

# Colorado River Commission of Nevada

## Natural Resources Group Hydrologic Update November 13, 2014



# Unregulated Inflow



# Unregulated Inflow Into Lake Powell

As of November 10, 2014

	MAF*	% Avg**
• WY 2014 (Observed):	10.38	96%
• April-July 2014 (Observed):	6.92	97%
• October (observed):	0.72	140%
• November (forecasted):	0.47	99%

\*MAF=Million Acre-Feet

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



# Storage Conditions

As of November 10, 2014

		<u>Percent of Capacity</u>	<u>Δ from last year</u>
Lake Mead elev.	1082.25 ft	39%	↓ 21.73 ft
Lake Powell elev.	3,605.34 ft	50%	↑ 14.54 ft
Total System Storage (11/2014)	29.89 maf	50%	↑ 0.31 maf
Total System Storage (11/2013)	29.58 maf	50%	



# Reservoir Storage

As of November 11, 2014

## Colorado River Reservoir Storages

Basin	Reservoir	Max Storage	*Current Storage	Percentage	Current Storage subtotals
Upper Basin	Crystal Reservoir	17,356	15,477	89%	5,415,940
	Flaming Gorge	3,749,000	3,295,691	88%	
	Fontenelle	344,800	308,009	89%	
	Morrow Point	117,190	110,504	94%	
	Blue Mesa	829,500	589,147	71%	
	Navajo	1,696,000	1,097,112	65%	
	Lake Powell	24,322,000	12,279,728	50%	
Lower Basin	Lake Mead	26,120,000	10,203,000	39%	2,019,000
	Lake Mohave	1,809,800	1,478,800	82%	
	Lake Havasu	619,400	540,200	87%	
	<b>TOTAL</b>	<b>59,625,046</b>	<b>29,917,668</b>	<b>50%</b>	

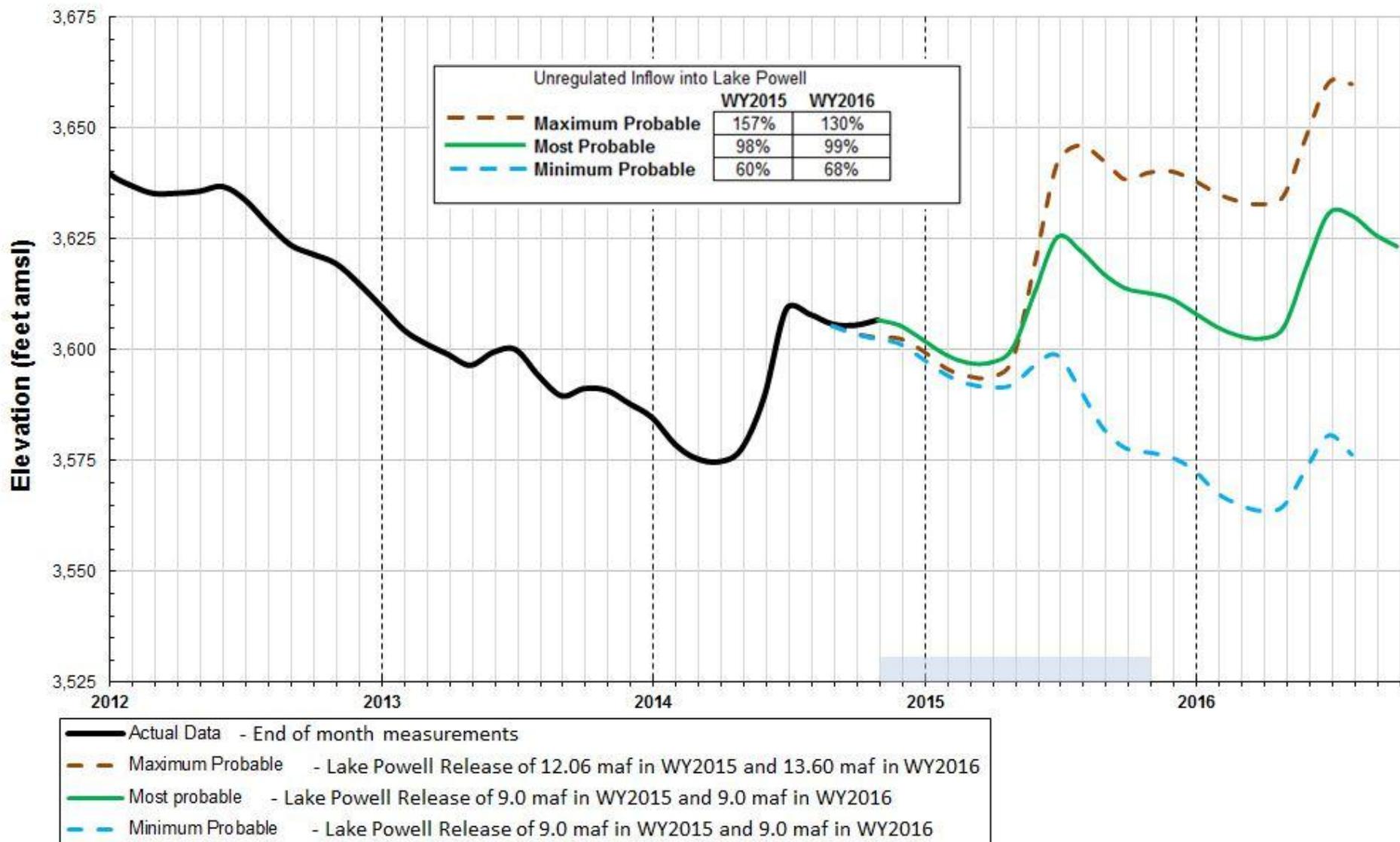
\*Data current as 11/5/2014

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

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

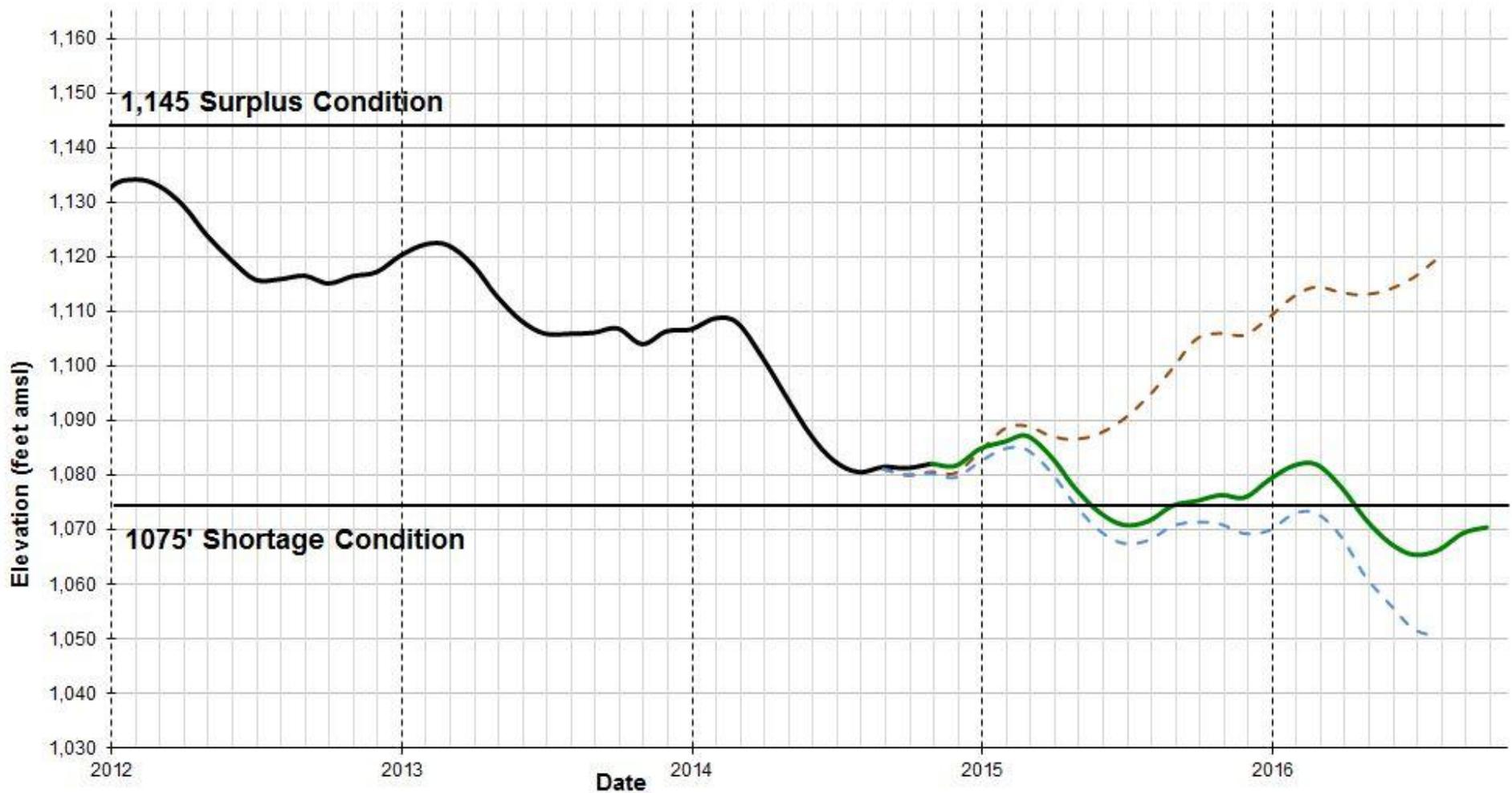
# Lake Powell End of Month Elevations

(based on October 2014 24-month Study)



# Lake Mead End of Month Elevation Projections

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



- Actual Data - End of month measurements
- - - Maximum Probable - Lake Powell Release of 12.06 maf in WY2015 and 13.60 maf in WY2016
- Most probable - Lake Powell Release of 9.0 maf in WY2015 and 9.0 maf in WY2016
- - - Minimum Probable - Lake Powell Release of 9.0 maf in WY2015 and 9.0 maf in WY2016

# Drought and Precipitation



# Precipitation – Colorado River Basin

As of November 10, 2014

## Upper Colorado Basin

WY 2015 Precip to Date

54% (1.9")

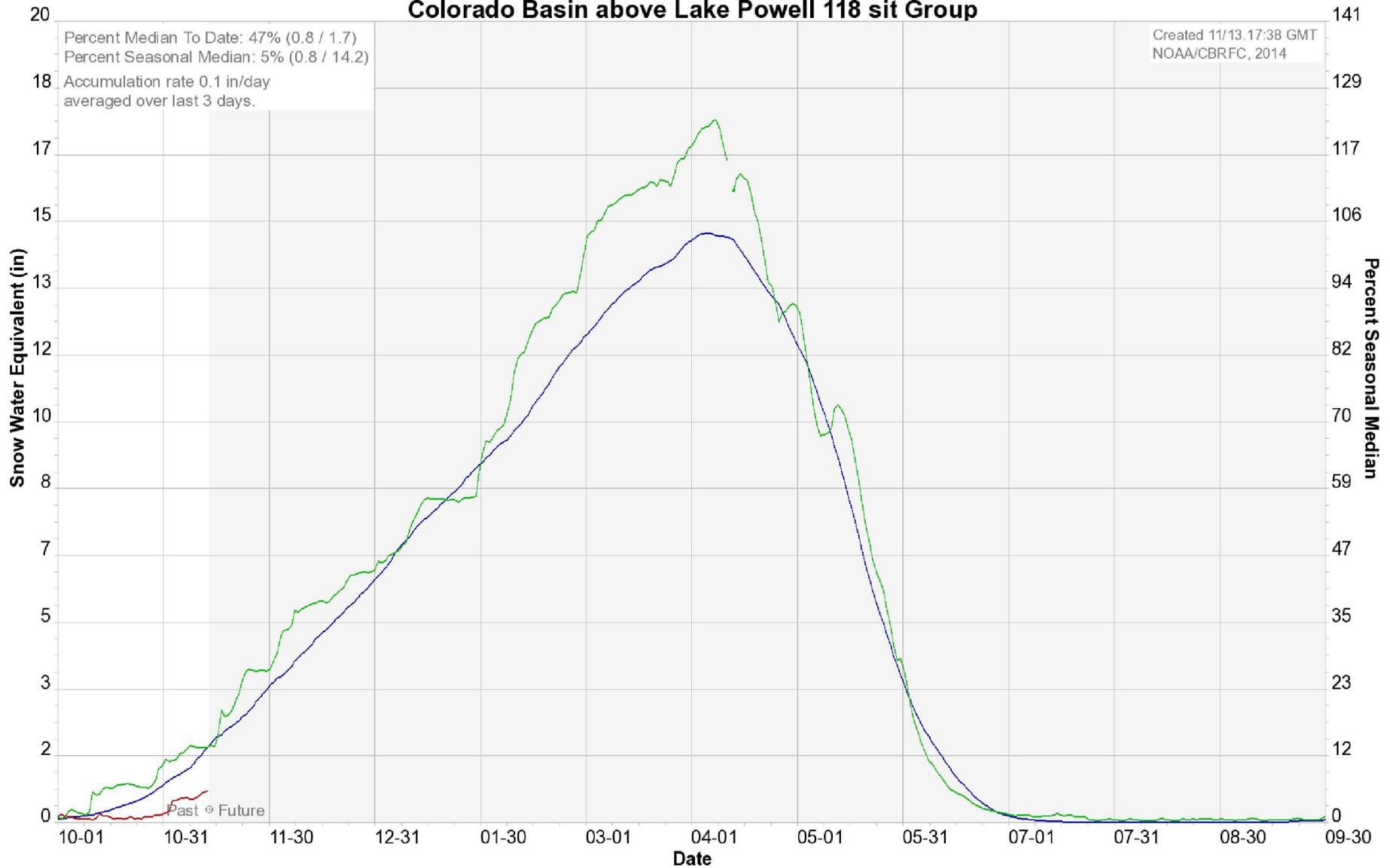
Current Basin Snowpack

NA

(Avg 1981-2010)



### Colorado Basin River Forecast Center Colorado Basin above Lake Powell 118 sit Group



Average 1981-2010 — 2014 — 2015 —

# U.S. Drought Monitor

## West

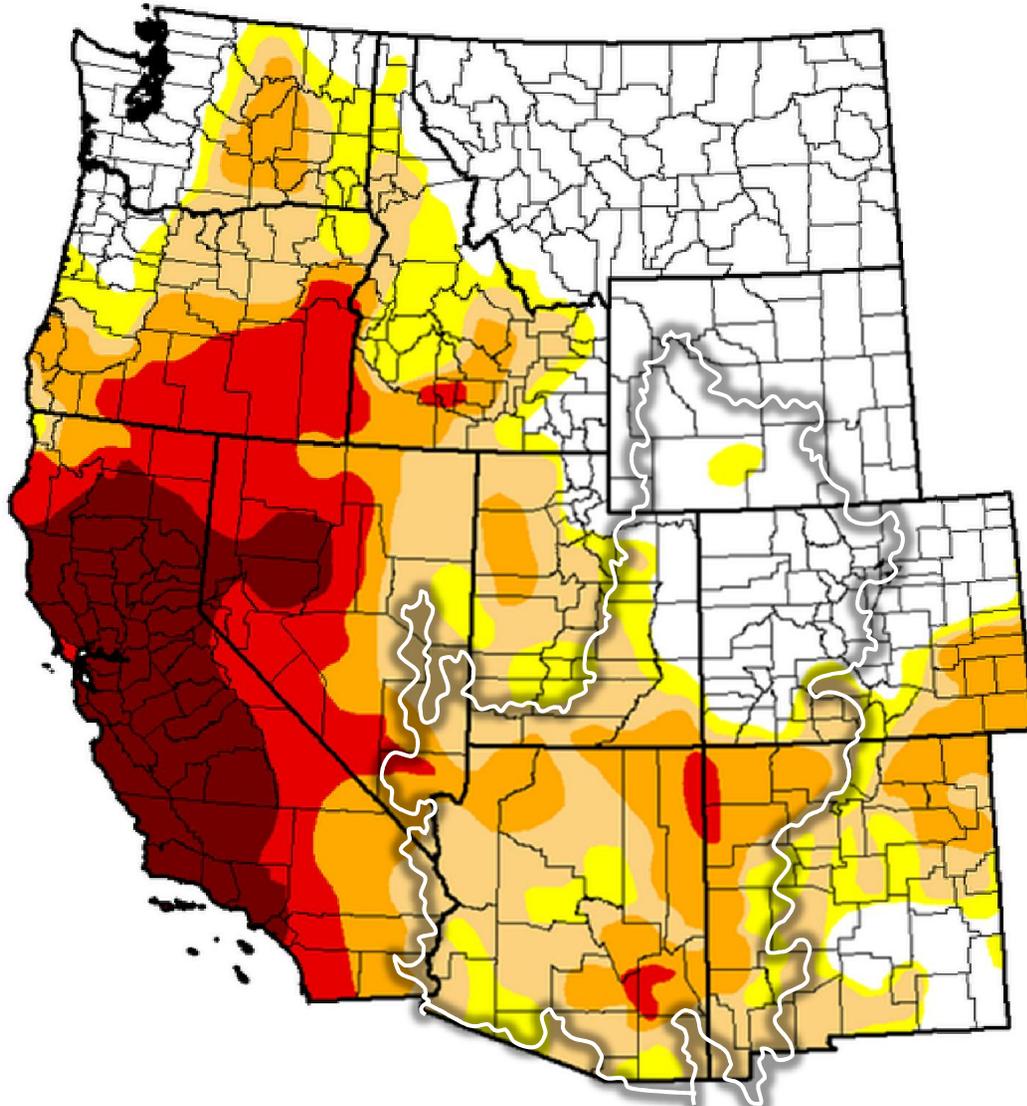
**November 4, 2014**

*(Released Thursday November 6, 2014)*

Valid 7 a.m. EST

### Intensity:

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



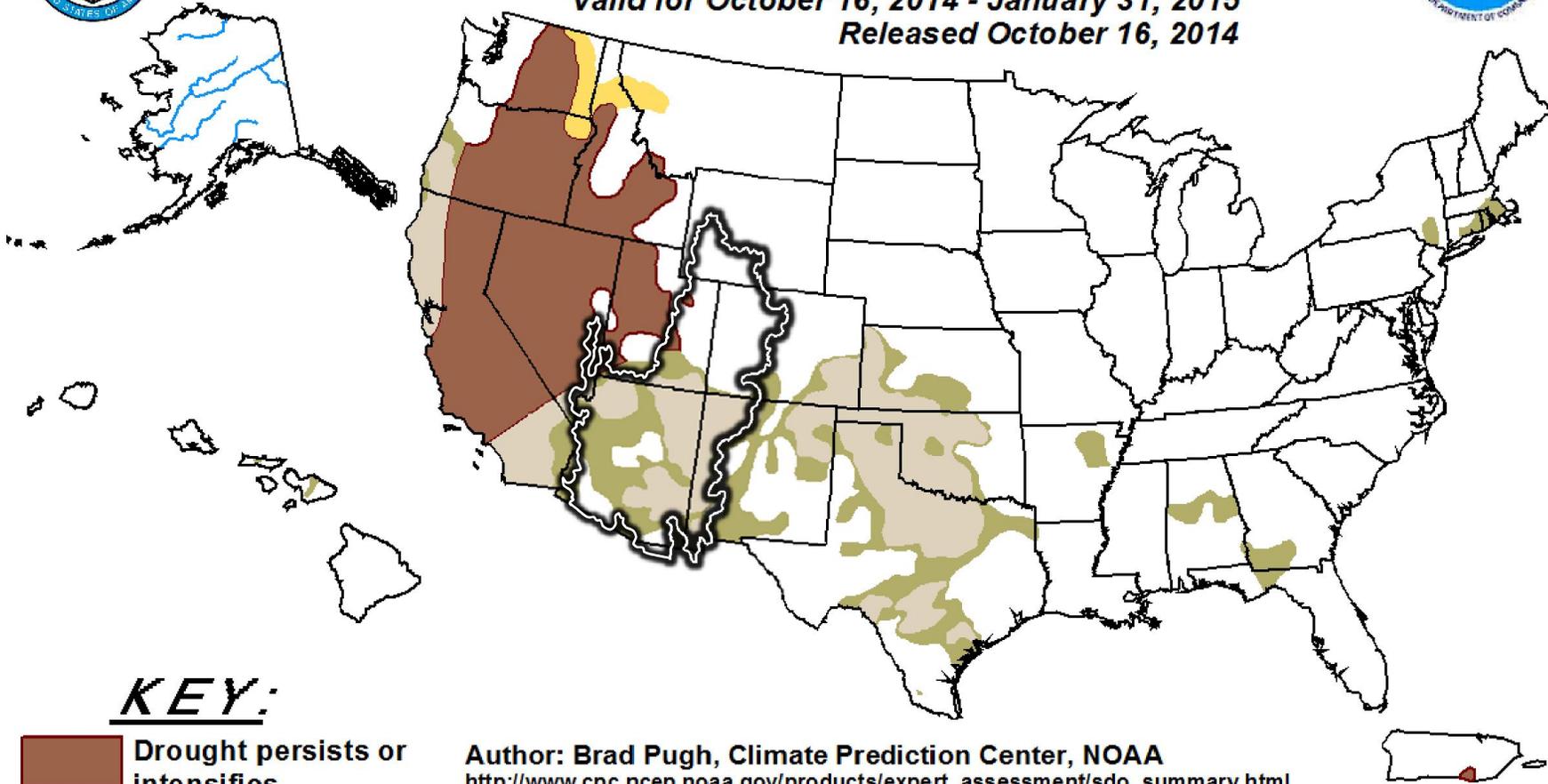


# U.S. Seasonal Drought Outlook

## Drought Tendency During the Valid Period

Valid for October 16, 2014 - January 31, 2015

Released October 16, 2014



### KEY:

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

Author: Brad Pugh, Climate Prediction Center, NOAA

[http://www.cpc.ncep.noaa.gov/products/expert\\_assessment/sdo\\_summary.html](http://www.cpc.ncep.noaa.gov/products/expert_assessment/sdo_summary.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.

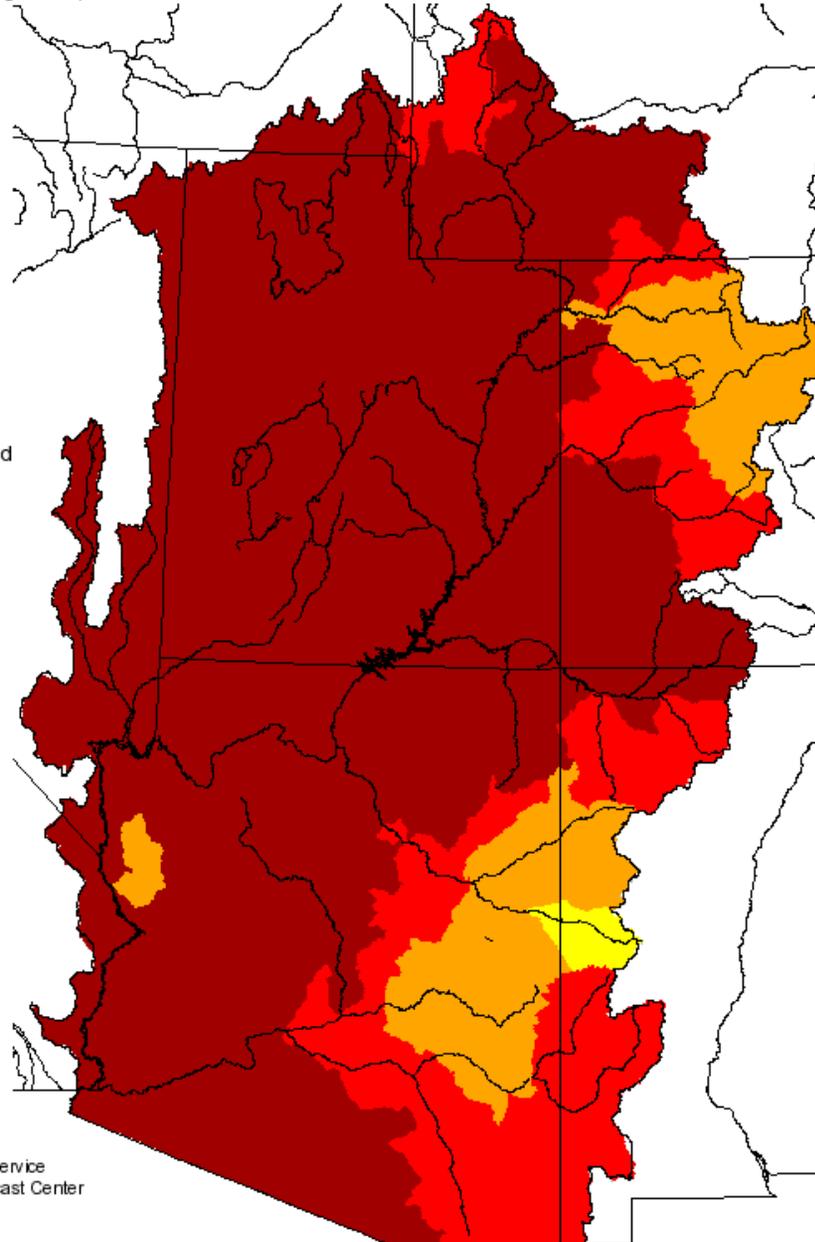
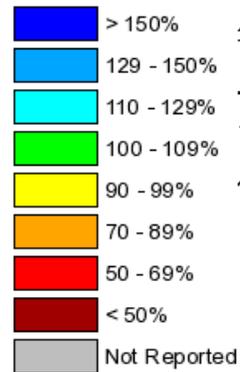
NOTE: The tan area areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period although drought will remain.

The Green areas imply drought removal by the end of the period (D0 or none)

# Monthly Precipitation for October 2014

(Averaged by Hydrologic Unit)

## % Average



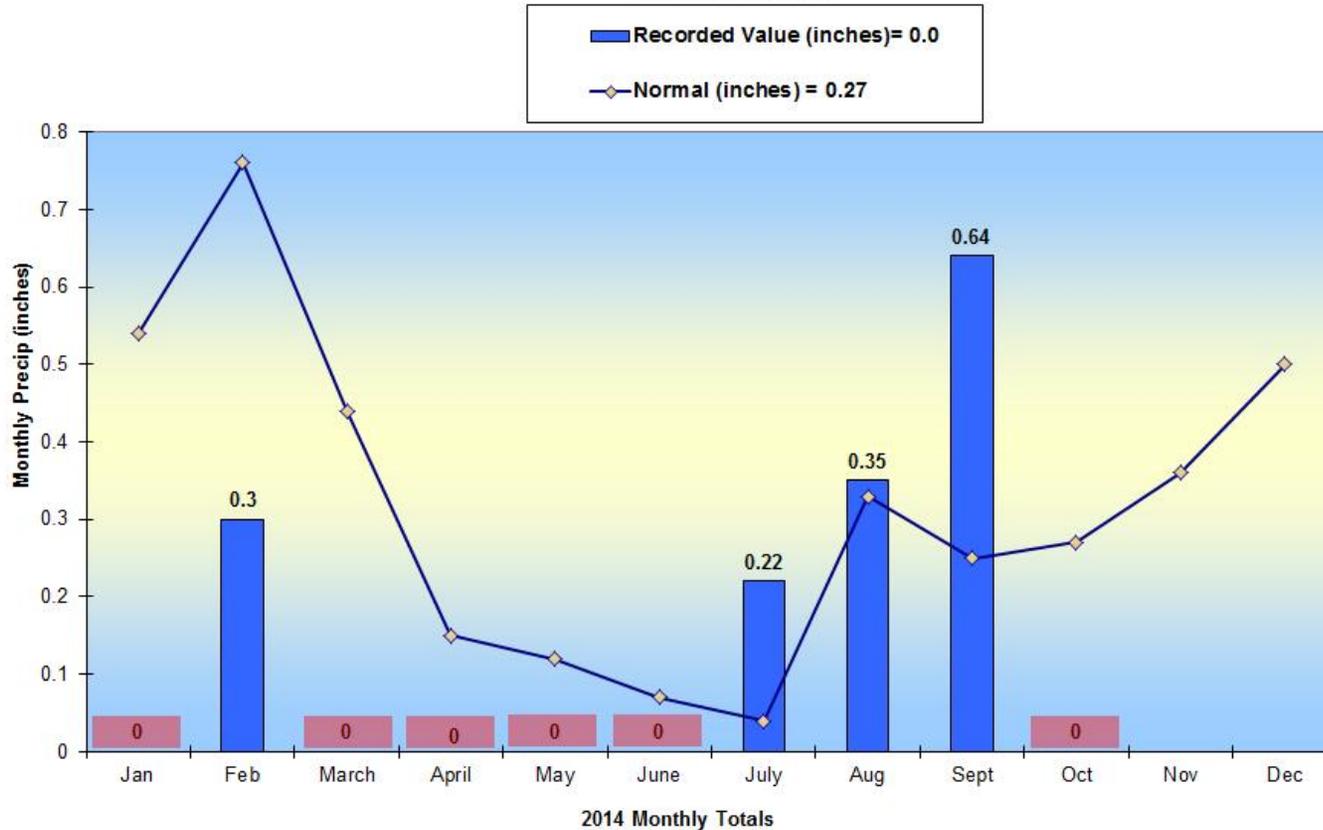
Prepared by  
NOAA, National Weather Service  
Colorado Basin River Forecast Center  
Salt Lake City, Utah  
[www.cbrfc.noaa.gov](http://www.cbrfc.noaa.gov)

# Monthly Precipitation, Las Vegas, NV

As of October 31, 2014

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

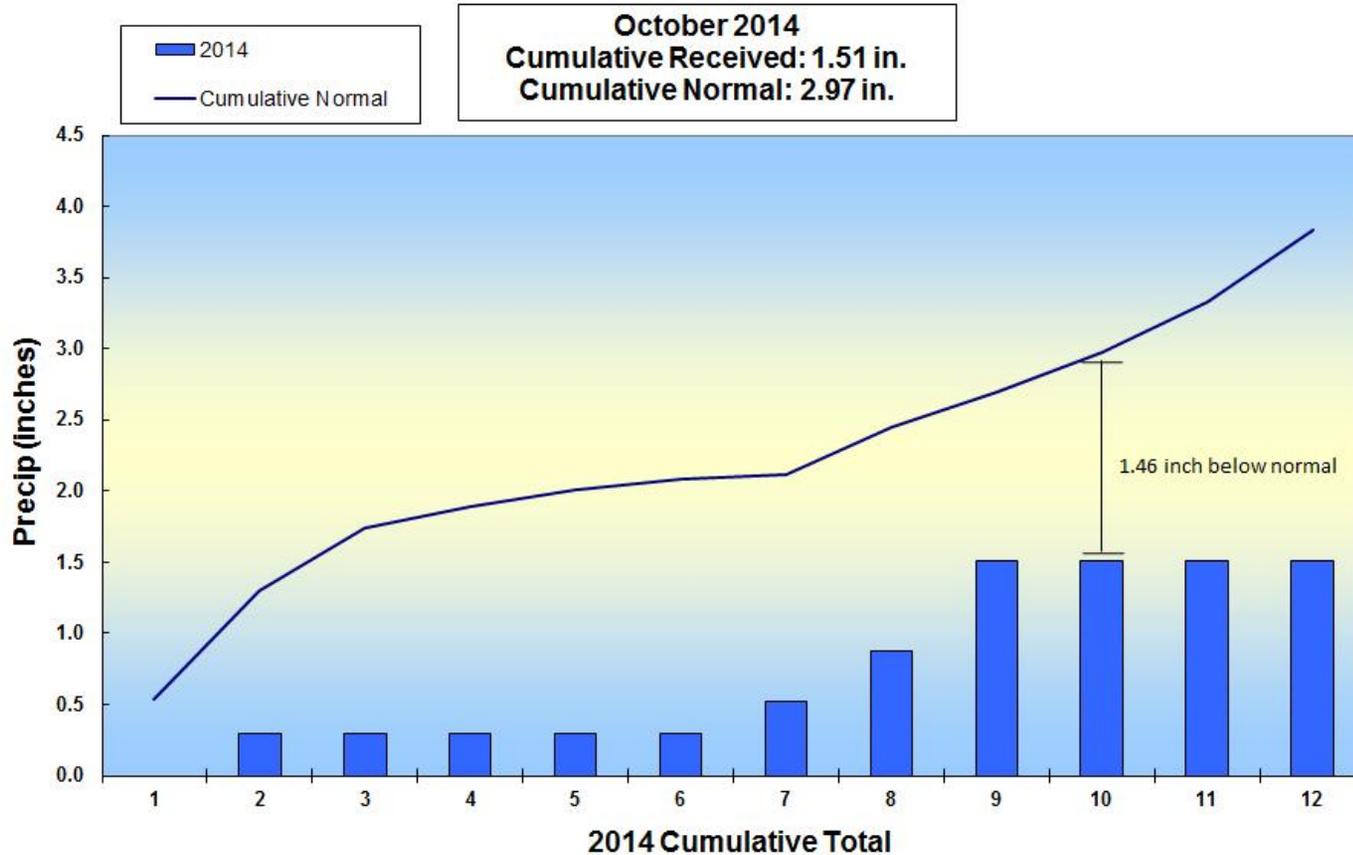
October 2014



# Cumulative Precipitation, Las Vegas, NV

As of October 31, 2014

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



# Water Use in Southern Nevada



# Water Use in Southern Nevada

January – September 2014

2014*:	Consumptive Use =	180,341
	<u>CR Water Banked =</u>	<u>0</u>
		180,341
2013:	Consumptive Use =	182,935
	<u>CR Water Banked =</u>	<u>0</u>
		182,935

**Difference = - 2,594 af**

\*Subject to final accounting.



# Colorado River Commission of Nevada

## Natural Resources Group Hydrologic Update November 13, 2014



# High Flow Experiment



- ❑ A high-flow experiment (HFE) is a large release of water from Glen Canyon Dam intended to replenish downstream sandbars and beaches for recreation and wildlife habitat
- ❑ Reclamation is currently conducting its 3<sup>rd</sup> HFE in a 10 year protocol
- ❑ The bypass tubes opened on November 10<sup>th</sup> and will close on November 15<sup>th</sup>

# Balance of Competing Interests



## HYDROPOWER:

- Water that bypasses the generation units does not produce power
- Western estimates the loss of power generation may cost as much as **\$1.7M**



## FISH:

- HFE's may benefit Rainbow Trout and other Non-Native fish
- Non-native fish compete and prey on Humpback Chub and other native fish



\*Resource monitoring is an important component of the HFE process