

Missouri River Basin Water Management Monthly Update

Participating Agencies

National Oceanic and Atmospheric Administration
National Weather Service
U.S. Army Corps of Engineers

August 7, 2018, 1:00 pm CST

“The views, opinions and findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation.”



US Army Corps
of Engineers®



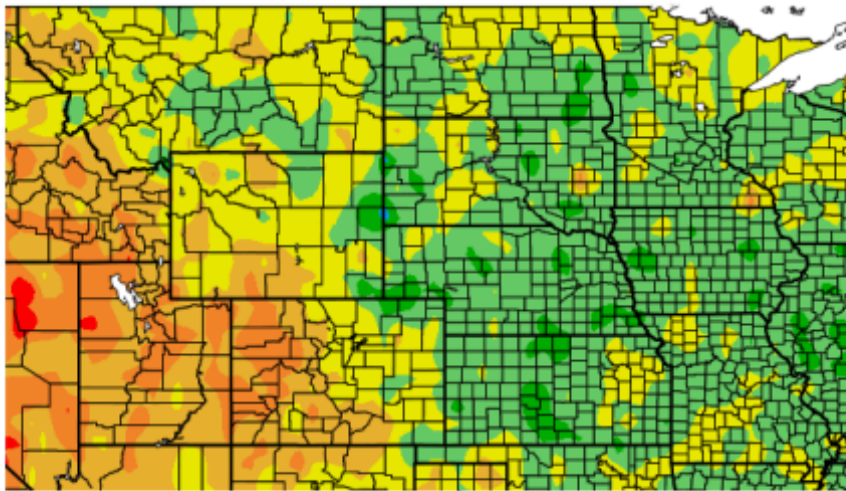
WEATHER / CLIMATE

Allen Schlag
Service Hydrologist
National Weather Service
Bismarck, ND



Conditions – Last 30 days (temperature and precipitation)

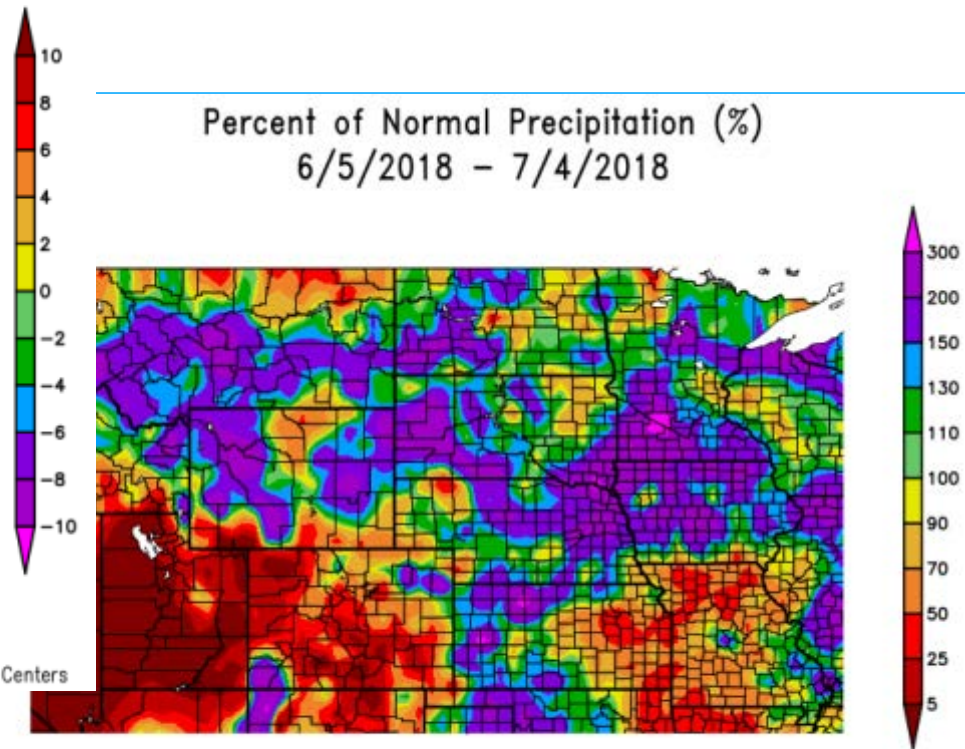
Departure from Normal Temperature (F)
7/7/2018 – 8/5/2018



Generated 8/6/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

Percent of Normal Precipitation (%)
6/5/2018 – 7/4/2018

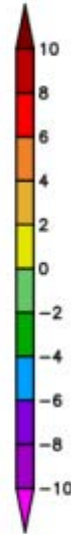
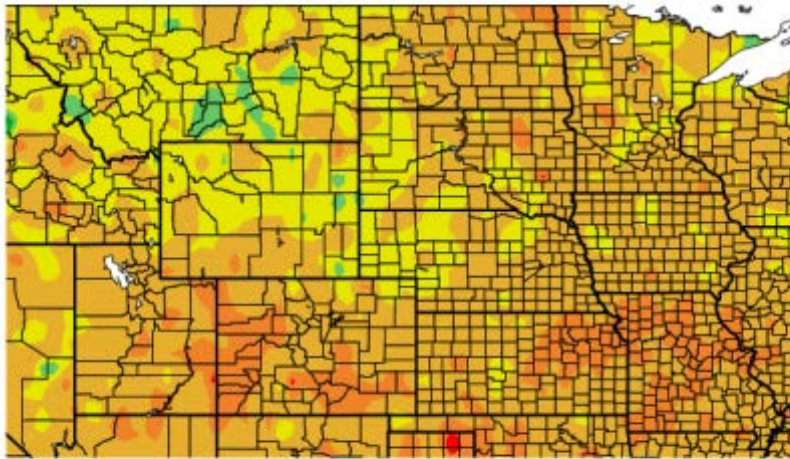


Generated 7/5/2018 at HPRCC using provisional data.

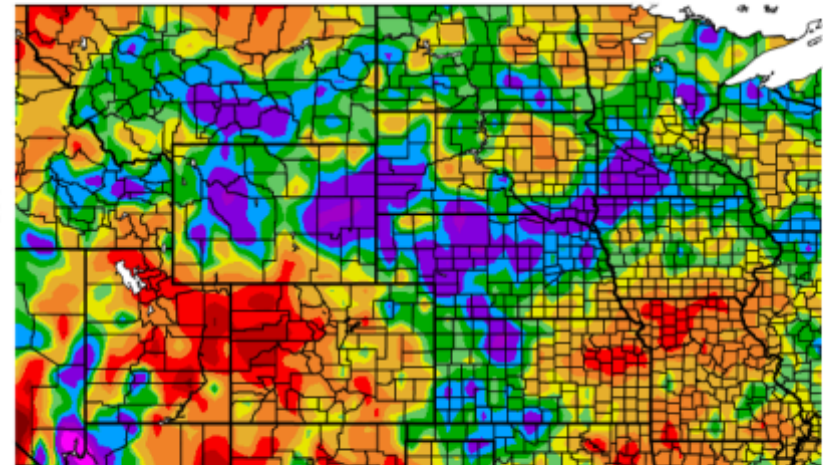
NOAA Regional Climate Centers

Conditions - Last 90 Days (temperatures and precipitation)

Departure from Normal Temperature (F)
5/8/2018 – 8/5/2018



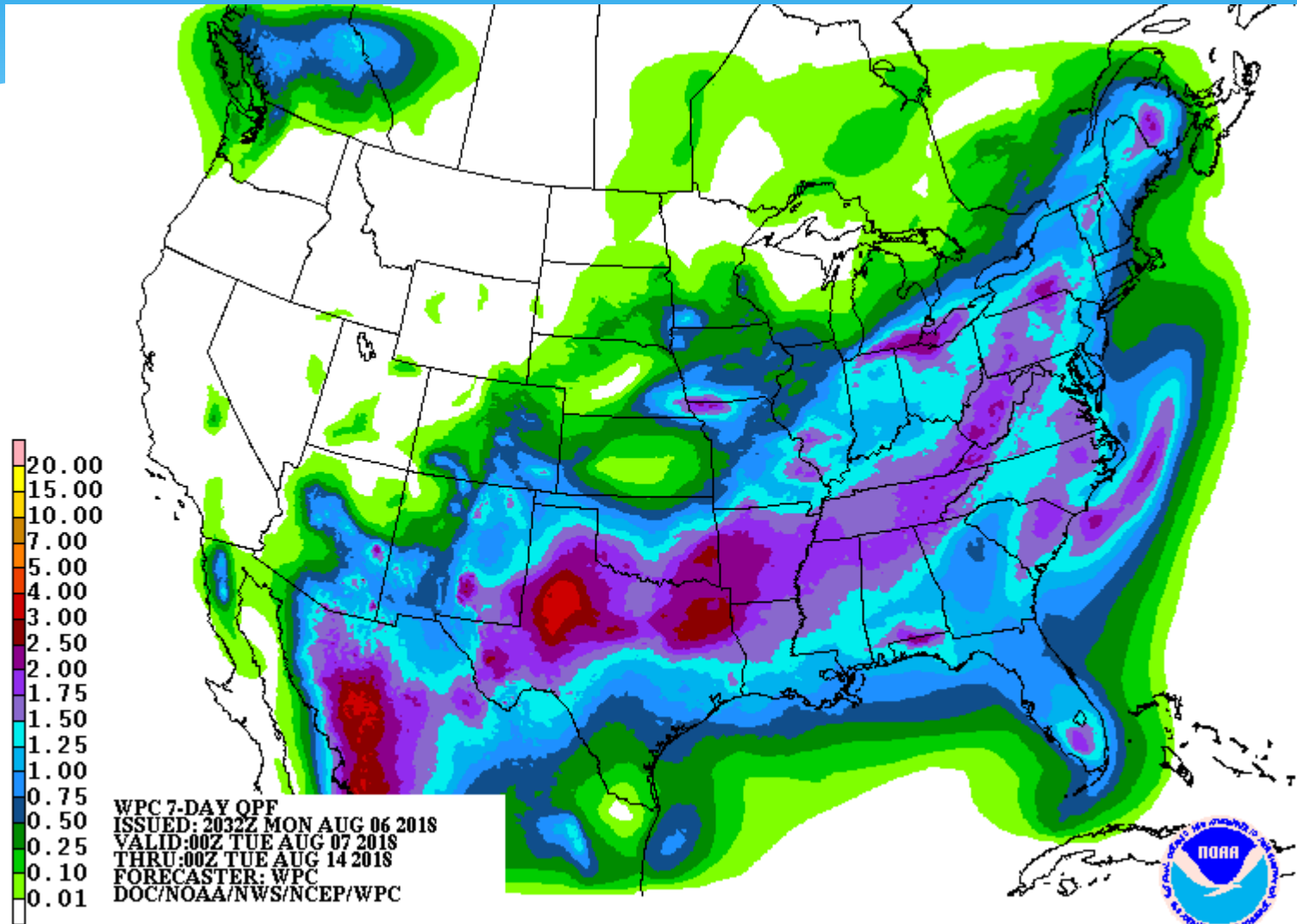
Percent of Normal Precipitation (%)
5/8/2018 – 8/5/2018



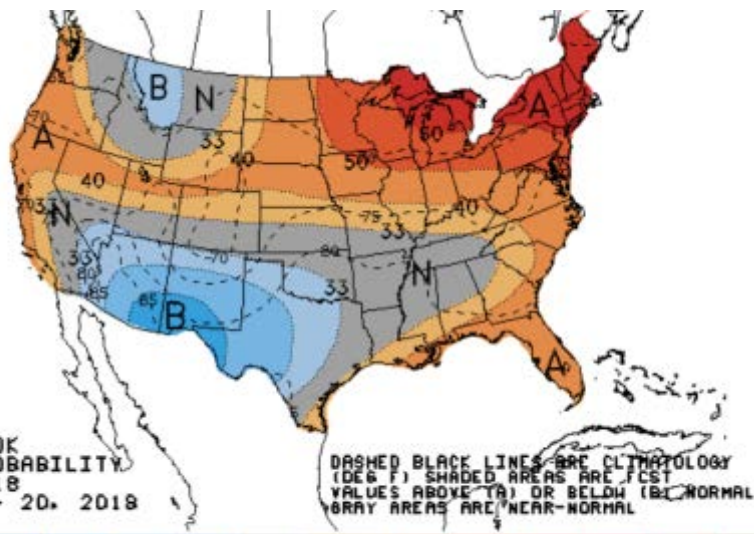
Generated 8/6/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

7-Day Total Rainfall (Aug 7-14)



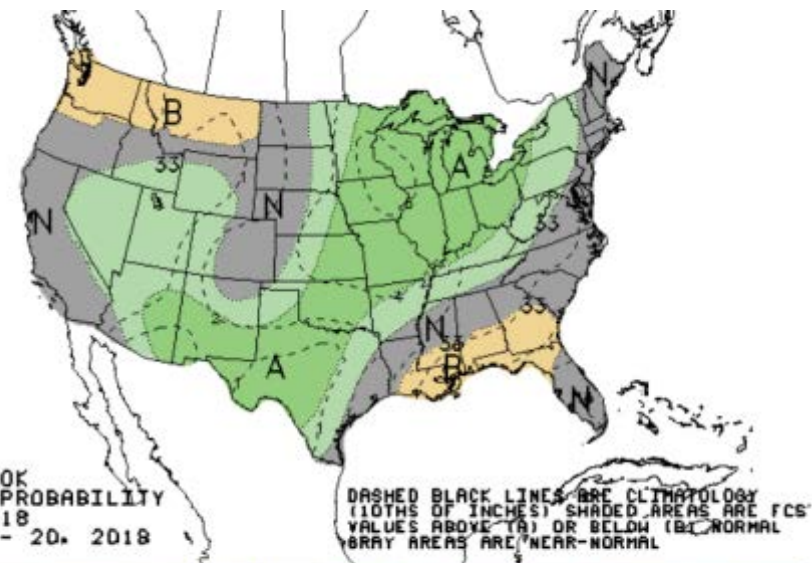
“Week 2” Temperature and Precipitation Probabilities (Aug 14-20)



90% 80% 70% 60% 50% 40% 33% 33% 40% 50% 60% 70% 80% 90%

Temperature

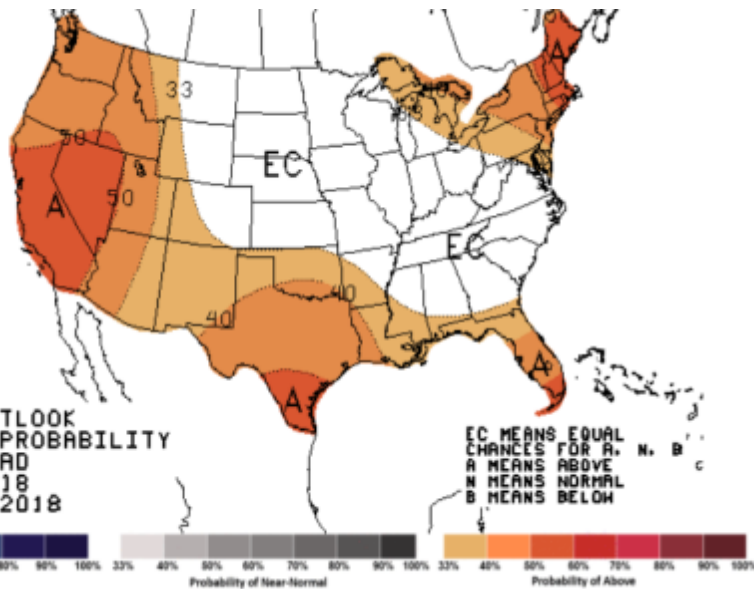
Precipitation



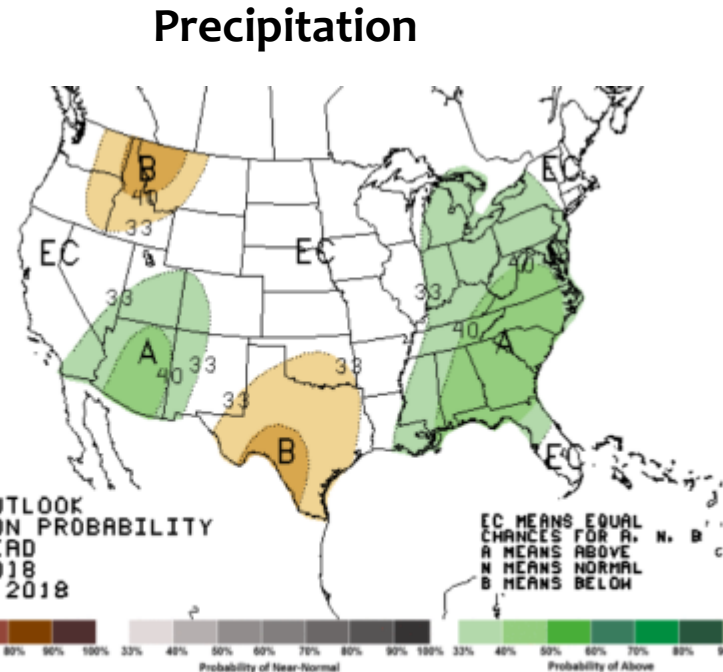
90% 80% 70% 60% 50% 40% 33% 33% 40% 50% 60% 70% 80% 90%

September 2018 Outlook

Temperature and Precipitation Probabilities

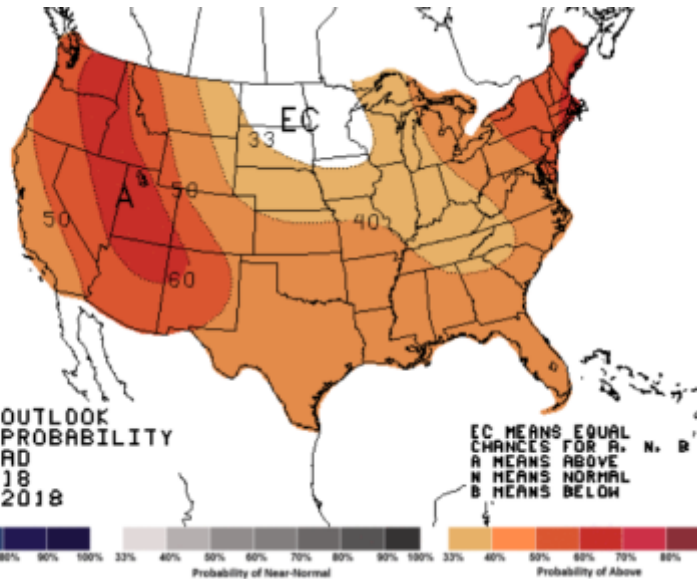


Temperature



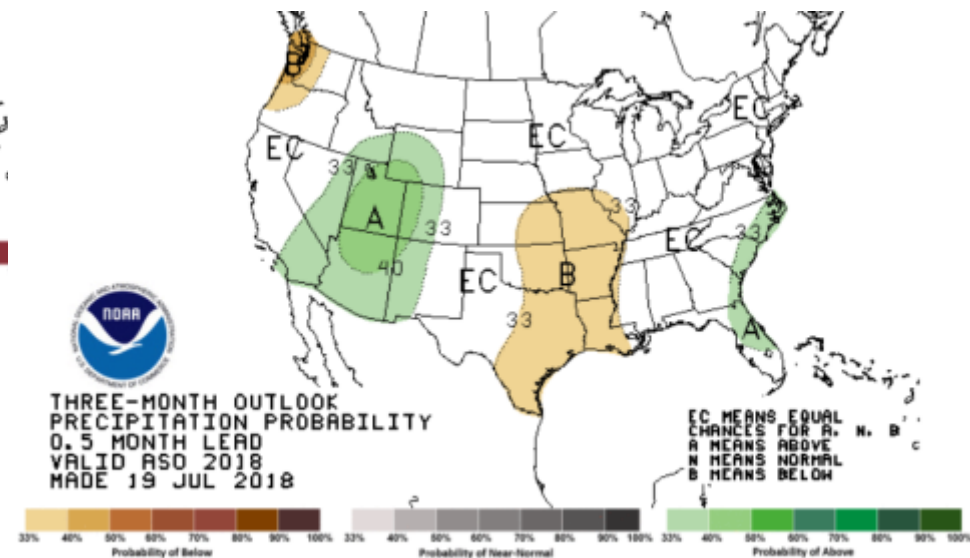
Precipitation

3 Month Temperature and Precipitation Probabilities (August–September–October 2018)



Temperature

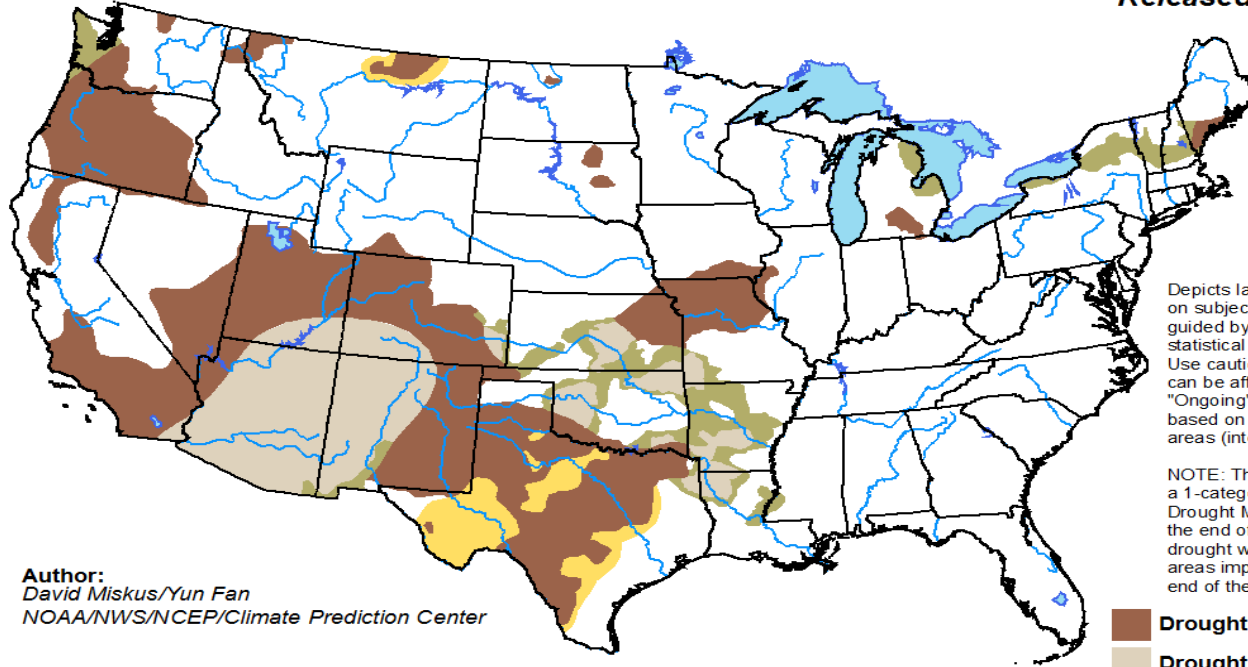
Precipitation



Drought Update

U.S. Monthly Drought Outlook Drought Tendency During the Valid Period



Valid for August 2018
Released July 31, 2018

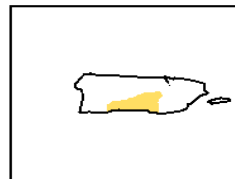
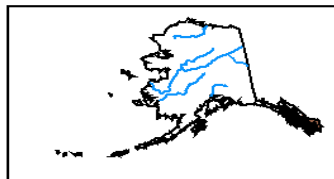


Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan 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).

Author:
David Miskus/Yun Fan
NOAA/NWS/NCEP/Climate Prediction Center

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



<http://go.usa.gov/3eZGd>



Key Points (Summary)

* **Current Conditions**

- * Current ENSO condition – El Nino Watch (conditions favor)
- * Upper basin continuing to dry out
- * Lower basin pretty dry (drought)
- * Upper end of normal to just plain hot temps across much of northern basin

* **Predictions**

- * August Temps: likely continued warm/hot - short term
 - * MT slightly better chance of cool or near normal
- * Sept-Oct: likely warmer south and west, equal chances NE basin
- * Precipitation into summer: short term dry
 - * Sept: equal chances across the basin
 - * Aug-Oct: generally a warmer signal with equal chances for precip in all but the most southern part of Missouri Basin where a hint of dry exists
 - * More opportunity for expanded drought in MT with drought persisting in MO and KS

BASIN CONDITIONS / FLOOD OUTLOOK

Kevin Low

Hydrologist, Missouri Basin River Forecast Center

National Weather Service

Pleasant Hill, MO



MISSOURI BASIN RIVER FORECAST CENTER



Summary Points

- **Since our last call on 06 July, flooding was experienced along:**
 - Missouri River at Williston ND (was already in flood at the time of our last call)**
 - Missouri River from Blair NE downstream to Miami MO (was already in flood)**
 - Little Sioux River in Iowa (was already in flood)**
 - Turtle Creek in northeast South Dakota (James River basin)**
 - Big Sioux River in South Dakota and Iowa**
 - Frenchman Creek in southwest Nebraska (Republican River basin)**
 - Bow Creek in north central Kansas (Solomon River basin)**
- **Currently, no flooding is occurring within the Missouri River basin**
- **The latest NWS 3-month river outlook (issued late July) indicates the likelihood (i.e. >50% chance) for thunderstorm-driven flooding for a handful of smaller tributaries located in eastern Kansas and in the state of Missouri. This is not atypical for the time period of August-October. However, the drought conditions in this area (eastern KS and MO) have significantly reduced the risk.**



UPPER MISSOURI RIVER BASIN WATER MANAGEMENT UPDATE FOR 2018

Mike Swenson, P.E.
Power Production Team Lead
U.S. Army Corps of Engineers
Missouri River Basin Water Management

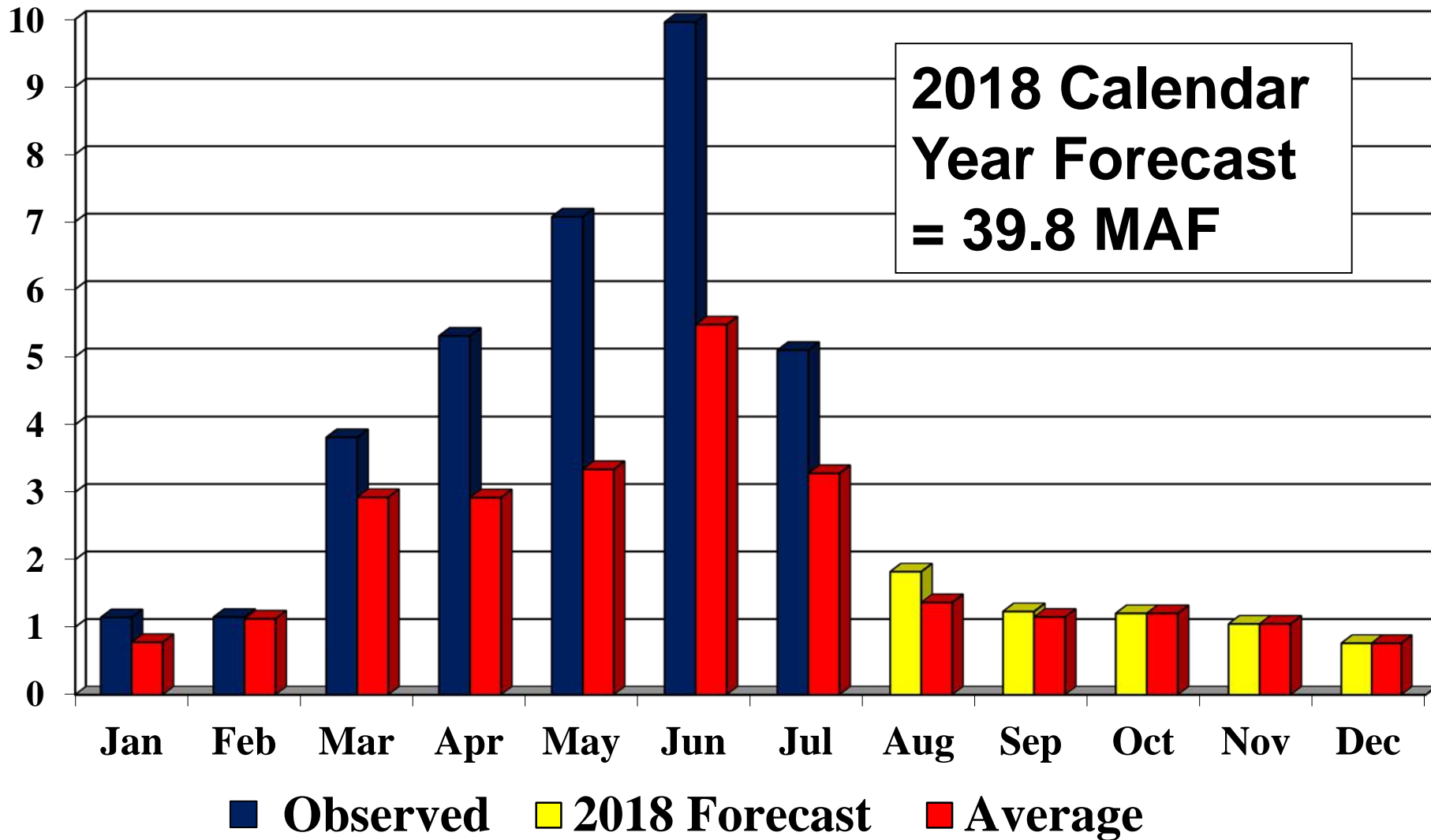


UPPER BASIN RUNOFF FOR 2018

Kevin Stamm, P.E.
Senior Hydraulic Engineer
U.S. Army Corps of Engineers
Missouri River Basin Water Management



Missouri River Runoff above Sioux City, IA 2018 Forecast

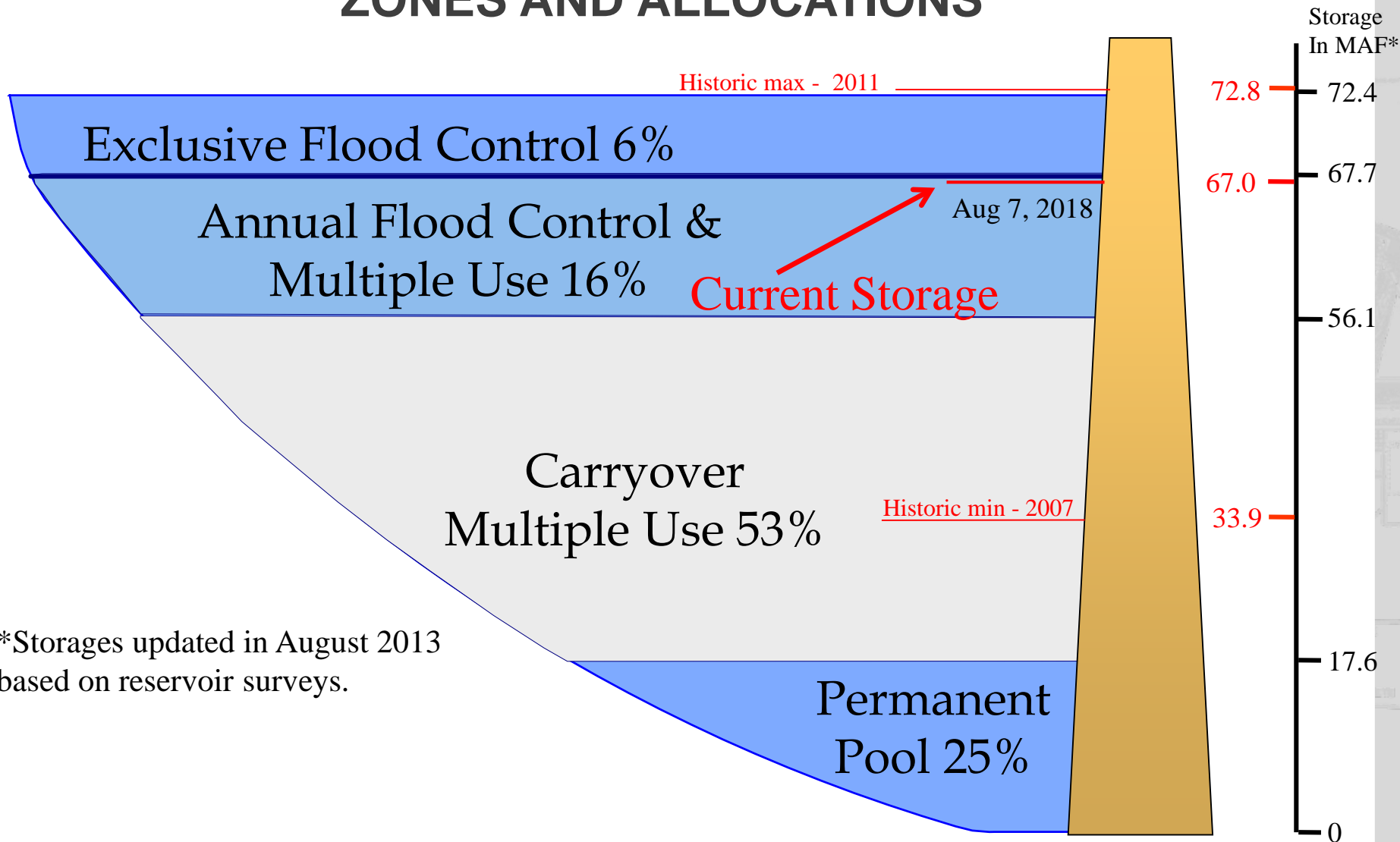


RESERVOIR SYSTEM REGULATION

Joel Knofczynski, P.E.
Senior Hydraulic Engineer
U.S. Army Corps of Engineers
Missouri River Basin Water Management

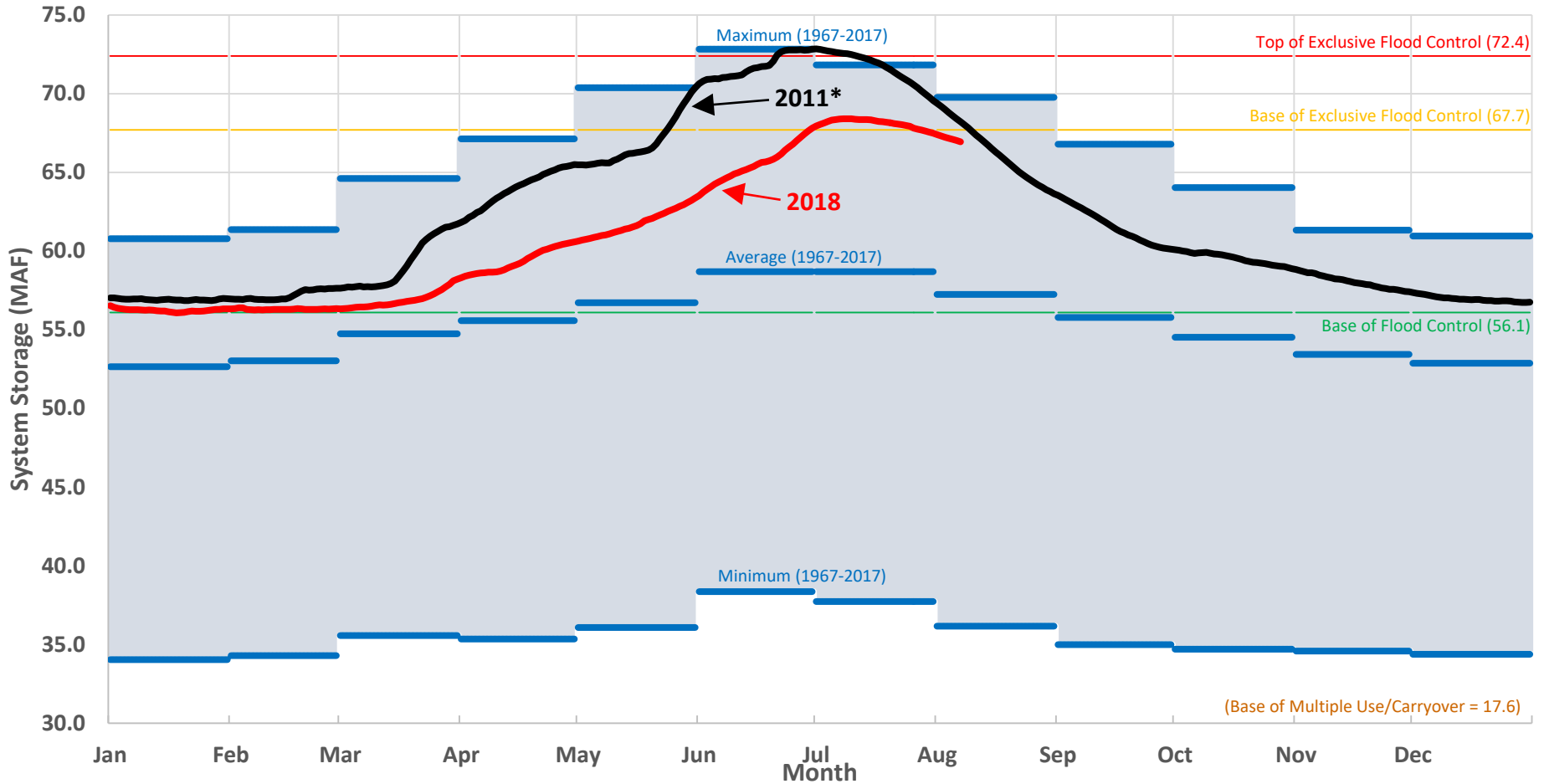


MISSOURI RIVER MAINSTEM SYSTEM STORAGE ZONES AND ALLOCATIONS



*Storages updated in August 2013 based on reservoir surveys.

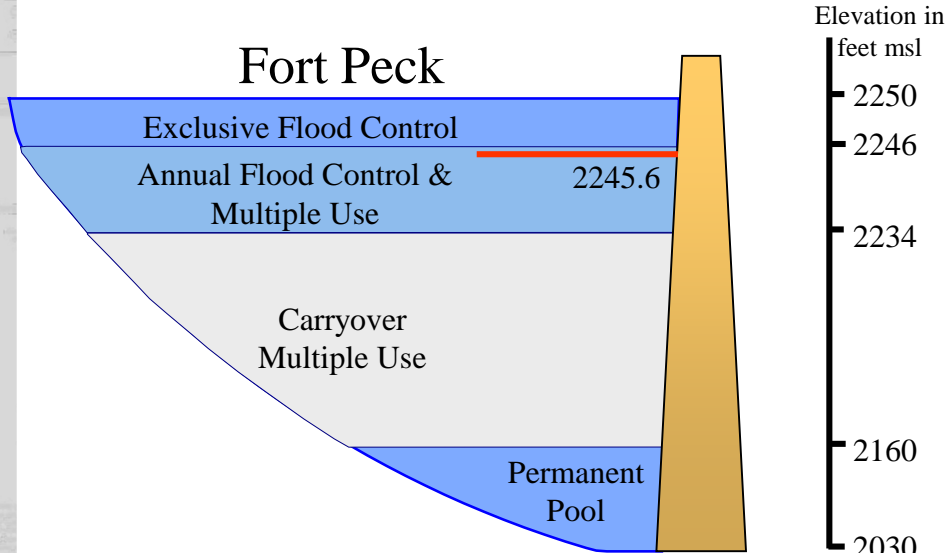
System Storage Comparison



*In January 2011, the Base of Flood Control was 56.8 MAF, and the Top of Exclusive Flood Control was 73.1 MAF.

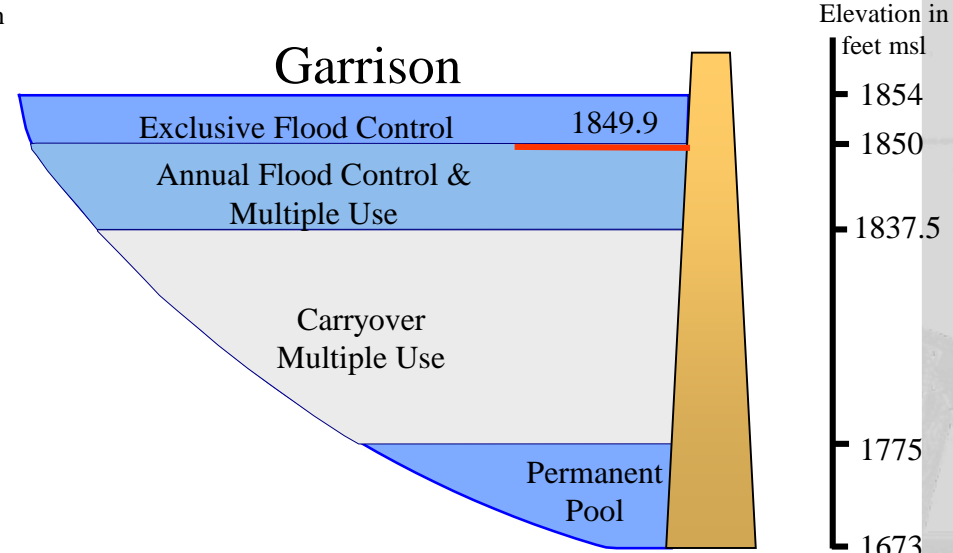
CURRENT RESERVOIR LEVELS – AUGUST 7, 2018

Fort Peck



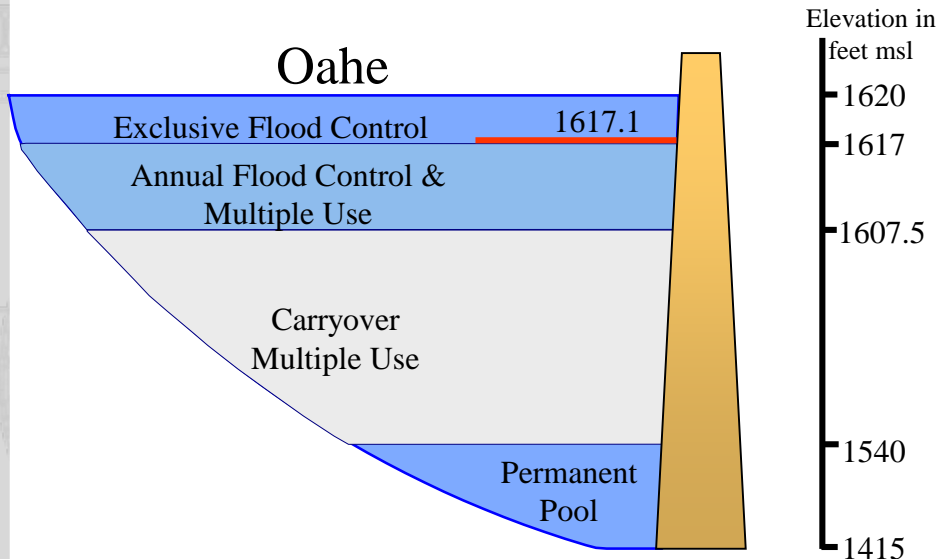
11.6 feet above the base of Flood Control Zone

Garrison



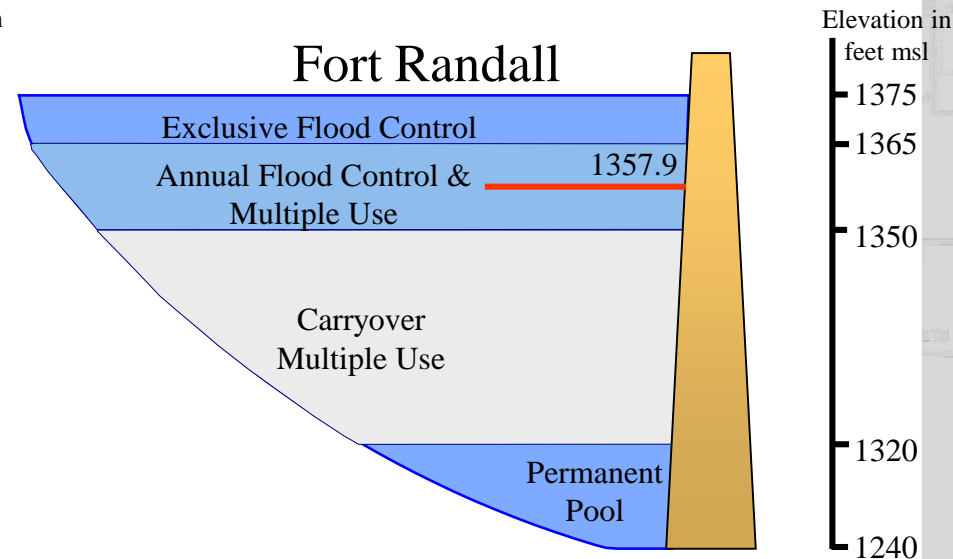
12.4 feet above the base of the Flood Control Zone

Oahe



9.6 feet above the base of Flood Control Zone

Fort Randall



7.9 feet above base of Flood Control zone

KEY POINTS

1. Currently, ~33% of flood storage space (5.4 MAF of 16.3 MAF) is available to capture runoff.
2. Full navigation season (10-day extension likely).
3. Expanded service level (+25,000 cfs).
4. Annual power production of 13.3 BKWhrs (average is 9.3 BKWhrs)

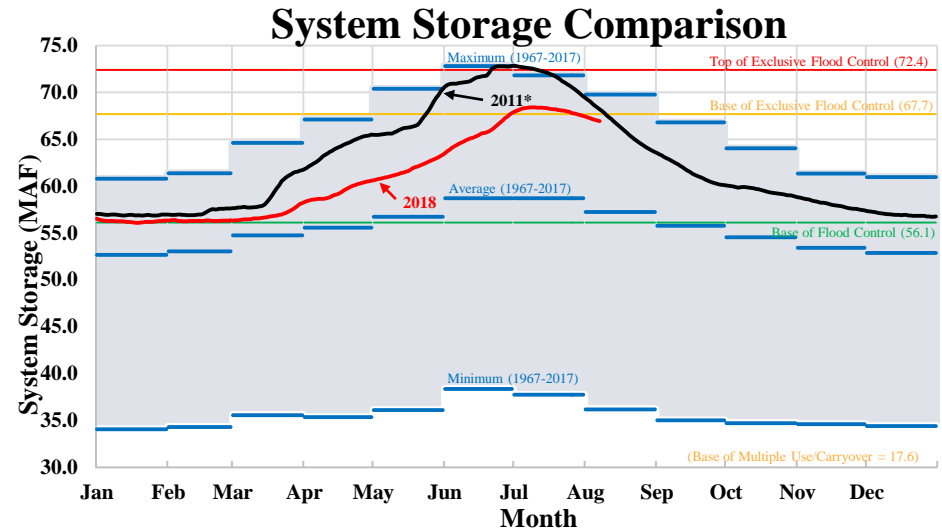


Missouri River Basin – Weekly Update – 06 August 2018

Mainstem Reservoir Status:

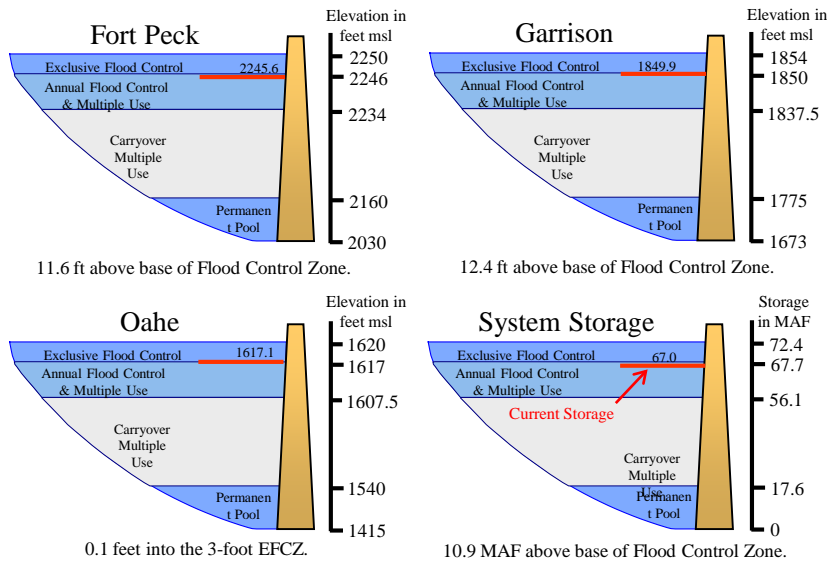
- ❖ System storage is currently 67.0 MAF, 10.9 MAF above the base of the Annual Flood Control and Multiple Use Zone.
- ❖ The storage in the System peaked at 68.4 MAF on July 8th, occupying 12.3 of the 16.3 MAF of designated flood control storage space.
- ❖ Releases from all System projects will be higher than average during the summer and fall to evacuate all water stored in the designated flood control storage zones.
- ❖ The August precipitation outlook from the CPC indicates slightly increased chances for below-normal precipitation in Kansas and Missouri, slightly increased chances for above-normal precipitation in Wyoming, and equal chances for above-normal, normal, and below-normal precipitation elsewhere in the Basin.
- ❖ Gavins Point releases are expected to be about 58,000 cfs for the next several months, but will be adjusted if downstream conditions warrant.
- ❖ The Gavins Point release schedule and forecasted Missouri River flows and stages can be found here:

[Click Here](#) for Missouri River releases, flows & stages



*In January 2011, the Base of Flood Control was 56.8 MAF, and the Top of Exclusive Flood Control was 73.1 MAF.

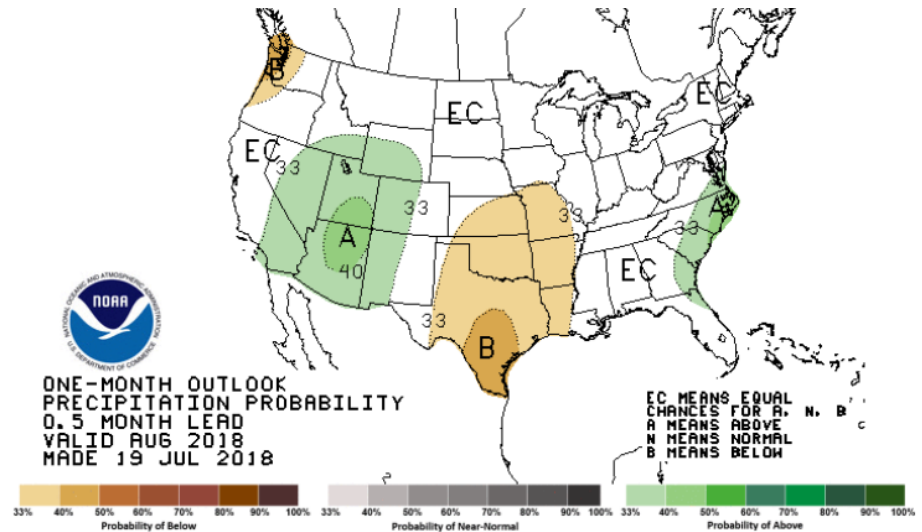
Current Reservoir Levels



[Click Here](#) for Latest 3-Week Forecast

[Click Here](#) for Comparison Plots

August Precipitation Outlook



Source: <http://www.cpc.ncep.noaa.gov/>

FINAL CALL OF THE 2018 RUNOFF SEASON



CONTACT INFORMATION

Name	Office	Email Address	Phone Number
Eileen Williamson	USACE, NWD Public Affairs Office	Eileen.L.Williamson@usace.army.mil	402-996-3802
Allen Schlag	National Weather Service, Hydrologist	Allen.Schlag@noaa.gov	
Kevin Low	National Weather Service, Hydrologist	Kevin.Low@noaa.gov	
Mike Swenson	USACE, MRBWMD, Power Production Team Lead	Michael.A.Swenson@usace.army.mil	402-996-3860
Kevin Stamm	USACE, MRBWM, Senior Hydraulic Engineer	Kevin.D.Stamm@usace.army.mil	402-996-3874
Joel Knofczynski	USACE, MRBWM, Senior Hydraulic Engineer	Joel.D.Knofczynski@usace.army.mil	402-996-3852

