

Missouri River Basin Water Management

US Army
Corps of Engineers

Low Water Update

November 20, 2012

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Chief, Missouri River Basin Water Management



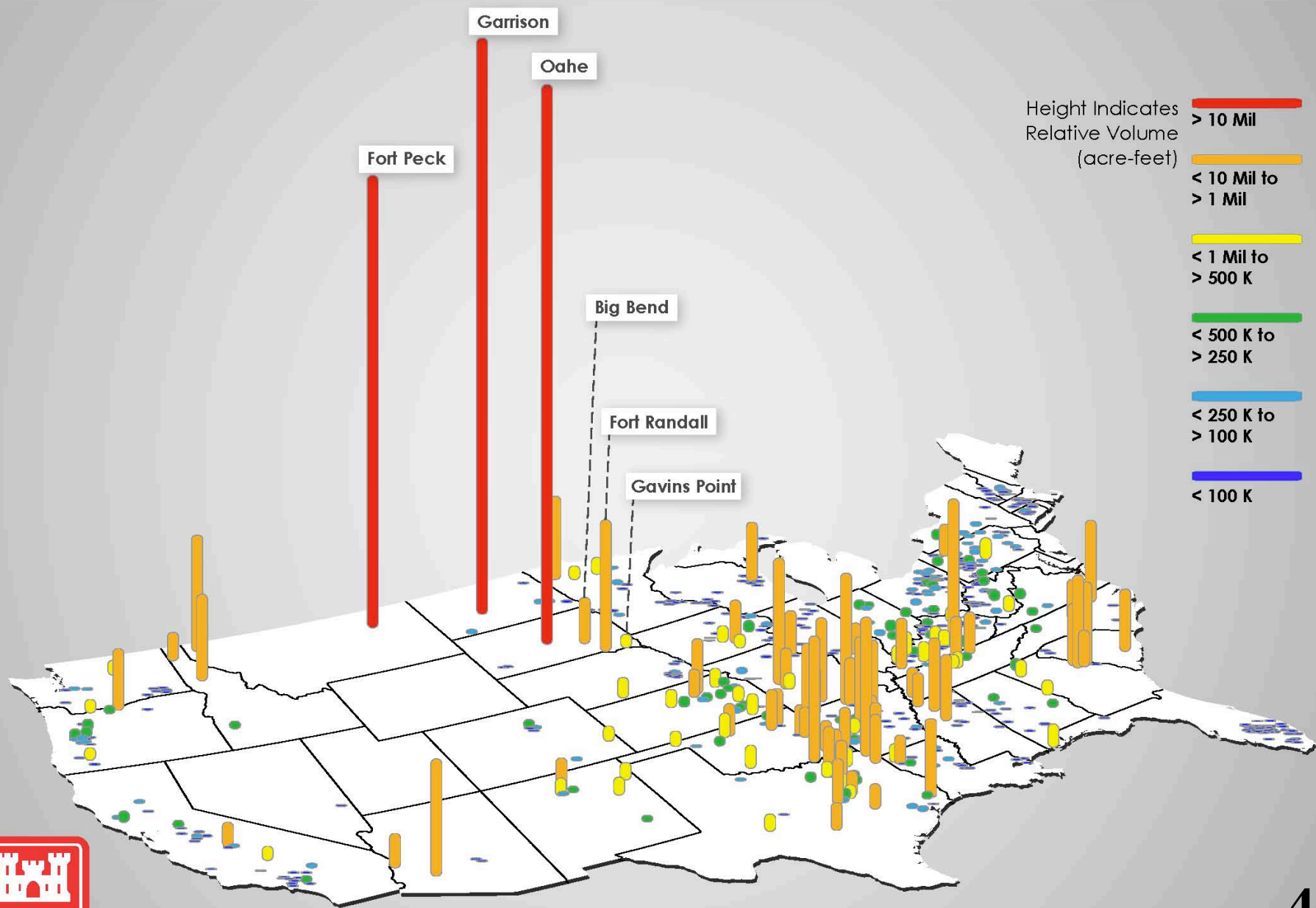
US Army Corps of Engineers
BUILDING STRONG®



Missouri River Mainstem Reservoir System



Storage Capacity of Corps Reservoirs



Our Mission

Regulate Missouri River Mainstem Reservoirs to Support Congressionally Authorized Purposes

Flood Control



Hydropower



Water Supply



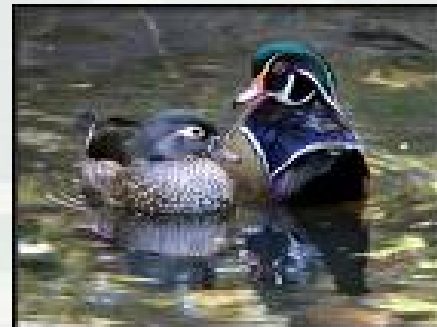
Water Quality Control



Recreation



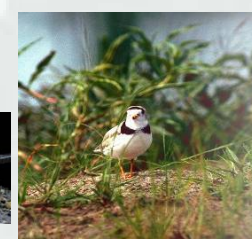
Navigation



Fish and Wildlife
Including Threatened and
Endangered Species

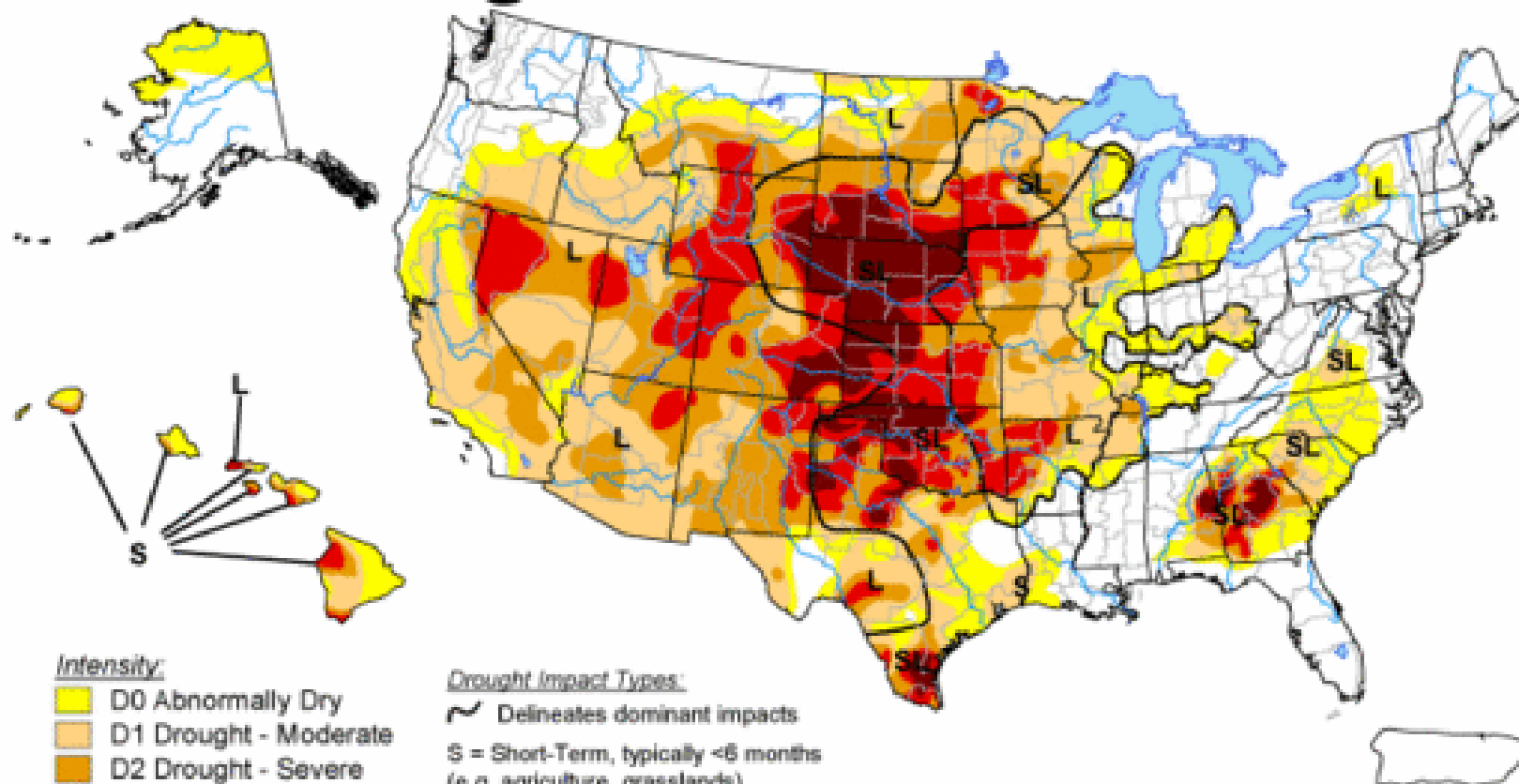


Irrigation



U.S. Drought Monitor

November 13, 2012
Valid 7 a.m. EST



Intensity:

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

Drought Impact Types:

- Delineates dominant impacts
- S = Short-Term, typically <6 months
(e.g. agriculture, grasslands)
- L = Long-Term, typically >6 months
(e.g. hydrology, ecology)

*The Drought Monitor focuses on broad-scale conditions.
Local conditions may vary. See accompanying text summary
for forecast statements.*

<http://droughtmonitor.unl.edu/>



Released Thursday, November 15, 2012

Author: David Miskus, NOAA/NWS/NCEP/CPC

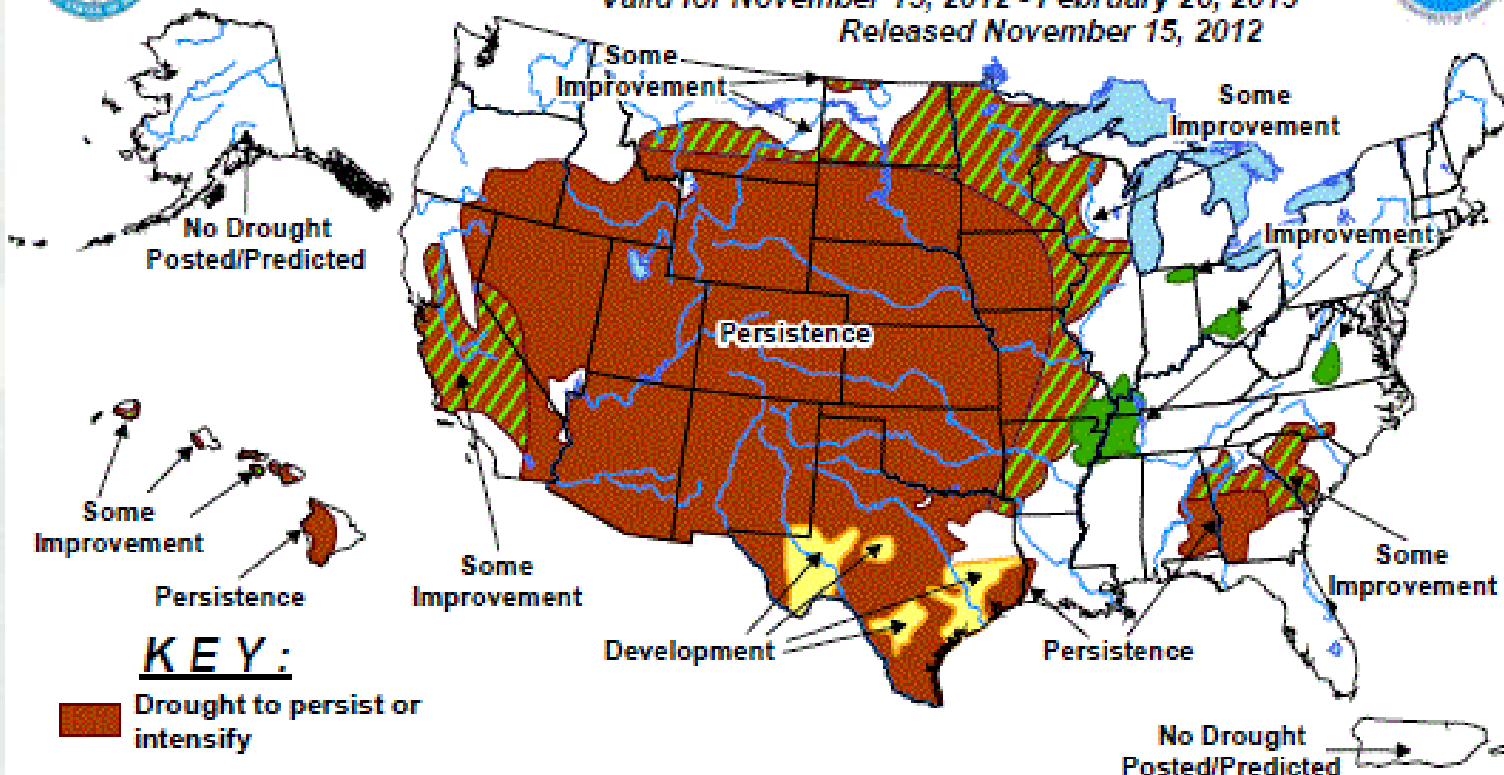


U.S. Seasonal Drought Outlook





Drought Tendency During the Valid Period

Valid for November 15, 2012 - February 28, 2013

Released November 15, 2012



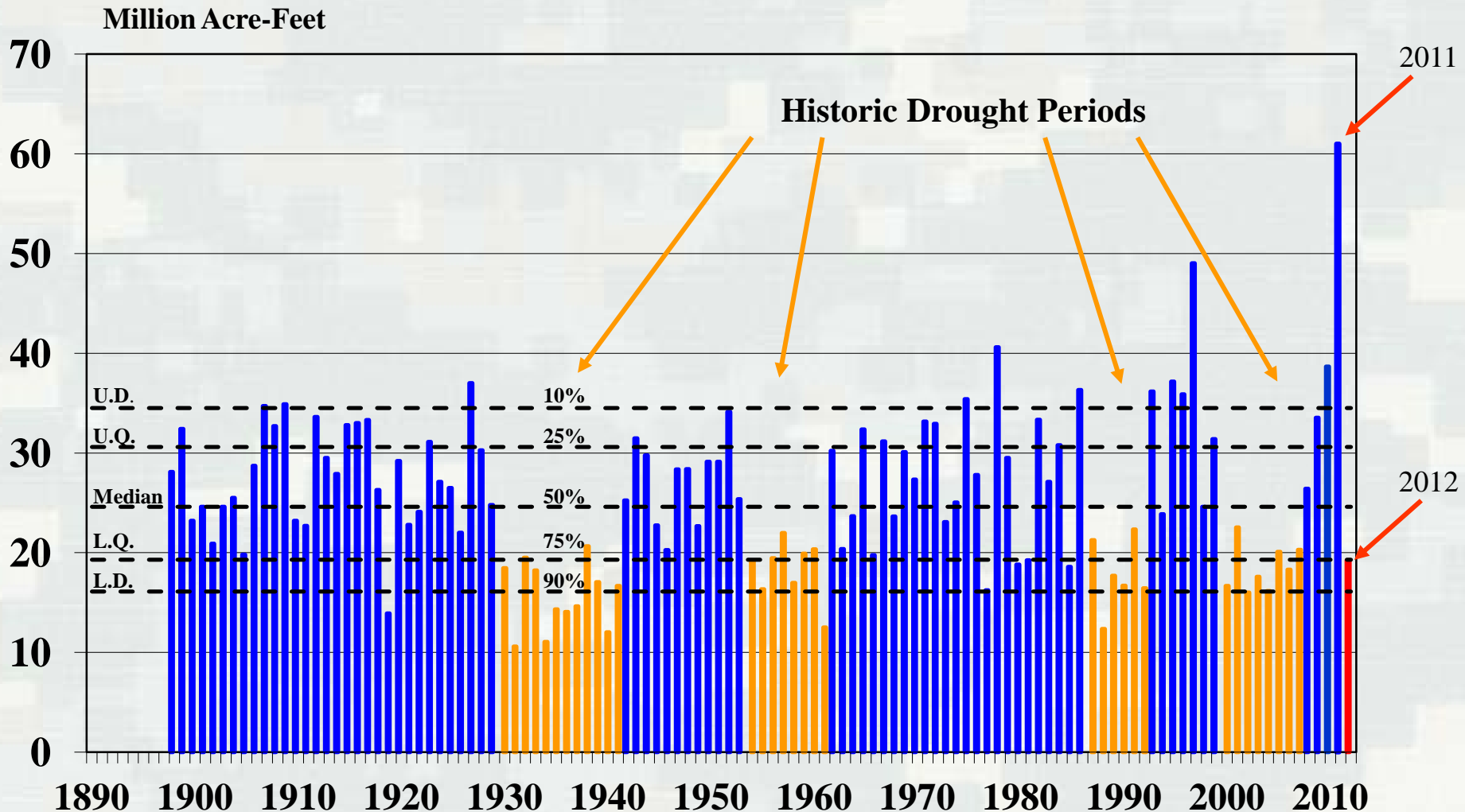
KEY:

-  Drought to persist or intensify
-  Drought ongoing, some improvement
-  Drought likely to improve, impacts ease
-  Drought development likely

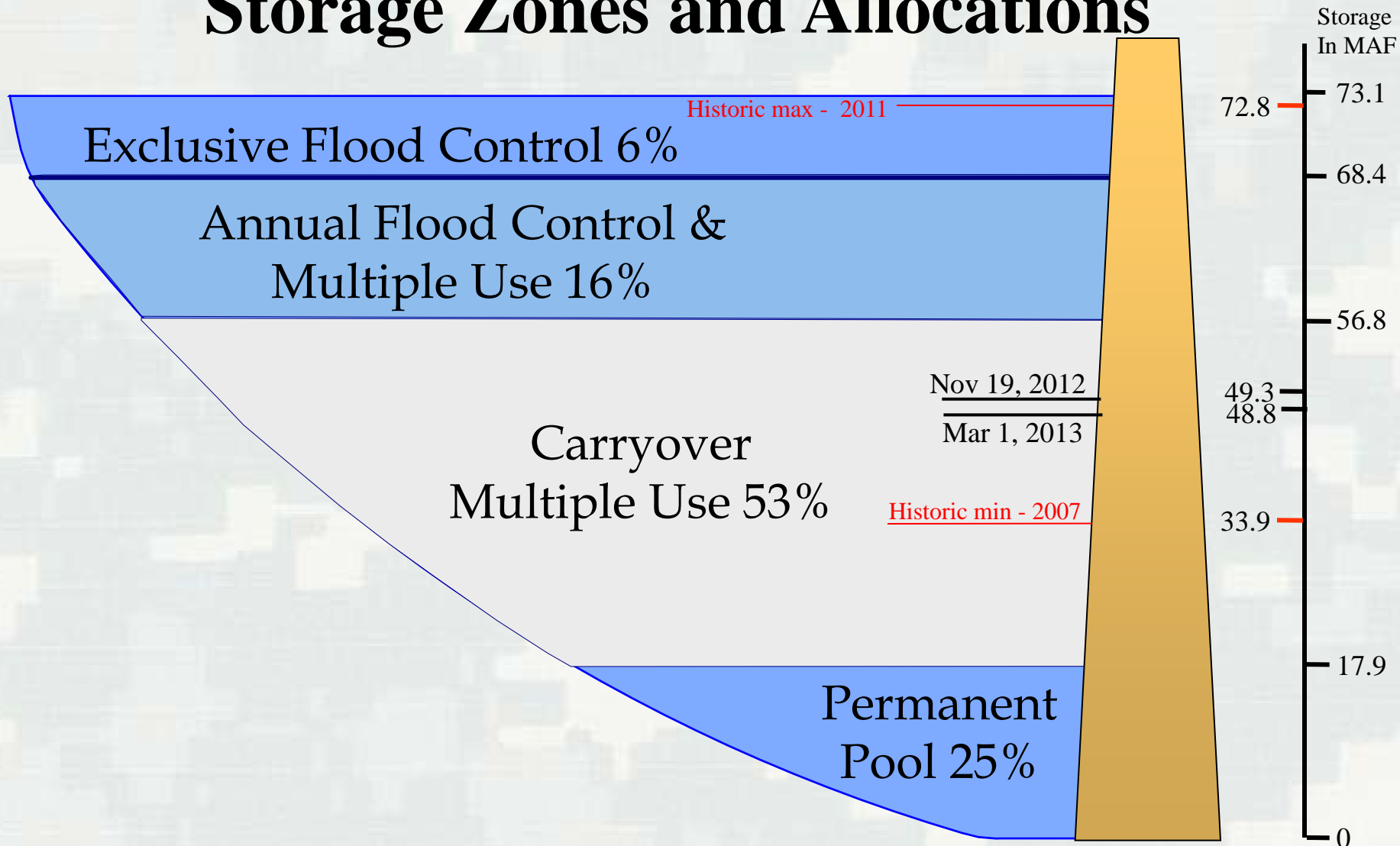
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events — such as individual storms — cannot be accurately forecast more than a few days in advance. Use caution for applications — such as crops — that 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 green Improvement areas imply at least a 1-category Improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.



Missouri River Mainstem System Annual Runoff above Sioux City, IA

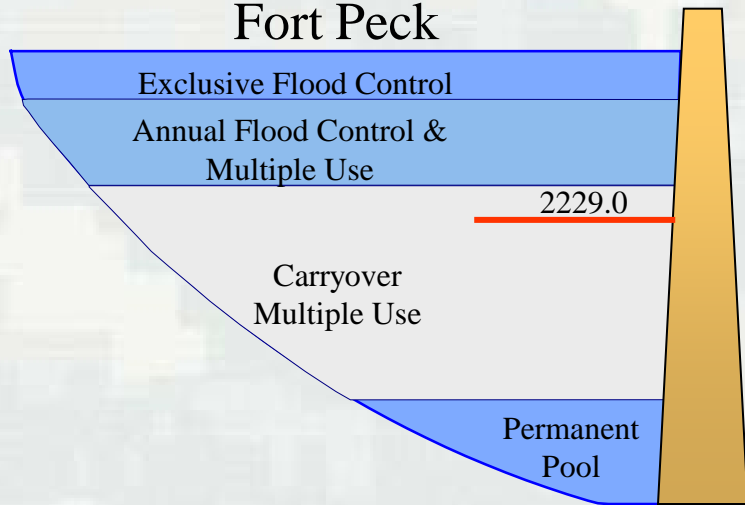


Missouri River Mainstem System Storage Zones and Allocations

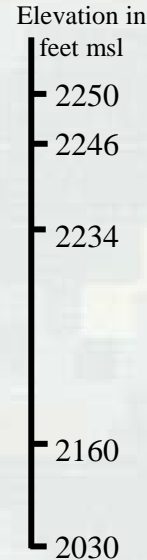


Current Reservoir Levels – November 19, 2012

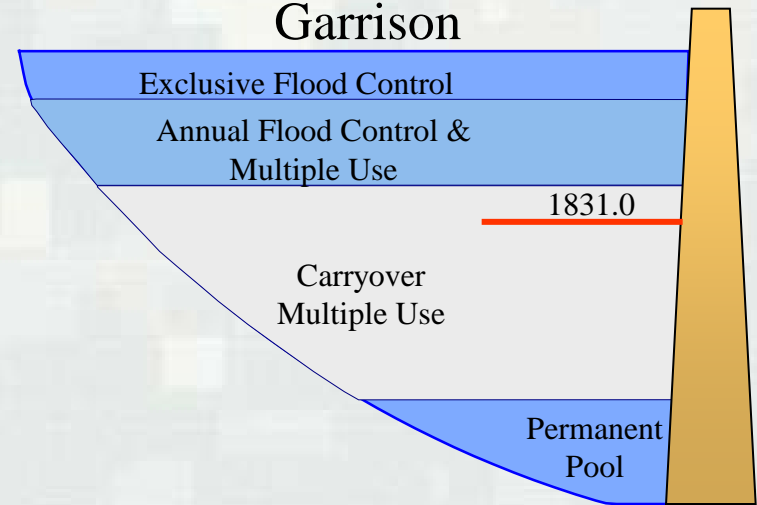
Fort Peck



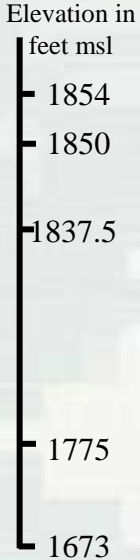
5.0 feet below base of Flood Control zone



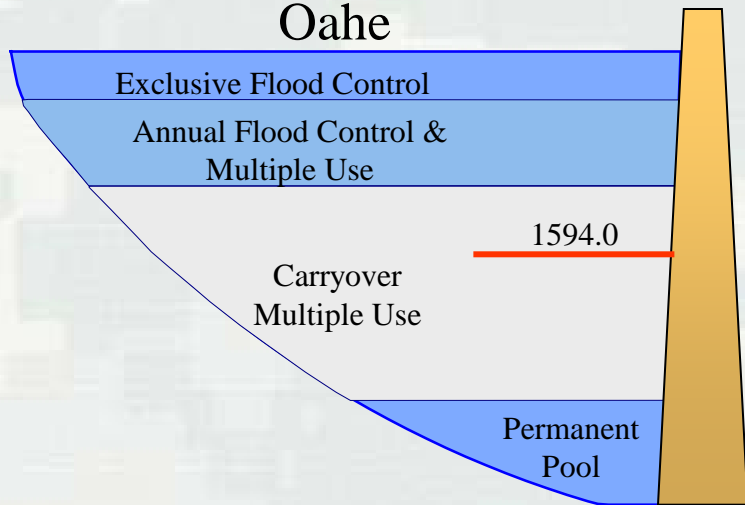
Garrison



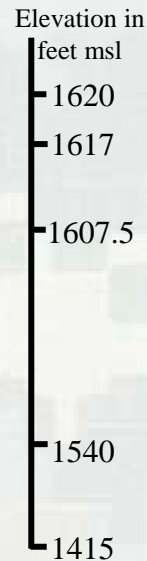
6.5 feet below base of Flood Control zone



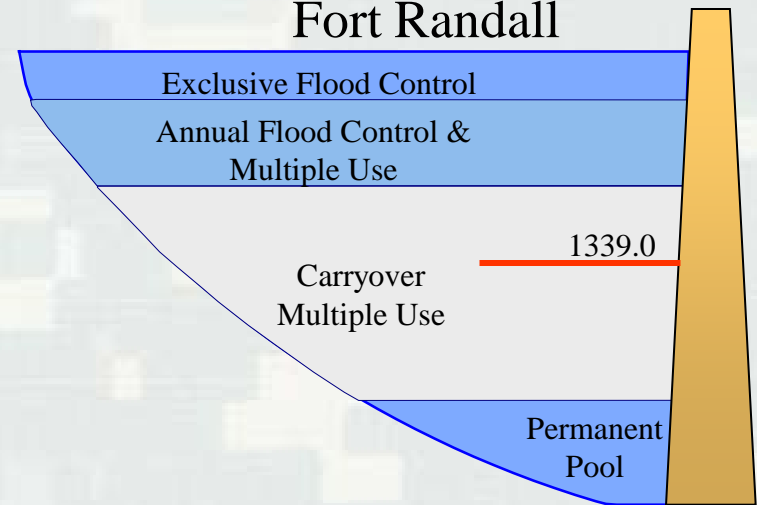
Oahe



13.5 feet below base of Flood Control zone



Fort Randall



11.0 feet below base of Flood Control zone



Missouri River Navigation Support

- Navigation support provided by meeting target flows at four locations: Sioux City, Omaha, Nebraska City, and Kansas City
- Level of service based on Reservoir System Storage checks on March 15 and July 1
- Navigation Flow Support
 - ▶ Full Service: flows designed to support a 9x300 ft channel
 - ▶ Minimum Service:
 - 6,000 cfs less than full service
 - Flows designed to support a 8x200 ft channel
- Navigation Season Length
 - ▶ Full Length Season: 8 month season from April 1 to December 1 at the mouth
 - ▶ Reduced Season Length: 6 to 8 months during droughts
 - ▶ Extended Season Length: 8 months + 10 days for flood water evacuation



2012 Navigation Support

- Based on July 1, 2012 System Storage check
- Full service flow support & full length season
 - ▶ Flows to support 9x300 ft channel
 - ▶ Eight month season from April 1 to December 1
- Releases will be stepped down at approximately 3,000 cfs per day beginning on November 23



2012 Navigation Season Last Day of Flow Support

- Sioux City (31,000 cfs) November 22
- Omaha (31,000 cfs) November 24
- Nebraska City (37,000 cfs) November 25
- Kansas City (41,000 cfs) November 27
- Mouth near St. Louis December 1



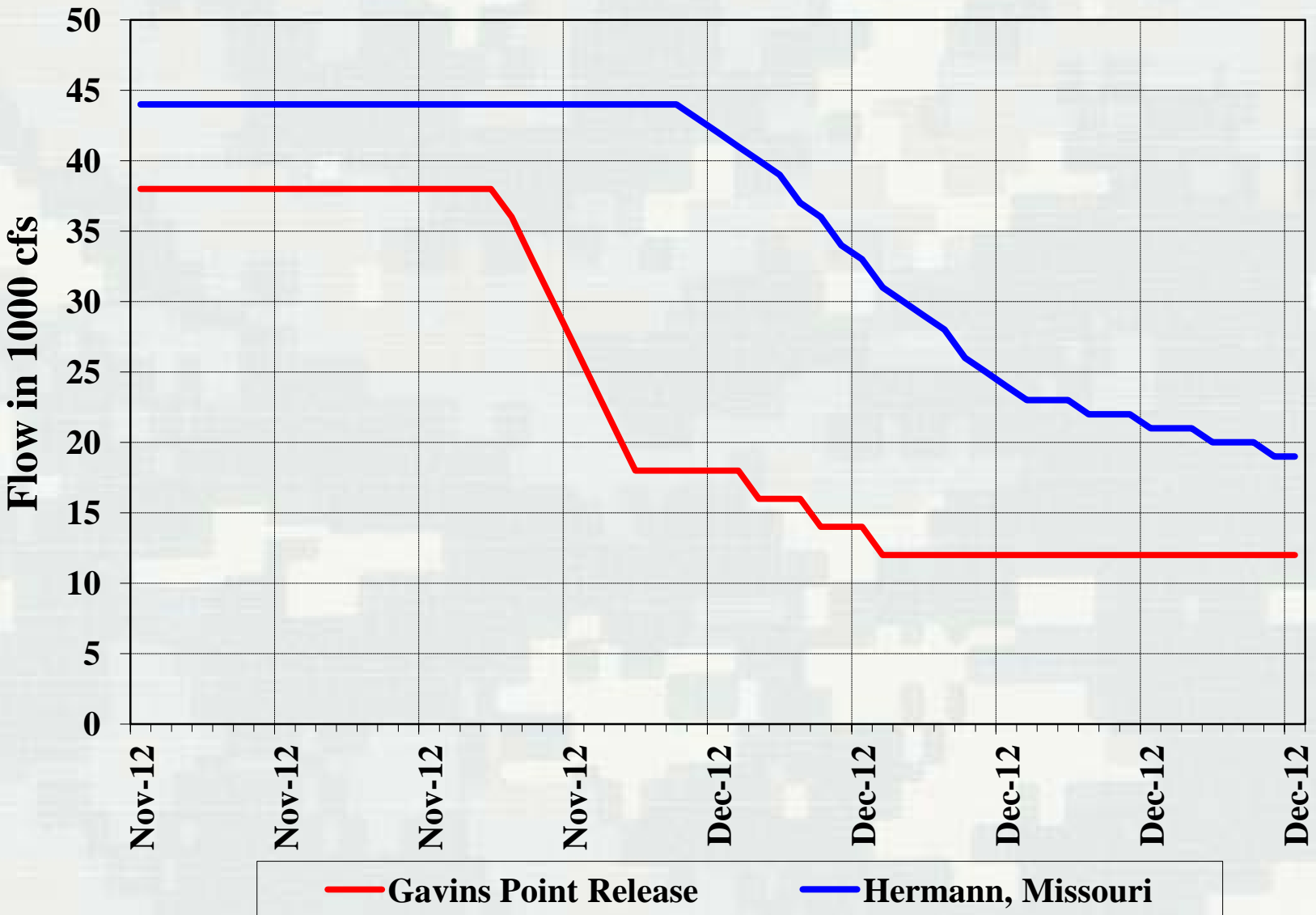
Missouri River Winter Releases

- Gavins Point winter releases based on September 1 System Storage check
 - ▶ Normal winter releases = 17,000 cfs
 - ▶ Minimum winter releases = 12,000 cfs
- 2012 winter releases = 12,000 cfs due to drought
- Meet needs of downstream water intakes on the Missouri River to the extent reasonably possible
 - ▶ Channel changes since the flood may require releases in excess of 12,000 cfs



Missouri River Flows

November – December 2012



2013 Navigation Support

- March 15, 2013 Storage Check
 - ▶ Near minimum service flow support
- July 1, 2013 Storage Check
 - ▶ Upper Decile: full service, full season + 10 days
 - ▶ Median: near full service, full season
 - ▶ Lower Decile: 5 kcfs below full service, 2-day season shortening

Missouri Basin

Drought Impacts - 2012

- Full navigation season / full service flows in 2012
 - ▶ Drought in lower basin required higher than normal releases to meet navigation targets resulting in quicker than normal drawdown of reservoirs
 - ▶ Low tributary inflow contributing to navigation challenges on lower Missouri River
 - ▶ Concerns about Mississippi River navigation after Missouri River flow support ends in early December
- Gavins Point winter releases at minimum level ~ 12,000 cfs
 - ▶ Concern over operability of municipal and industrial water intakes due to changed river conditions
- Upper three reservoirs 5 to 14 feet below the top of conservation pool
 - ▶ Tribes concerned about exposure of cultural resources with low reservoir levels
 - ▶ Boat ramp issues



Missouri Basin

Drought Impacts - 2013

- Reduced navigation support
 - ▶ At or near minimum service flow support at start of navigation season
 - ▶ Potential for reduced season based on July 1 storage check
 - ▶ Further reductions in navigation support if drought continues
- Reservoir system begins runoff season 8 MAF below the top of the conservation (carry-over multiple use) zone
 - ▶ Upper three reservoirs begin runoff season 10 to 12 feet below normal
 - ▶ Tribes concerned about exposure of cultural resources with low reservoir levels
 - ▶ Boat ramp issues impact on recreation visitation at reservoirs
 - ▶ Reduced hydropower generation
 - ▶ Concern about impact to reservoir fisheries
 - ▶ Concern about municipal and industrial water intakes on reservoirs if drought continues
- Gavins Point releases at minimum level next winter



Annual Operating Plan Schedule

- Draft Annual Operating Plan developed using August 1 starting condition
 - ▶ Based on 5 statistical runoff scenarios
- September 5, 2012 letter to Tribes offered consultation
- Draft AOP released in late September 2012
- Public meetings held the week of October 29, 2012
- Comments due November 23, 2012
- Final Annual Operating Plan in December 2012



Thank You!

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<http://www.nwd-mr.usace.army.mil/rcc/>

Or Google “Corps Missouri River”

