

# RECLAMATION

*Managing Water in the West*

**Fontenelle Working Group Meeting**

**August 26, 2015**



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Upper Colorado Region  
Hydraulic Engineer



U.S. Department of the Interior  
Bureau of Reclamation

- 2015 Operations Summary
- Dfd
  - What we expected (in April) vs. what we got.
  - Lessons learned.
- Current conditions
- Anticipated WY 2016 Operations
- Other items of interest

# 2015 Operations Summary

## (the good)

- Reservoir filled
  - Peak elevation: 6505.5 ft (June 18)
  - Avoided spill (mostly)
- Spring peak
  - Peak release: 7,030 cfs (June 13)
  - Peak inflow: 7,520 cfs (June 13)
- Sufficient carry-over storage winter 2016
  - Baseflows set at 1,020 cfs

# 2015 Operations Summary

## (the not so good)

- Underestimated A-J inflow volume
  - Entered May anticipating “dry year operation”
- Filled reservoir by early June
  - High carry-over storage + May rainfall
  - Limited flexibility during June melt



*Fontenelle Reservoir  
“not spilling”, June 16, 2015*

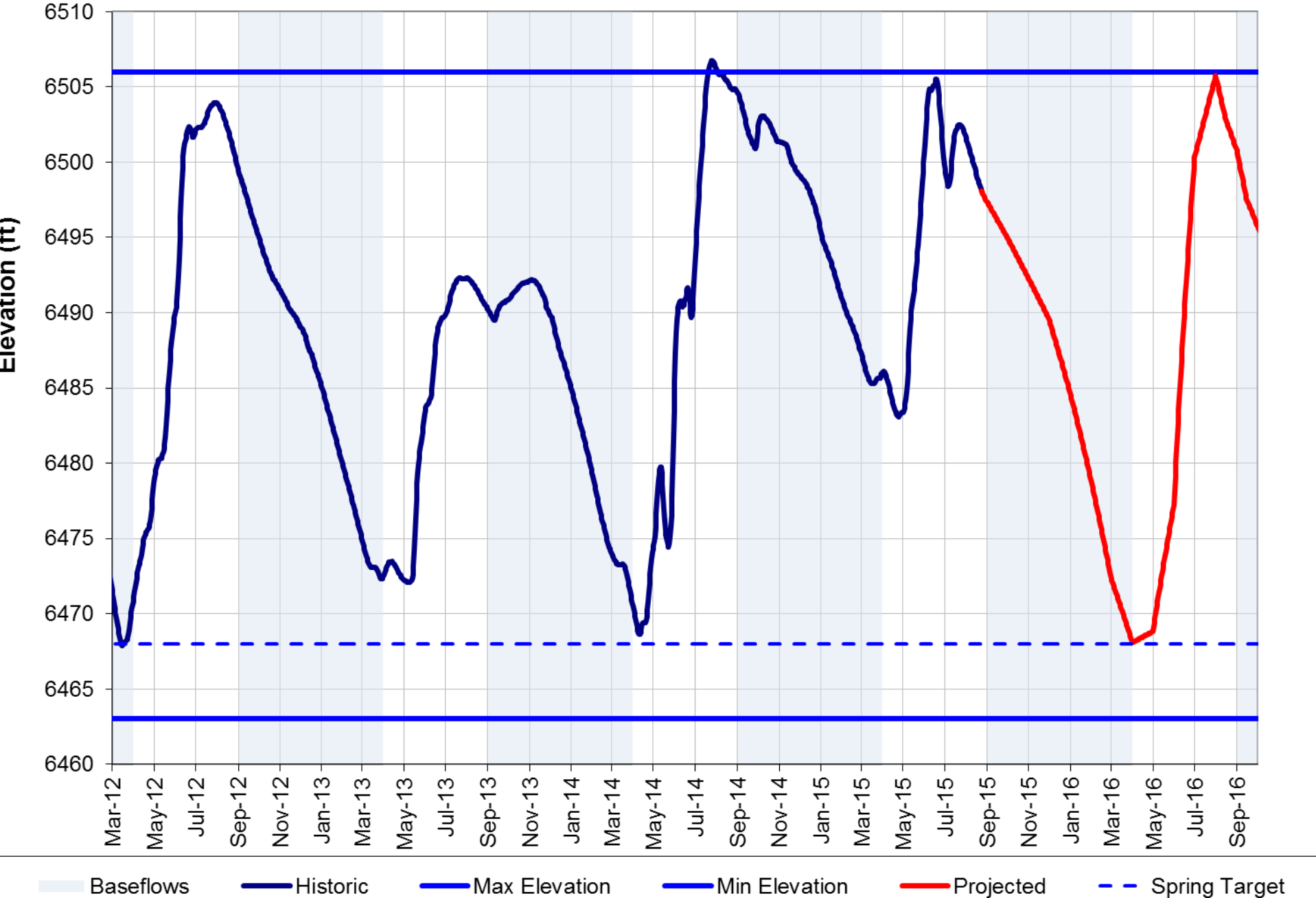


# Water Year 2015 Operations Review

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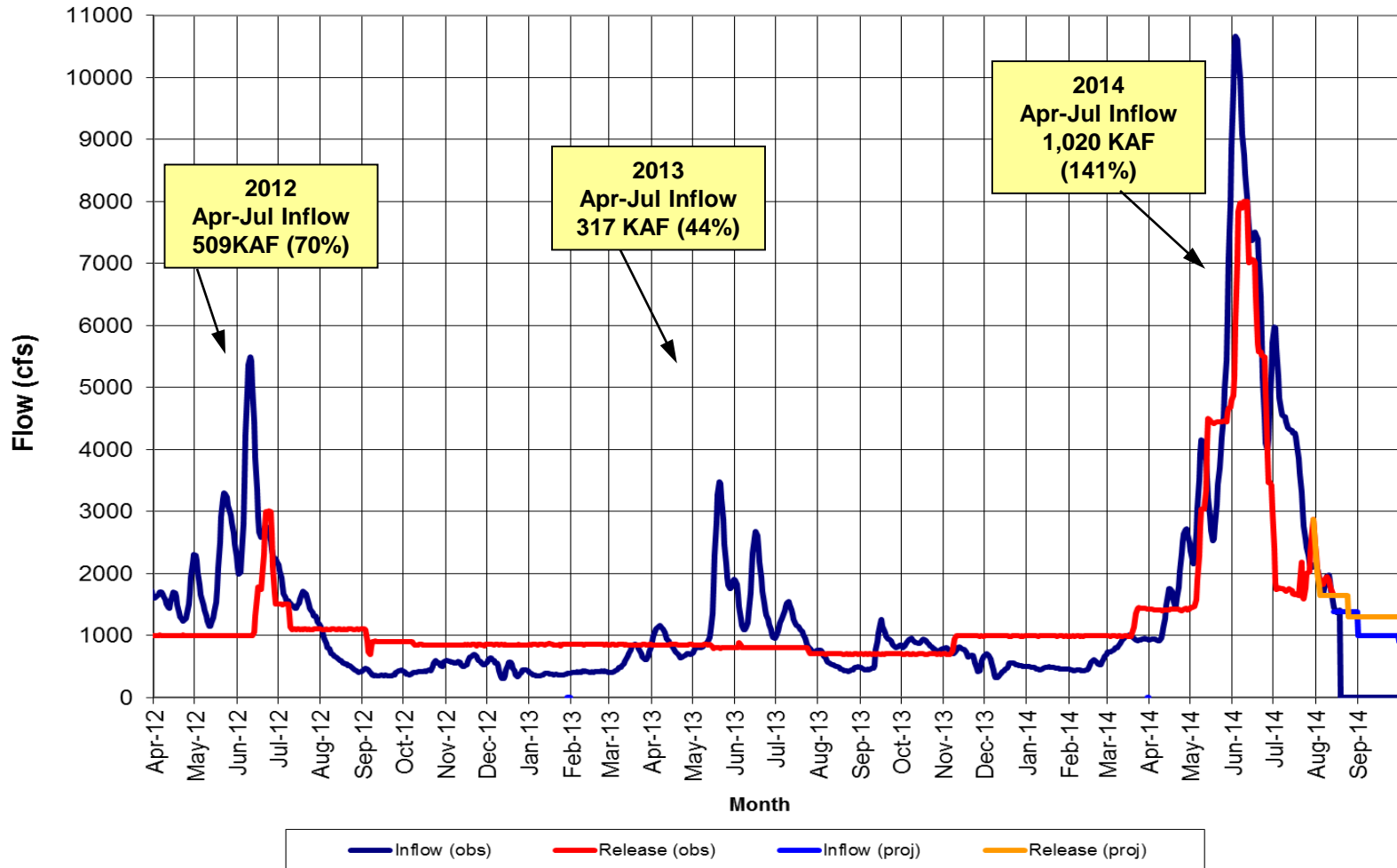
# Fontenelle Elevations

Observed 2012, 2013, 2014, & 2015; Most Probable 2016

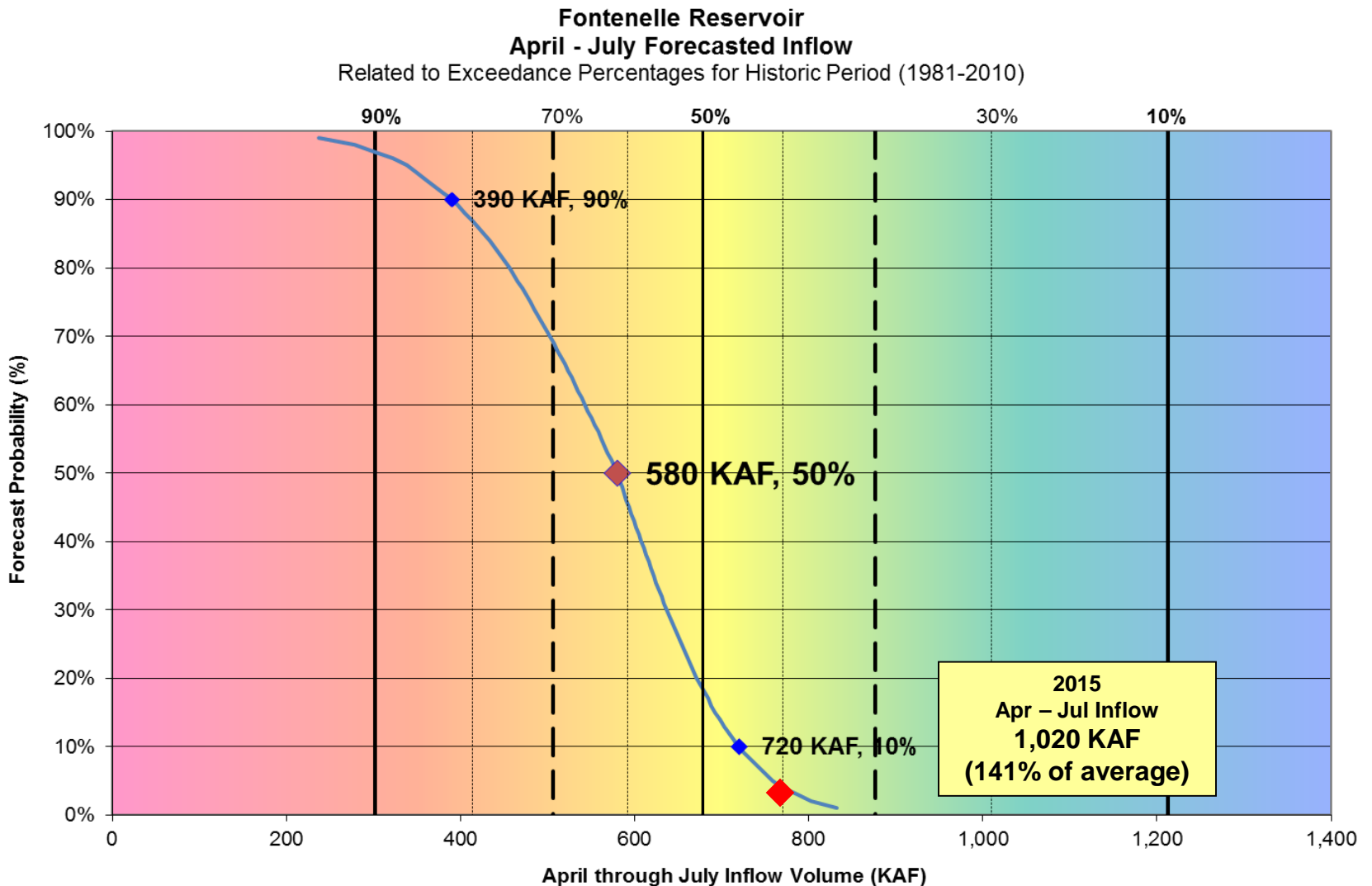


# Observed Inflow and Release

Fontenelle Inflow and Release  
2012, 2013, 2014



# April 2015 Official Inflow Forecast





# Fontenelle Reservoir Current Status

As of 4/13/15

## Storage

Live Capacity	345,000 AF
Capacity on 4/13/15	<u>193,295 AF</u>
	(56% full) <i>HIGH for April</i>

## Pool Elevation

Top of reservoir	6506.0 ft
Elevation on 4/13/15	<u>6484.7 ft</u>
Elevation below top	21.3 ft

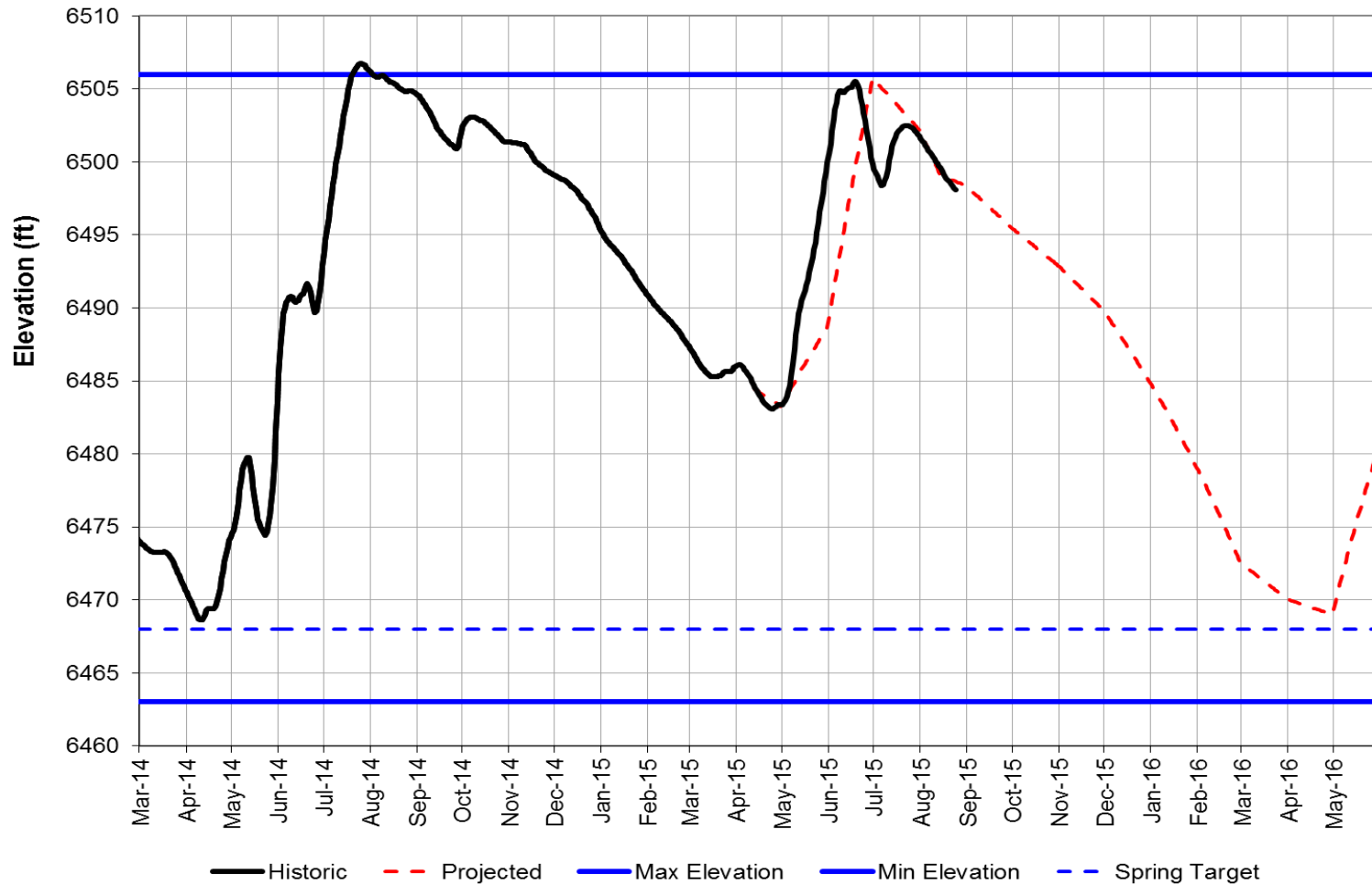
## Inflow and Release

5 Day Average Inflow	1,230 cfs
Current Release on 4/13/15	1,700 cfs

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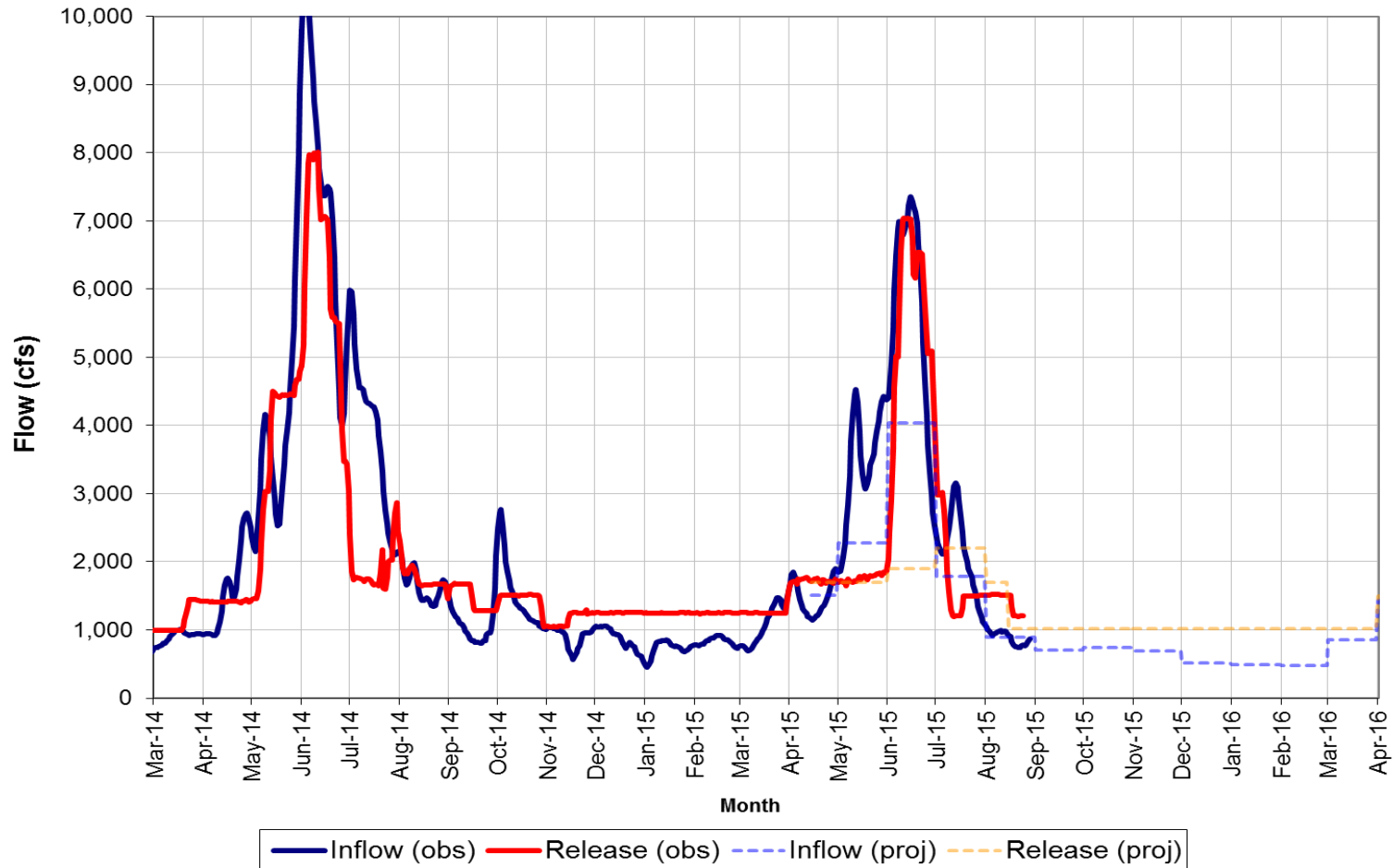
# Fontenelle Reservoir Elevation

Fontenelle Elevations  
2015 Observed

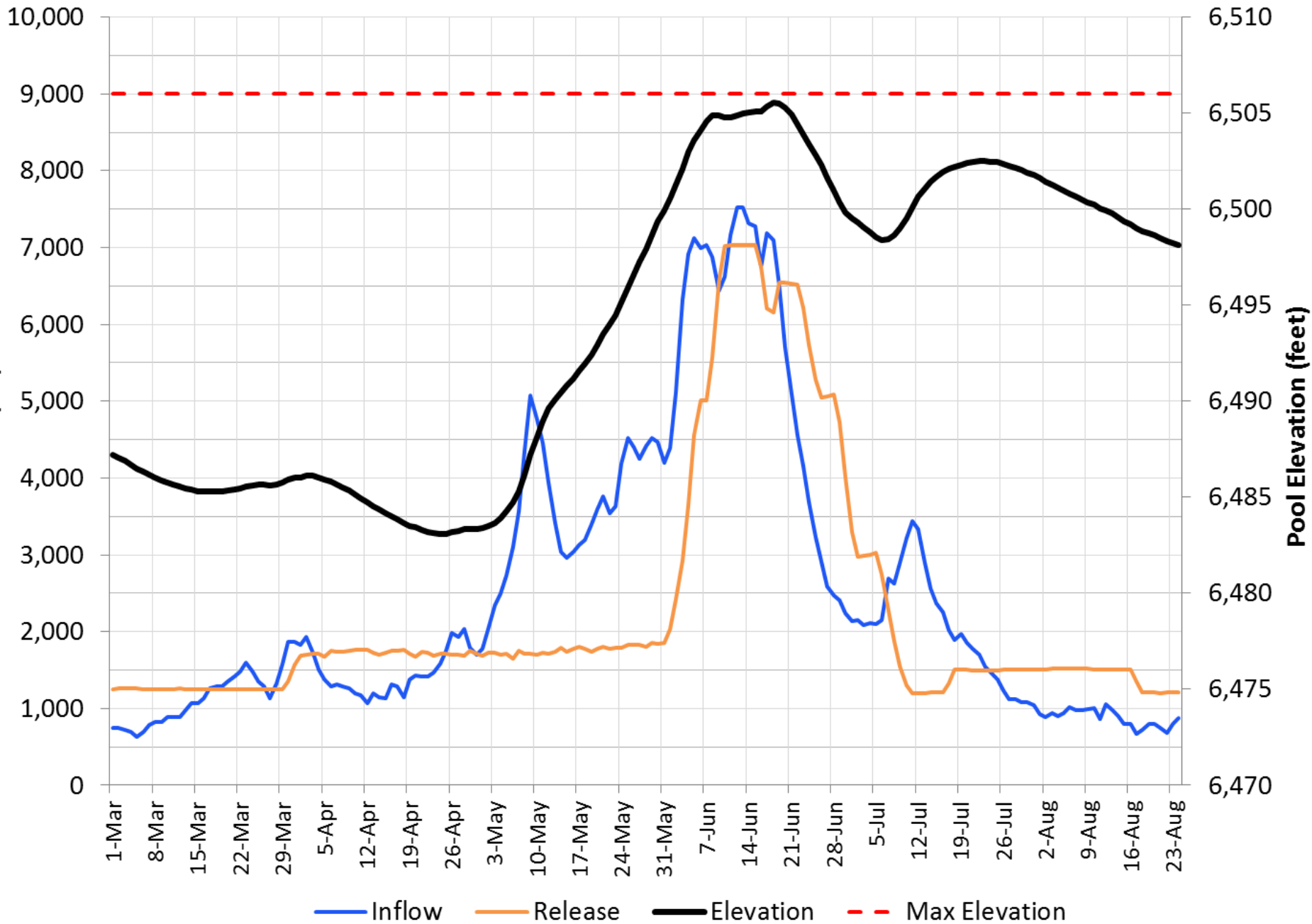


# Fontenelle Inflow and Release

Fontenelle Inflow and Release  
2015 Observed



# Fontenelle Dam Elevation, Inflow, and Releases - WY 2015



# Current Conditions August 2015

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# Fontenelle Current Conditions

## Storage

Live Capacity	345,000 AF
Capacity on 8/24/15	<u>285,000 AF</u> (83% full)

## Pool Elevation

Reservoir Elev. (Max)	6506.00 ft
Elevation on 8/24/15	<u>6498.22 ft</u>
Elevation below (Max)	7.78 ft

## Inflow and Release

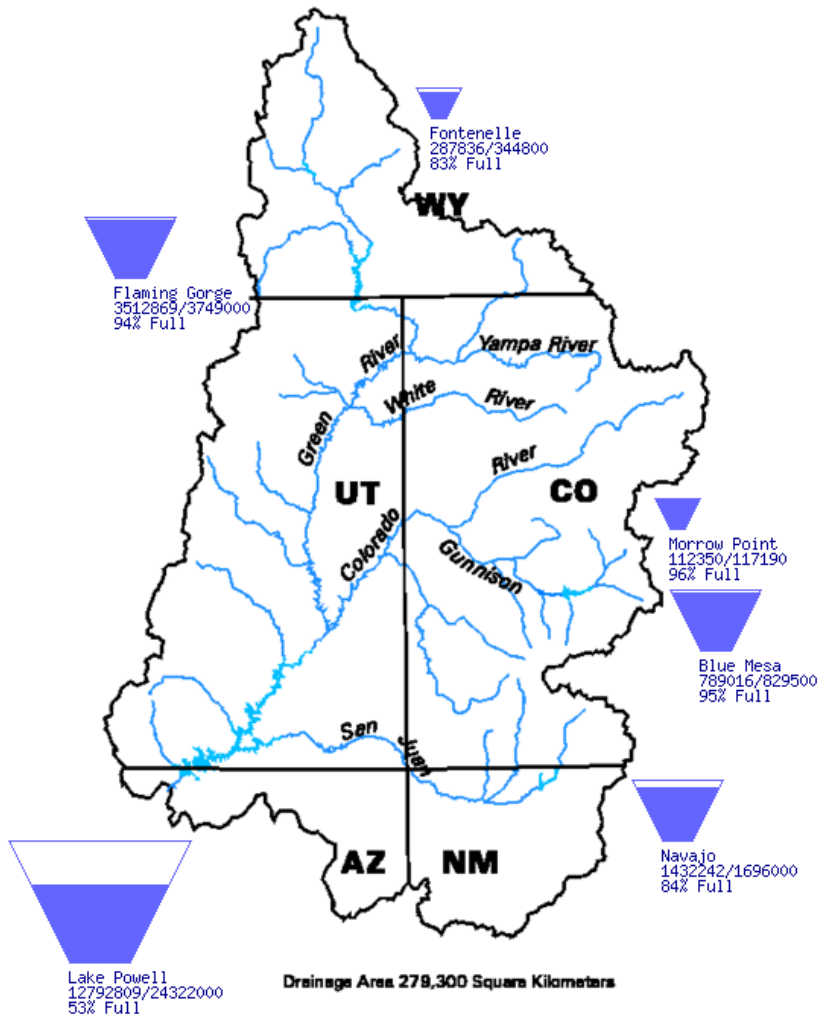
Average Inflow on 8/24/15	800 cfs
Current Release on 8/24/15	1,200 cfs



# Current Conditions: CRSP System Storage

Data Current as of:  
08/20/2015

## Upper Colorado River Drainage Basin



## Storage Conditions (% Full)

- Fontenelle – 83%
- Flaming Gorge – 94%
- Blue Mesa – 95%
- Navajo – 84%
- Glen Canyon – 53%

## Observed April-July Inflow (%Avg)

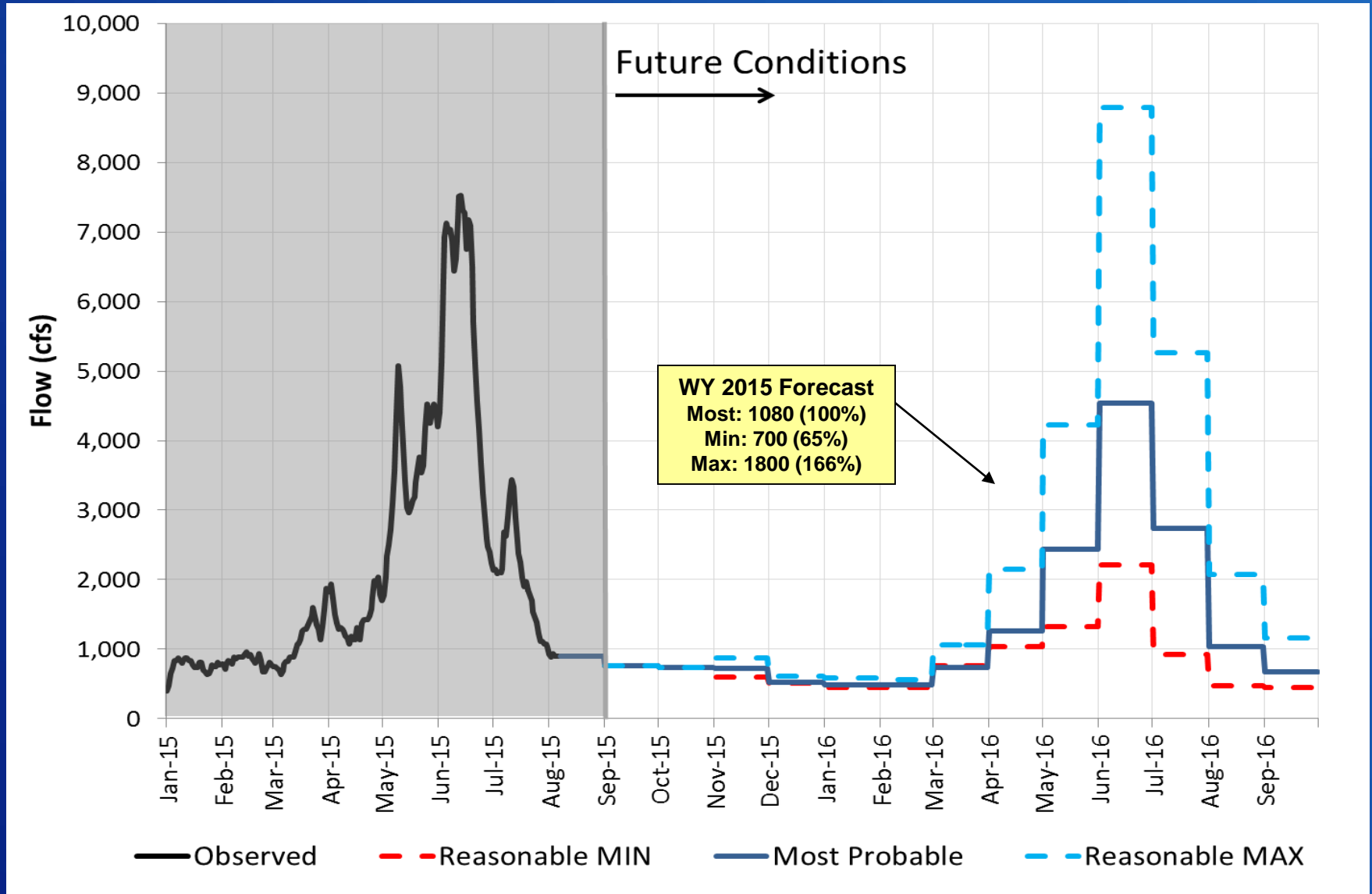
- Fontenelle – 106%
- Flaming Gorge – 106%
- Blue Mesa – 105%
- Navajo – 84%
- Glen Canyon – 94%

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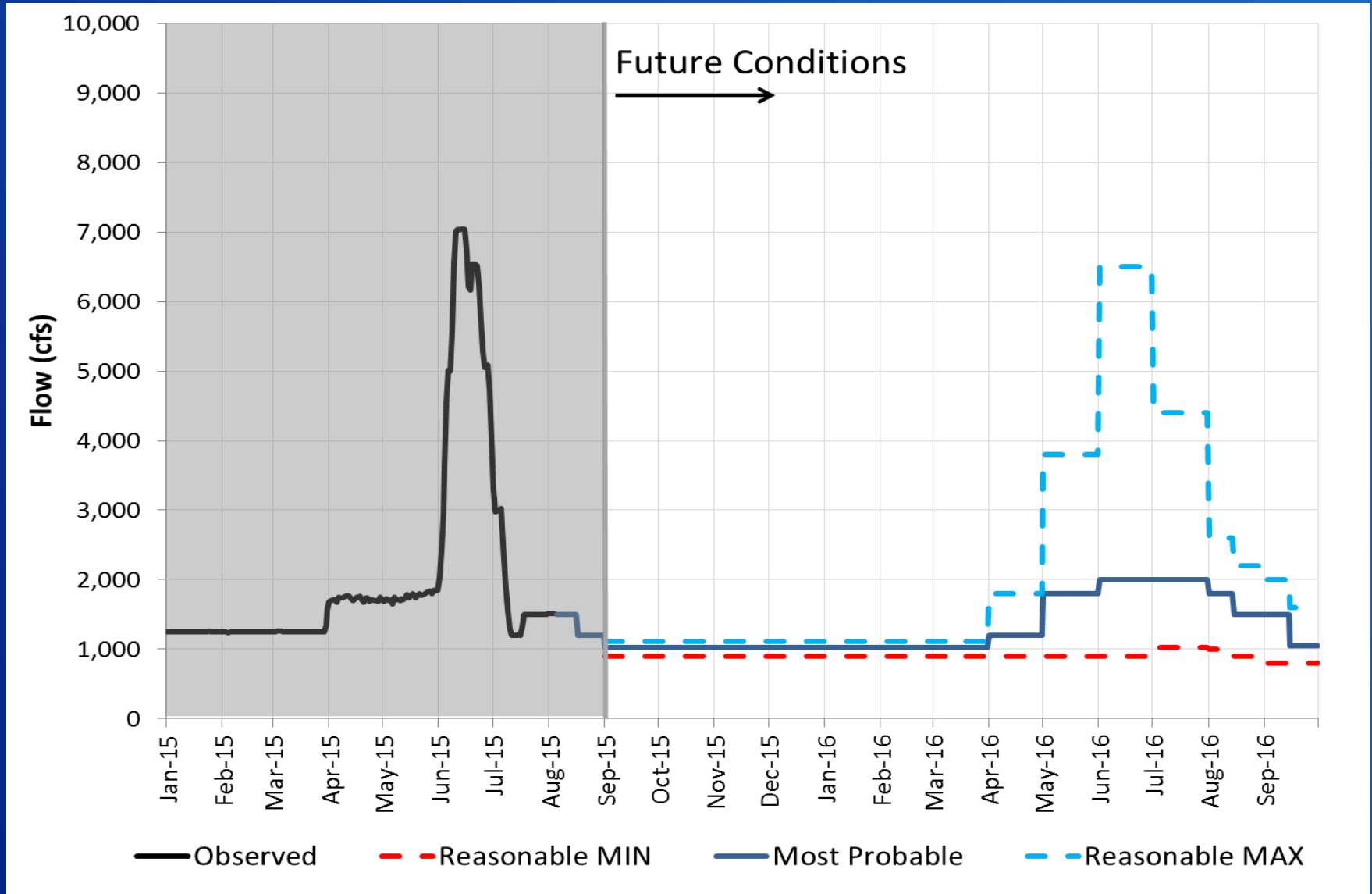
# Water Year 2016 Projected Operations

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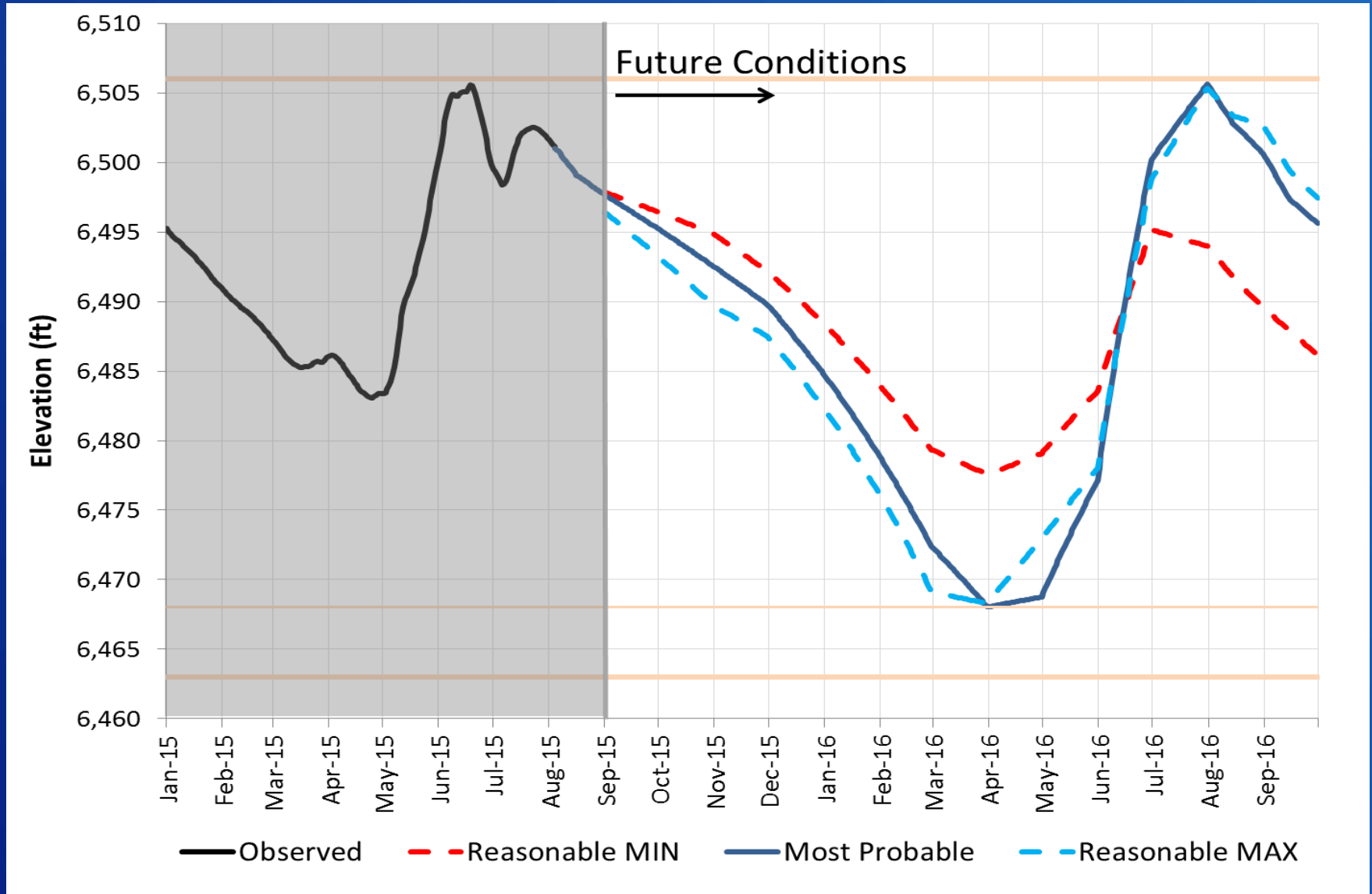
# Inflow Scenarios - Water Year 2015



# Release Scenarios - Water Year 2015



# Elevation Scenarios - Water Year 2015



# Other Items of Interest

- Reclamation website issues
  - Contact us directly at [ResourceMgr@usbr.gov](mailto:ResourceMgr@usbr.gov)
- Riprap extension project
  - Legislation proposed by WY, approved at both House and Senate committee levels
  - If revised legislation passes, would allow



# Other Items of Interest

- Drought Contingency: weather modification
  - Science and Technology Advisor to brief leadership in September
  - Leadership to develop policy position
- Drought Contingency: demand management
  - Upper Basin System Conservation Pilot Program
  - 5 of 10 qualified proposals submitted by WY
  - Selections made, currently negotiating contracts

# Fontenelle Working Group Meeting August 2015



Green River at La Barge, WY 6/20/2009

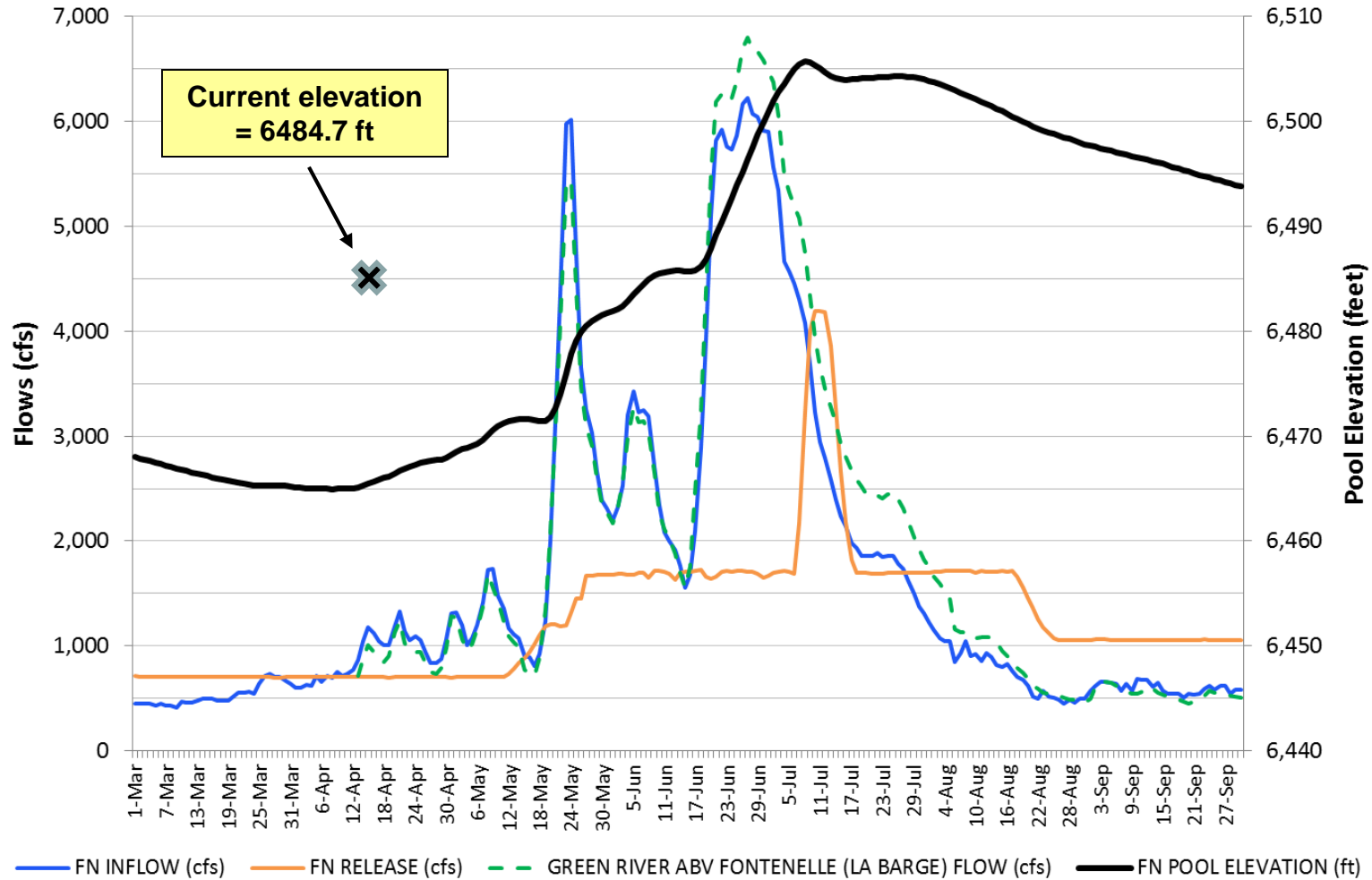
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Extra Slides Follow

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# Historic Hydrology

## Fontenelle Dam Inflow & Releases and Green River Flows 2008



# Historic Inflow Statistics

## Period of Record 1981-2010

### ANNUALIZED MONTHLY INFLOW VOLUME(THOUSAND-ACRE-FEET)

Month	95%	90%	80%	75%	70%	60%	50%	40%	30%	25%	20%	10%	5%	Average
OCT	28	31	34	36	37	41	44	49	54	57	60	71	81	49
NOV	28	32	37	38	40	42	44	45	47	48	49	51	53	42
DEC	27	28	30	30	31	32	32	33	34	35	35	37	38	32
JAN	23	25	28	28	29	30	31	32	33	34	34	36	37	30
FEB	22	24	26	26	27	28	29	29	30	30	31	32	33	28
MAR	39	42	46	47	49	51	53	55	58	59	60	64	68	53
APR	55	56	62	65	68	74	81	88	97	102	108	126	142	85
MAY	47	74	105	116	128	147	164	182	201	212	224	255	282	164
JUN	93	120	162	180	198	234	271	311	358	389	419	514	601	299
JUL	26	51	85	99	112	137	162	189	220	240	259	318	371	178
AUG	17	27	41	47	52	62	72	83	94	101	107	126	141	77
SEP	20	25	31	33	36	40	44	49	54	57	59	68	75	46
<b>ANNUAL</b>	424	535	686	746	806	917	1,028	1,146	1,279	1,363	1,446	1,697	1,921	1,082
<b>APR-JUL</b>	220	301	414	460	506	592	678	770	876	943	1,010	1,213	1,396	726

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# Historic Inflow Statistics

## Period of Record 1971-2000

### ANNUALIZED MONTHLY INFLOW VOLUME(THOUSAND-ACRE-FEET)

Month	95%	90%	80%	75%	70%	60%	50%	40%	30%	25%	20%	10%	5%	Average
OCT	41	<b>49</b>	57	59	62	66	71	75	80	82	84	<b>90</b>	92	<b>49</b>
NOV	41	<b>51</b>	61	63	65	68	70	70	70	69	68	<b>65</b>	61	<b>42</b>
DEC	39	<b>45</b>	49	50	51	52	52	51	51	50	49	<b>47</b>	44	<b>32</b>
JAN	34	<b>40</b>	46	47	48	49	50	50	49	48	48	<b>45</b>	42	<b>30</b>
FEB	32	<b>38</b>	42	43	44	45	45	45	45	44	43	<b>40</b>	38	<b>28</b>
MAR	57	<b>67</b>	76	78	81	83	85	85	85	85	84	<b>81</b>	77	<b>53</b>
APR	55	<b>56</b>	62	65	68	74	81	88	97	102	108	<b>126</b>	142	<b>85</b>
MAY	47	<b>74</b>	105	116	128	147	164	182	201	212	224	<b>255</b>	282	<b>164</b>
JUN	93	<b>120</b>	162	180	198	234	271	311	358	389	419	<b>514</b>	601	<b>299</b>
JUL	26	<b>51</b>	85	99	112	137	162	189	220	240	259	<b>318</b>	371	<b>178</b>
AUG	24	<b>42</b>	67	77	86	102	115	128	139	144	149	<b>158</b>	161	<b>77</b>
SEP	29	<b>39</b>	51	55	59	65	71	75	79	81	83	<b>85</b>	85	<b>46</b>
<b>ANNUAL</b>	517	<b>673</b>	863	933	1,002	1,123	1,236	1,350	1,473	1,546	1,619	<b>1,824</b>	1,995	<b>1,243</b>
<b>APR-JUL</b>	220	<b>301</b>	414	460	506	592	678	770	876	943	1,010	<b>1,213</b>	1,396	<b>726</b>

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