

## WATER MANAGEMENT WORKING GROUP FALL 2023 MEETING SUMMARY

*"local solutions to local problems"*

**Thursday, October 19 at 10 am**

***Fairfield Ambulance Center, 24 1<sup>st</sup> St SW, Fairfield, MT and via Zoom***

Meeting followed by lunch at 12:30 and SRWG Board Meeting at 1 pm

### ATTENDEES

Becky Ayre, NRCS

Bill Norris, GID

Bruce Farling, SRWG project committee

Charla Merja, FSID

Clayton Jordan, Reclamation\*

Dick Eisenzimer, FSID\*

Emily Kemp, SRWG/MCC

Erling Juel, GID

Jason Hahn, Reclamation\*

Jason Mullen, FWP

Joe Kremer-Herman, Lewis & Clark CD

Joella Signalness, NRCS

\* indicates remote participation (Zoom)

John Chase, SRWG and Cascade CD\*

Lance Rosenkrantz, Broken O

Larry Dolan, committee chair

Linda Berger, SRWG

Matthew Ludwig, National Weather Service\*

Morgan Case, Trout Unlimited

Randy Perry, TroutWest

Ryan Colloton, Reclamation\*

TJ Laviolette, TroutWest

Tanner Tompkins, Broken O and SRWG

Tracy Wendt, SRWG

Agenda review – no changes

Welcome from committee chair, Larry Dolan

Review of Action items from April 2023 meeting:

- SatLink updates – gages must be updated to SatLink3 by 2025. Estimate is \$2800-3500 per station, for 6 gage stations (Upper Muddy Creek, Big Coulee, Floweree, Sun River Valley Ditch (2), Tank Coulee). Tracy plans to apply for DNRC Irrigation Development Grant funds this winter to cover these costs. Larry is working with DNRC and Reclamation to find out if we can get any kind of discount if we order together in bulk.
- Late-season call – SRWG coordinated two late-season calls in August. Summaries for calls are available at [www.sunriverwatershed.org/wmwg](http://www.sunriverwatershed.org/wmwg). Action items that arose from those calls were added to the agenda for this meeting.
- Elk Creek – Tracy to follow up with Matt re: potential for gage maintenance, cost, etc. If annual maintenance can be resolved, Tracy will include gage parts needed in the IDG application this winter.

NWS – Weather outlook, presentation attached to this summary

- Overall, anticipating a warmer, drier winter than average due to El Nino. Likely not to be a very snowy winter.
- [www.weather.gov/tfx/winter](http://www.weather.gov/tfx/winter) is a good source of information and is updated at least twice/day.

Water supply, proposed operations

*Next regular meeting tentatively set for April 18, 2024 at 10 am. Location TBD.*

- Gibson is 6.5% full, which is 42% of normal for this time of year
- Inflows to Gibson are 75-85% of the 30-year-average for this time of year; managing Gibson so inflows roughly = outflows
- Flows are at approximately 150 cfs at Diversion Dam
- 0 snowpack so far this season
- Willow Creek Feeder Canal (WCFC) is not yet operational. GID is working to repair a site of significant seepage. Once filling begins, GID will be drawing 100 cfs at Diversion through WCFC which, after seepage losses, will result in about 75 CFS reaching Willow Creek Reservoir. They will compensate for this diversion from the river by bumping releases from Gibson Reservoir as necessary.
- Broken O will be at winter use flows by the end of this week, down to taking 30 cfs via Floweree Canal (see “Floweree Gage Discrepancy” later in this summary).
- Willow Creek Reservoir (WCR) is 44% full, which is 71% of normal for this time of year. GID hopes to start working towards filling the reservoir in the next 7-10 days and hope to keep filling through Thanksgiving
- May have to start filling WCR earlier than normal this coming year (2024) for the best shot at filling the reservoir before the irrigation season, but that will depend on snow and ice in the feeder canal during the early spring.
- Pishkun is  $\frac{3}{4}$  full which is more than the 30-year-average. GID tries to keep some damaged concrete covered to reduce additional damage due to ice, freeze/thaw. Repairing the project is on GID’s list, but not likely to happen in the next few years.
- Releases this winter from Gibson will be based on snowpack and water availability. Inflows will mostly = outflows.
- Reclamation will do their first forecast in January based on snowpack at that time
- Erling noted that in spring of 2023, snowpack was below normal and melted early. Irrigation demand in the spring was reduced due to timely precipitation. However a hot, dry summer necessitated earlier than usual termination of irrigation (mid-August for GID).

#### Discussion of desired / lowest acceptable water levels

##### Willow Creek Reservoir

- Capacity is 31,848 acre-feet (or elevation 4,142 feet )
- WCR is currently at 4127.5 feet high. In recent history, the suggested minimum height has been 4128 feet.
- The reason for having a minimum height for WCR is because that is about as low as the reservoir can get and still reliably be filled before the irrigation season, given the 75 CFS flow restriction on the feeder canal. If WCR isn’t refilled, there is a risk there won’t be enough water for the irrigation season to provide exchange water for GID diversions at the Sun River Diversion Dam, and to provide a supplemental supply of stored water for FSID during times of low natural inflow to Gibson. This is also the minimum water level needed to maintain the fishery.
- Erling suggested there is potential to coordinate with Nilan water users to have some water released from Nilan over to Willow Creek Reservoir at times when Nilan can afford to do so.
- WCR is important because when Sun River flows aren’t sufficient to meet irrigation demands, water can be released from WCR storage.

##### River Minimums

*Next regular meeting tentatively set for April 18, 2024 at 10 am. Location TBD.*

- Sun River minimum flows are based on various studies and agreements through the years and have changed over time.
- Minimums are measured by flow going over Diversion Dam and at Simms, mainly.
- In drought years, this group may need to add a winter flow coordination call to see if 100 cfs can be maintained at Diversion Dam. Winter flows are critical for the fishery, especially for keeping new redds covered with water. For that reason, the preferred winter low flow at Simms is 130 cfs. Typically during the winter, the river will gain at least 30 cfs during the diversion dam and Simms.
- Maintaining minimum flows in the summer is more challenging because there are more water users/uses than in winter. The goal is and absolute minimum of 100 cfs at Diversion and 130 cfs at Simms. This is based on wetted perimeter studies performed by FWP and documented in the Gibson Operations Guide agreed to by this working group in 2021. This agreement also states that flows may have to be lowered at times during extreme drought years. The guide recommends that all parties meet and discuss river operations during these critical drought times.
- FWP advocates for these flows *as a minimum* to benefit fish habitat. In years with good water supply, it is possible to meet or exceed these flows without detriment to producers.
- Minimum flows are also important for recreation.
- Historically, the absolute minimum flow goal was 50 cfs, but the new Operations Guide this group created updated that to set a goal of 100/130 cfs at a minimum.
- As irrigation is upgraded and becomes more efficient, it should be easier to maintain at least minimum flows. FSID and GID have multiple projects in progress and planned that will help conserve and more efficiently use water.
- It was observed that in the not too recent past, river flows were so low it could be crossed by Fort Shaw on foot. Through improved communication facilitate by this group and more efficient irrigation, that has greatly improved.

#### Stream gages

- Floweree gage was fixed this spring and has been operating all season. Later summer, it is noted that due to multiple issues, the gage reading has become less accurate. In September, Larry physically measured flows at 60 cfs, while the gage read about 120 cfs. This was due to algae build-up, and potentially sediment issues in the ditch downstream and at the flume, and other issues. Larry will be working with Broken O to resolve and to keep working towards better accuracy throughout the irrigation season.
- Tank Coulee gage issues have been resolved
- Upper Muddy Creek was vandalized in July 2023. Tracy is working with USFWS warden, who is working with Teton County sheriff to see if the vandal can be caught. Larry is working on assessing damage. SRWG hopes to acquire new parts through grants and seeing what parts our partners may have to spare. The goal is to have the gage up and running again at the start of the 2024 irrigation season.
- Elk Creek – Tracy will follow up with Matt N at DNRC to see if annual maintenance is possible, will try to get funding to replace gages as long as they can be maintained regularly.
- Morgan mentioned that Trout Unlimited provides stream measurement training each year that is available if we need it. Tracy will share that information with this group when it becomes available.

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#### Other water management projects

SRWG projects: Muddy Creek restoration is waiting for DNRC to release funding for the RRG awarded this year. GID can start on J-Wasteway expansion whenever it fits into their workload. SRWG is applying for funds for design to improve Floweree intake and Willow Creek Reservoir outlet to make it easier to manage water there, look into removal or revision to the diversion to improve fish passage. Looking into watershed-scale planning strategy which would give us access to more planning and construction funds.

FSID projects – Applied for funding to replace the Simms Creek siphon; waiting to hear from NRCS. FWP suggested that if they can design the new siphon to facilitate fish salvage or reduce entrainment, Future Fisheries funds could be available to help build the project.

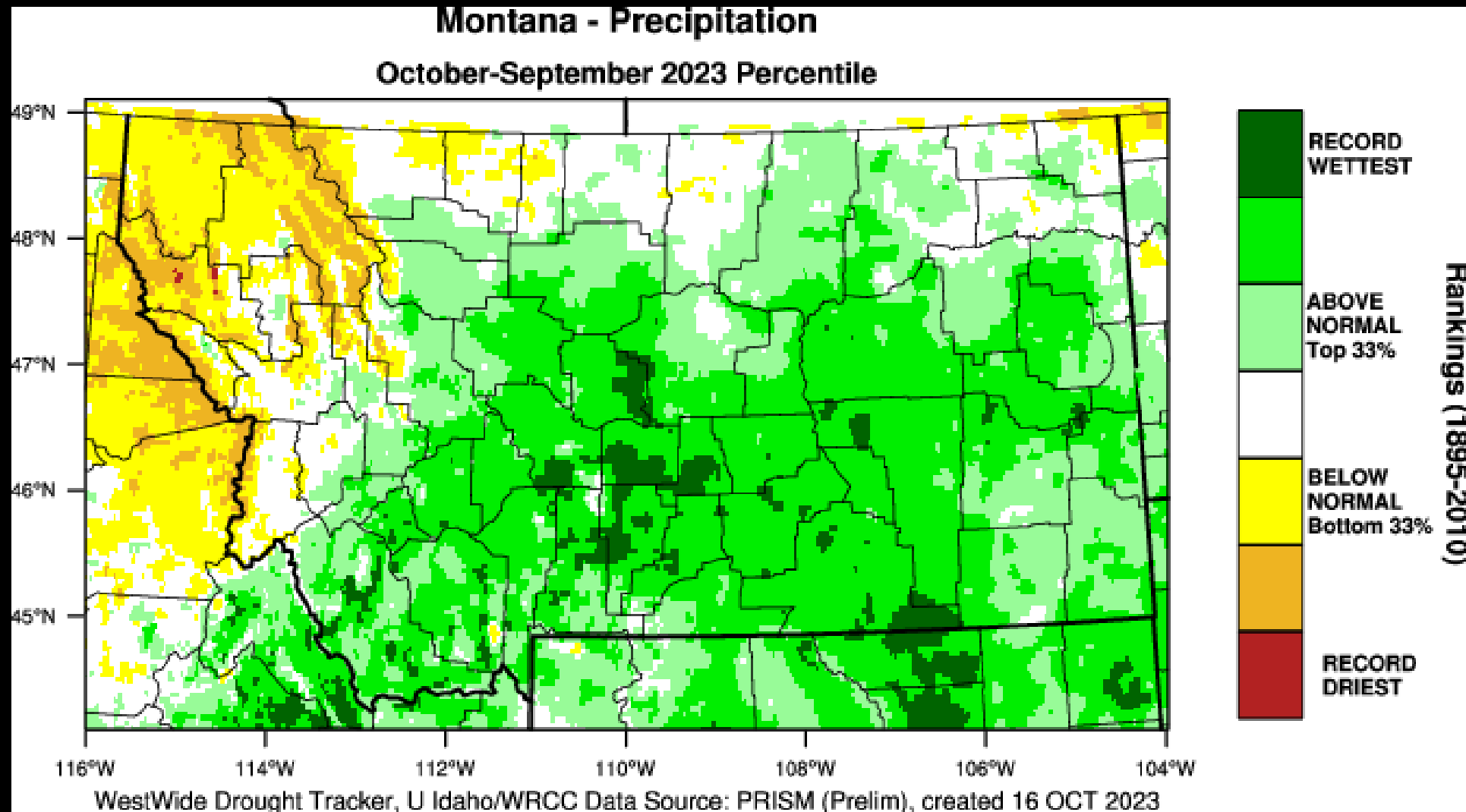
GID projects – Infrastructure upgrades in planning across the district, through FCA and NRCS. Need to modernize and overhaul the system for better efficiency. This will be a long-term effort, taking 25-35 years. In the final phase of J-wasteway work. Wasteway will be made larger to improve management and reduce operational water loss.

#### Partners updates

- Reclamation: Stephanie Micek is in a new position. Tyler is replacing her and will start participating in these meetings after November.
- FWP: will provide fish survey information from this summer at the Spring 2024 meeting. They surveyed 2 of their 3 long-term sites plus a single pass at Alkalai Flats.
- NRCS: FCA is creating a preliminary finding report on GID that will help NRCS prioritize future PL566 funding. Deadline for current TIPs is October 27. Current TIPs in our watershed include irrigation efficiency on Muddy Creek and Spring Coulee Creek.
- Next meeting is tentatively scheduled for April 18, 2024.

# Water-Year Precipitation % of Normal

- Much wetter water-year than past several years!










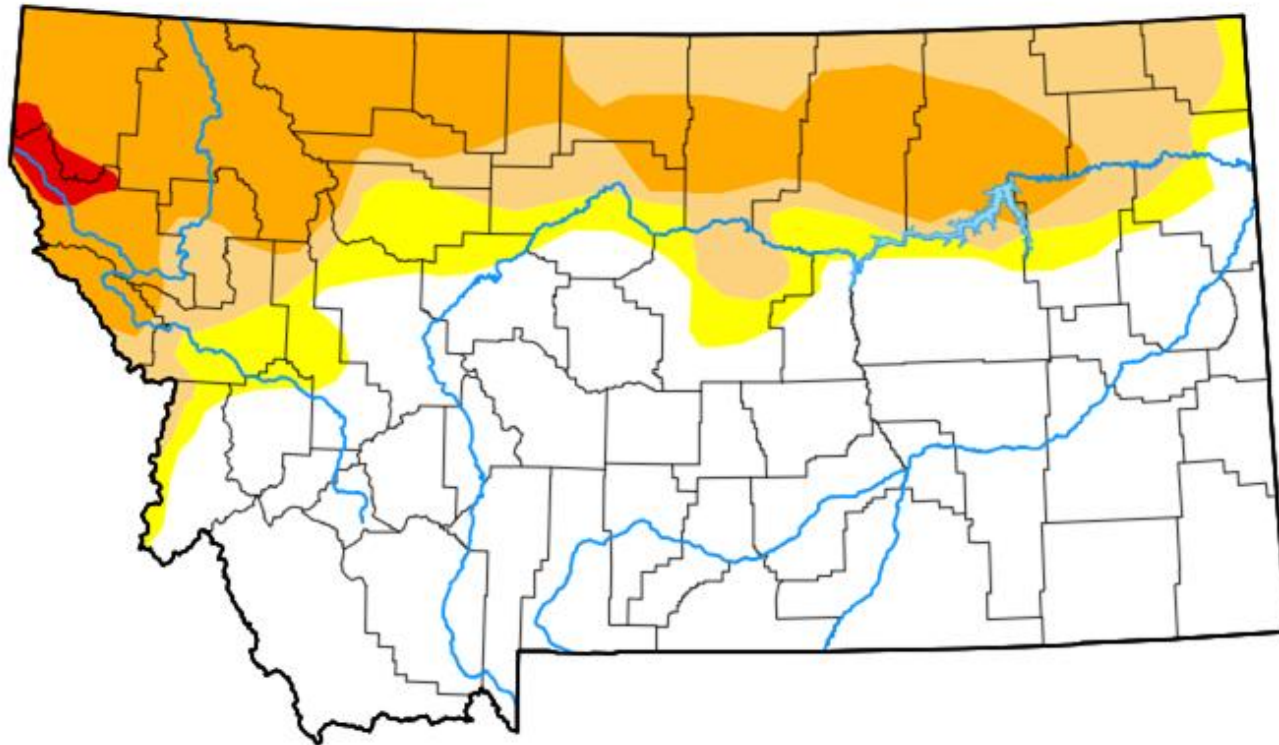
# Current Drought Status

Map released: Thurs. October 19, 2023

Data valid: October 17, 2023 at 8 a.m. EDT

## Intensity

-  None
-  D0 (Abnormally Dry)
-  D1 (Moderate Drought)
-  D2 (Severe Drought)
-  D3 (Extreme Drought)
-  D4 (Exceptional Drought)
-  No Data



## Authors

United States and Puerto Rico Author(s):

[Rocky Bilotta](#), NOAA/NCEI

Pacific Islands and Virgin Islands Author(s):

[Ahira Sanchez-Lugo](#), NOAA/NCEI

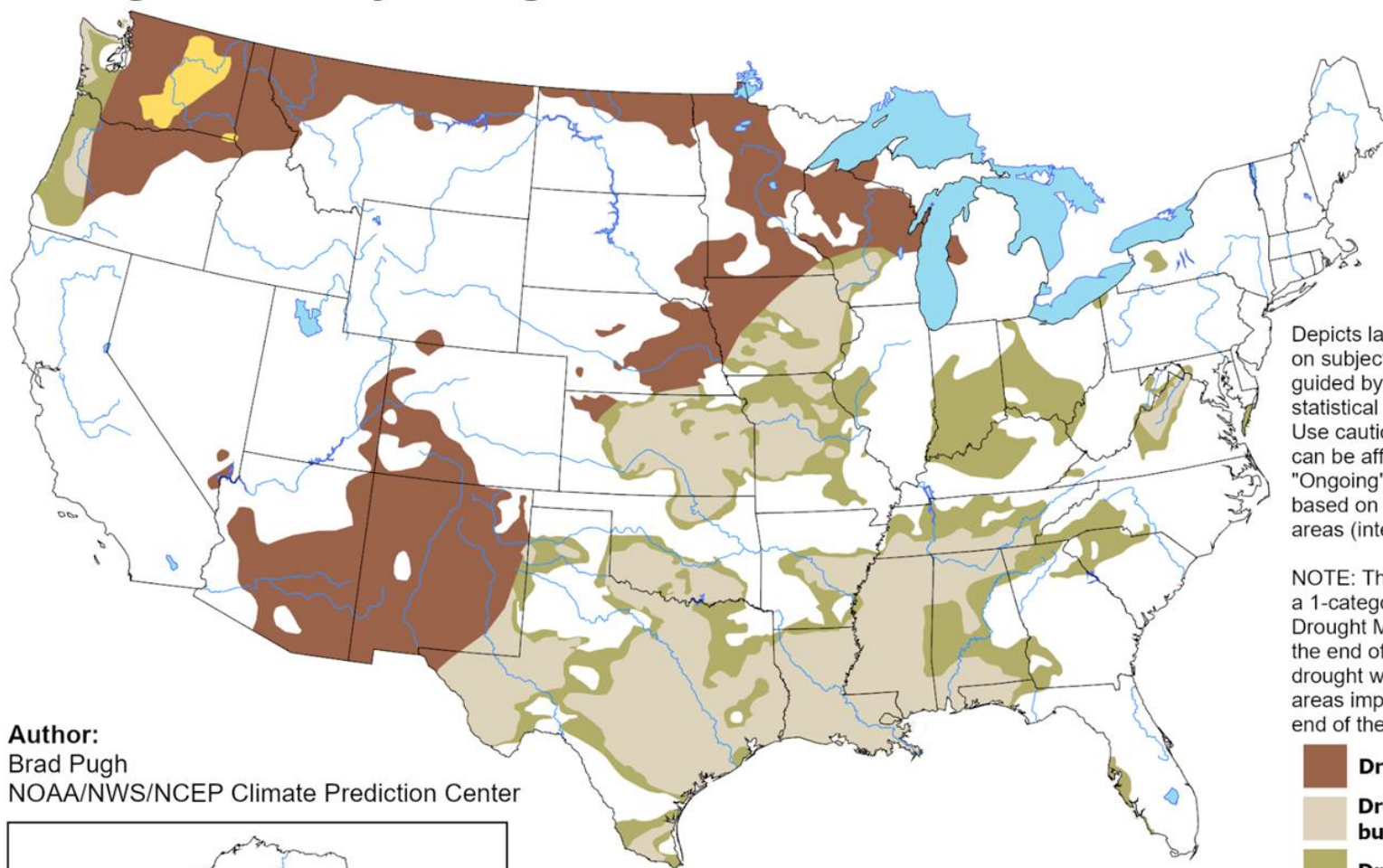
# U.S. Seasonal Drought Outlook

## Drought Tendency During the Valid Period

Valid for October 19, 2023 - January 31, 2024

Released October 19, 2023

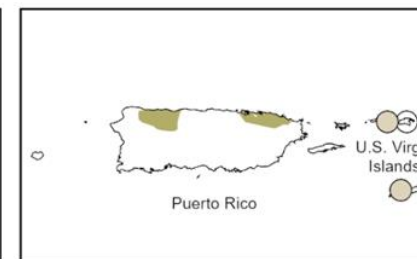
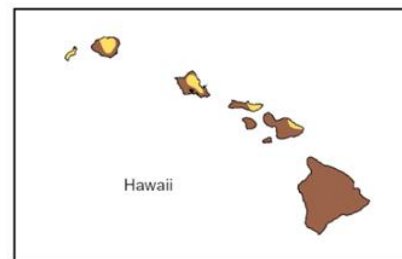
- No significant change in drought conditions expected at this time.



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:**  
Brad Pugh  
NOAA/NWS/NCEP Climate Prediction Center



-  **Drought persists**
-  **Drought remains, but improves**
-  **Drought removal likely**
-  **Drought development likely**
-  **No drought**

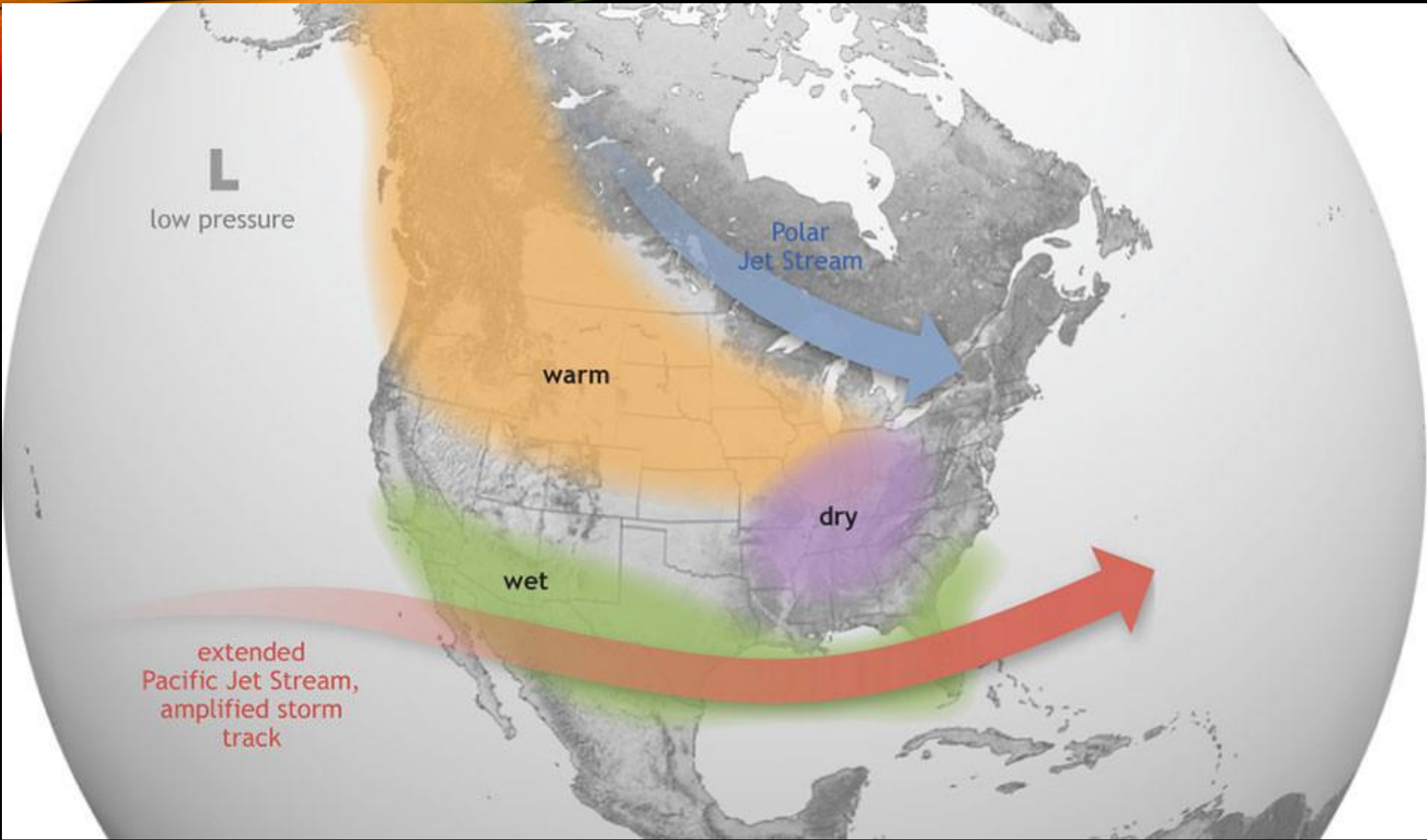


<https://go.usa.gov/3eZ73>

# El Niño is occurring

El Niño—the warm phase of the El Niño-Southern Oscillation ("ENSO") climate pattern—is humming along in the tropical Pacific Ocean as of early October 2023. It's virtually certain El Niño will last through Northern Hemisphere winter, and the chances of a strong event are 75-85 percent. A strong event doesn't guarantee strong global impacts, but it does increase the odds that *some* level of impacts will occur in places with a history of being affected by ENSO.





L  
low pressure

Polar  
Jet Stream

warm

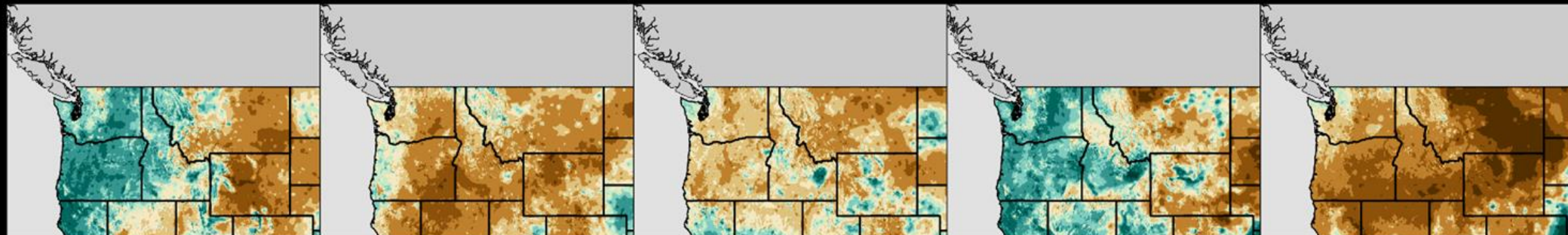
dry

wet

extended  
Pacific Jet Stream,  
amplified storm  
track

# EL NIÑO EVENTS (DJF): PRECIPITATION

**STRONG**



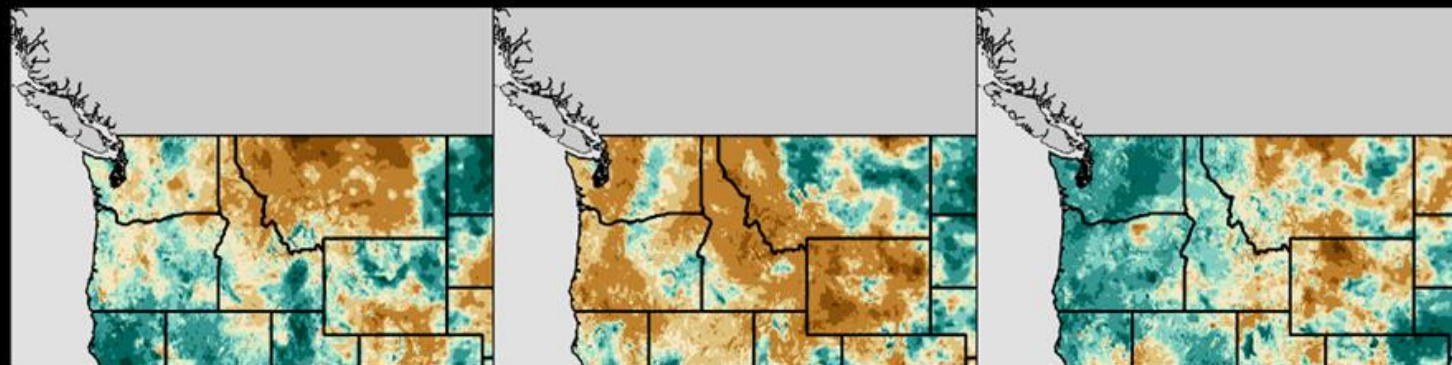
**1957-1958**

**1965-1966**

**1972-1973**

**1982-1983**

**1991-1992**



**1997-1998**

**2009-2010**

**2015-2016**

# El Nino is occurring

- Typically experience “not as cold” and “not as snowy” winters
- We’ll still be cold at times.
- It’ll still snow at times (next week?!).
- Remember, even one winter storm can result in major impacts.



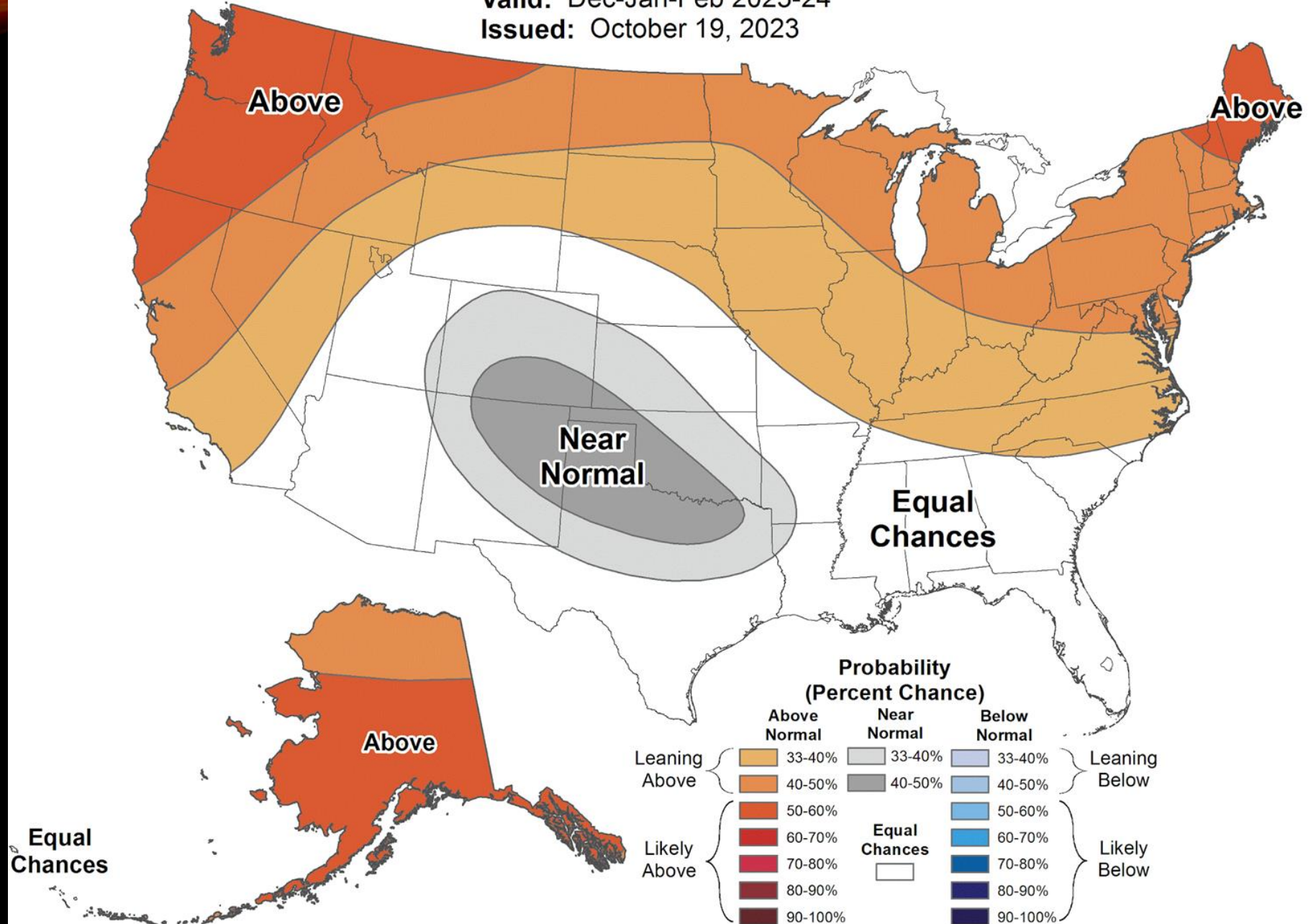
# Seasonal Temperature Outlook



Valid: Dec-Jan-Feb 2023-24

Issued: October 19, 2023

- Updated outlook for winter
- Looking to be not as cold as last winter
- Will still have some cold spells, though (it IS Montana)





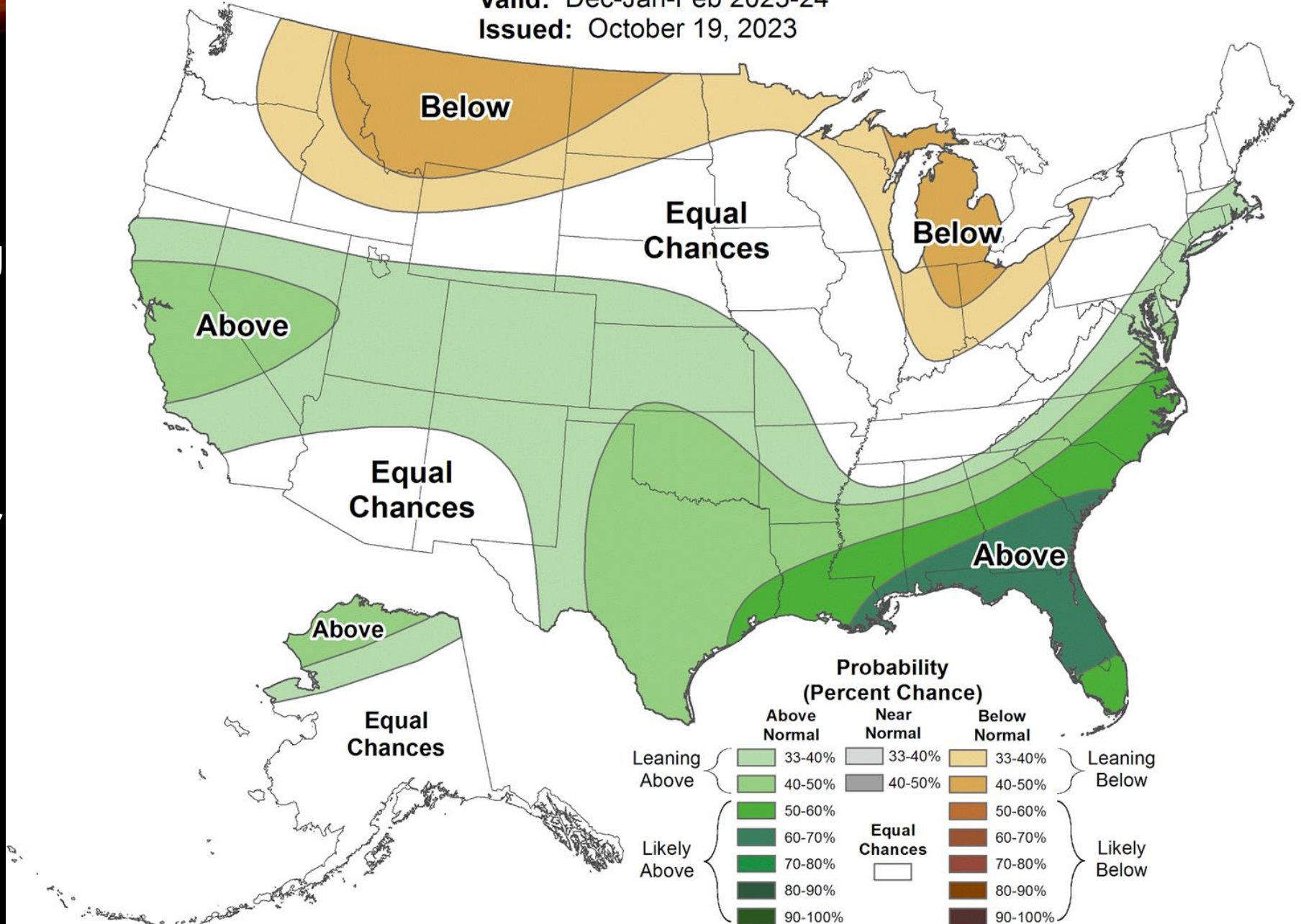
# Seasonal Precipitation Outlook



Valid: Dec-Jan-Feb 2023-24

Issued: October 19, 2023

- Probability of the heart of winter being less snowier than usual is 40-50%
- Still some impactful snow storms at times, however, just not as many





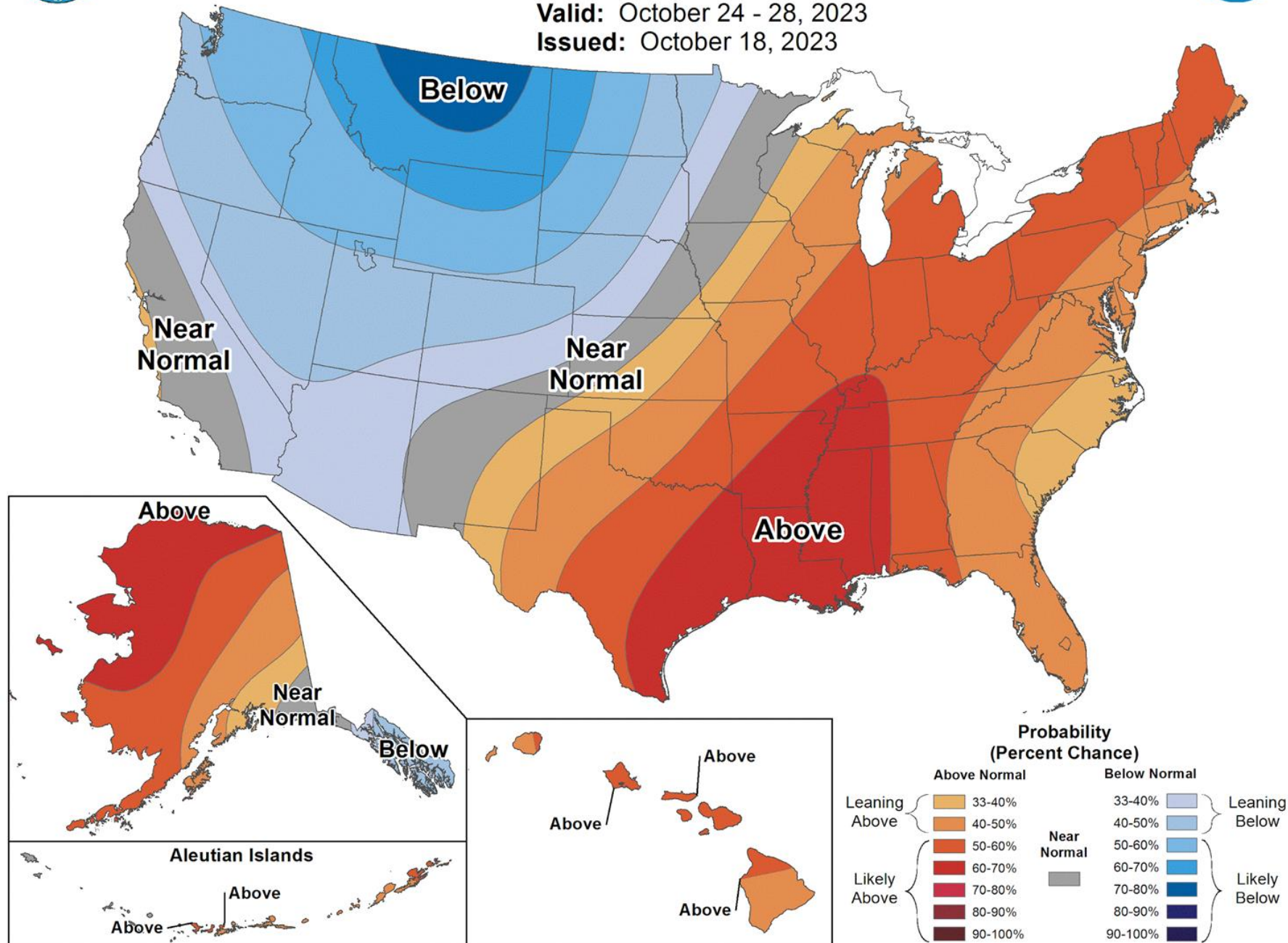
# 6-10 Day Temperature Outlook



Valid: October 24 - 28, 2023

Issued: October 18, 2023

- 60-80% chance of our first impactful cold spell of the season next week
- Lows in the teens/20s?
- Highs in 30s?



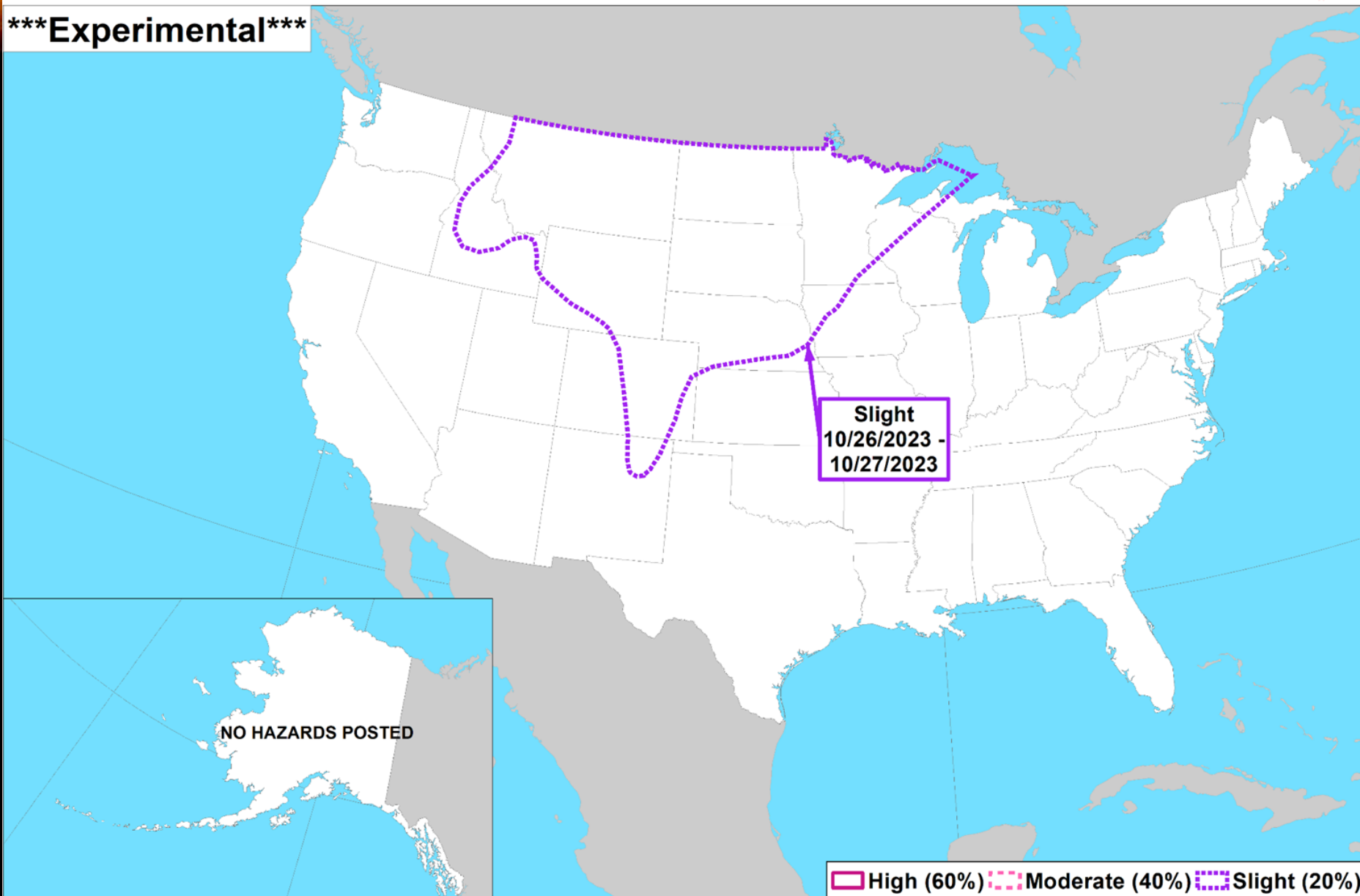


# Risk of Heavy Snow Valid: 10/26/2023-11/01/2023



\*\*\*Experimental\*\*\*

- First winter-like storm system next week?



Slight  
10/26/2023 -  
10/27/2023

Climate Prediction Center

Made: 10/18/2023 3PM EDT

Follow us:

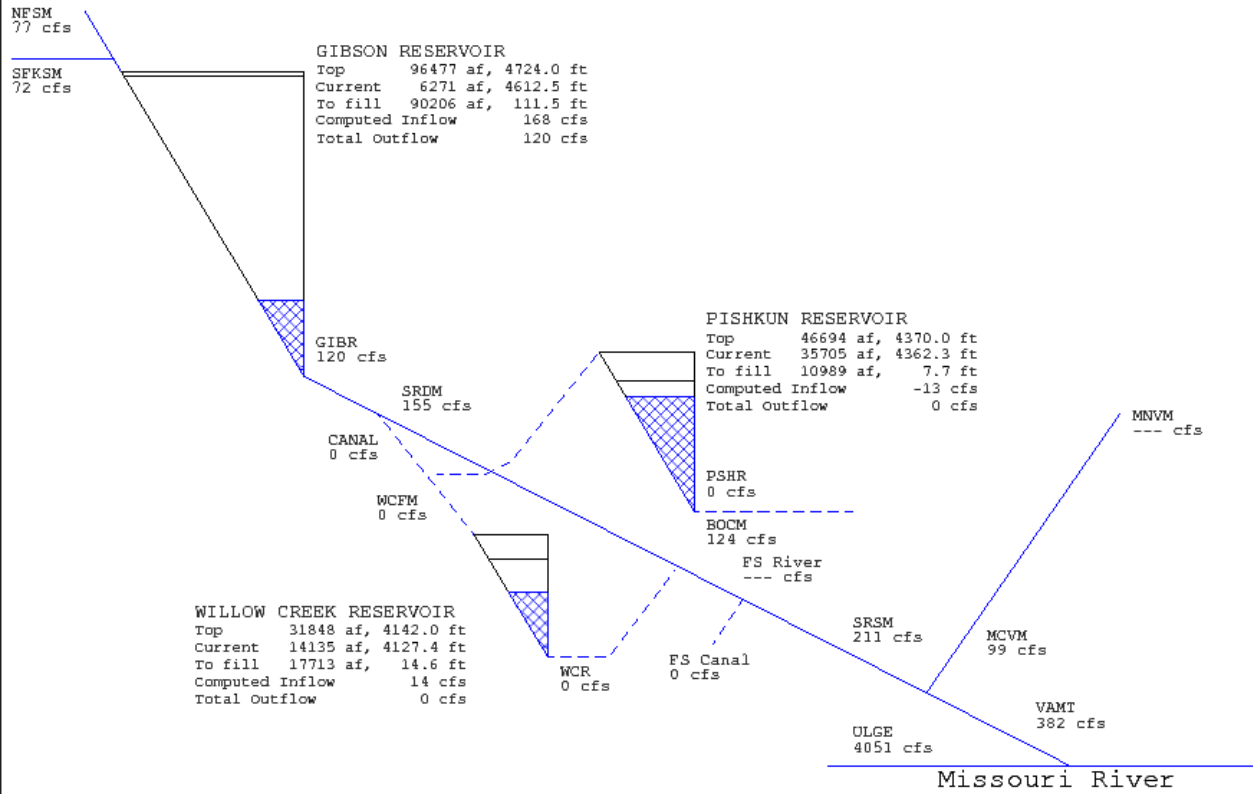
[www.cpc.ncep.noaa.gov](http://www.cpc.ncep.noaa.gov)

# [weather.gov/tfx/winter](https://weather.gov/tfx/winter)

- Bookmark this link!
- Official NWS snowfall forecast maps
- Probabilities of exceeding various snow amount thresholds
- Updates at least twice a day (more frequently during events)
- And more!



# Archive Data



Data as of 10/16/2023