

Colorado River Commission of Nevada

Natural Resources Group Hydrologic Update September 9, 2014



Unregulated Inflow



Unregulated Inflow Into Lake Powell

As of September 2, 2014

	MAF*	% Avg**
• WY 2014 (forecasted):	10.27	95%
• April-July 2014 (Observed):	6.92	97%
• August (observed):	0.52	103%
• September (forecasted):	0.40	98%

*MAF=Million Acre-Feet

**30-year average, from 1981-2010 (current normal)



Storage Conditions

As of September 2, 2014

		<u>Percent of Capacity</u>	<u>Δ from last year</u>
Lake Mead elev.	1081.66 ft	39%	↓ 25.92 ft
Lake Powell elev.	3,605.84 ft	51%	↑ 16.24 ft
Total System Storage (9/2014)	30.21 maf	51%	↑ 0.38 maf
Total System Storage (9/2013)	29.83 maf	50%	



Reservoir Storage

As of September 4, 2014

Colorado River Reservoir Storages

Basin	Reservoir	Max Storage	*Current Storage	Percentage	Current Storage subtotals
Upper Basin	Crystal Reservoir	17,356	15,885	92%	5,449,092
	Flaming Gorge	3,749,000	3,287,311	88%	
	Fontenelle	344,800	330,600	96%	
	Morrow Point	117,190	112,374	96%	
	Blue Mesa	829,500	622,396	75%	
	Navajo	1,696,000	1,080,526	64%	
	Lake Powell	24,322,000	12,307,264	51%	
Lower Basin	Lake Mead	26,120,000	10,146,000	39%	2,264,500
	Lake Mohave	1,809,800	1,691,300	93%	
	Lake Havasu	619,400	573,200	93%	
	TOTAL	59,625,046	30,166,856	51%	

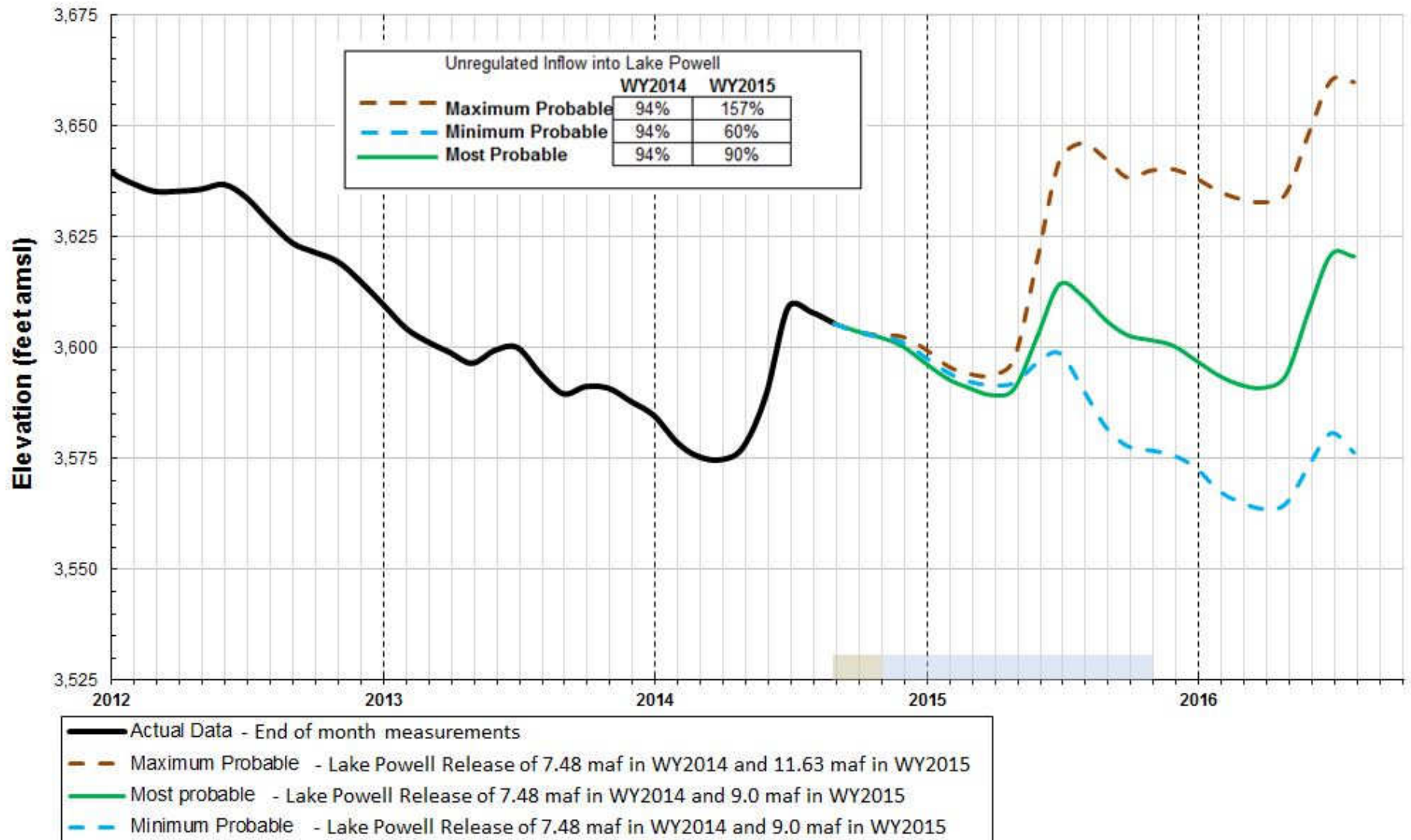
*Data current as 9/04/2014

<http://www.usbr.gov/lc/region/g4000/hourly/levels.html>

<http://www.usbr.gov/uc/water/rsvrs/ops/r40day.html>

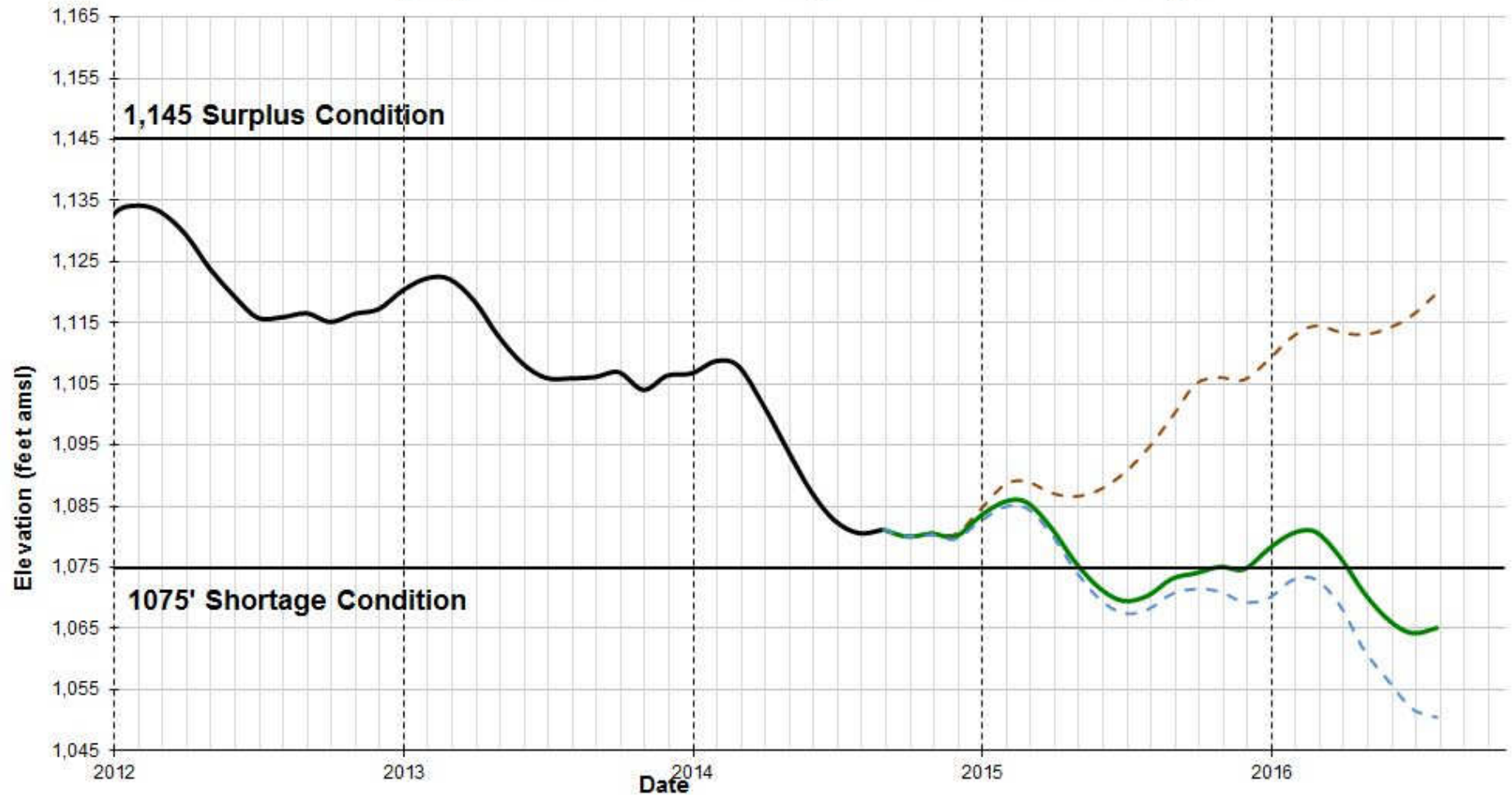
Lake Powell End of Month Elevations

(based on August 2014 24-month Study)



Lake Mead End of Month Elevation Projections

(Projections based on the August 2014 24-month study)



- Actual Data - End of month measurements
- - - Maximum Probable - Lake Powell Release of 7.48 maf in WY2014 and 11.63 maf in WY2015
- Most probable - Lake Powell Release of 7.48 maf in WY2014 and 9.0 maf in WY2015
- - - Minimum Probable - Lake Powell Release of 7.48 maf in WY2014 and 9.0 maf in WY2015

Drought and Precipitation



Precipitation – Colorado River Basin

As of September 2, 2014

Upper Colorado Basin

WY Precip to Date

102% (29.8")

Current Basin Snowpack

NA

(Avg 1981-2010)



U.S. Drought Monitor






West

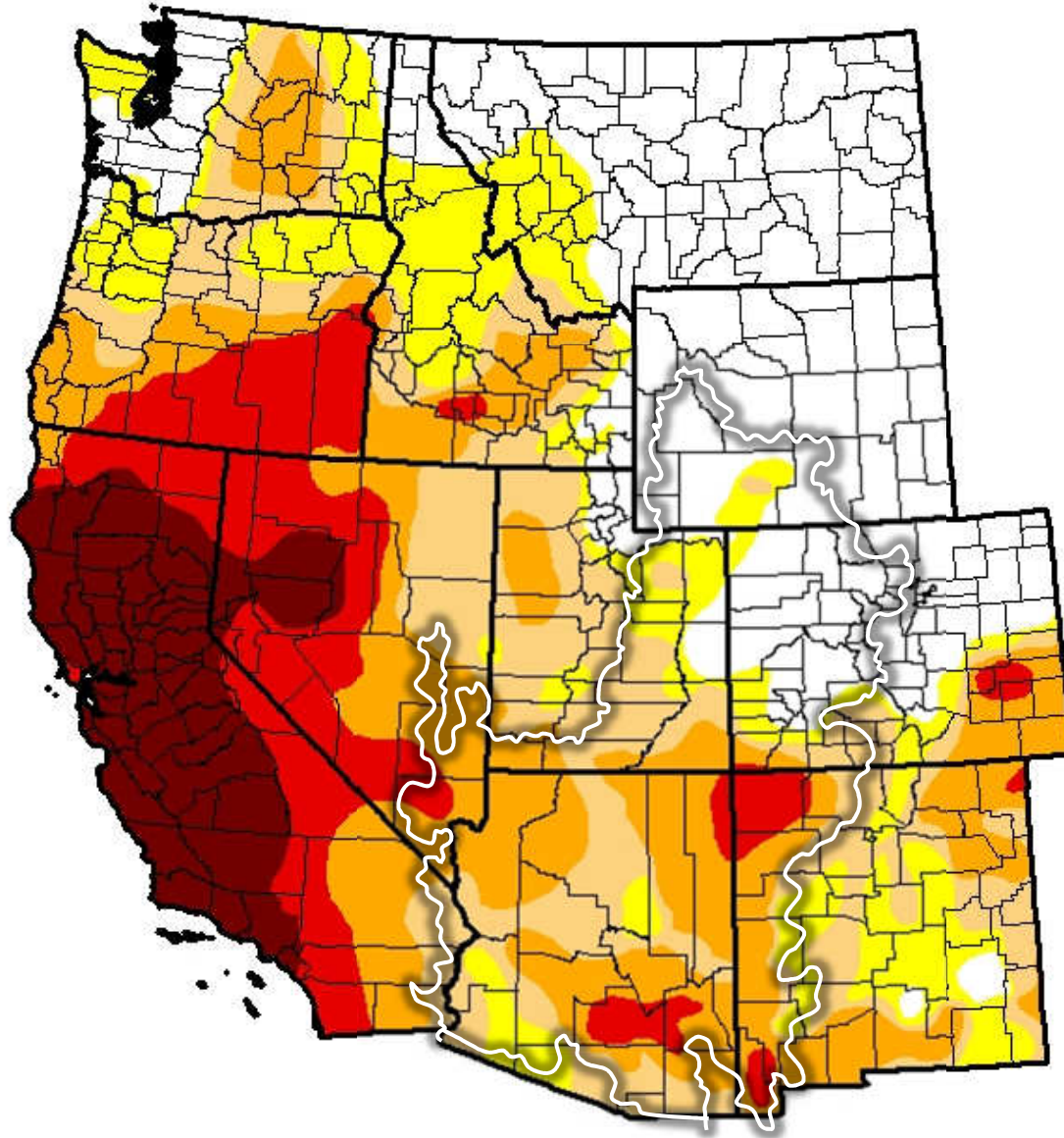
September 2, 2014

(Released Thursday, Sep. 4, 2014)

Valid 8 a.m. EDT

Intensity:

-  D0 - Abnormally Dry
-  D1 - Moderate Drought
-  D2 - Severe Drought
-  D3 - Extreme Drought
-  D4 - Exceptional Drought

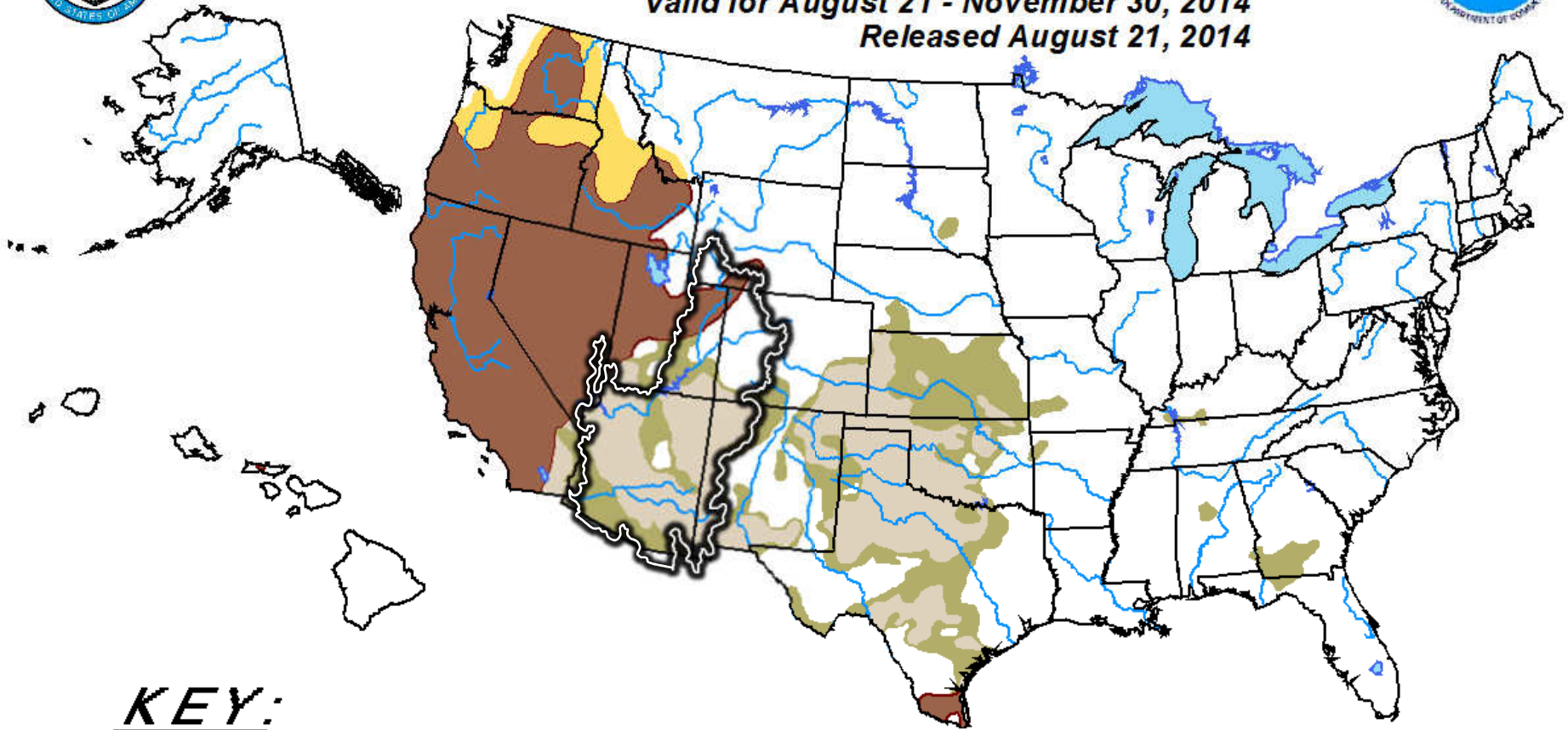








U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for August 21 - November 30, 2014
Released August 21, 2014



KEY:

-  Drought persists or intensifies
-  Drought remains but improves
-  Drought removal likely
-  Drought development likely

Author: David Miskus, Climate Prediction Center, NOAA
http://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.html

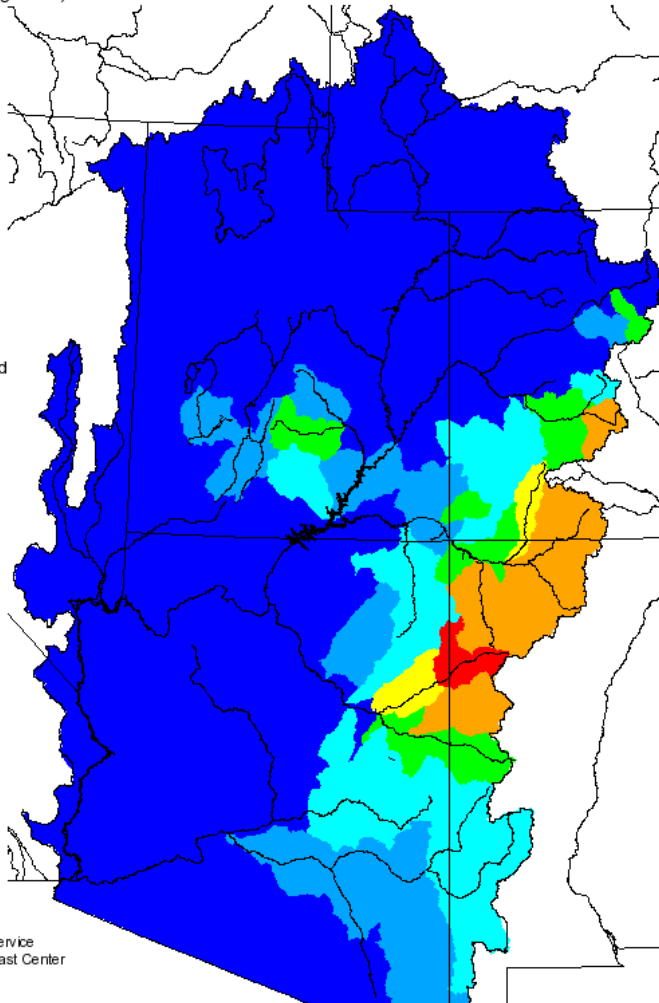
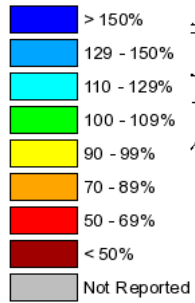
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: The tan area areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period although drought will remain. The Green areas imply drought removal by the end of the period (D0 or none)



Monthly Precipitation for August 2014

(Averaged by Hydrologic Unit)

% Average

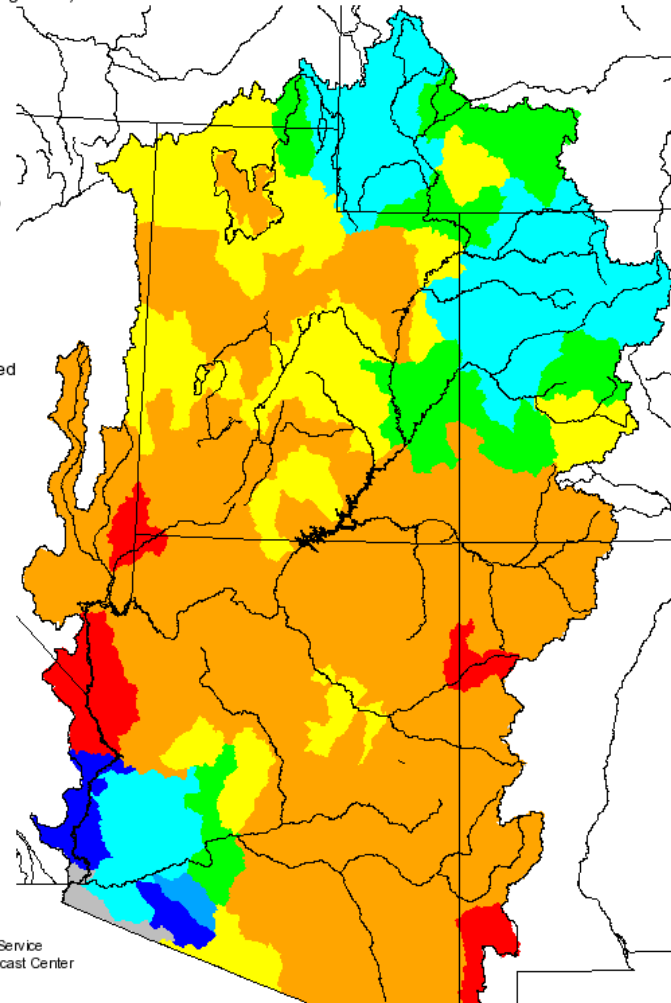
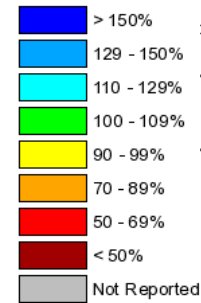


Prepared by
NOAA, National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah
www.cbrfc.noaa.gov

Seasonal Precipitation, October 2013 - August 2014

(Averaged by Hydrologic Unit)

% Average

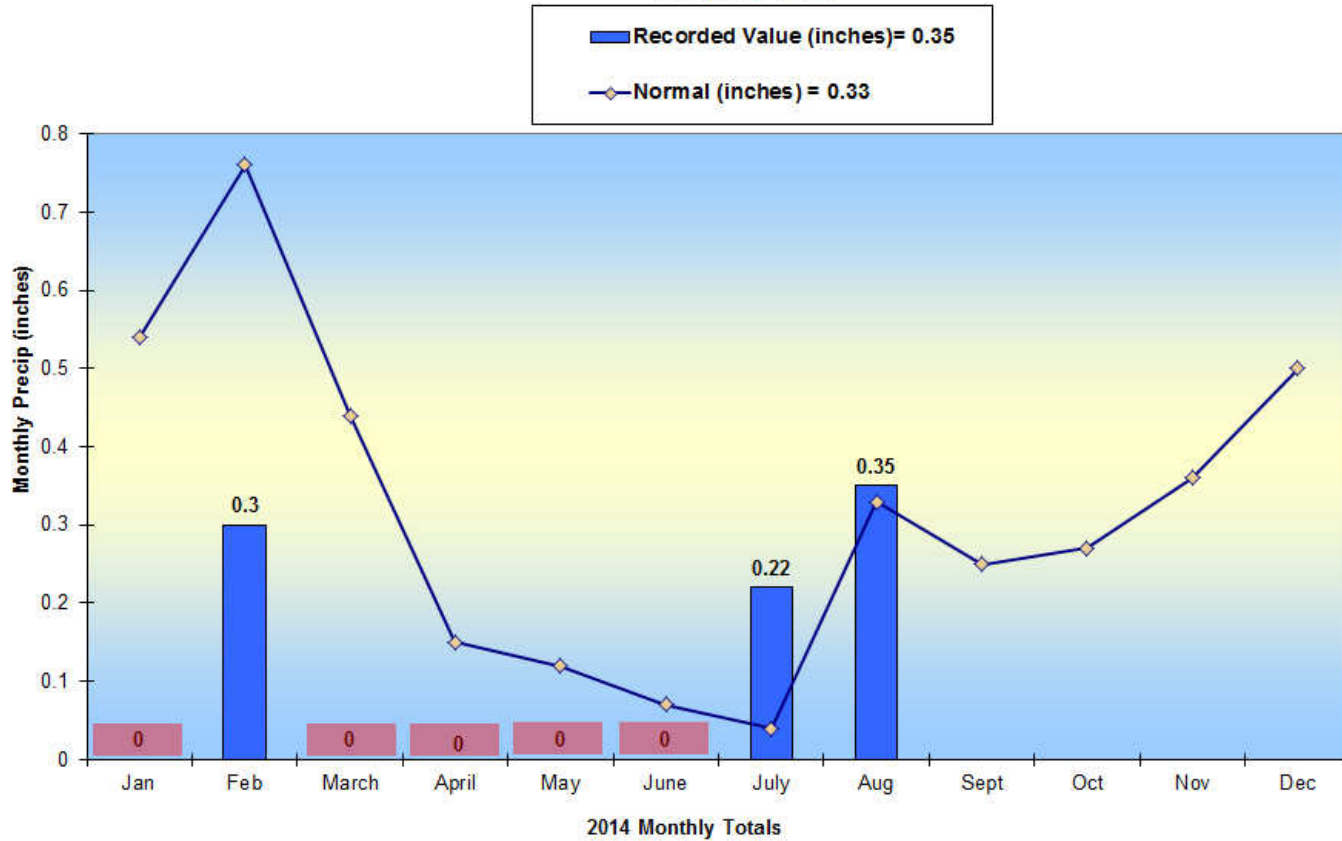


Prepared by
NOAA, National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah
www.cbrfc.noaa.gov

Monthly Precipitation, Las Vegas, NV

As of August 31, 2014

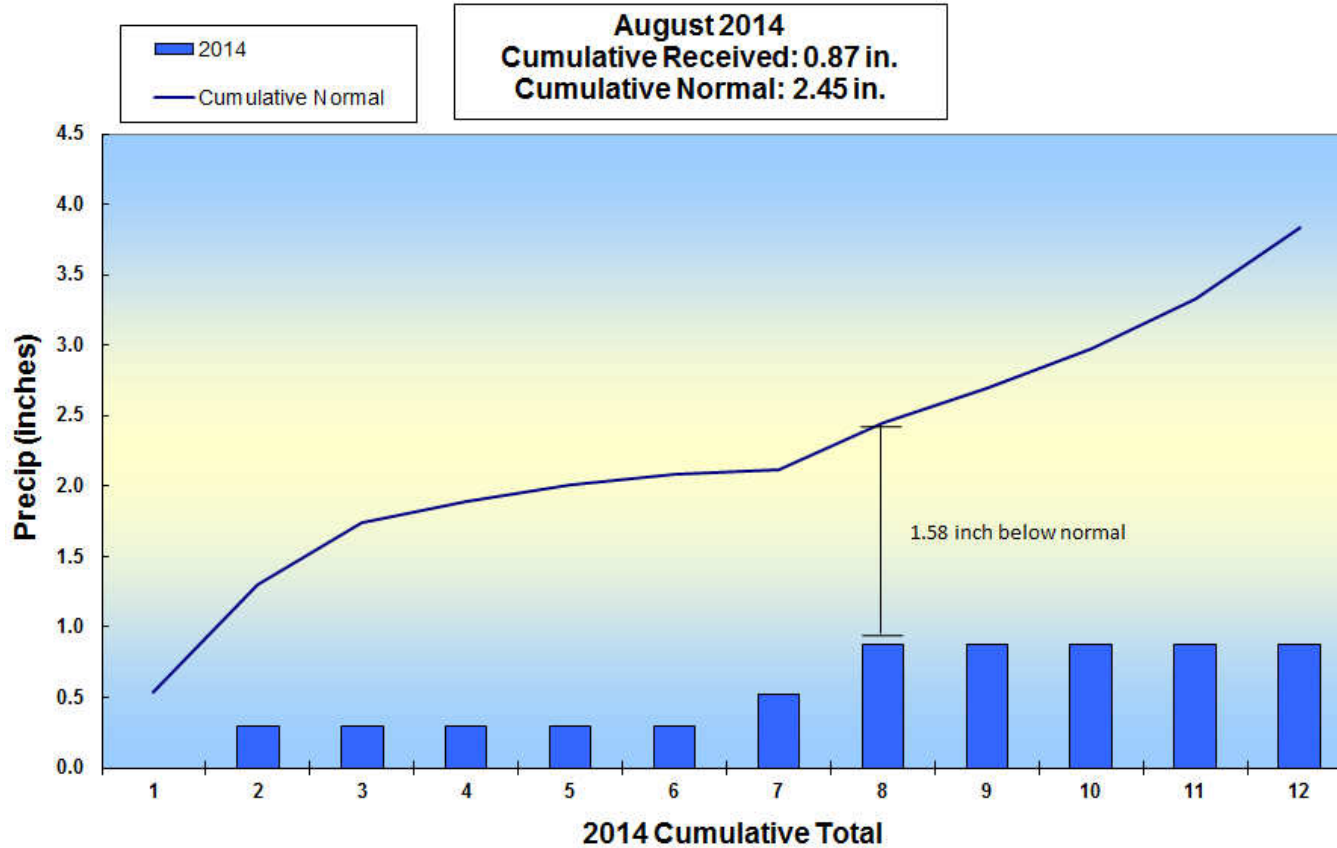
Record of Precipitation at McCarran International Airport, Las Vegas, NV
August 2014



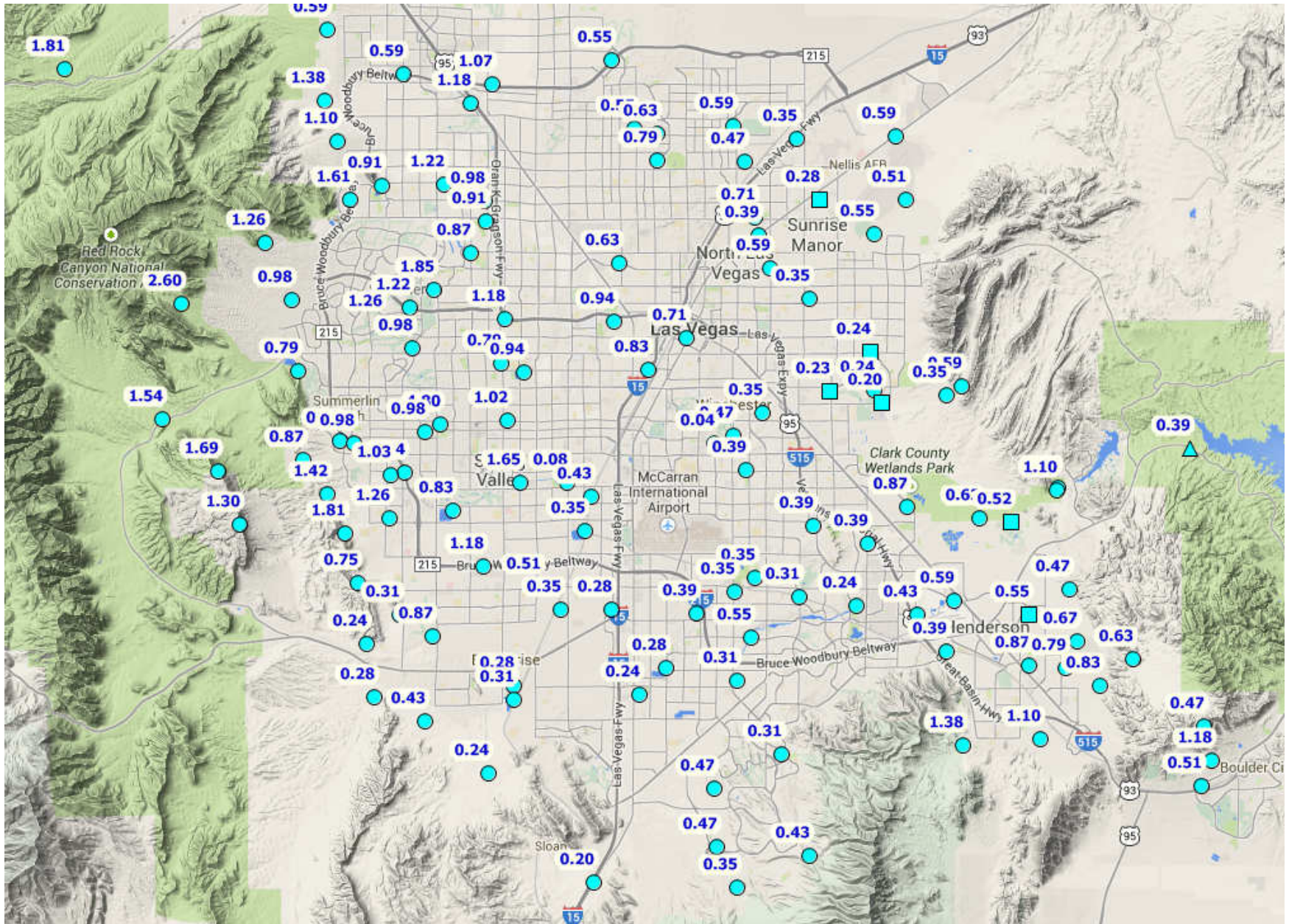
Cumulative Precipitation, Las Vegas, NV

As of August 31, 2014

Record of Precipitation at McCarran International Airport, Las Vegas, NV



Clark County Regional Flood Control District Rain Gages August Totals



Water Use in Southern Nevada



Water Use in Southern Nevada

January – July 2014

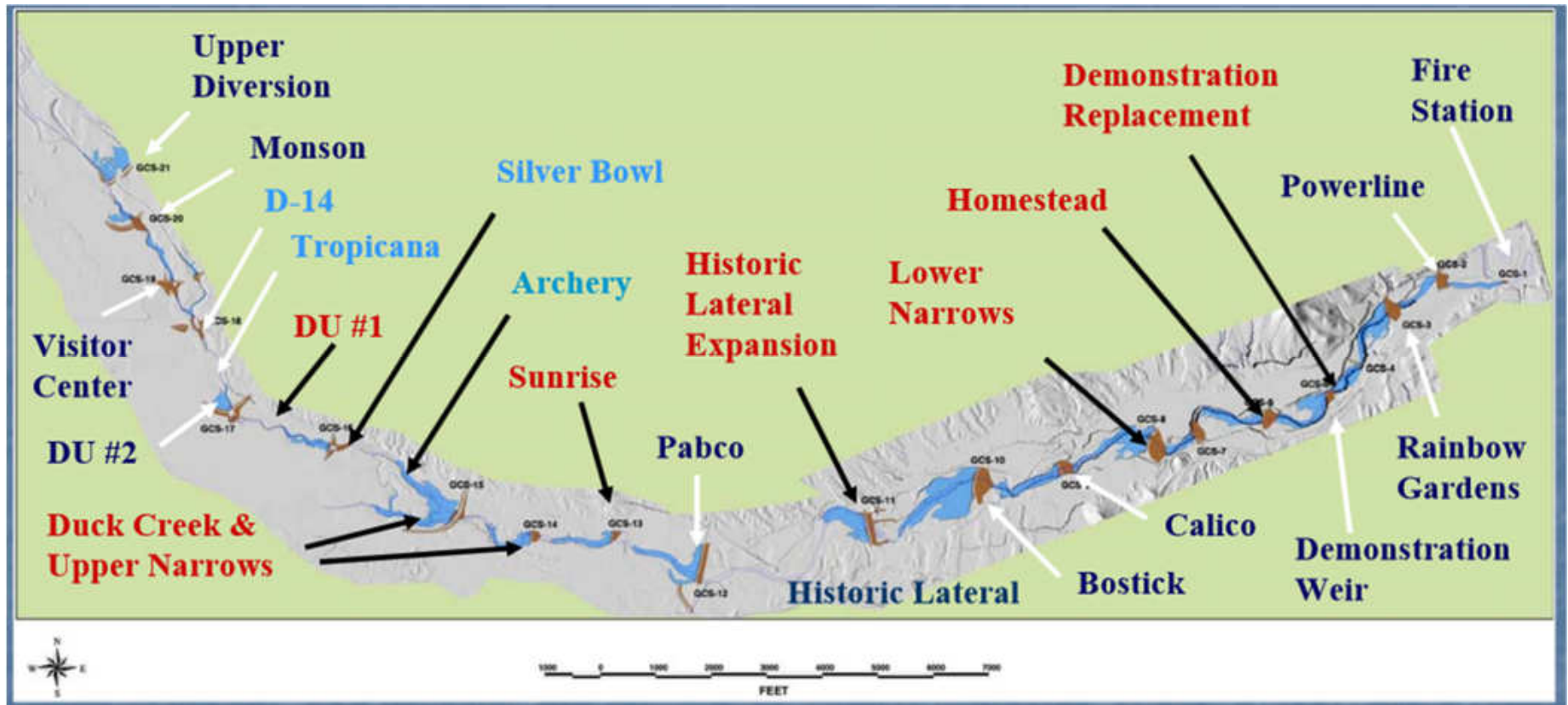
2014*:	Consumptive Use =	136,971
	<u>CR Water Banked =</u>	<u>0</u>
		136,971
2013:	Consumptive Use =	139,278
	<u>CR Water Banked =</u>	<u>0</u>
		139,278

Difference = - 2,307 af

*Subject to final accounting.

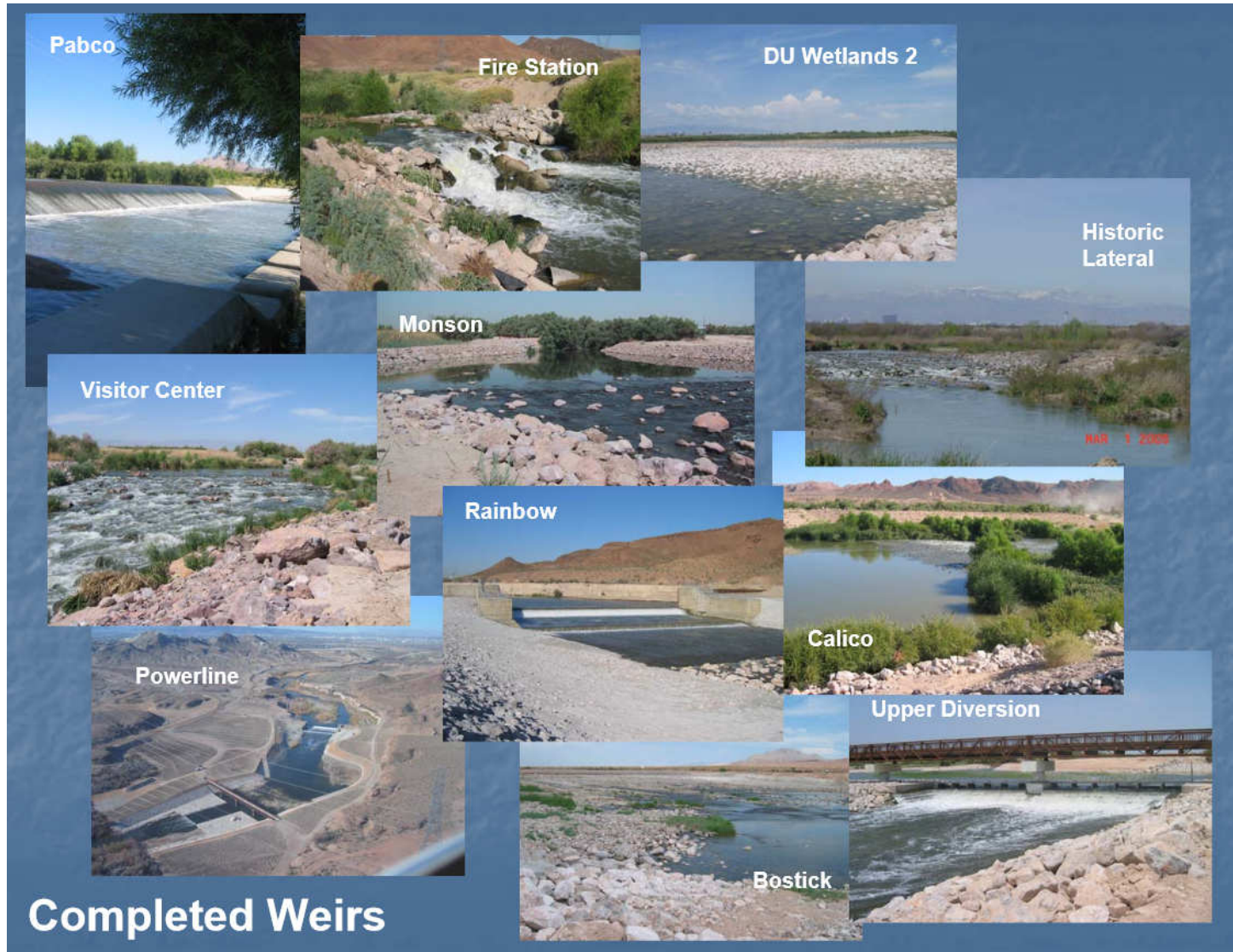


Las Vegas Wash Weirs



- Completed 1999-2009
- 2010 Design and Construction
- Future Design and Construction

Las Vegas Wash Weirs



Las Vegas Wash Weirs



Demonstration Weir

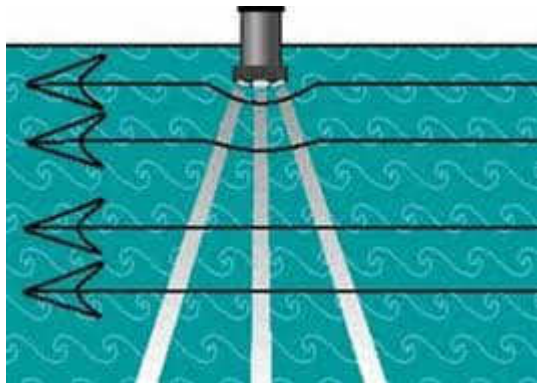


Rainbow Gardens Weir

USGS Flow Calculations



USGS Acoustic Doppler



Return Flow Credit Calculations

year	storm flow (af)	elevation in Mead (ft)	elevation in Mead (in)
2014	529	0.006	0.08
2013	8,106	0.098	1.17
2012	15,179	0.183	2.19
2011	3,085	0.037	0.45
2010	9,993	0.120	1.44
2009	1,910	0.023	0.28
2008	1,678	0.020	0.24
2007	2,829	0.034	0.41
total	43,309	0.522	6.26

Colorado River Commission of Nevada

Natural Resources Group Hydrologic Update September 9, 2014

