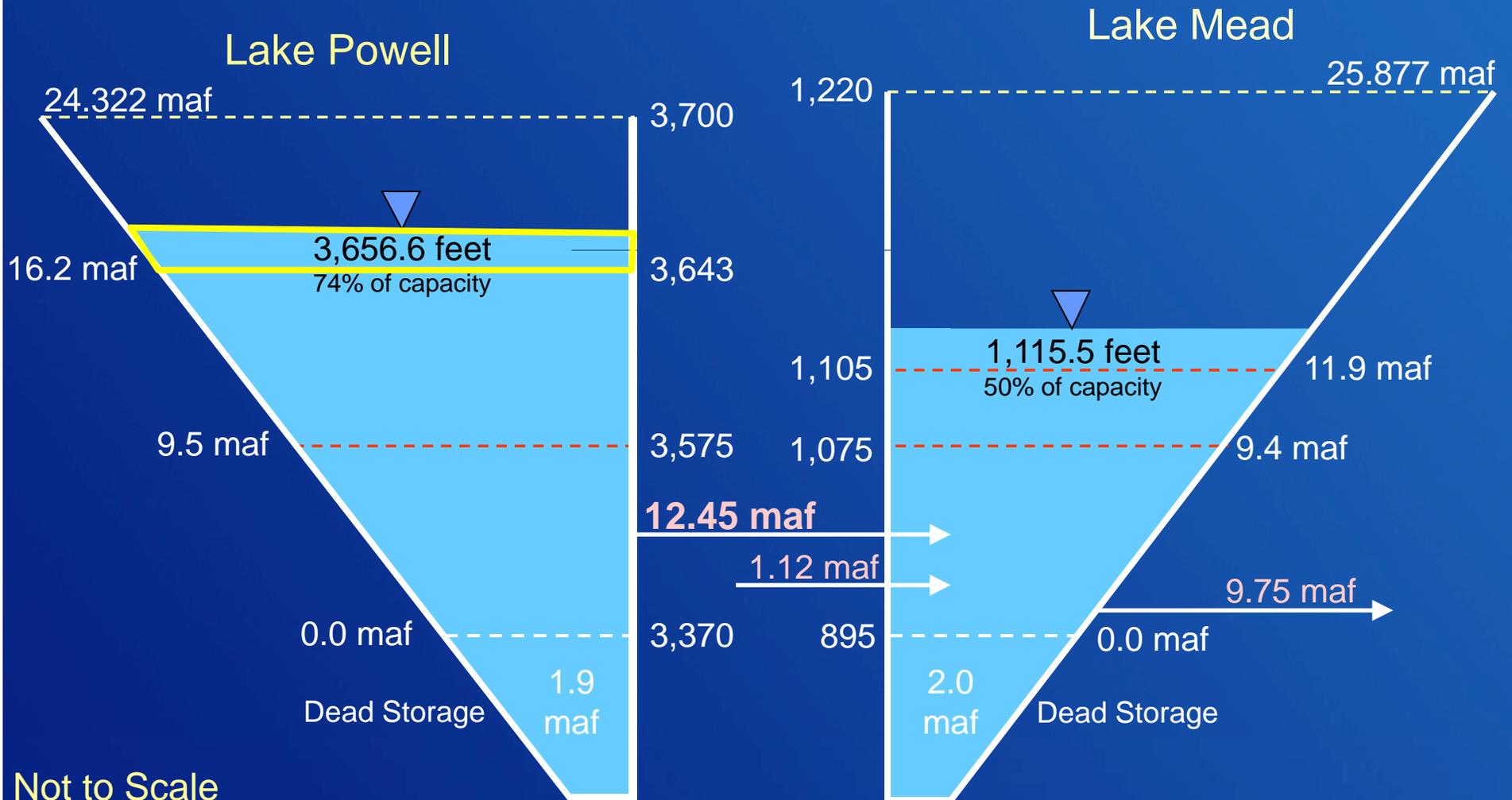
Projected Operations for WY 2012

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Water Year 2011 Projections

July 2011 Most Probable 24-Month Study

Projected Unregulated Inflow into Powell¹ = 16.21 maf (135% of average)



Not to Scale

¹ Projected elevations from the July 2011 24-Month Study which is based on the CBRFC inflow forecast dated July 5, 2011

Glen Canyon Power Plant Planned Unit Outage Schedule for Water Year 2012 (updated 7-19-2011)

Unit Number	Oct 2011	Nov 2011	Dec 2011	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012
1	[Red Bar]											[Red Bar]
2			[Red Bar]									
3					[Red Bar]							
4					[Red Bar]							
5	[Red Bar]											[Red Bar]
6 (3/4 Unit)	[Red Bar]											
7					[Red Bar]							
8					[Red Bar]							
Units Available	5	6.75	6.75	6.75	4.75	4.75 / 6.75	6.75	6.75	6.75	6.75	6.75	4.75
Capacity (cfs)	14,800	23,800	23,000	23,000	14,400	14,400 / 23,800	23,000	23,000	23,000	23,800	23,800	14,800
Capacity (kaf/month)	1050	1200	1400	1390	1000	1150	1260	1300	1260	1390	1390	1030
Max (kaf)	912	1200	1400	1250	900	1000	1260	1300	1260	1390	1390	1030
Most (kaf)	912	1200	1400	1120	800	800	1054	1150	1100	1150	1108	714
Min (kaf)	912	1200	800	800	700	600	600	600	700	850	839	476

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Annual Operating Plan

Lake Powell Unregulated Inflow WY2011

Scenario	2011 AOP WY 2011 Developed Aug 2010	Current Projection WY 2011 Developed July 2011
Minimum Probable	4.85 maf (40 %)	14.61 maf (121 %)
Most Probable	10.75 maf (89 %)	16.21 maf (135 %)
Maximum Probable	17.10 maf (142 %)	18.0 maf (149 %)

¹ Percentages and percent of average based on period of record from 1971-2000.

Annual Operating Plan

Lake Powell Unregulated Inflow WY2012

Scenario	2011 AOP WY 2011 Developed Aug 2010	2012 AOP WY 2012 1976-2005 Statistics used in July
Minimum Probable	4.85 maf (40 %)	4.71 maf (39 %)
Most Probable	10.75 maf (89 %)	11.15 maf (93 %)
Maximum Probable	17.10 maf (142 %)	18.05 maf (150 %)

¹ Percentages and percent of average based on period of record from 1971-2000.

Annual Operating Plan

Lake Powell Unregulated Inflow WY2012

Scenario	2011 AOP WY 2011 Developed Aug 2010	2012 AOP WY 2012 Outlook from CBRFC to be used in Aug 2011
Minimum Probable	4.85 maf (40 %)	
Most Probable	10.75 maf (89 %)	
Maximum Probable	17.10 maf (142 %)	

¹ Percentages and percent of average based on period of record from 1971-2000.

Lower Colorado River Basin

Hydrology and Operations

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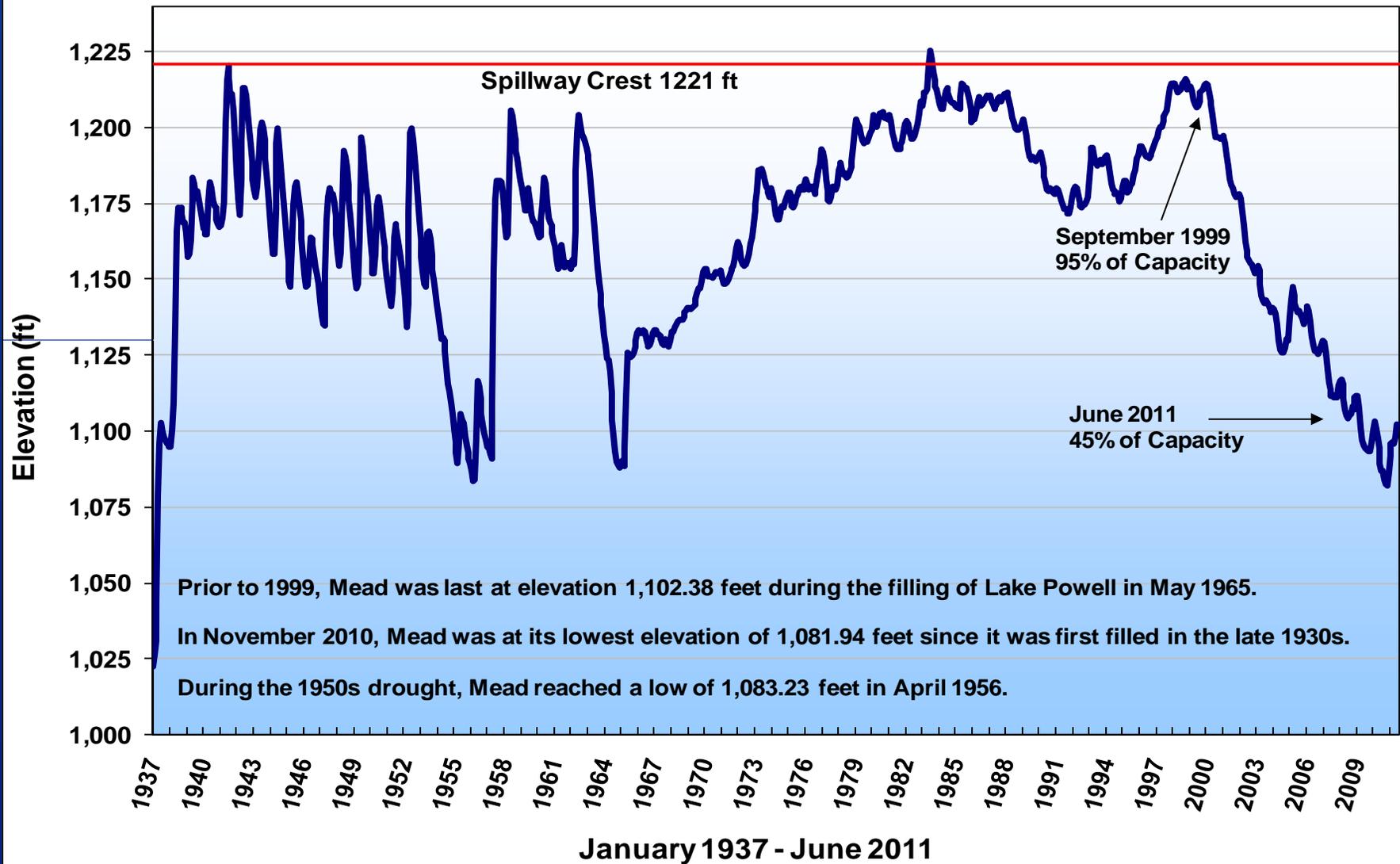
Colorado River Basin Storage (as of July 26, 2011)

Current Storage	Percent Full	MAF	Elevation (Feet)
Lake Powell	76%	18.58	3,661
Lake Mead	47%	12.06	1,106
Total System Storage*	66%	39.14	NA

*Total system storage was 34.23 maf or 58% this time last year

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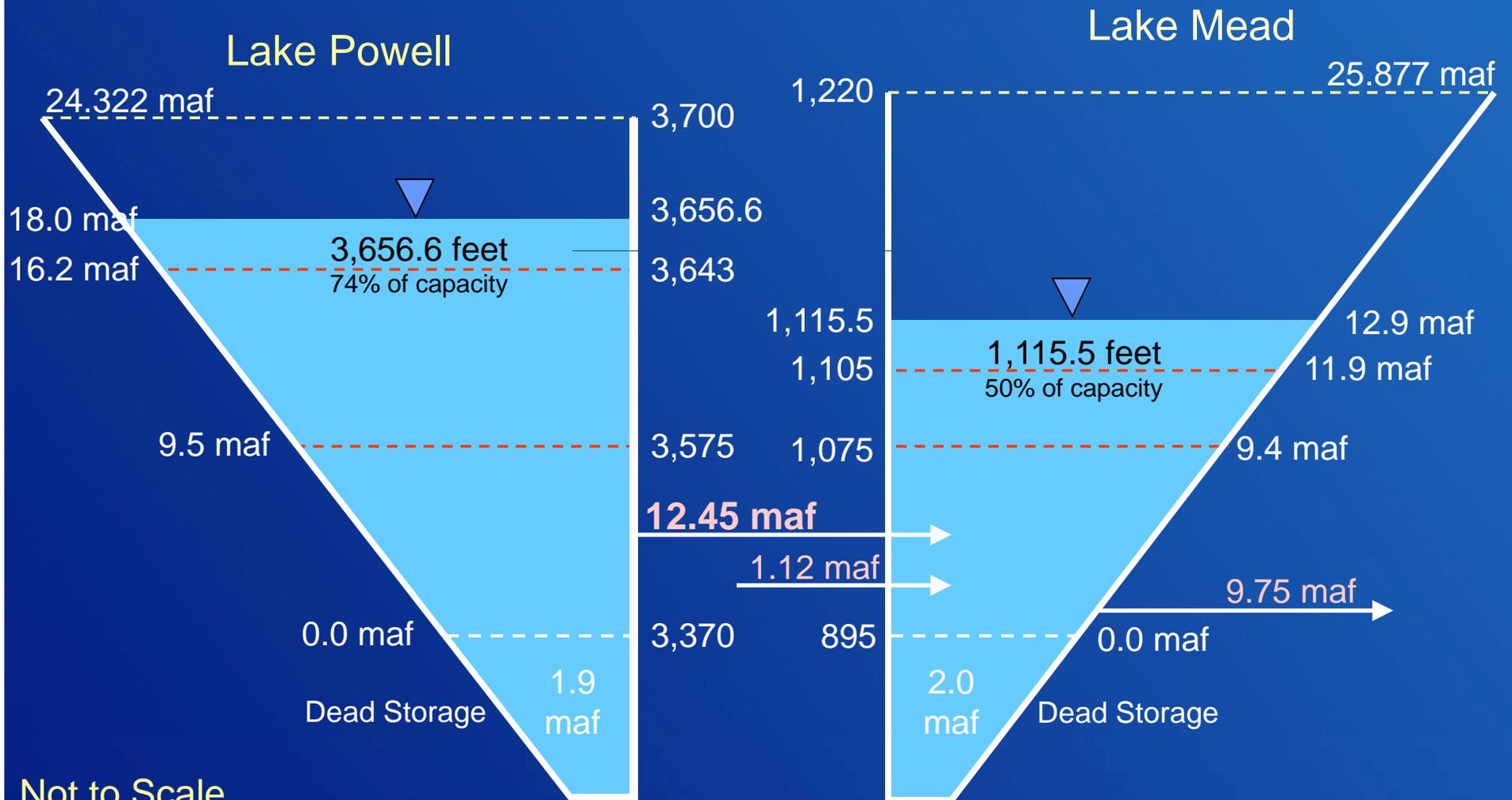
Lake Mead End of Month Elevation



Water Year 2011 Projections

July 2011 24-Month Study Most Probable Inflow Scenario

Projected Unregulated Inflow into Powell¹ = 16.21 maf (135% of average)

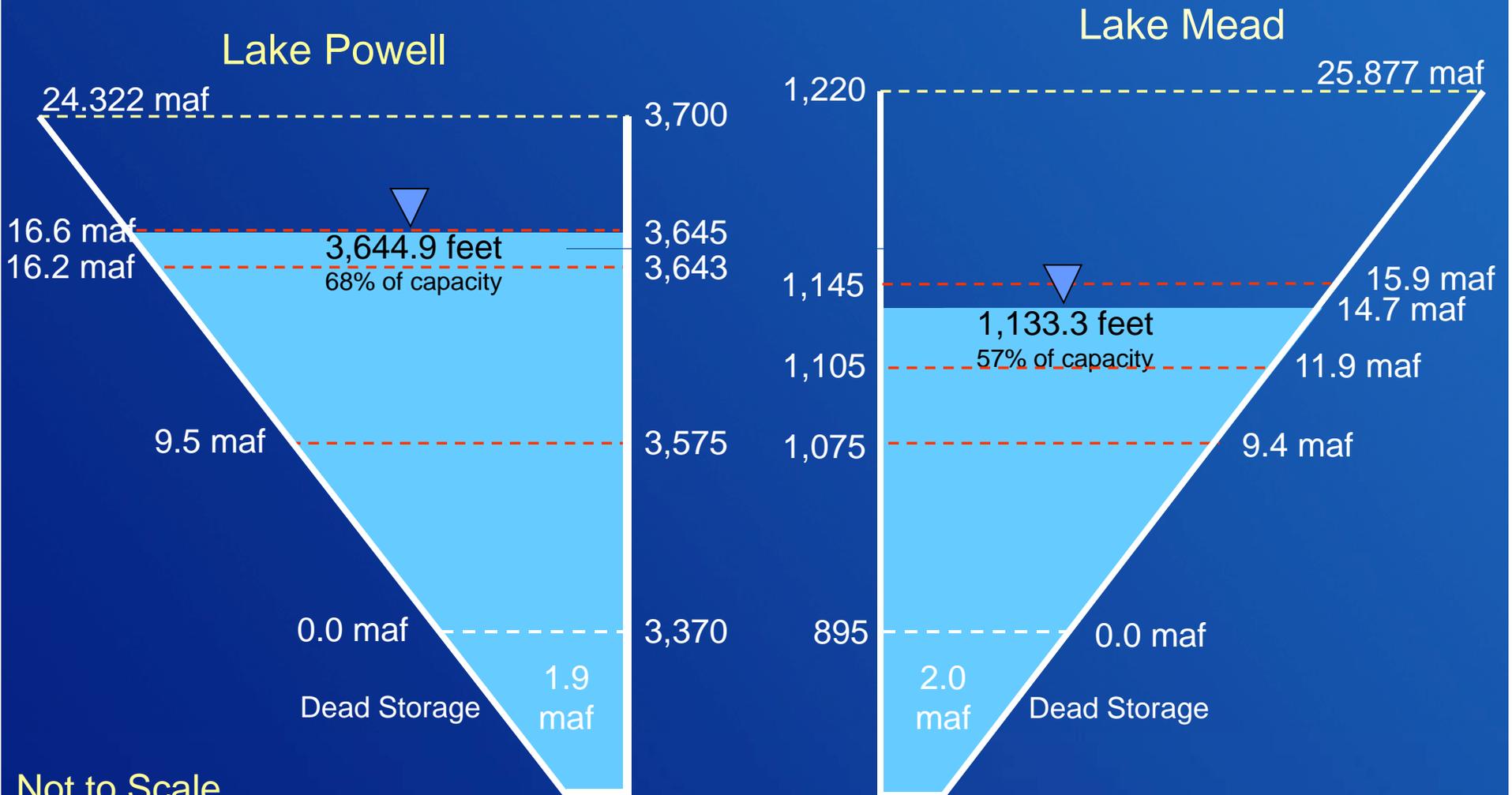


Not to Scale

¹ WY 2011 volume projected in the July 2011 24-Month Study

January 1, 2012 Projections

July 2011 24-Month Study Most Probable Inflow Scenario

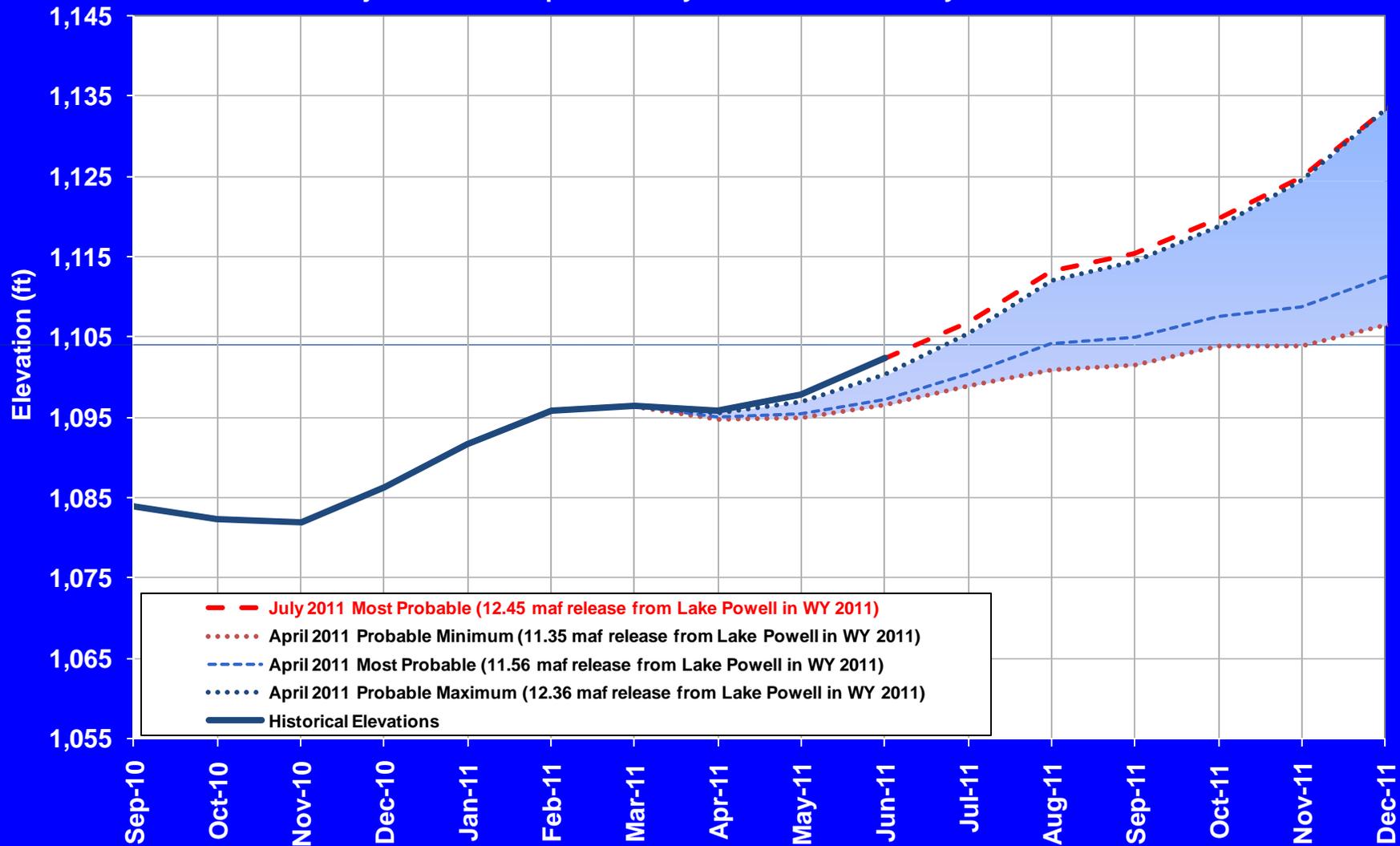


Not to Scale

¹ BOCY 2012 values based on the July 2011 24-Month Study

Lake Mead End of Month Elevation

Projections from April and July 2011 24-Month Study Inflow Scenarios



Lower Basin Side Inflows

Glen Canyon to Hoover in WY/CY 2011^{1,2}

Month in WY/CY 2011		Intervening Flow Glen Canyon to Hoover (KAF)	Intervening Flow Glen Canyon to Hoover (% of Average)	Difference From 5-Year Average (KAF)
H I S T O R Y	October 2010	80	136%	+21
	November 2010	13	27%	-35
	December 2010	248	251%	+149
	January 2011	74	97%	-2
	February 2011	84	91%	-8
	March 2011	77	96%	-3
	April 2011	140	233%	+80
	May 2011	104	214%	+55
P R O J E C T E D	June 2011	73	317%	+50
	July 2011	50		
	August 2011	109		
	September 2011	70		
	October 2011	59		
	November 2011	48		
	December 2011	99		
WY11 Totals		1,122	138%	+307
CY11 Totals		987	121%	+172

¹ Values were computed with the LC's gain-loss model for the most recent 24-month study.

² Percent of average are based on the 5-year mean from 2006-2010 in CY 2011.

YAO Operations Update

- YDP Pilot Run
 - Completed on March 23, 2011
 - Approximately 30,000 AF were delivered to Mexico at NIB
 - Arranged water delivered to the Ciénega
 - 10 KAF delivered by United States
 - 19 KAF combined delivered by Mexico and NGOs



¹ All values are provisional

YAO Operations Update

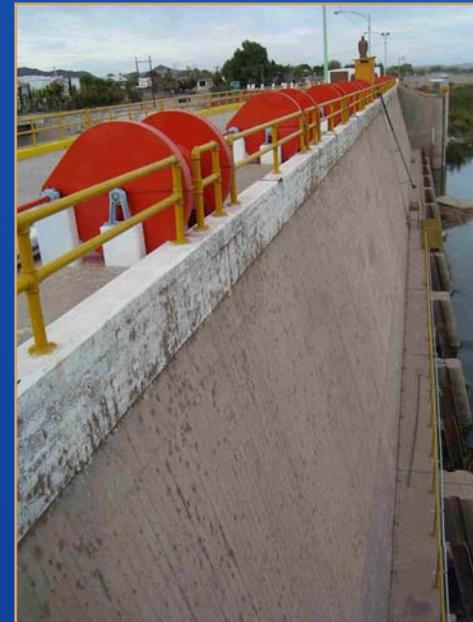
- Next Steps
 - Publish Report on the YDP pilot run by December 2011
 - Engage interested stakeholders on future discussion of YDP
 - YDP is back on maintenance mode



¹ All values are provisional

YAO Operations Update

- Brock and Senator Wash conservation year-to-date through July 21, 2011
 - Brock – 55,400 AF
 - Senator Wash – 72,300 AF
- Excess Flows to Mexico year-to-date through July 25, 2011
 - 51,104 AF



¹ All values are provisional

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An aerial photograph of a large dam and reservoir. The dam is a curved concrete structure with several spillways. The reservoir is a deep blue-green color, surrounded by rugged, brown mountains. The sky is clear and blue. The text is overlaid in white on the image.

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