

RECLAMATION

Managing Water in the West

Fontenelle Working Group Meeting

April 23, 2014



U.S. Department of the Interior
Bureau of Reclamation

Heather Patno
Upper Colorado Region
Hydraulic Engineer

Fontenelle Reservoir Current Status

As of 4/22/14

Storage

Live Capacity	345,000 AF
Capacity on 4/22/14	<u>117,566 AF</u>
	(34% full) <i>typical for April</i>

Pool Elevation

Top of reservoir	6506.0 ft
Elevation on 4/22/14	<u>6469.8 ft</u>
Elevation below top	36.2 ft

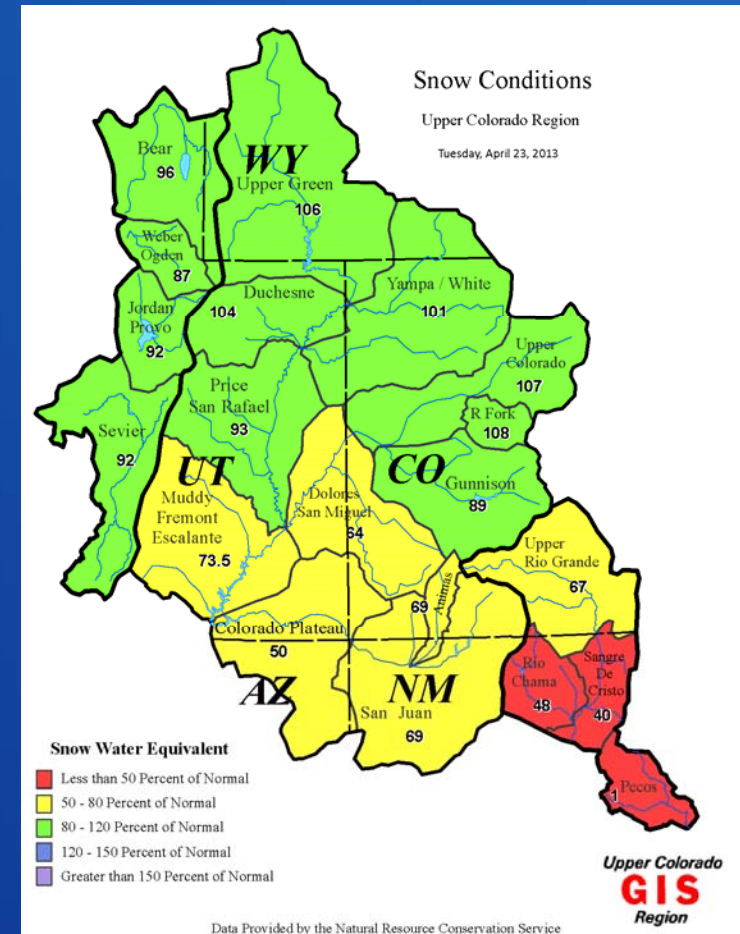
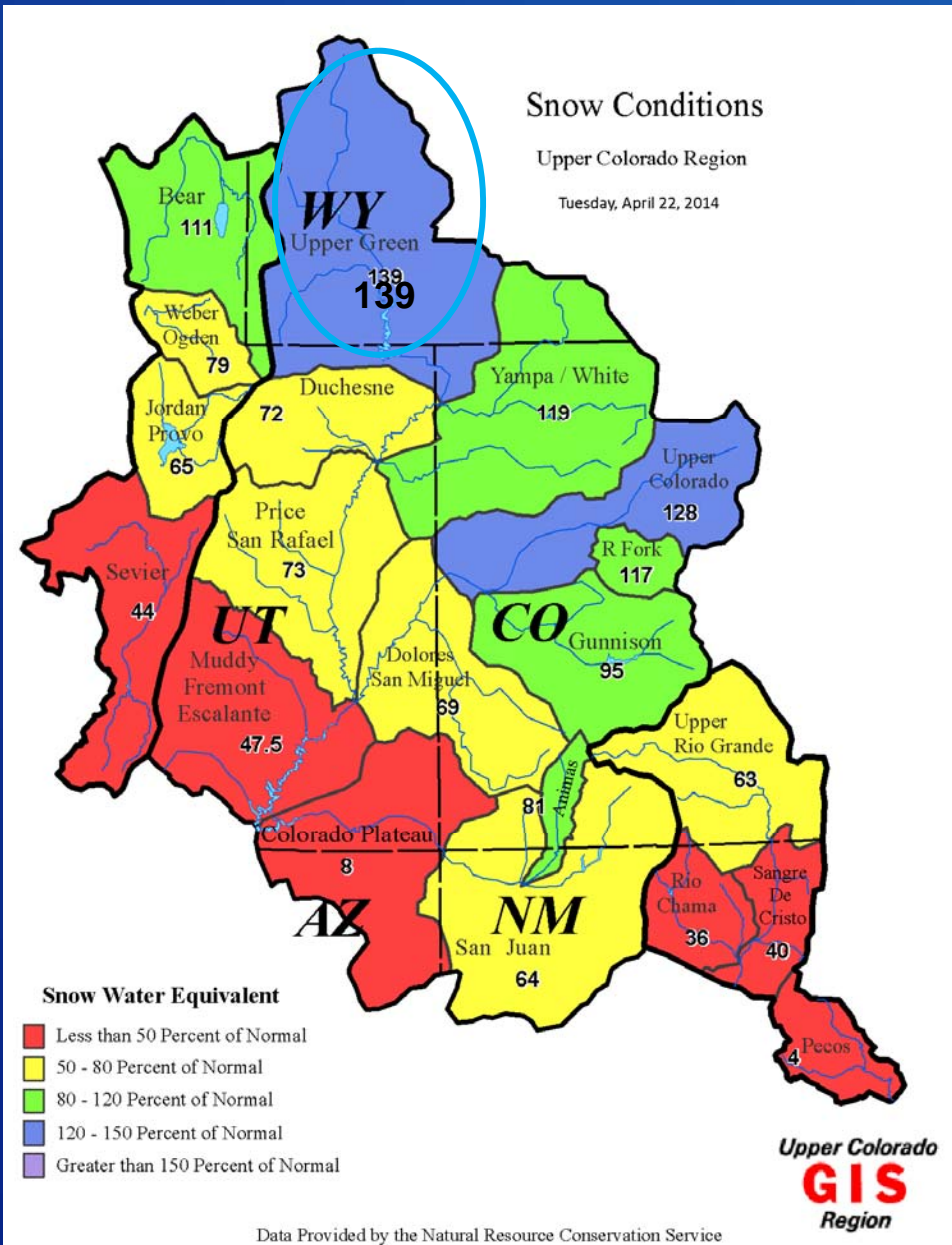
Inflow and Release

5 Day Average Inflow	1,600 cfs
Current Release on 4/22/14	1,420 cfs

* *Expect steady releases throughout the season*

RECLAMATION

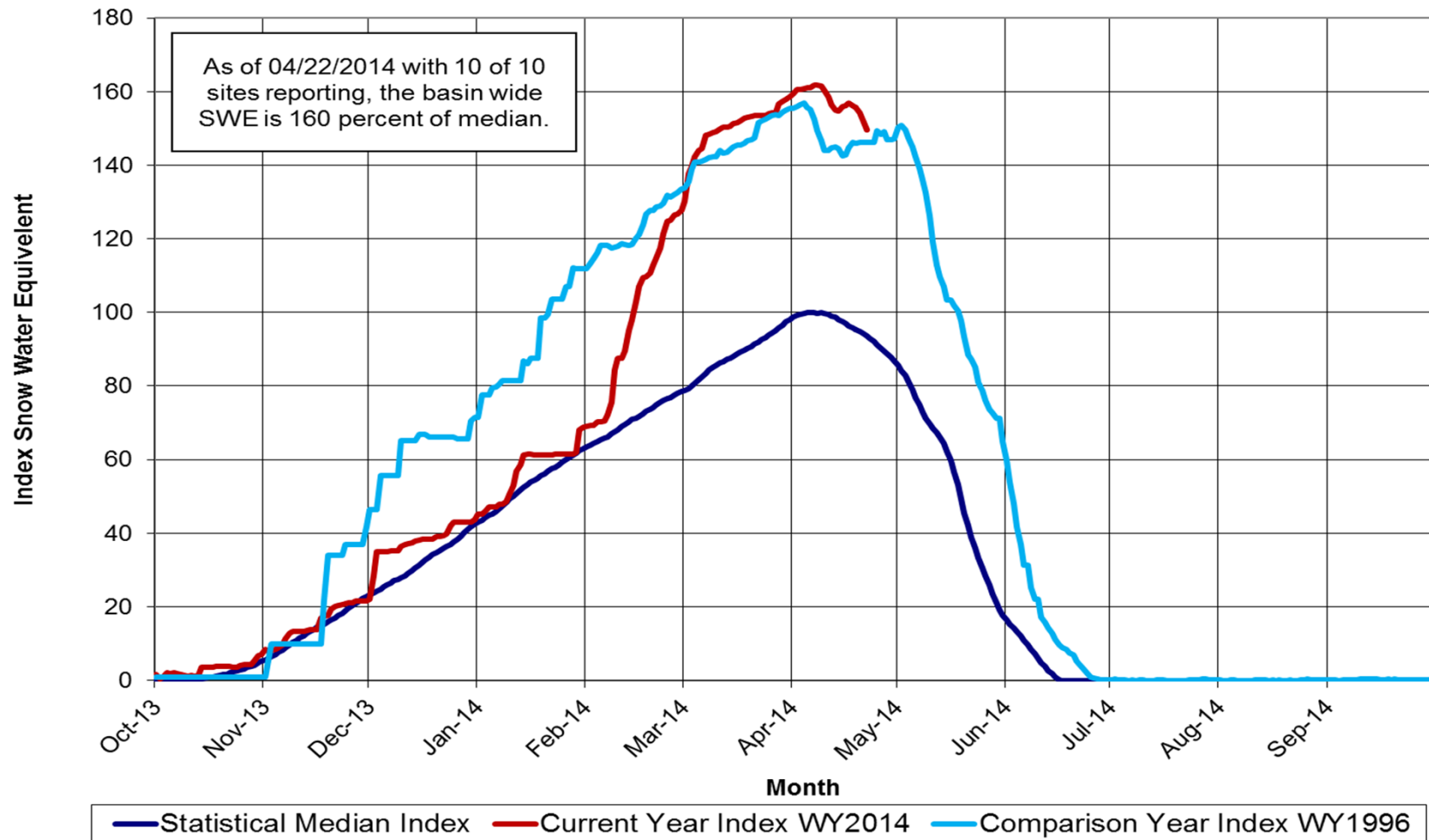
Snow Water Equivalent (SWE) Current Conditions



RECLAMATION

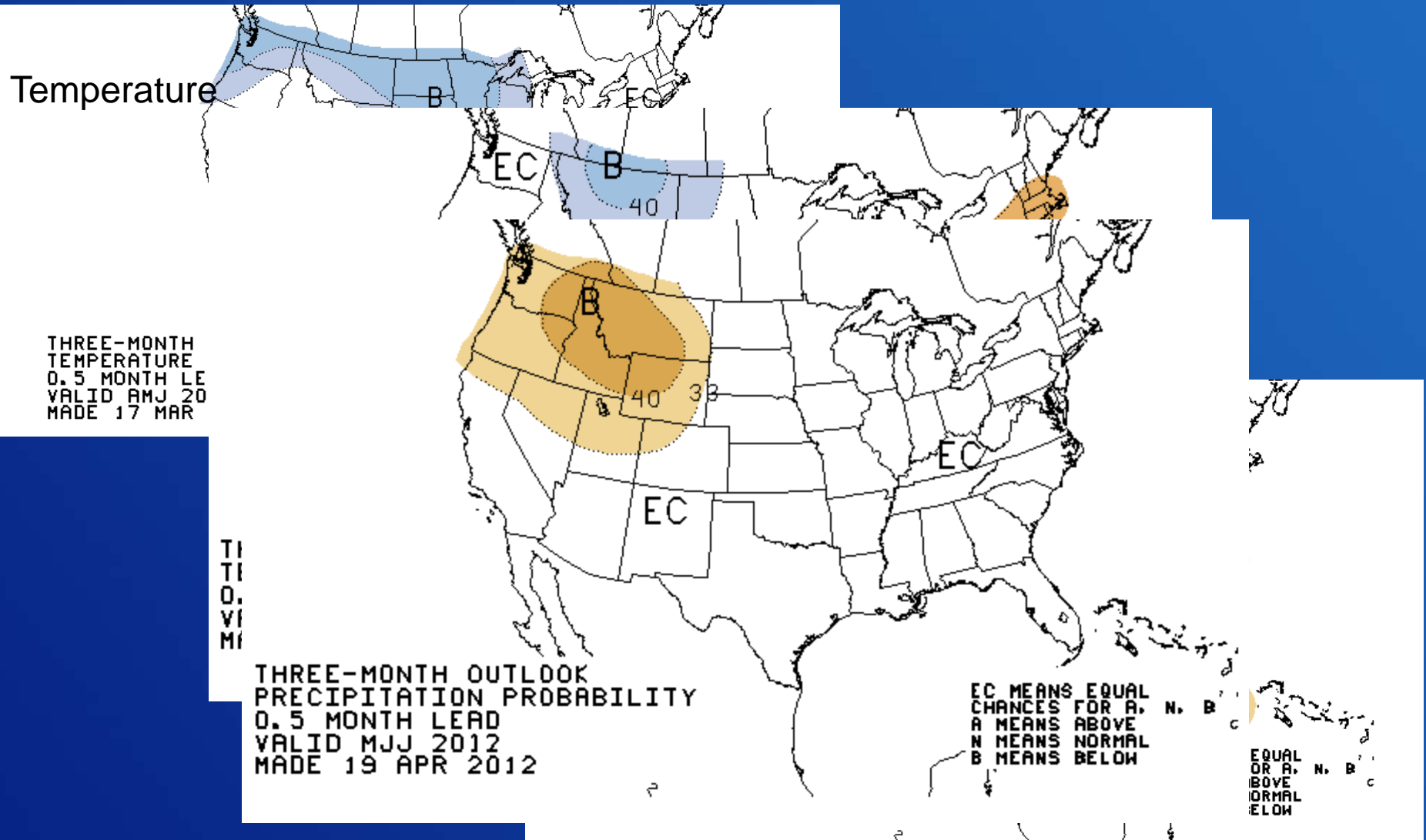
Current Snowpack

Upper Green River Basin Snotel Tracking
Aggregate of 13 Snotel Sites above Fontenelle Reservoir



Data Provided by the Natural Resource Conservation Service

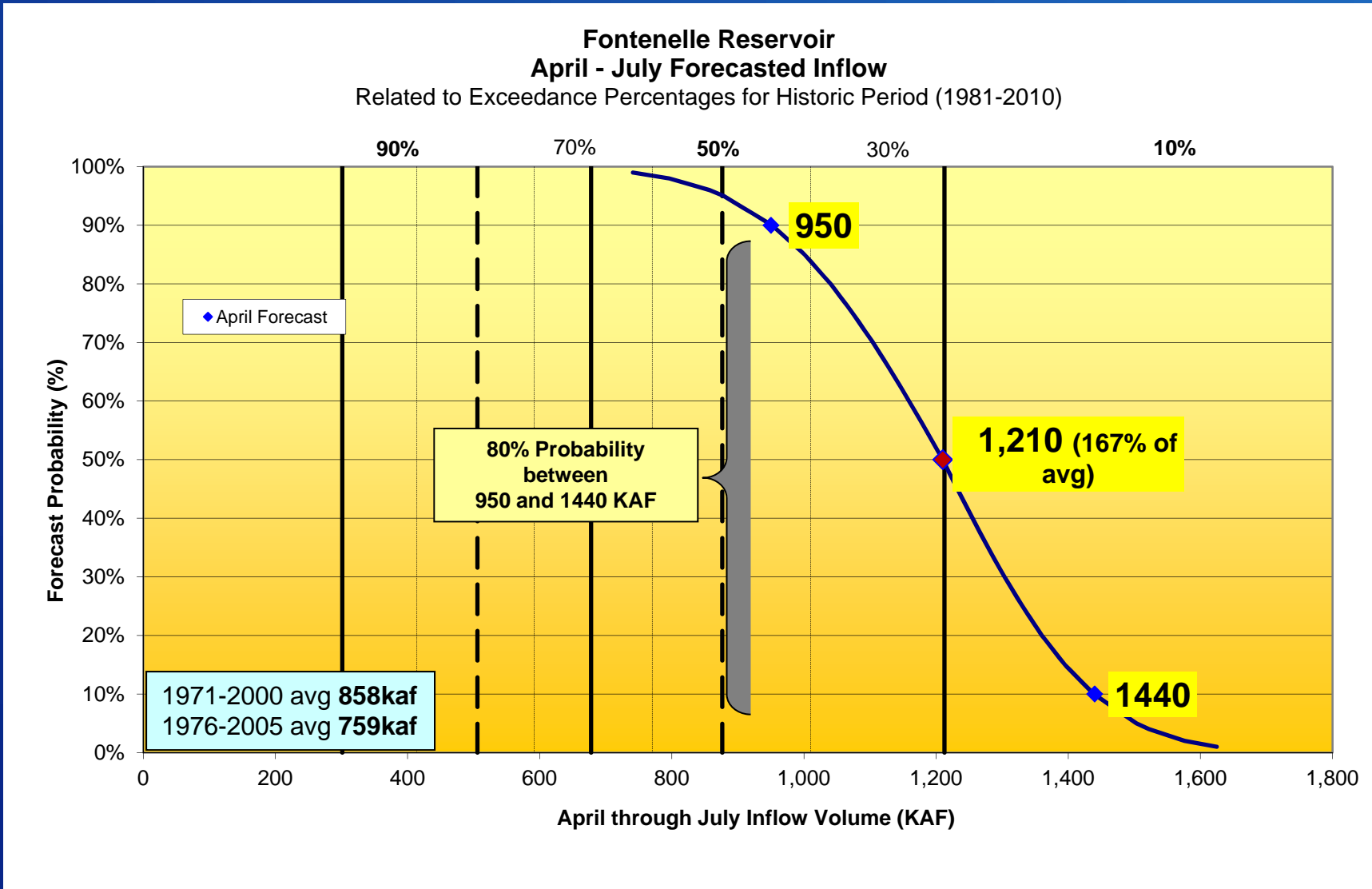
3-Month Climate Outlook



Images courtesy of National Weather Service Climate Prediction Center

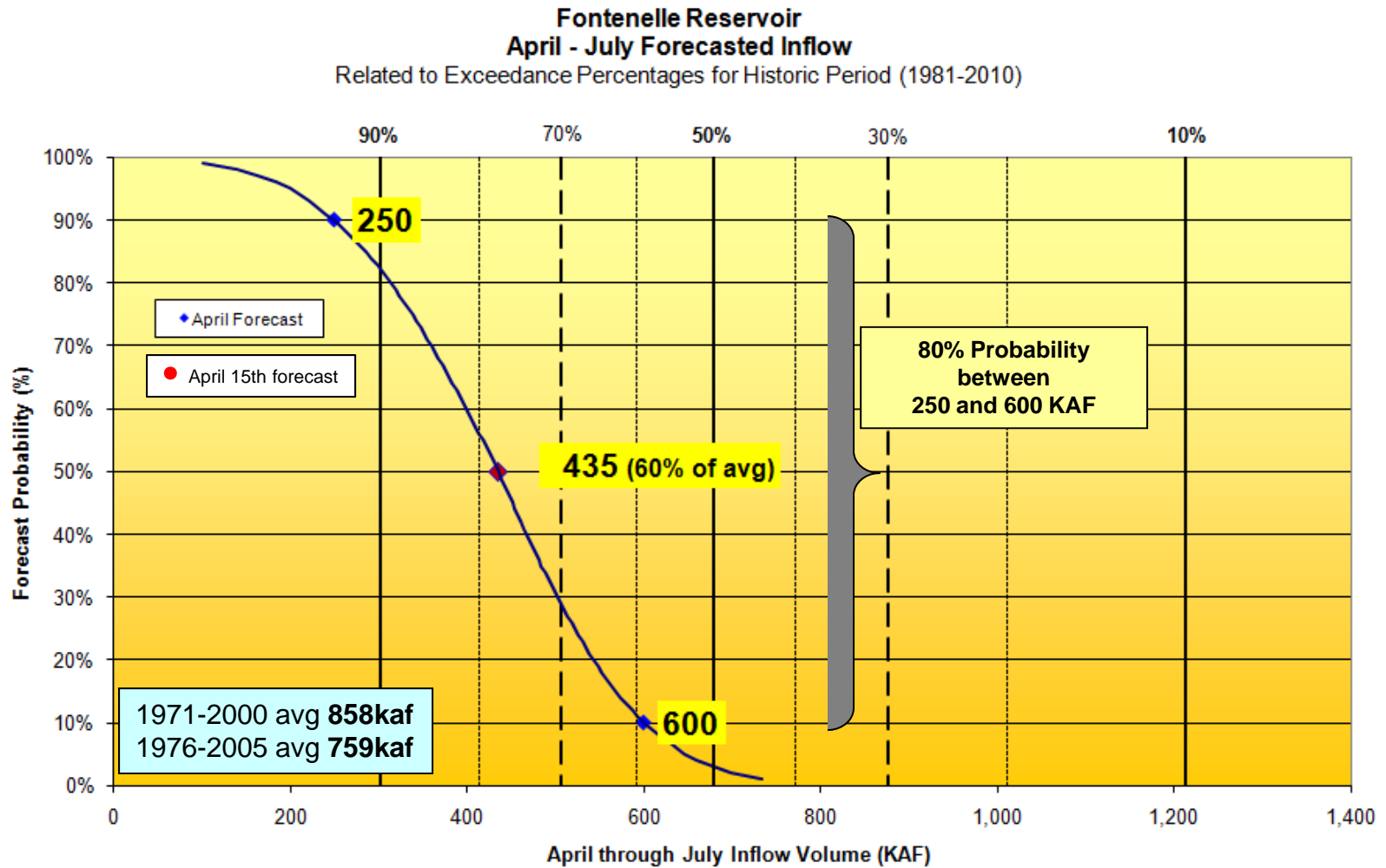
RECLAMATION

April Official and Midmonth Forecast



RECLAMATION

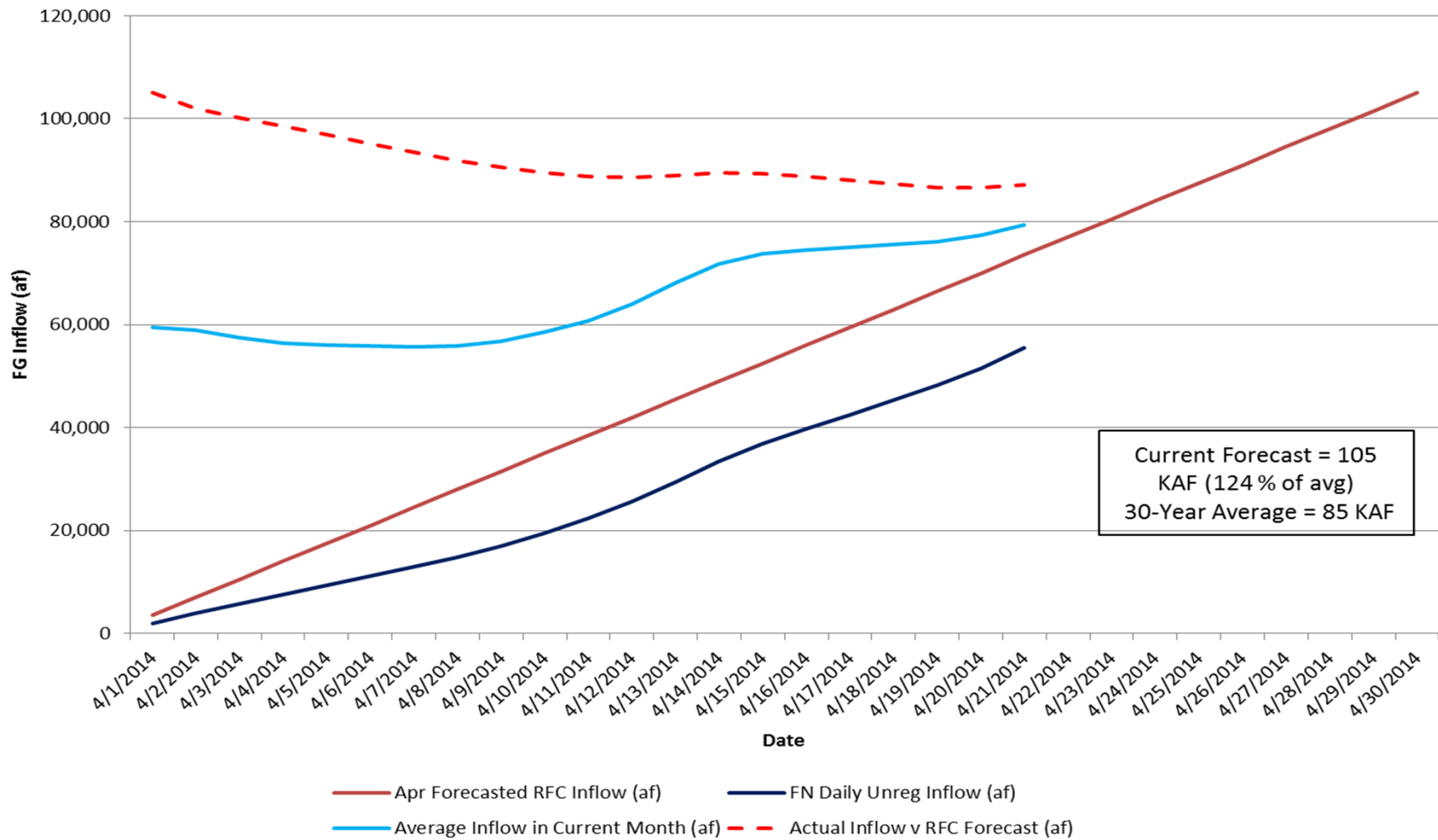
April 15th Forecast



RECLAMATION

April Hydrology

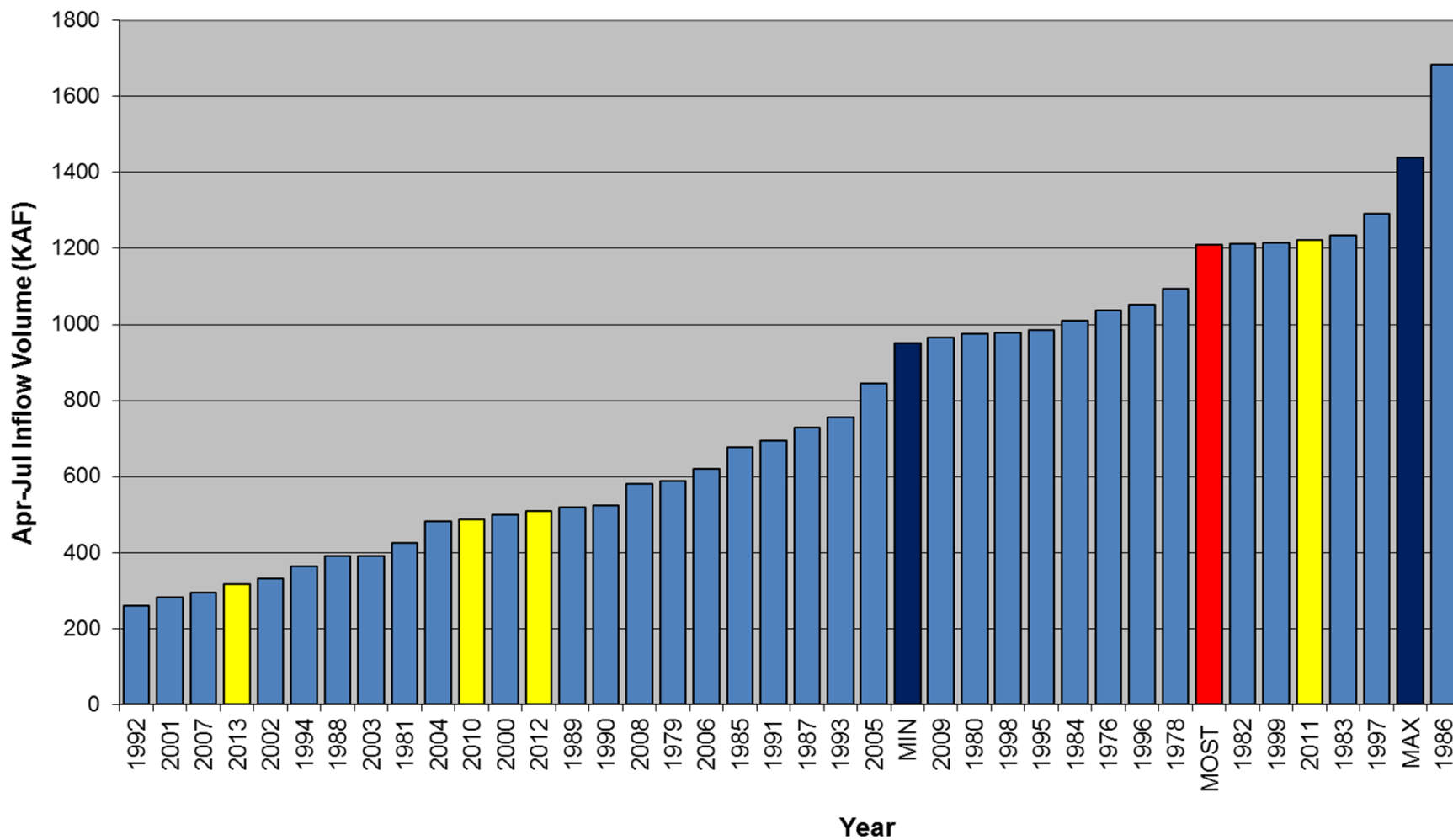
Fontenelle Monthly Unreg Inflow Comparison
Related to the RFC Apr 2014 Forecast



2014 Forecast

Fontenelle Apr-Jul Forecast 2014

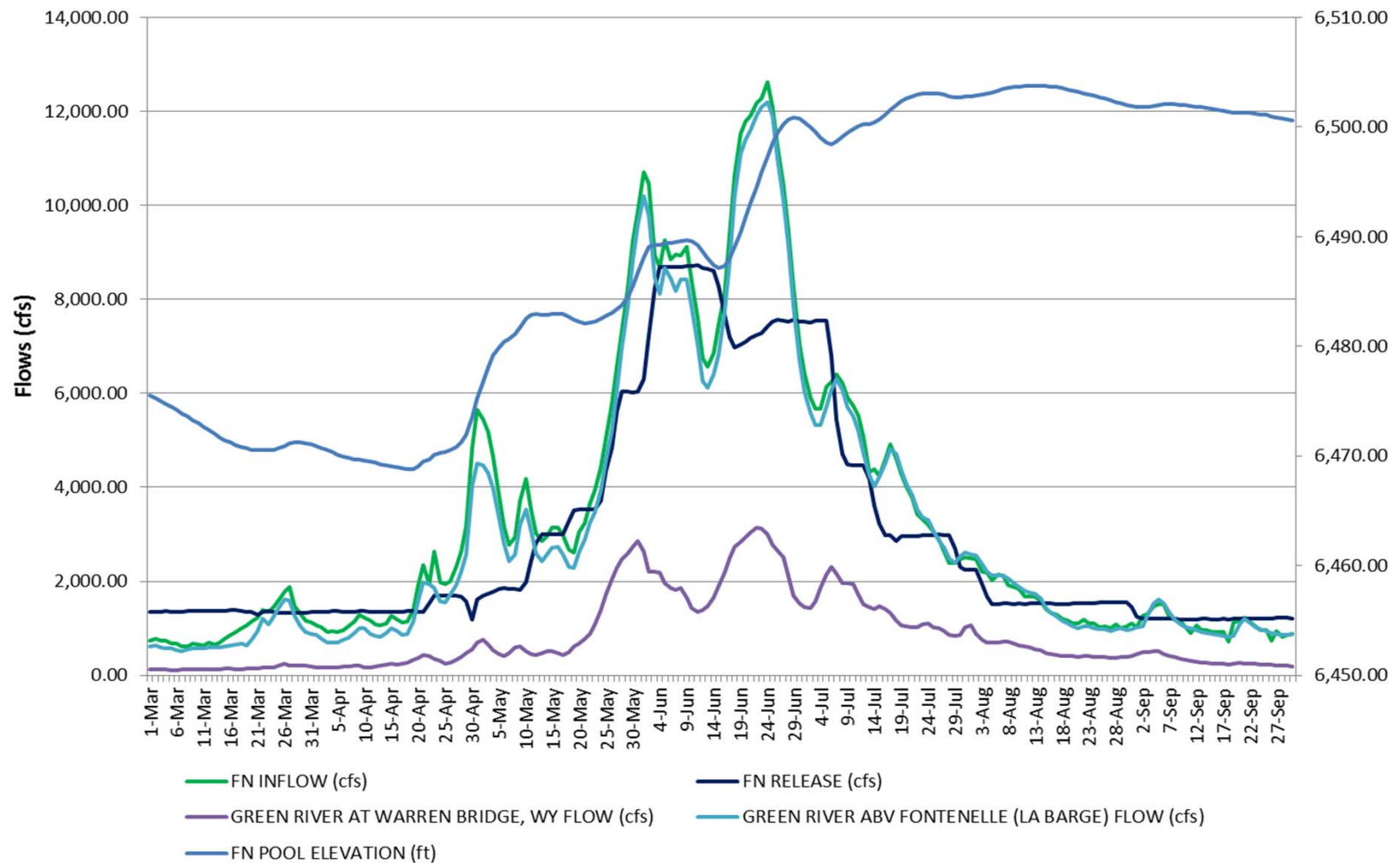
Comparison with History



RECLAMATION

Historic Hydrology

Fontenelle Dam Inflow & Releases and Green River Flows 1999



RECLAMATION

Forecast Evolution

Green - Fontenelle Res- Fontenelle Nr (GBRW4) Apr-Jul 2014 Runoff Forecast (Includes 5 Day Precip Forecast)
2014-04-01 Official 50% Forecast: 1210kaf (167% of average)



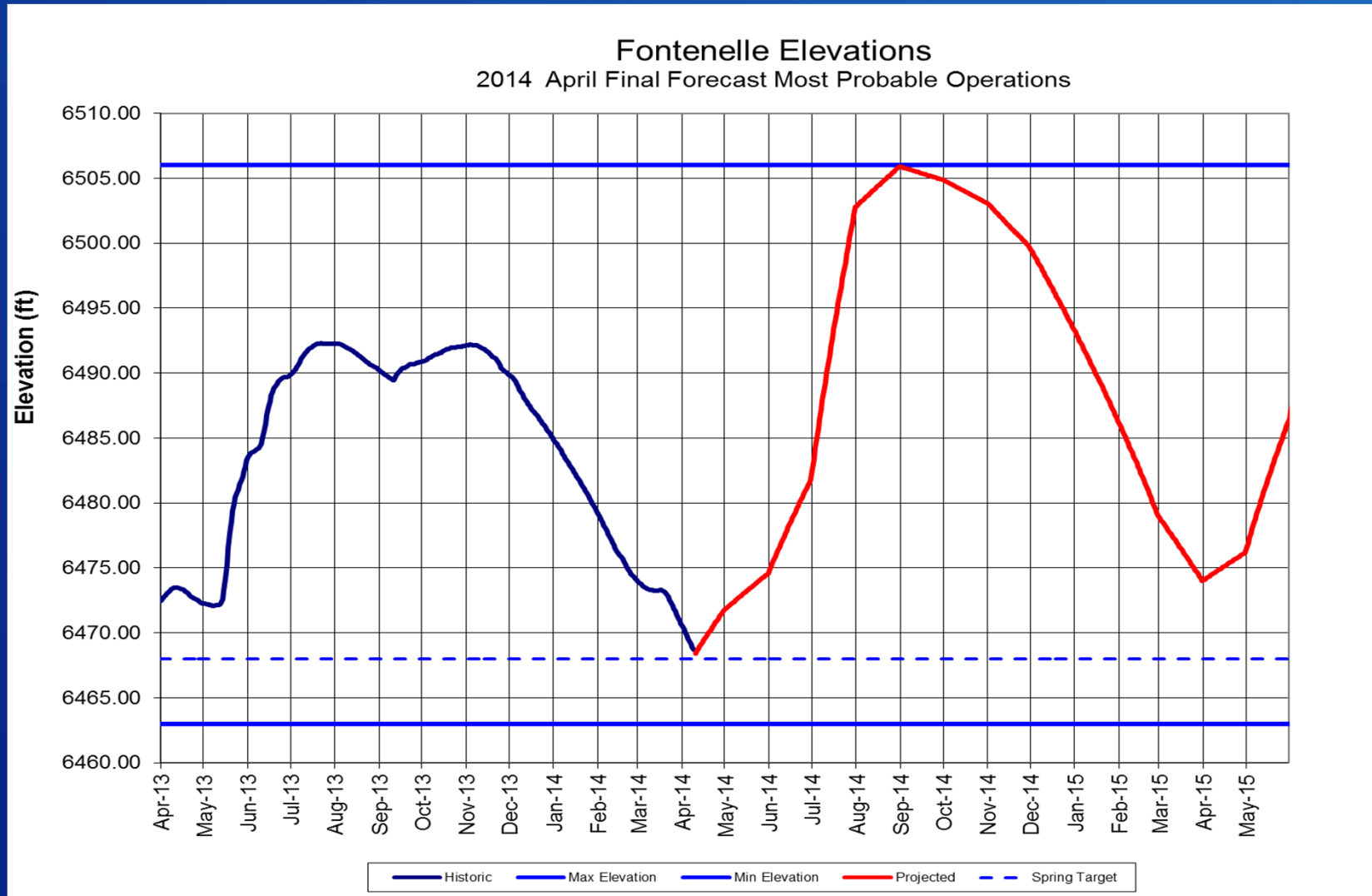
Plot Created 2014-04-09 15:27:04, Lastest ESP Run from 2014-04-09, NOAA / NWS / CBRFC
Today's 50% ESP forecast changed 1.5% from yesterday and -4.4% from April 1
**These ESP forecasts do not include observed and are not total runoff.

Image courtesy of CBRFC/NWS/NOAA

RECLAMATION

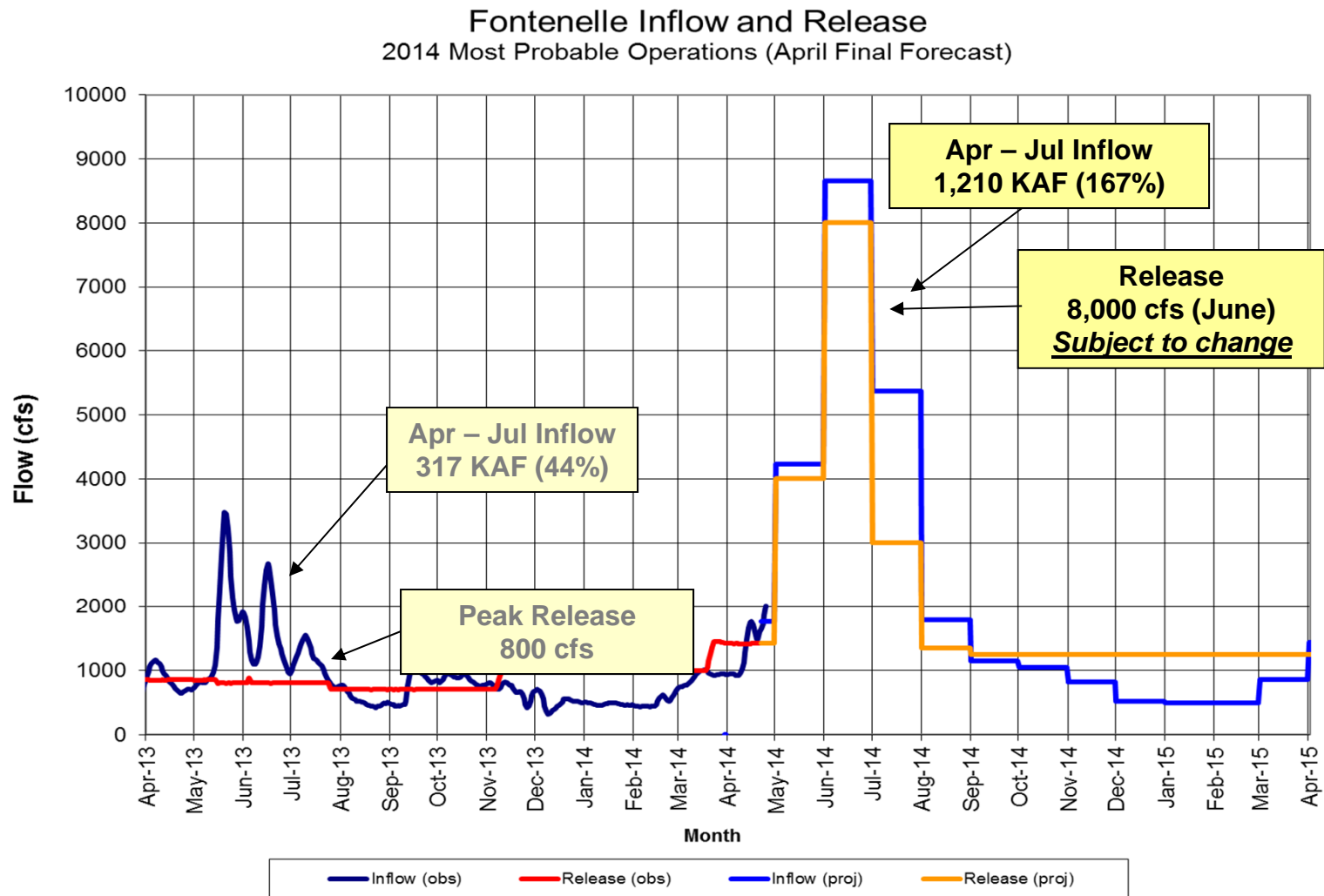
Projected Reservoir Elevation

Based on April 15th Forecast



Projected Inflow and Release

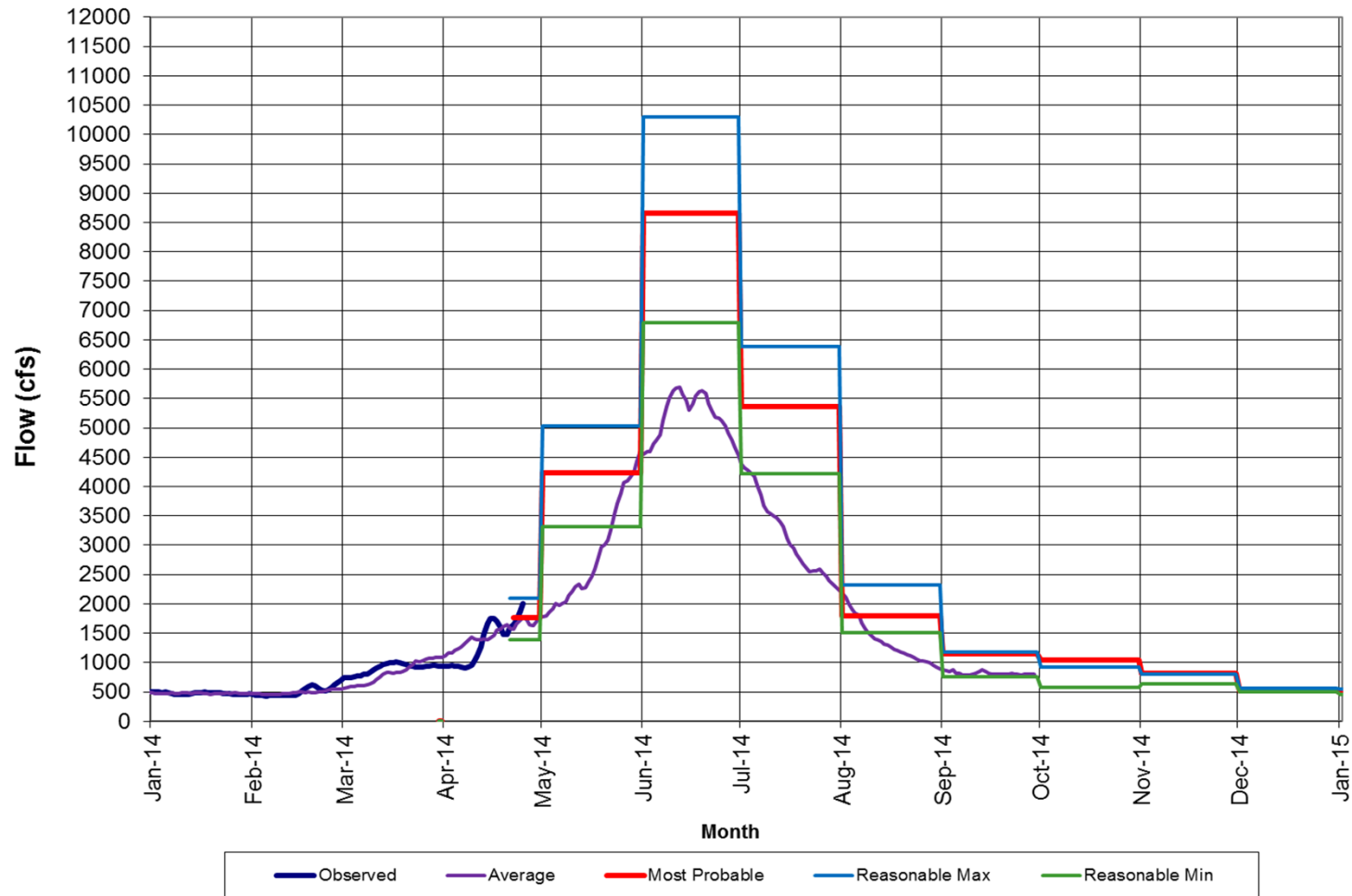
Based on April 15th Forecast



RECLAMATION

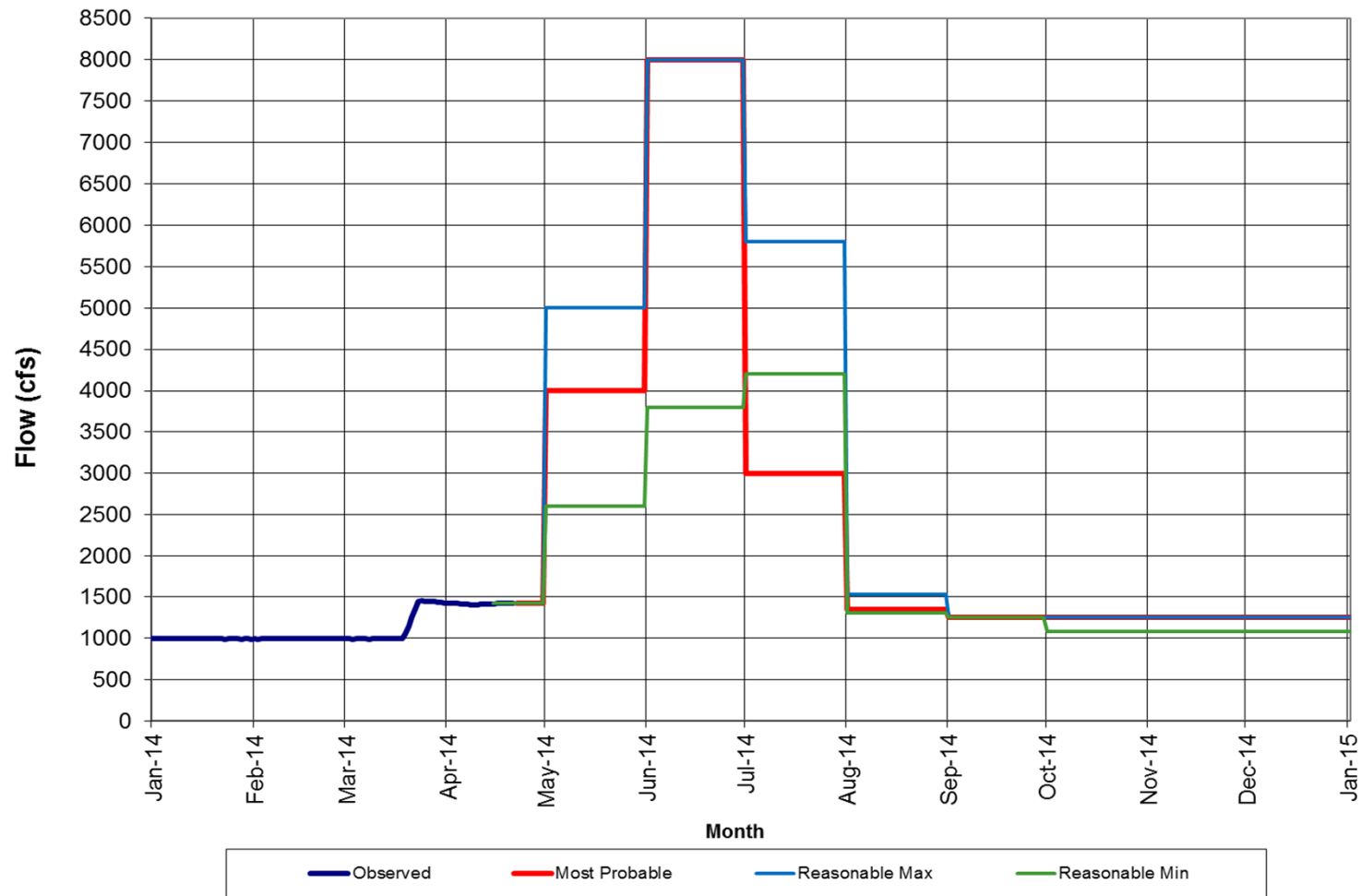
Inflow Scenarios

Fontenelle 2014 Inflow Scenarios
Based on April Forecast



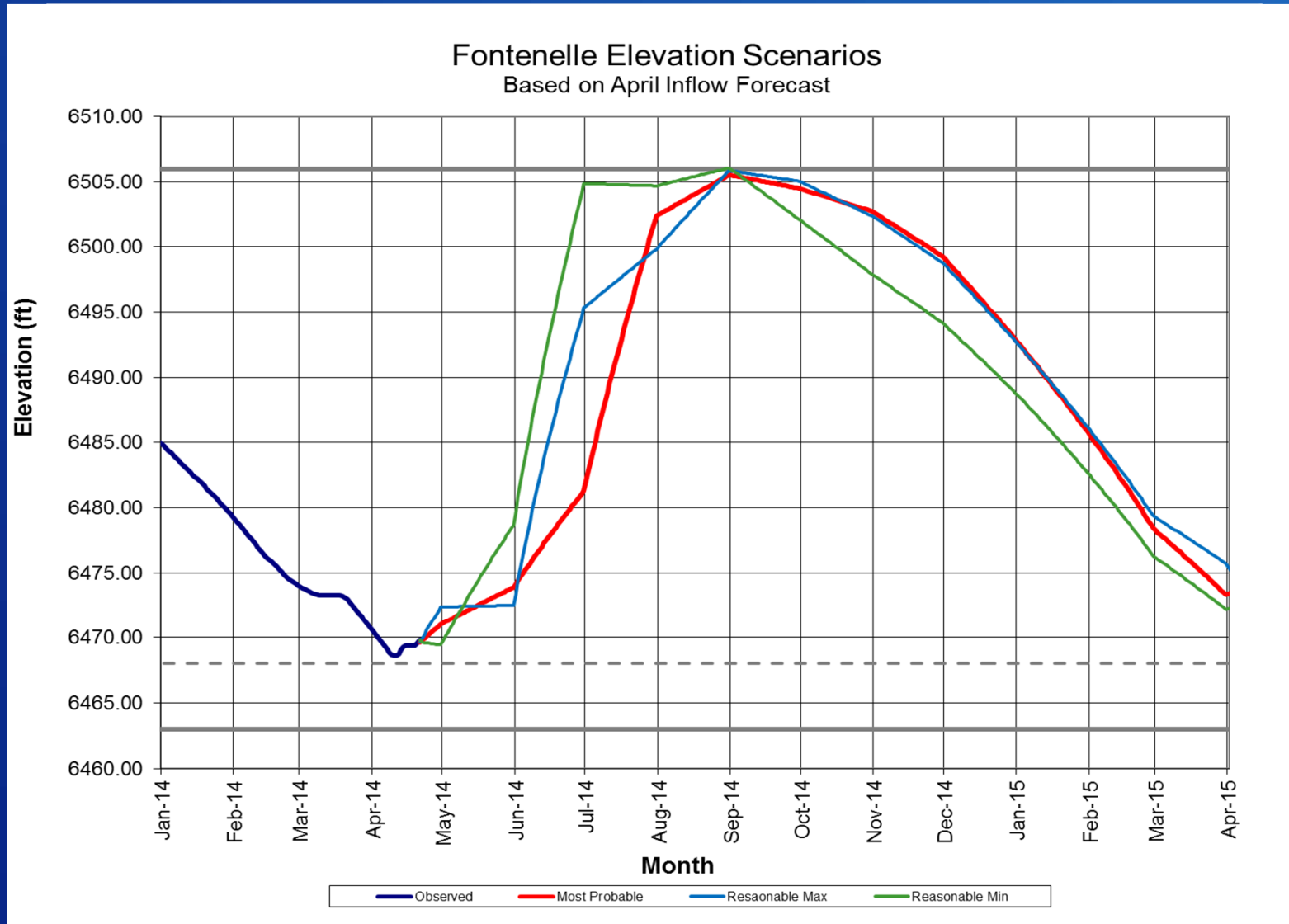
Release Scenarios

Fontenelle Release Scenarios
Based on April Forecast



RECLAMATION

Elevation Scenarios



RECLAMATION

Fontenelle Working Group Meeting April 2014

Questions / Comments ?

Heather Patno
hpatno@usbr.gov
801-524-3883

<http://www.usbr.gov/uc/water/crsp/cs/ftd.html>

<http://www.usbr.gov/uc/water/crsp/wg/ft/ftcurrnt.html>



RECLAMATION

Additional Slides Follow

RECLAMATION

Historic Inflow Statistics

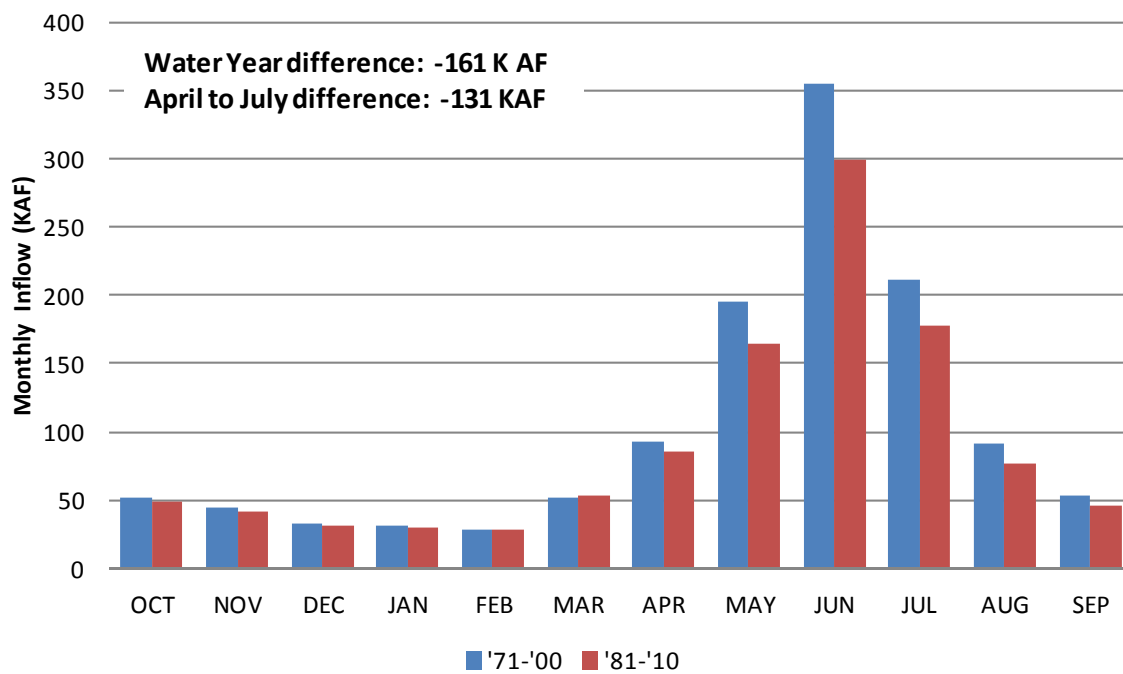
Period of Record 1971-2000

MONTHLY INFLOW VOLUME(THOUSAND-ACRE-FEET)

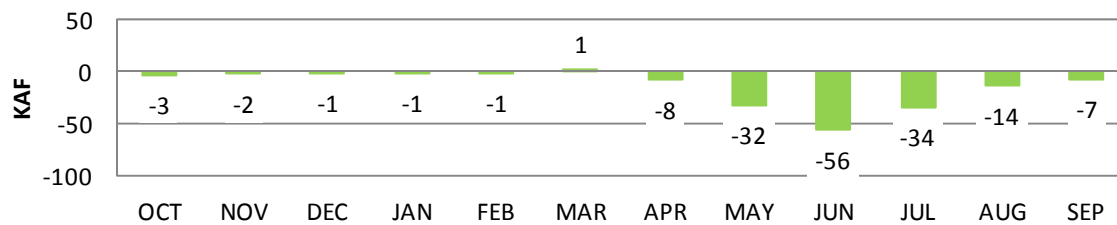
%	60%	50%	40%	30%	25%	20%	10%	5%	Average
2	44	48	51	56	59	62	71	80	52
2	44	45	47	48	49	49	51	52	44
3	33	34	35	36	36	37	38	39	33
1	32	32	33	34	34	34	35	36	31
9	30	30	31	32	32	32	33	33	29
7	49	51	53	56	57	59	64	68	52
9	86	92	99	107	111	116	129	141	93
39	189	207	223	240	248	257	280	296	196
31	304	345	388	434	463	491	571	640	355
51	180	207	234	264	282	300	350	393	212
3	83	91	99	108	113	117	130	140	91
6	50	53	57	61	63	65	71	75	53
102	1,123	1,236	1,350	1,473	1,546	1,619	1,824	1,995	1,243
30	758	851	944	1,045	1,104	1,164	1,331	1,471	857

RECLAMATION

Fontenelle Inflow



Difference



Historic Inflow Statistics

Period of Record 1981-2000

MONTHLY INFLOW VOLUME(THOUSAND-ACRE-FEET)

70%	60%	50%	40%	30%	25%	20%	10%	5%	Average
37	41	44	49	54	57	60	71	81	49
40	42	44	45	47	48	49	51	53	42
31	32	32	33	34	35	35	37	38	32
29	30	31	32	33	34	34	36	37	30
27	28	29	29	30	30	31	32	33	28
49	51	53	55	58	59	60	64	68	53
68	74	81	88	97	102	108	126	142	85
128	147	164	182	201	212	224	255	282	164
198	234	271	311	358	389	419	514	601	299
112	137	162	189	220	240	259	318	371	178
52	62	72	83	94	101	107	126	141	77
36	40	44	49	54	57	59	68	75	46
806	917	1,028	1,146	1,279	1,363	1,446	1,697	1,921	1,082
506	592	678	770	876	943	1,010	1,213	1,396	726

RECLAMATION