

MISSOURI BASIN: USACE DROUGHT MANAGEMENT UPDATE

Midwest & Missouri River Basin
Drought Early Warning Systems (DEWS)
Partners Meeting

October 13, 2022

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US Army Corps
of Engineers®



MISSOURI RIVER MAINSTEM RESERVOIR SYSTEM



Late Summer of 2020

- Upper Basin Runoff Dropped Sharply
- Initial Water Conservation Measures

Calendar Year 2021

- Began the Year at Full Navigation Flow Support
- July 1st Reduced Navigation Flow Support to Intermediate
- September 1st Set Winter Release to 12,000 CFS



MISSOURI RIVER MAINSTEM RESERVOIR SYSTEM



Calendar Year 2022

- Began the Year at Minimum Navigation Flow Support
- July 1st Increased Navigation Flow Support to Minimum +500 CFS
- September 1st Set Winter Release to 12,000 CFS

2023 (forecasted)

- 1 March Total System Storage 46.5 MAF (9.6 MAF below FC)
 - Fort Peck – 12.6 Feet Below FC
 - Garrison – 11.9 feet below FC
 - Oahe – 12.4 feet below FC
- Minimum Flow Support to Start the Navigation Support Season

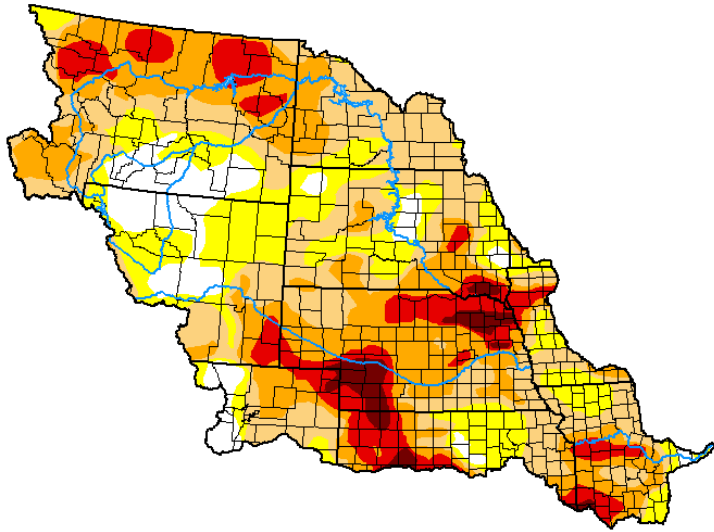


MISSOURI BASIN DROUGHT - OUTLOOK



U.S. Drought Monitor Missouri Basin RFC

October 4, 2022
(Released Thursday, Oct. 6, 2022)
Valid 8 a.m. EDT



Intensity:
None
D0 Abnormally Dry
D1 Moderate Drought
D2 Severe Drought
D3 Extreme Drought
D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

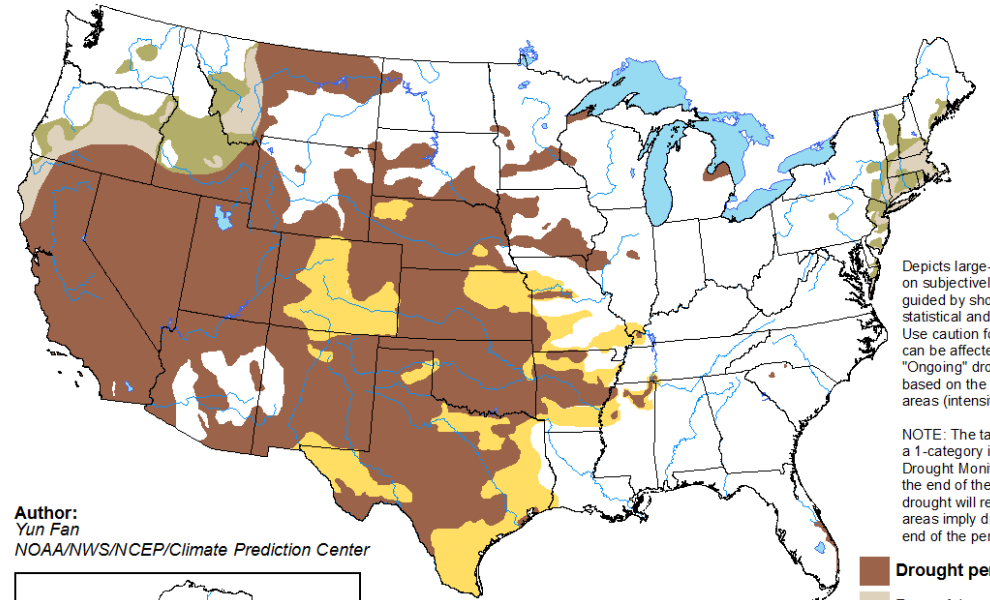
Author:
Brad Pugh
CPC/NOAA



droughtmonitor.unl.edu

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

Valid for September 15 - December 31, 2022
Released September 15



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).

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

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



<http://go.usa.gov/3eZ73>

As of 4 October 2022

- Fort Peck: Moderate to **Extreme** drought
- Garrison: **Rapid expansion** of Severe drought
- Oahe: Moderate to Severe drought
- Fort Randall: Moderate to Severe drought
- Central High Plains: Severe to **Extreme** drought
- Lower Missouri River: Moderate to **Exceptional** drought
- Republican River: **Extreme** to **Exceptional** drought

Seasonal Drought Forecast

- Drought persists/expands for much of the Basin
- Widespread drought in Central Rockies/Plains

BLUF: More drought mitigation measures are LIKELY during Spring-Summer 2023 due to persistent or worsening drought conditions impacting Recreation



DROUGHT RESILIENCE – OMAHA DISTRICT



❑ Boat Ramp (low-water access) Projects Completed/Pending

- Fort Peck Lake
 - Rock Creek Fishing Access Site (gravel – parking/access)
 - Hell Creek Recreation Area (gravel - parking/access)
 - Bone Trail Recreation Area (gravel – parking/access)
- Lake Sakakawea (high water levels during construction season)
- Lake Oahe
 - Hazelton Recreation Area (silt removal)
 - Walker Bottom Recreation Area (gravel – parking/access)
 - Beaver Creek Recreation Area (gravel – parking/access)
 - Jennerville (Rivory) (gravel – parking/access)
 - Cattail Bay Recreation Area (silt removal)
 - Fort Yates Recreation Area (low-water access)
 - Indian Memorial Recreation Area (silt removal)



Indian Memorial Recreation Area (Lake Oahe)

❑ Additional Drought PDT Efforts

- Noxious Weed Removal (Lake Oahe)
- Outreach to Partner Agencies, States, Tribes (site-visits)
- Identification of potential/likely impacts based upon historical events

❑ Ongoing/Anticipated Activities FY 2022 – FY 2023

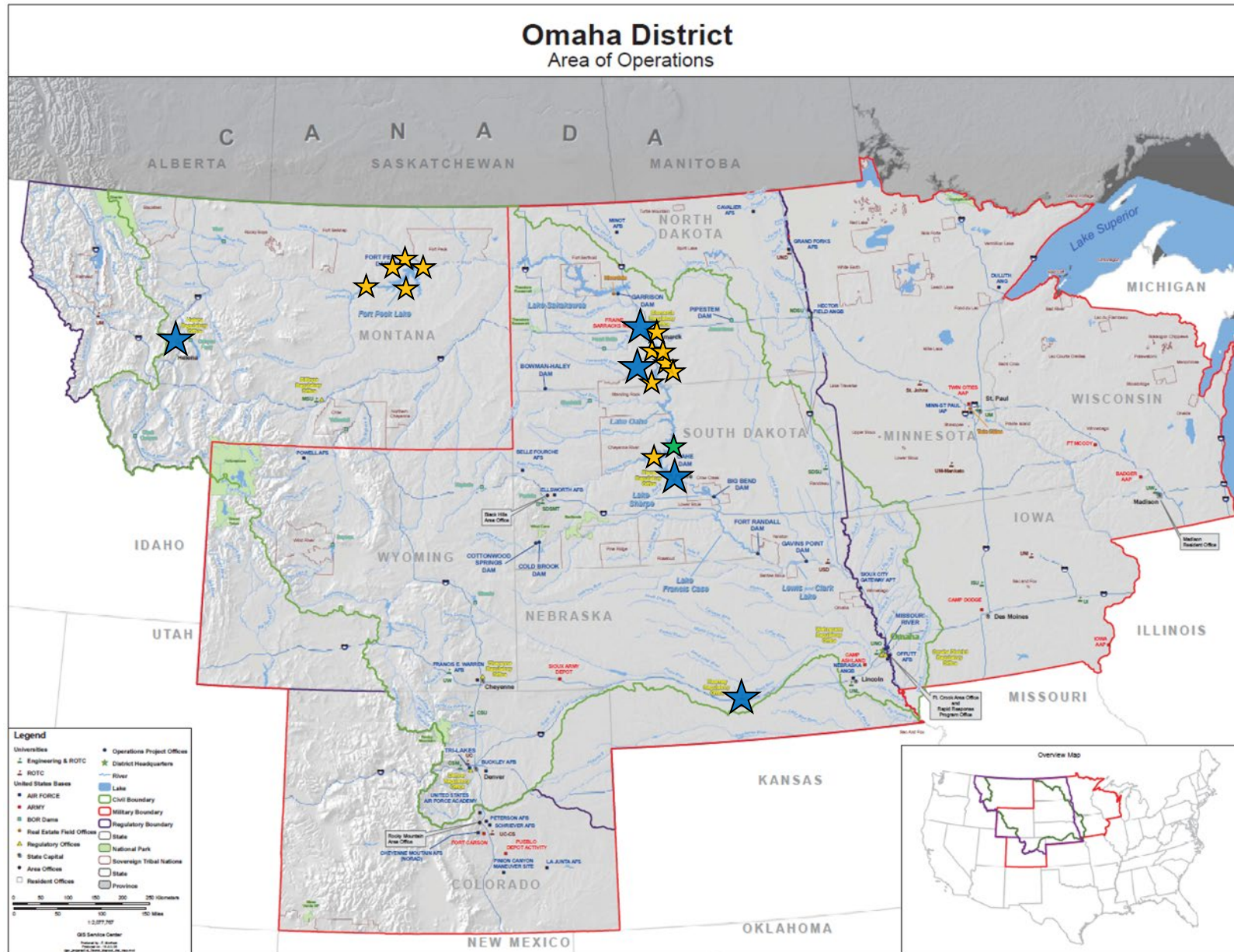
- Federal Inter-Agency, Tribal Nation, and State Partner Coordination
- Additional low-water ramp work (as water continues to recede)



Cannon Ball intake with exposed pipe (facing northwest)



OMAHA DISTRICT EFFORTS TO DATE

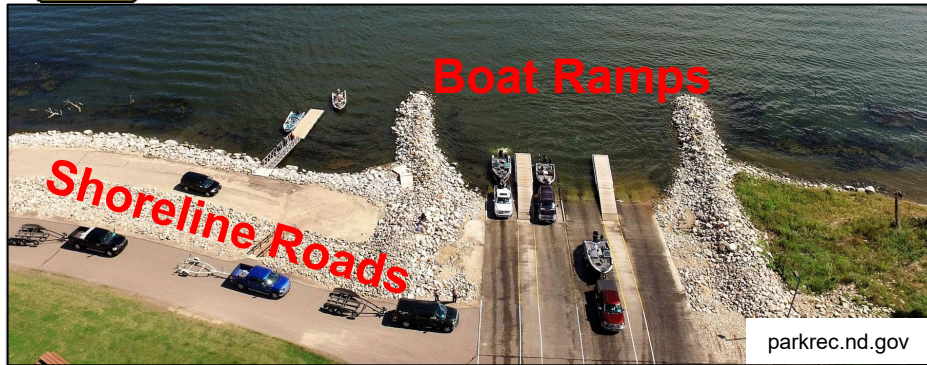


Basin-Wide PDT Work

- ★ Low Water Boat Access
 - Fort Peck Lake
 - Rock Creek FAS
 - Hell Creek Rec. Area
 - Bone Trail Rec. Area
 - Duck Creek FAS (FY23 proposed)
 - Pines Boat Ramp (FY23 proposed)
 - Lake Oahe
 - Hazelton Rec. Area
 - Walker Bottom Rec. Area
 - Beaver Creek Rec. Area
 - Jennerville Boat Access
 - Cattail Bay Rec. Area
 - Fort Yates Rec. Area
 - Indian Memorial Rec. Area
- ★ Noxious Weed Removal
 - Lake Oahe
- ★ Stakeholder Outreach
 - Standing Rock Sioux Tribe
 - Bureau of Reclamation
 - State of Montana
 - State of North Dakota
 - State of South Dakota
 - State of Nebraska



OMAHA DISTRICT HISTORICAL IMPACTS



Boat Ramps

Shoreline Roads

parkrec.nd.gov



Livestock Containment

Sandbars, Stumps

bismarcktribune.com



Land Management

Wildfire Hazards

Noxious Weeds

sdpb.org



Threatened/Endangered Species

nwo.usace.army.mil

Prepared to:

- Mitigate Impacts
- Demonstrate Drought Resilience
- Serve Missouri River Basin stakeholders



Cultural/Historic Resources

Paleontology

nps.gov



Bank Erosion

nwo.usace.army.mil



Intakes (M&I, Irrigation)

theconstructor.org

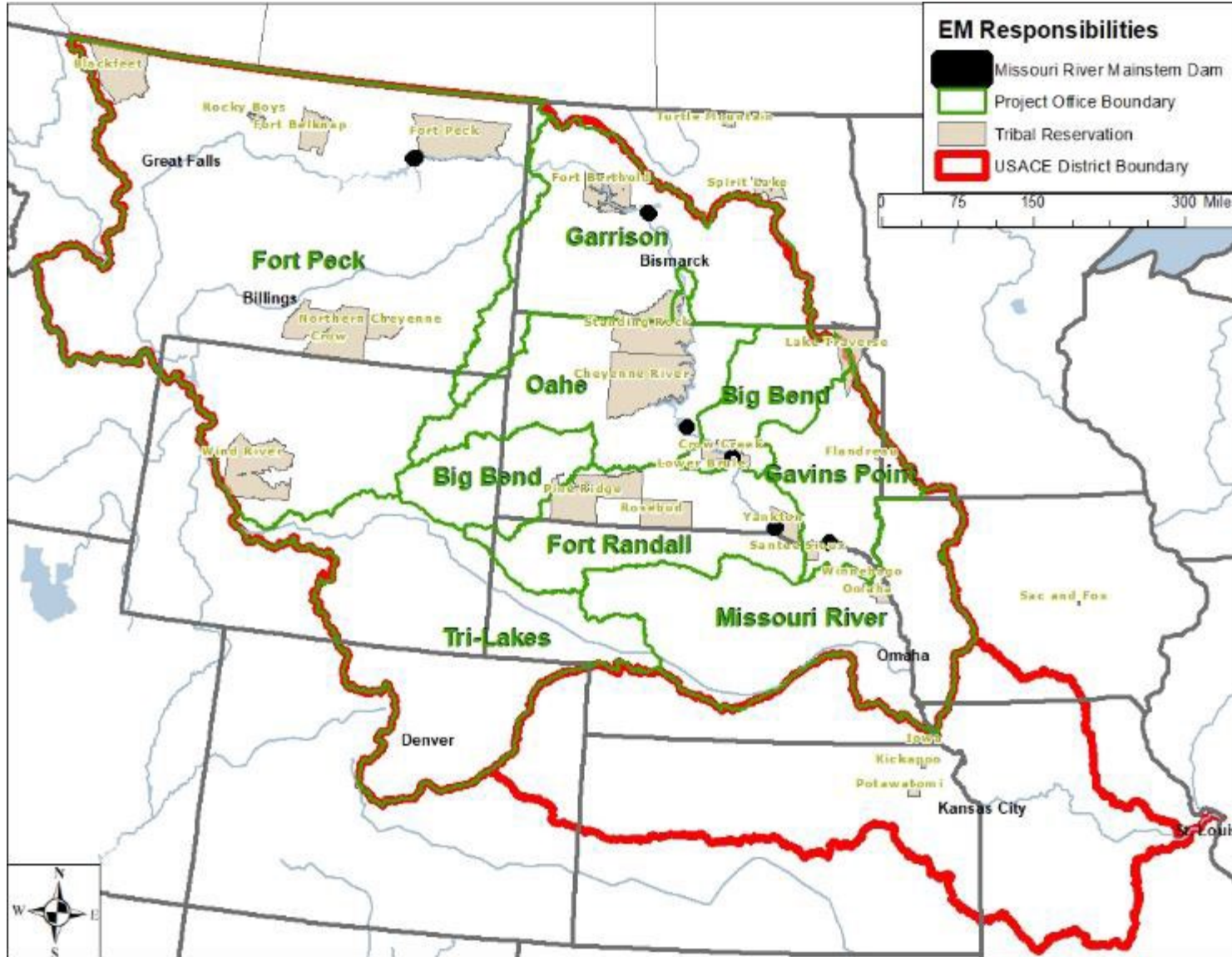


**Fish Hatcheries
Coldwater Fish Habitat**

fws.gov



DISTRICT PROJECT OFFICE BOUNDARIES



General Areas of Responsibility

- Fort Peck Dam
 - ❖ (most of) Montana / northern Wyoming
- Garrison Dam
 - ❖ western / central North Dakota
 - ❖ Little Missouri River watershed
- Oahe Dam
 - ❖ Missouri River (downstream of Bismarck)
 - ❖ northwestern South Dakota
 - ❖ Belle Fourche River watershed
- Big Bend Dam
 - ❖ “northeastern” South Dakota
 - ❖ Cheyenne River watershed
- Fort Randall Dam
 - ❖ (most of) southern South Dakota
 - ❖ Niobrara River watershed
- Gavins Point Dam
 - ❖ (most of) eastern South Dakota
- Missouri River Project Office
 - ❖ Missouri River (downstream of Sioux City)
 - ❖ Lower Platte River watershed
- Tri-Lakes Project Office
 - ❖ Upper Platte River watershed
 - ❖ Denver metropolitan area



QUESTIONS ??

THANK YOU !!