

2025 Spring Flood Outlook

February 27, 2025

USACE St. Louis District
Flood Preparedness Meeting
Waterloo, Illinois

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St. Louis, MO

NWS St. Louis



Spring Flood Outlook 2025

Bottom Line Up Front:

- **Significant (moderate or major) flooding is not likely anywhere.**
- **Mississippi River:** Minor flooding likely at Louisiana and Clarksville, and at Chester, but not likely elsewhere. This is a below average risk.
- **Missouri River:** Minor flooding likely from Chamois to St. Charles, but not at Jefferson City. This is a below average risk.
- **Illinois River:** Minor flooding likely by early May (normal risk).
- **Local tributaries:** Near average flood risk, with flooding unlikely in most locations.

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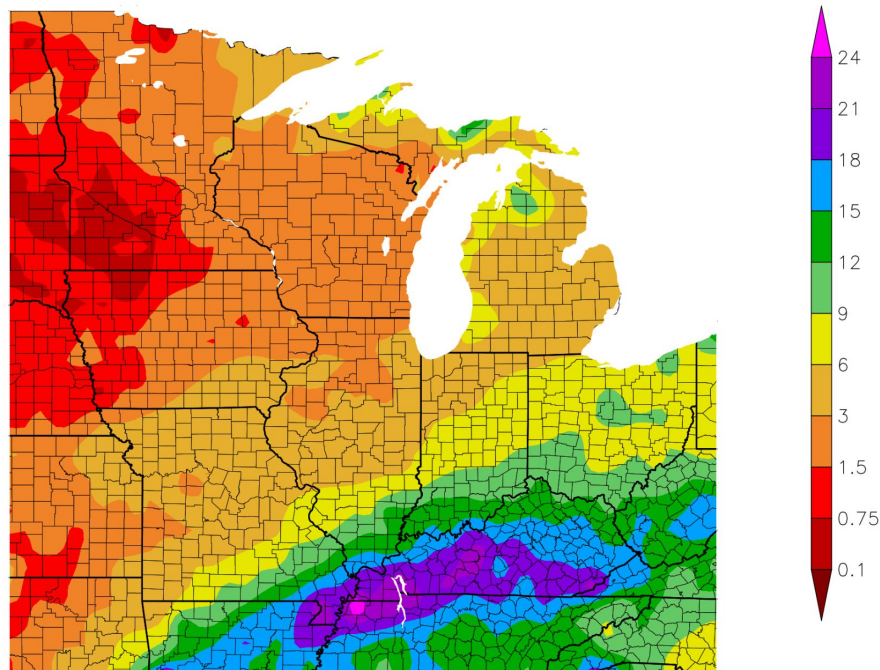


Factors we look at for spring flooding:

- Precipitation in major river basins
- Snowpack in major river basins
- Soil moisture in area basins
- Current flow in area rivers

Spring Flood Outlook 2025

Precipitation (in)
11/27/2024 – 2/24/2025



Generated 2/25/2025 at HPRCC using provisional data.

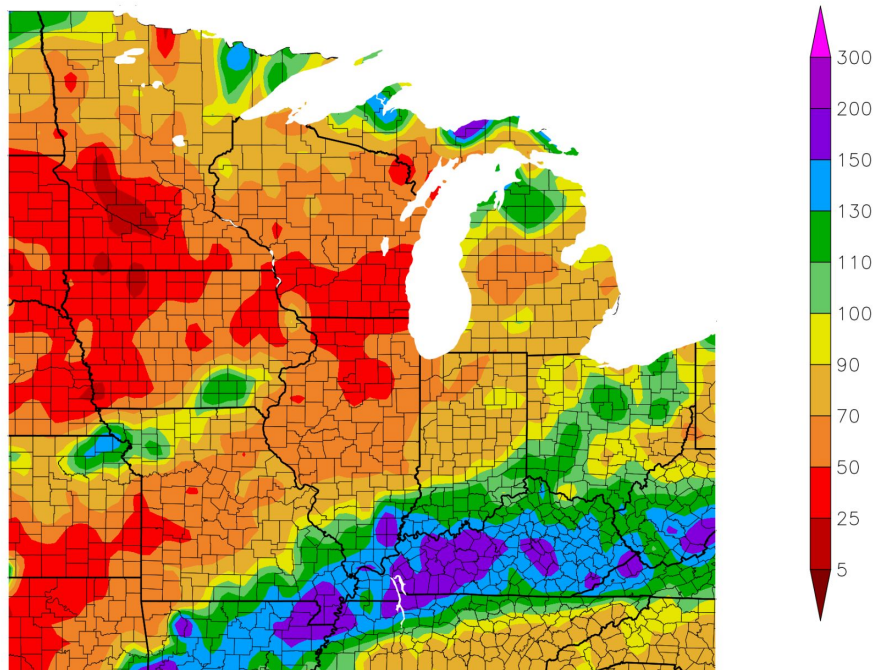
NOAA Regional Climate Centers

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Spring Flood Outlook 2025

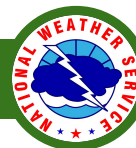
Percent of Normal Precipitation (%)
11/27/2024 – 2/24/2025



Generated 2/25/2025 at HPRCC using provisional data.

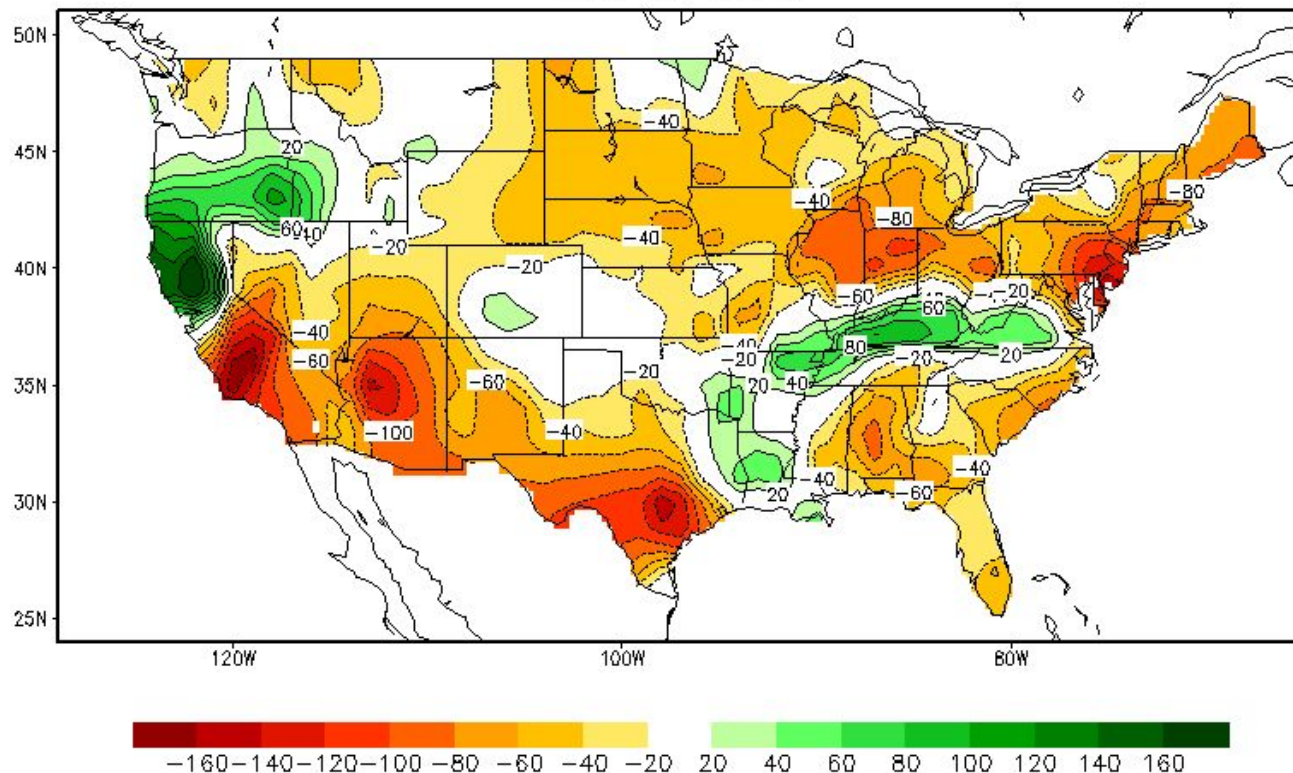
NOAA Regional Climate Centers

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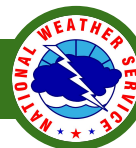


Spring Flood Outlook 2023 - Soil Moisture Percentiles

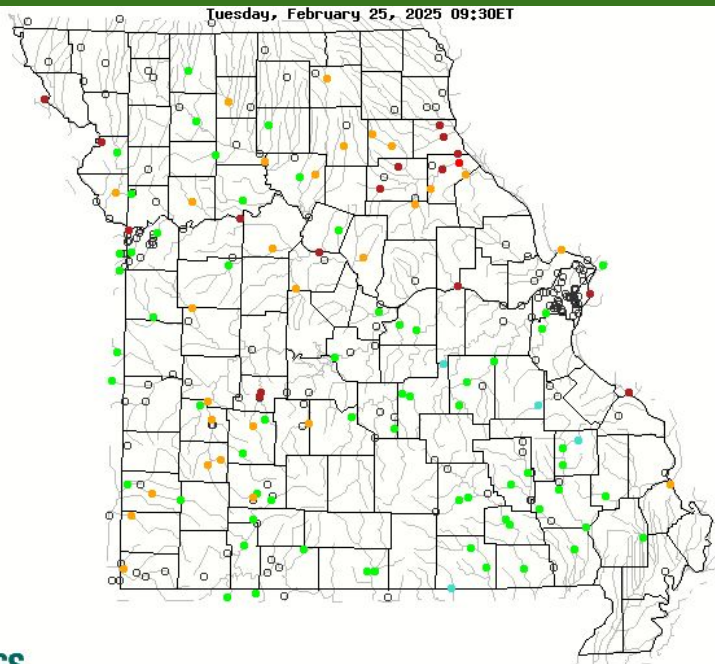
Calculated Soil Moisture Anomaly (mm)
FEB 24, 2025



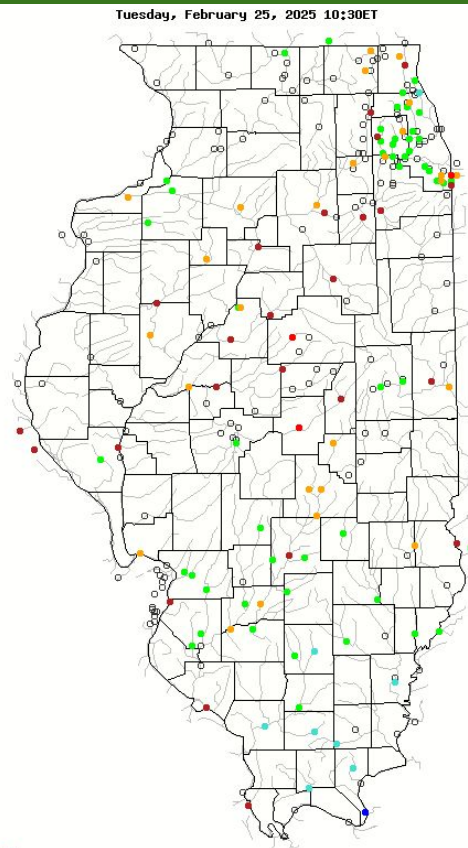
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Spring Flood Outlook 2023 - Streamflow



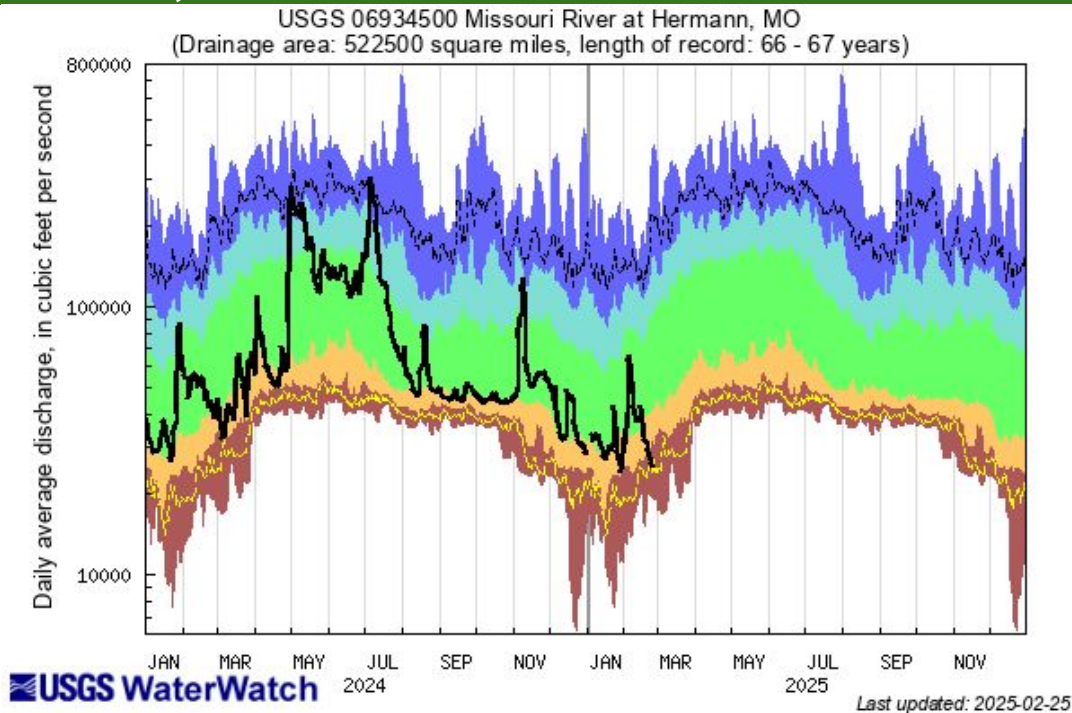
Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked









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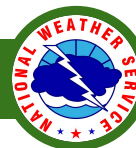


Missouri River at Hermann, MO

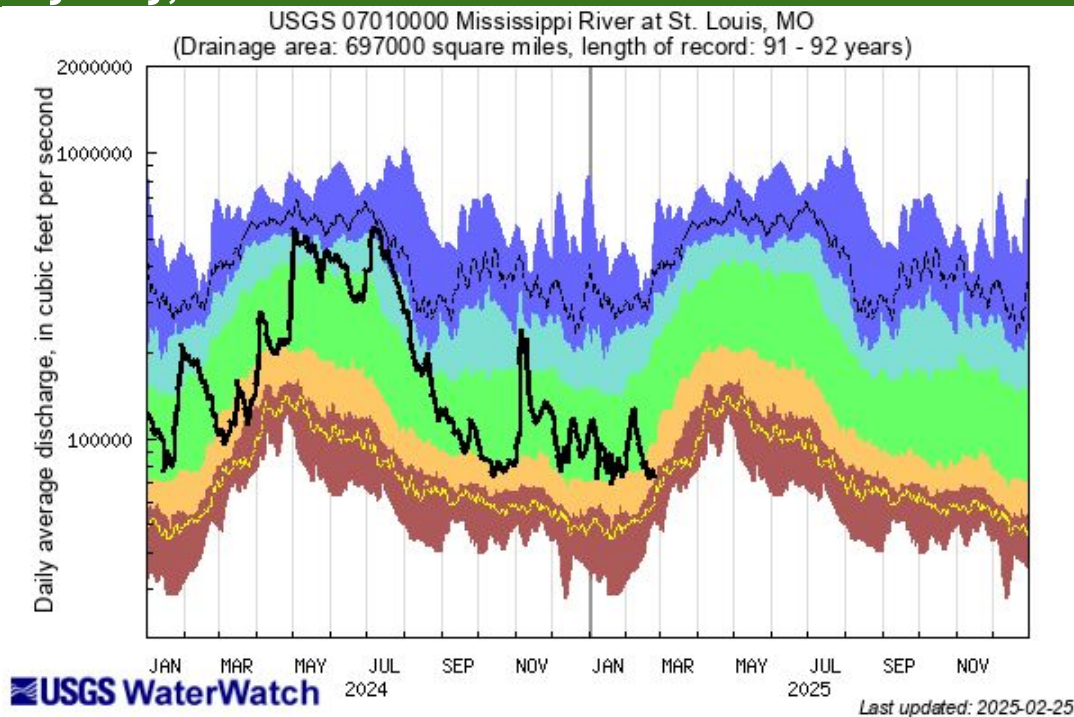


Explanation - Percentile classes						Flow
						
lowest-10th percentile	5	10-24	25-75	76-90	95 90th percentile-highest	
Much below Normal	Below normal	Normal	Above normal	Much above normal		

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Illinois River at Valley City, IL



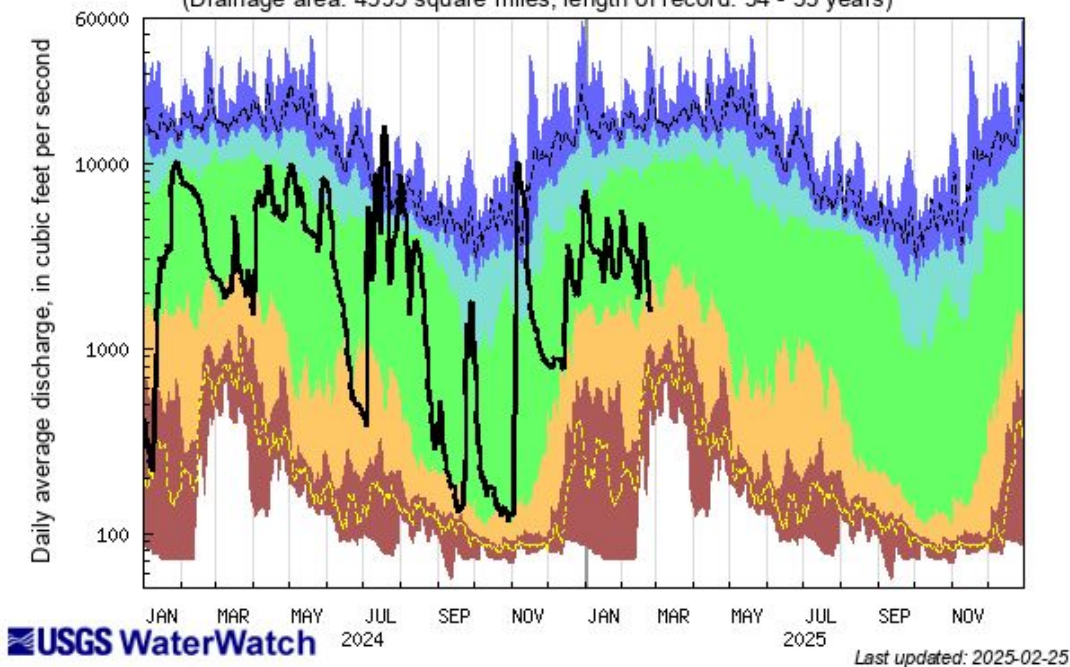
Explanation - Percentile classes						Flow
lowest-10th percentile	5	10-24	25-75	76-90	95	
Much below Normal	Below normal	Normal	Above normal	Much above normal	90th percentile - highest	

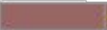






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Mississippi River at St. Louis, MO

USGS 05594100 KASKASKIA RIVER NEAR VENEDY STATION, IL
(Drainage area: 4393 square miles, length of record: 54 - 55 years)



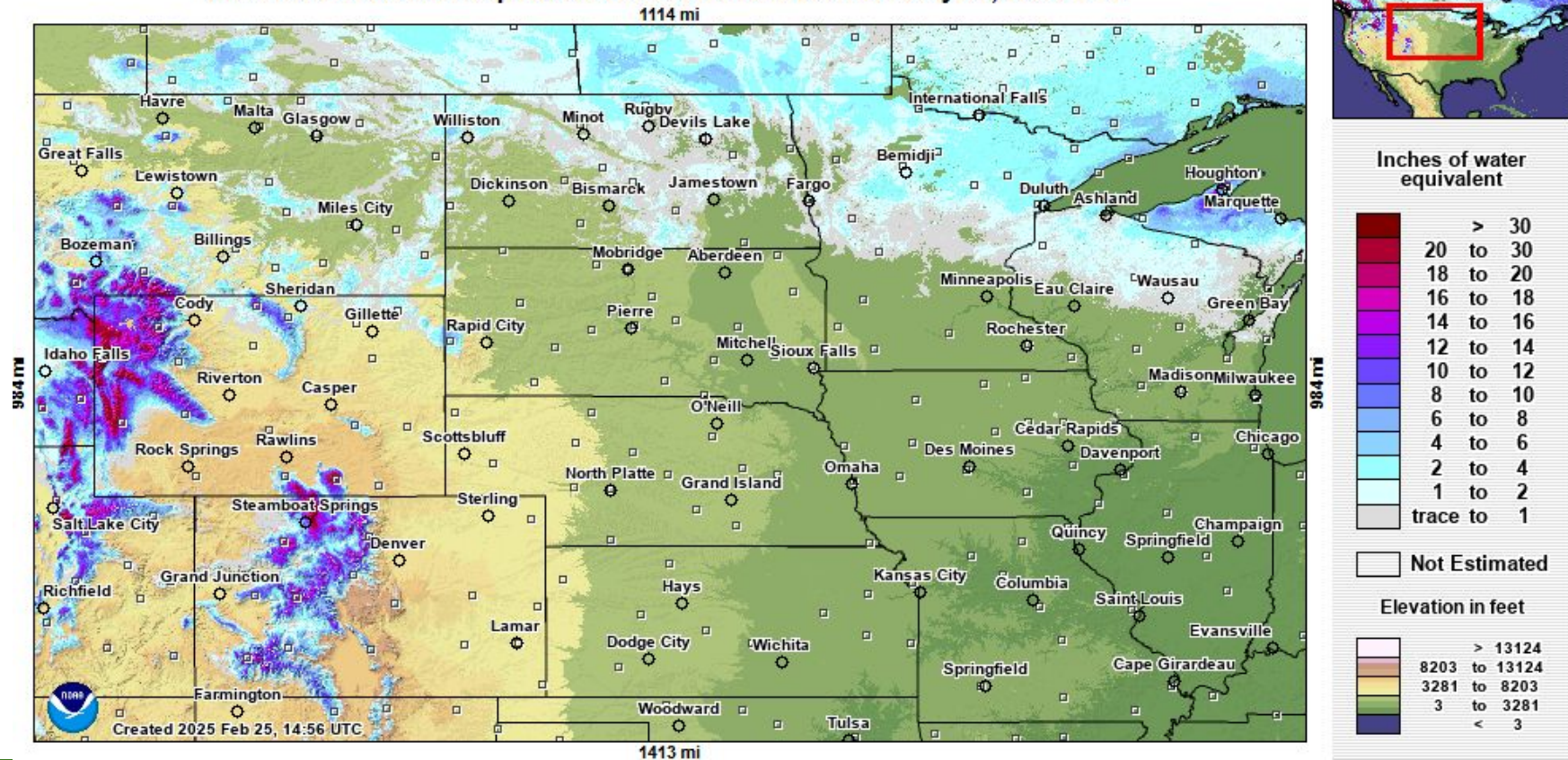
Explanation - Percentile classes							Flow
							
lowest-10th percentile	5	10-24	25-75	76-90	95	90th percentile - highest	
Much below Normal		Below normal	Normal	Above normal	Much above normal		

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Spring Flood Outlook 2025

Modeled Snow Water Equivalent forecasted for 2025 February 25, 19:00 UTC



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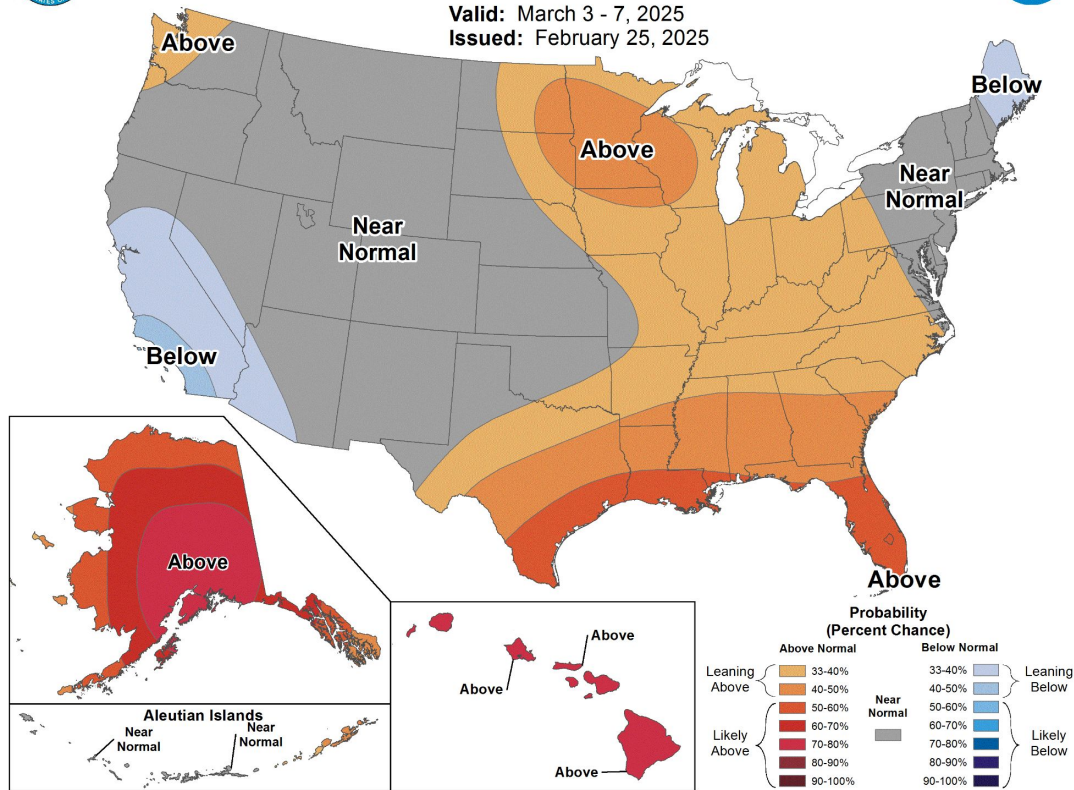
6-10 Day Temperature Outlook



6-10 Day Temperature Outlook



Valid: March 3 - 7, 2025
Issued: February 25, 2025



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6-10 Day Precipitation Outlook

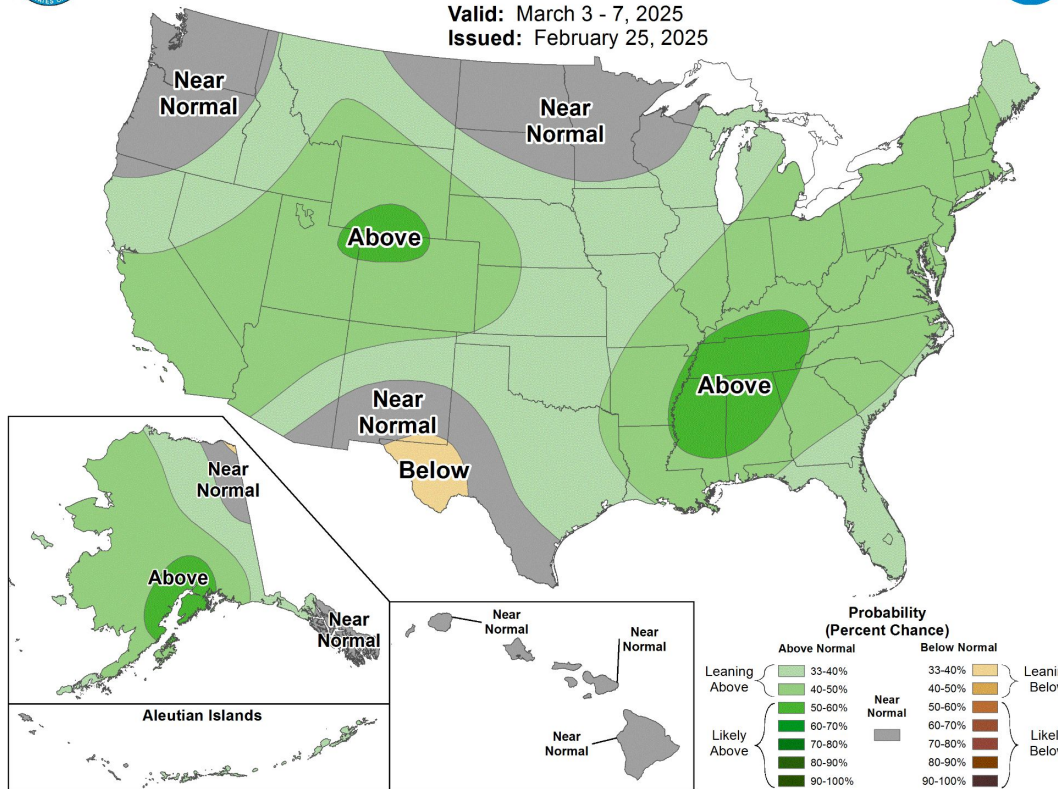


6-10 Day Precipitation Outlook



Valid: March 3 - 7, 2025

Issued: February 25, 2025



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8-14 Day Temperature Outlook

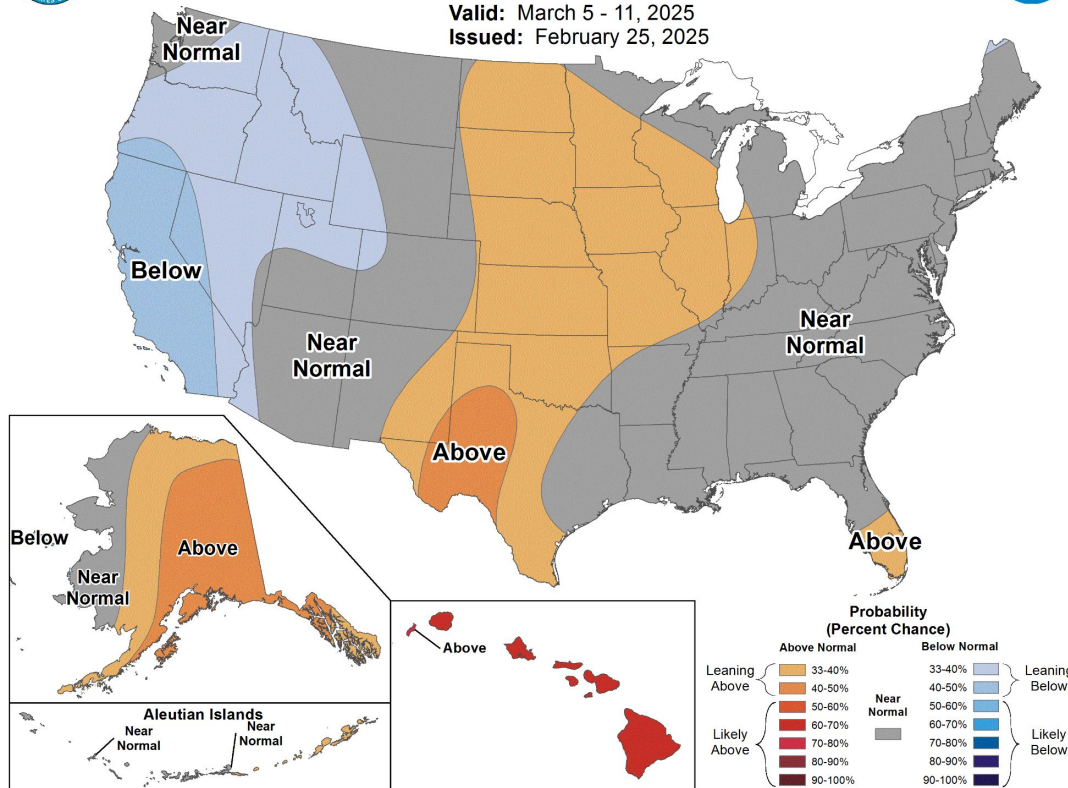


8-14 Day Temperature Outlook



Valid: March 5 - 11, 2025

Issued: February 25, 2025



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8-14 Day Precipitation Outlook

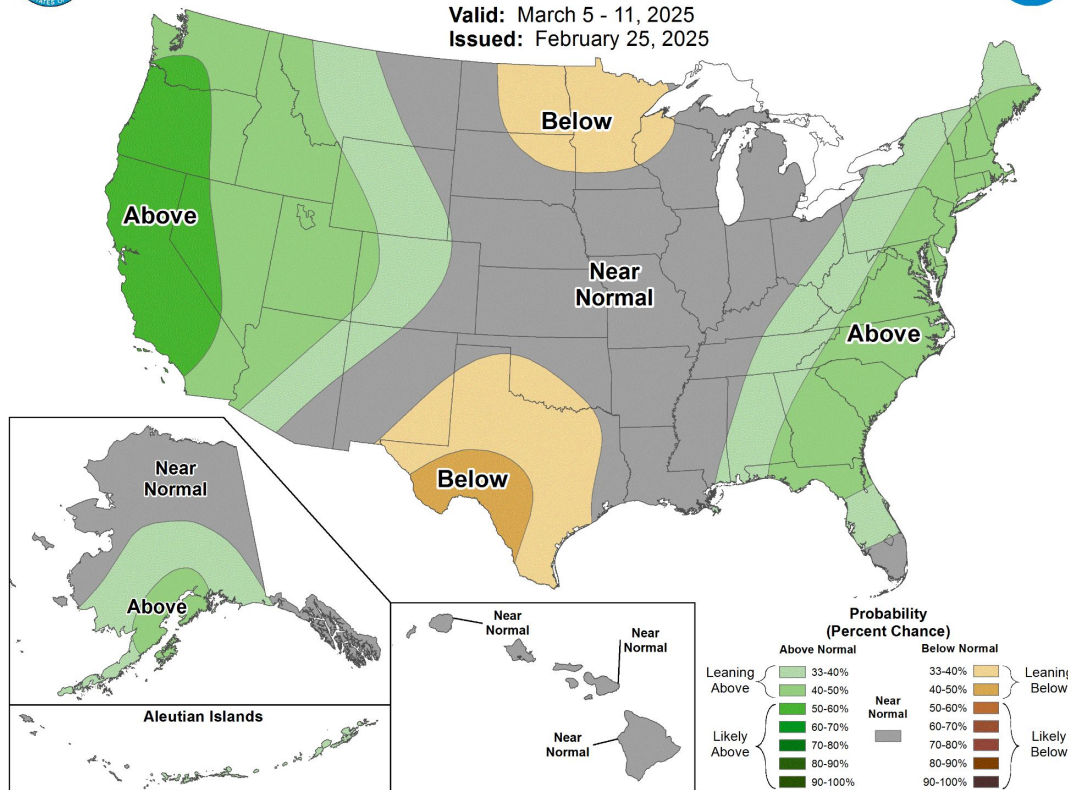


8-14 Day Precipitation Outlook



Valid: March 5 - 11, 2025

Issued: February 25, 2025



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March Temperature Outlook

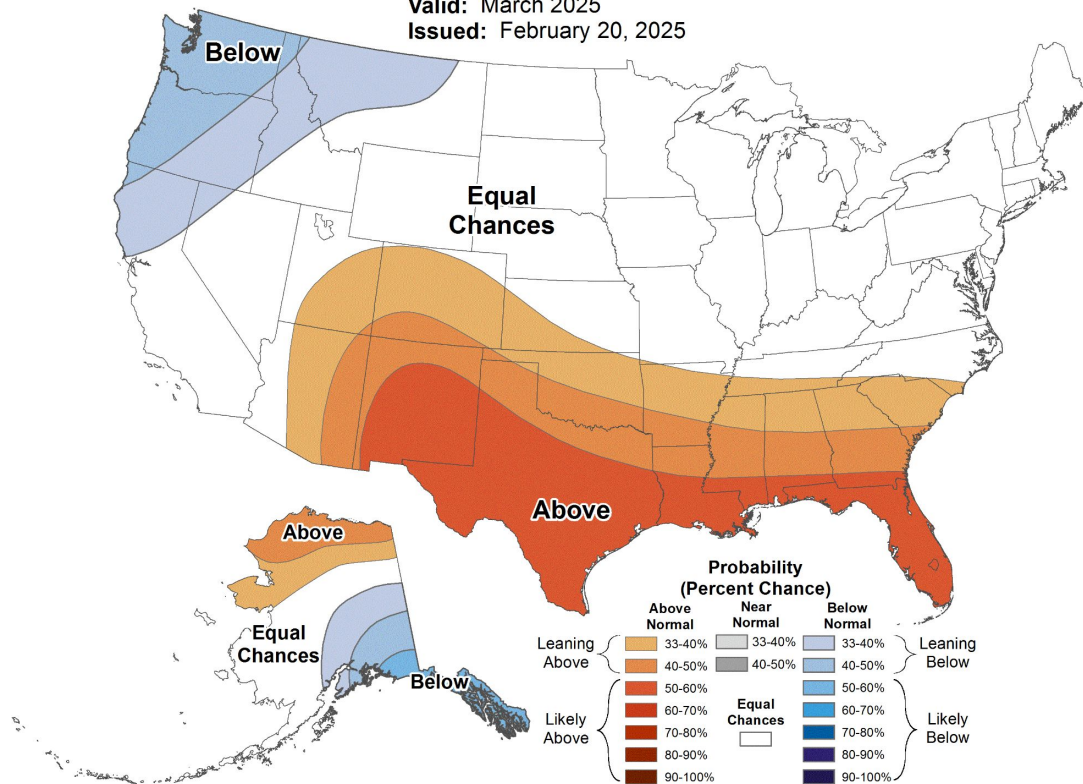


Monthly Temperature Outlook

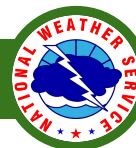


Valid: March 2025

Issued: February 20, 2025



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March Precipitation Outlook

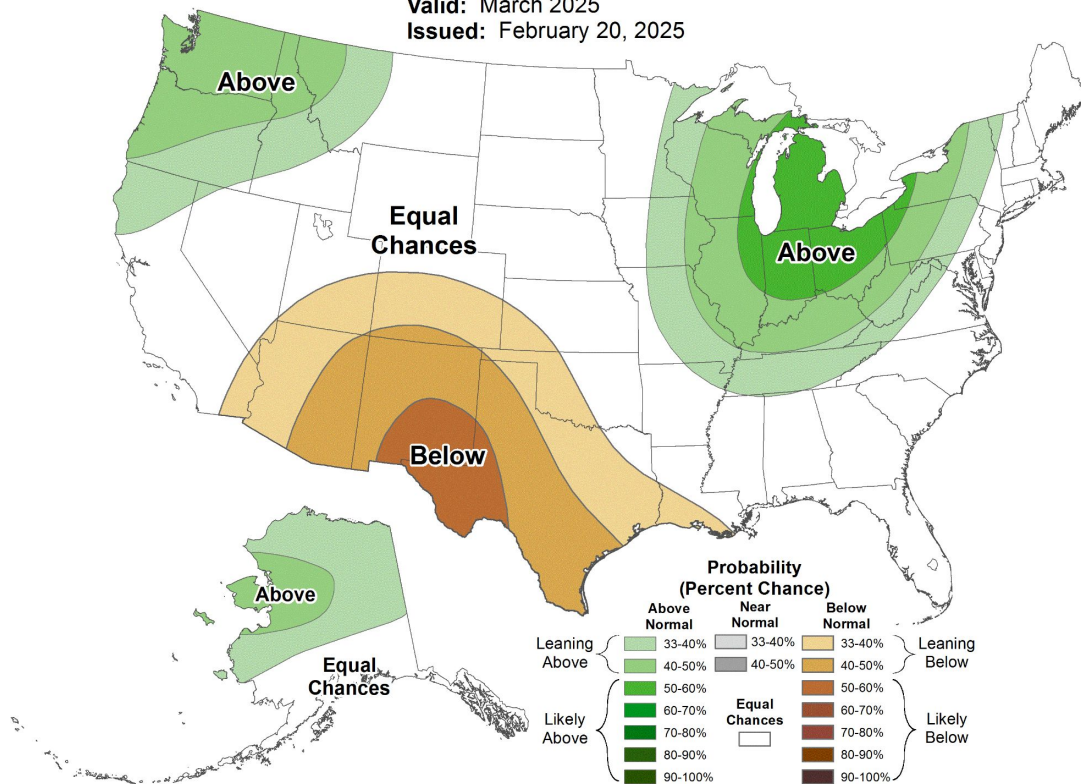


Monthly Precipitation Outlook

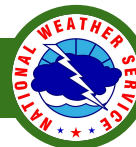


Valid: March 2025

Issued: February 20, 2025



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90-Day Temperature Outlook (March-May)

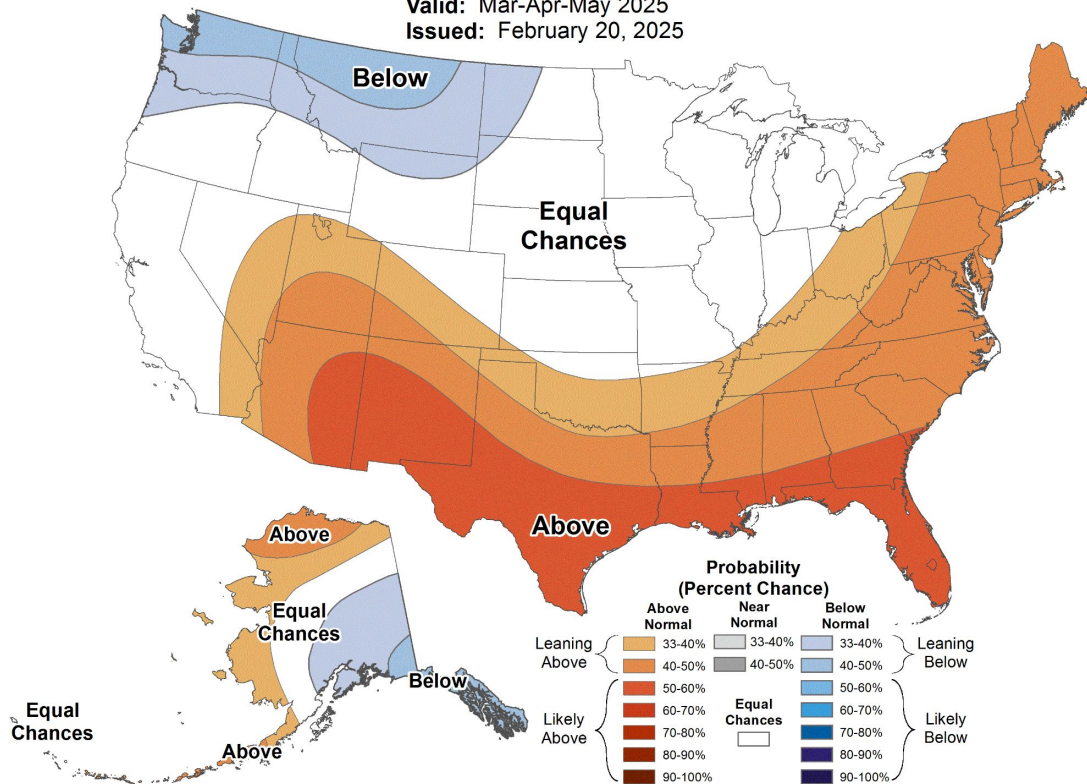


Seasonal Temperature Outlook



Valid: Mar-Apr-May 2025

Issued: February 20, 2025



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90-Day Precipitation Outlook (March-May)

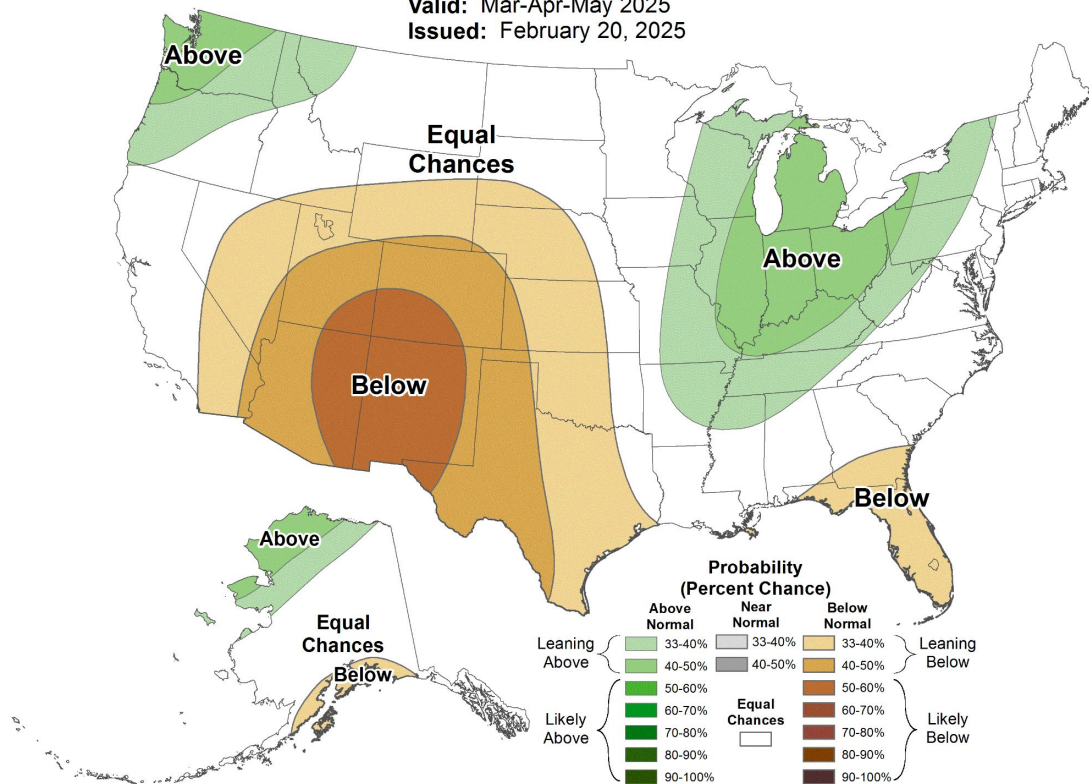


Seasonal Precipitation Outlook



Valid: Mar-Apr-May 2025

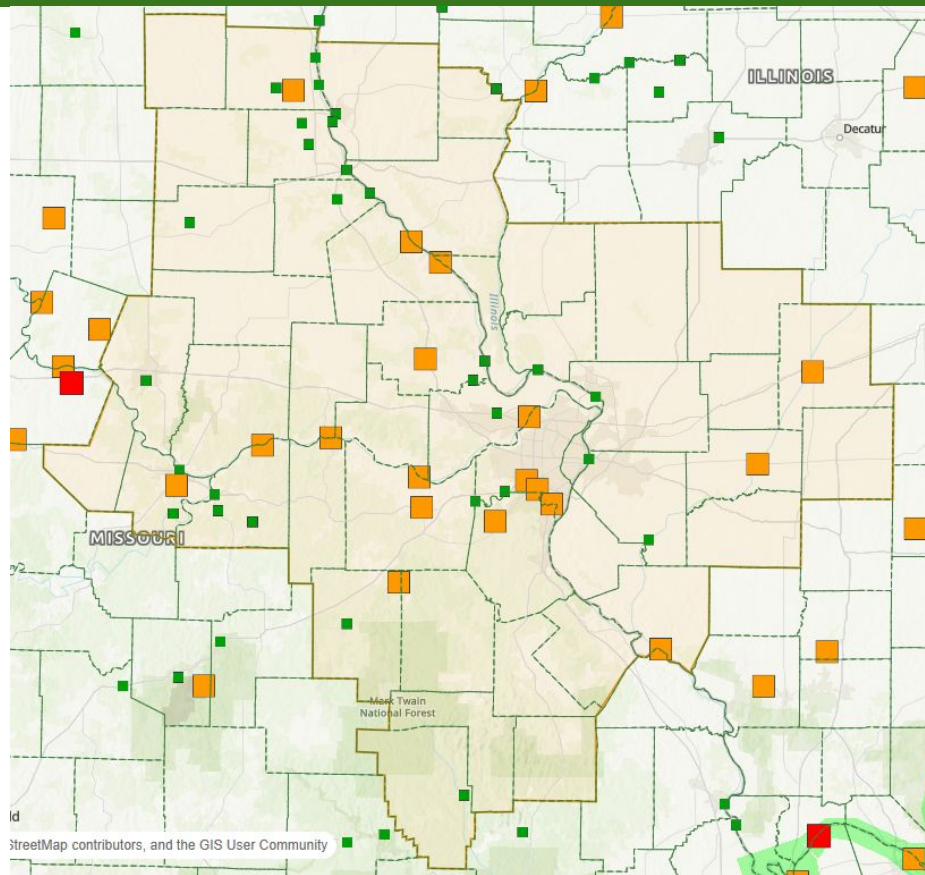
Issued: February 20, 2025



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Spring Flood Outlook 2025



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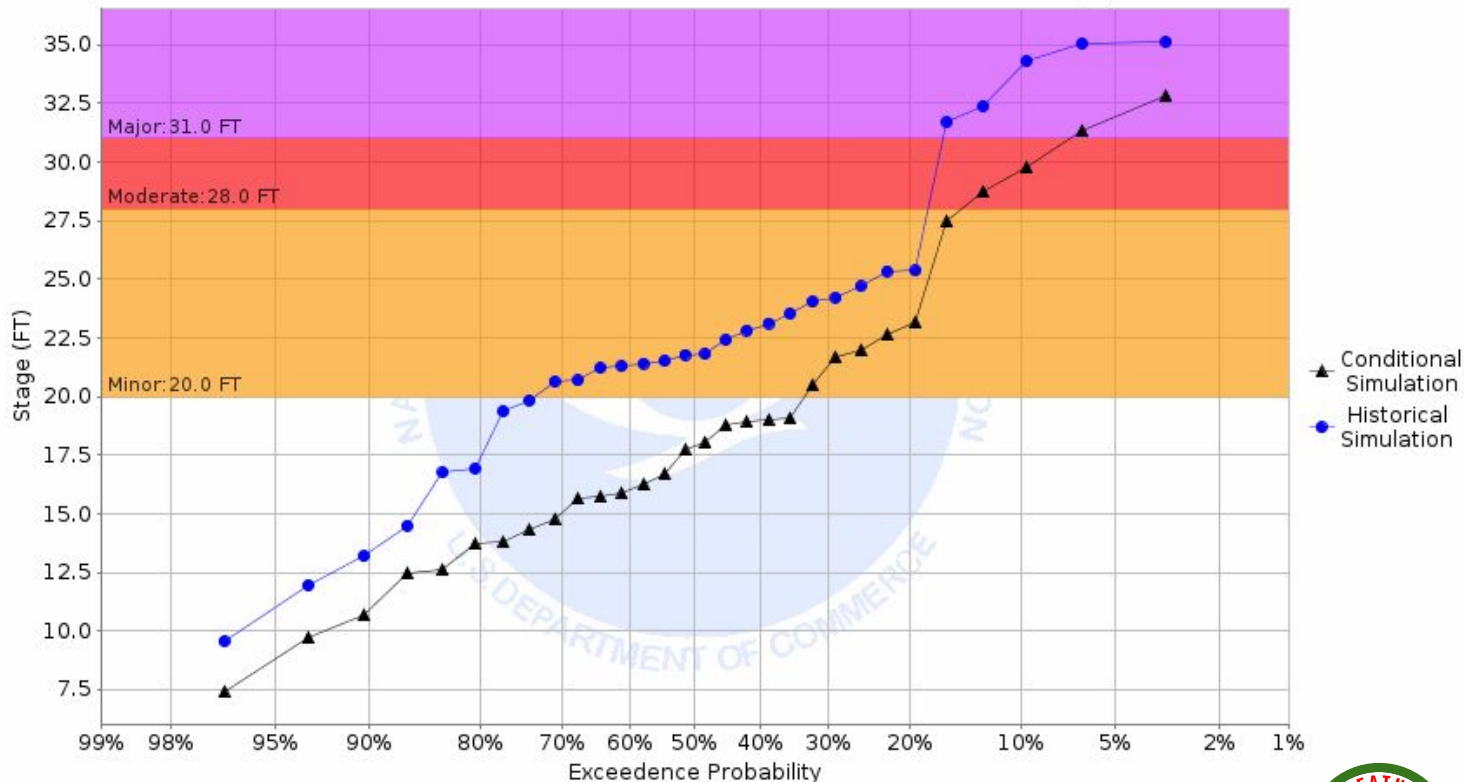
Spring Flood Outlook 2025 - Missouri River at Washington, MO

Chance of Exceeding River Stage on the MISSOURI R at WASHINGTON MO

Forecast for the period 03/01/2025 - 05/30/2025

This is a conditional simulation based on the current conditions as of 02/24/2025

- The chance of exceeding minor flood stage is 33%, which is 41% below the historical average.
- The chance of exceeding moderate flood stage is 15%, 3% below the historical average.



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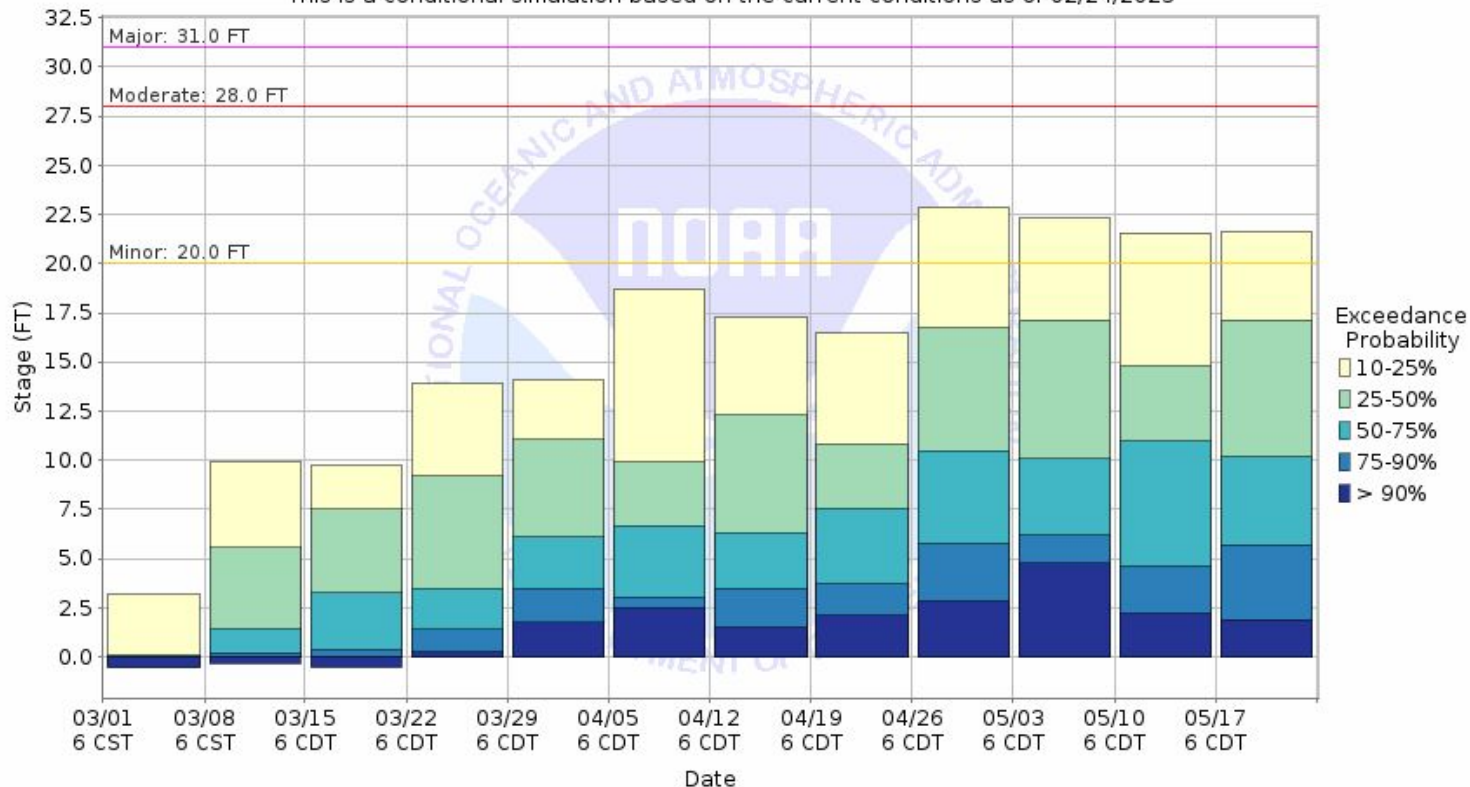


Spring Flood Outlook 2025 - Missouri River at Hermann, MO

Weekly Chance of Exceeding River Stage on the MISSOURI R at WASHINGTON MO

Forecast for the period 03/01/2025 - 05/24/2025

This is a conditional simulation based on the current conditions as of 02/24/2025



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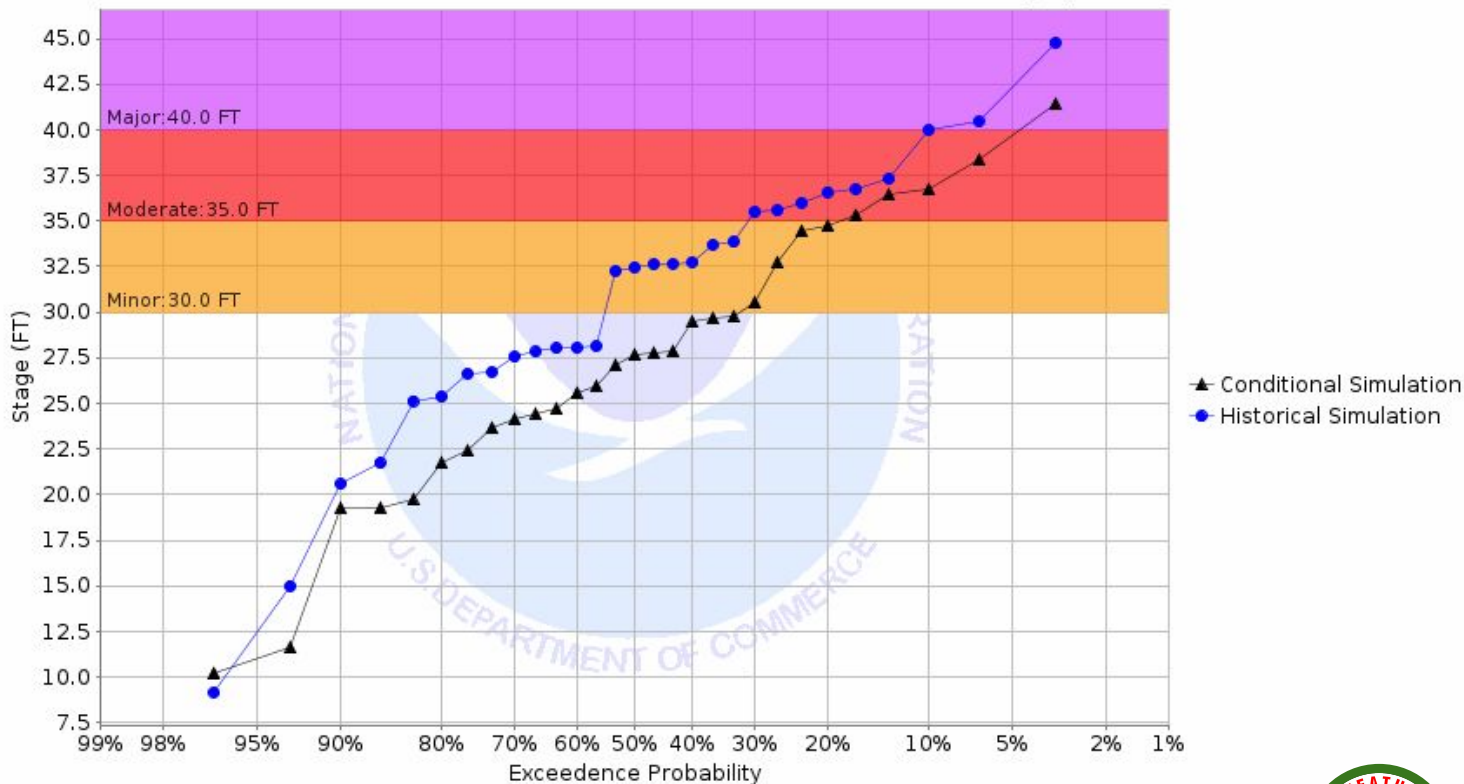
Spring Flood Outlook 2025 - Mississippi River at St. Louis, MO

Chance of Exceeding River Stage at Mississippi River at St. Louis (Eads Bridge) (EADM7)

Forecast for the period 02/17/2025 - 05/18/2025

This is a conditional simulation based on the conditions as of 02/10/2025

- Like much of the upper Mississippi, the probability of minor flooding is 32%, 23% below the historical average.
- For significant (moderate or major) flooding, the chances are also below normal.



NWS St. Louis

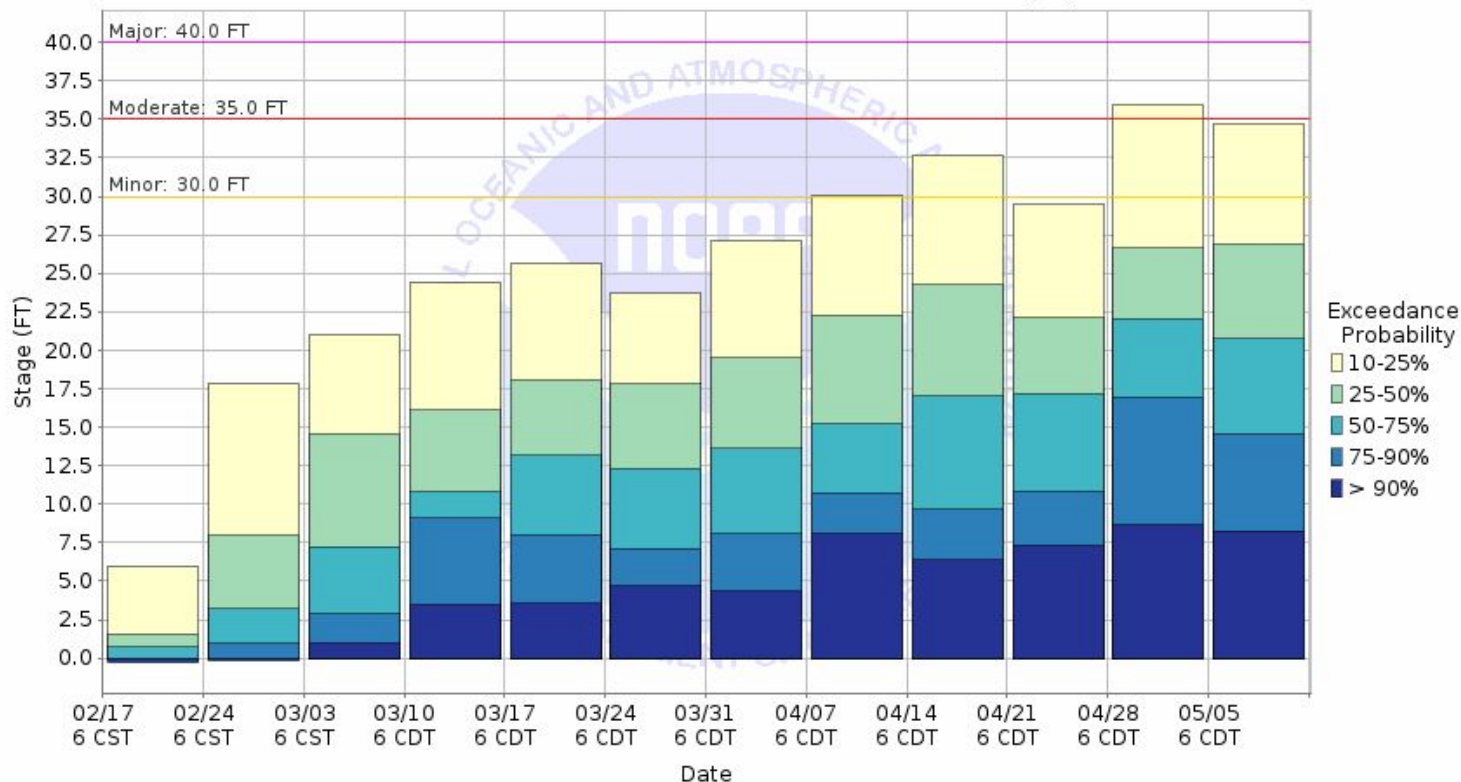


Spring Flood Outlook 2025 - Mississippi River at St. Louis, MO

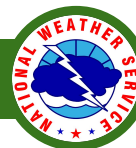
Weekly Chance of Exceeding River Stage at Mississippi River at St Louis (Eads Bridge) (EADM7)

Forecast for the period 02/17/2025 - 05/18/2025

This is a conditional simulation based on the conditions as of 02/10/2025



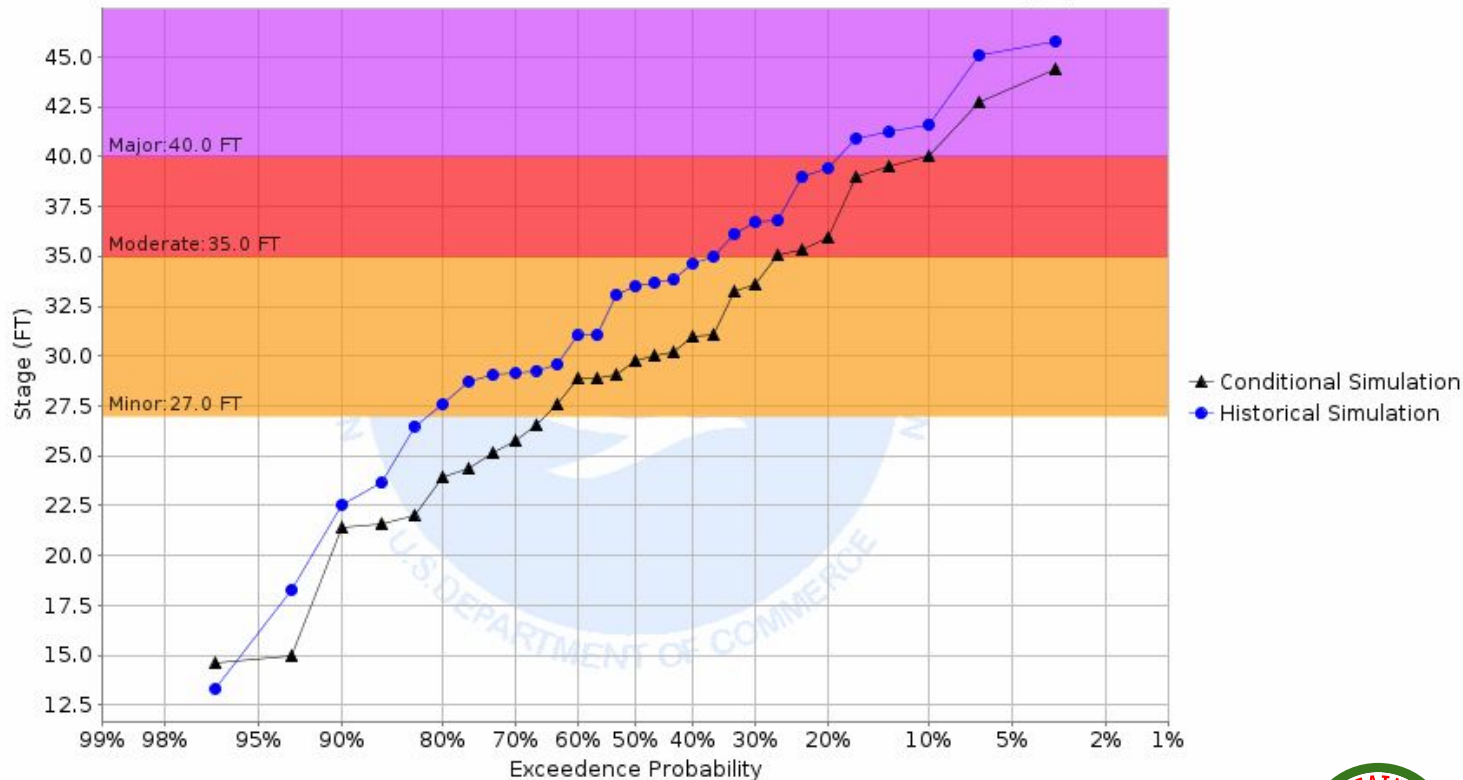
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Spring Flood Outlook 2025 - Mississippi River at Chester, IL

Chance of Exceeding River Stage at Mississippi River at Chester (CHS12)
Forecast for the period 02/17/2025 - 05/18/2025
This is a conditional simulation based on the conditions as of 02/10/2025

- Minor Flooding likely at 65%, but that's 17% below the historical average.
- Chance of moderate flooding is 27%, 10% below the historical average.



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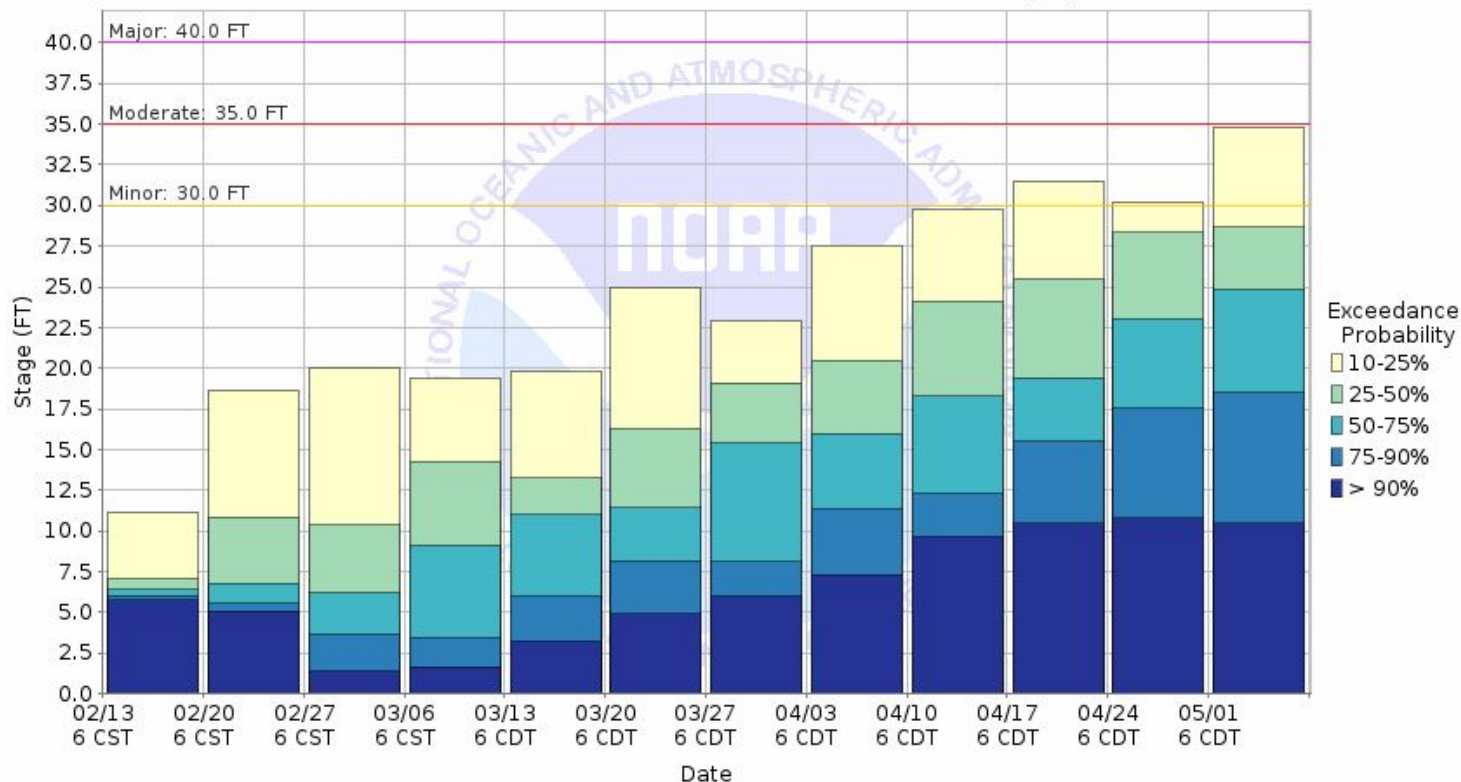


Spring Flood Outlook 2025 - Mississippi River at Chester, IL

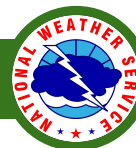
Weekly Chance of Exceeding River Stage at Mississippi River at St Louis (Eads Bridge) (EADM7)

Forecast for the period 02/13/2023 - 05/14/2023

This is a conditional simulation based on the conditions as of 02/06/2023



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Near Term River Probabilities - Hydrologic Ensemble Forecast Service (HEFS)

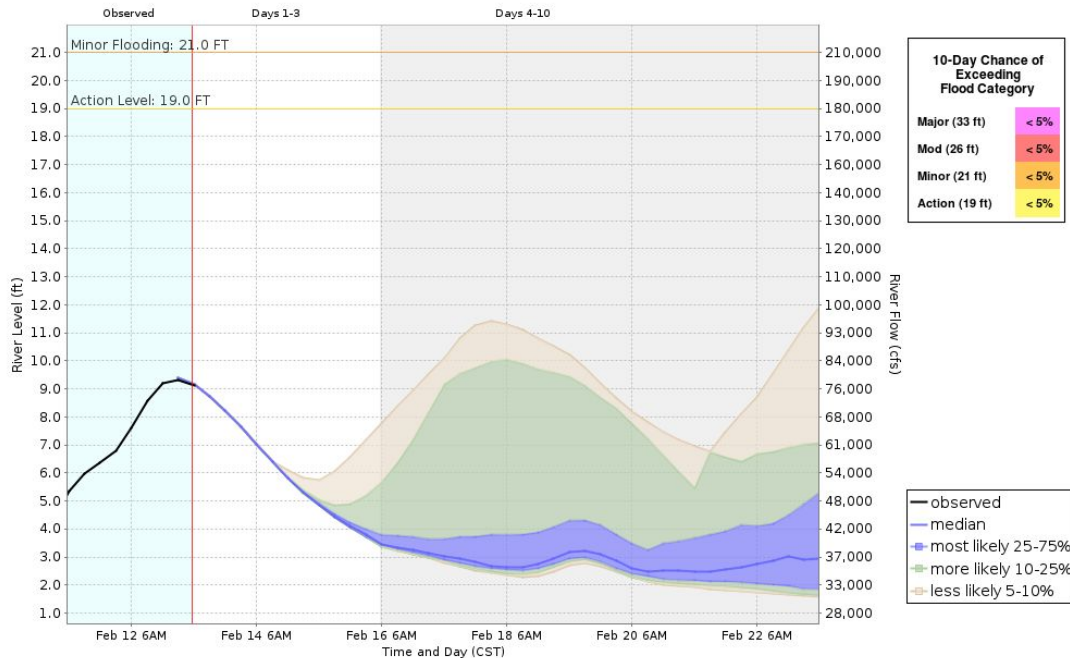
HEFS - 10 Day River Level Probabilities

Based on Hydrologic Ensemble Forecast Service Model Simulations
Used to Estimate the Range of Possible River Levels



Feb 13 - Feb 23, 2023

MISSOURI R at HERMANN MO MKC DCP



Model runtime: 05:30 AM CST Feb 13 2023
Missouri Basin River Forecast Center

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How confident should we be in this forecast?

http://www.weather.gov/crh/rfc_ensemble

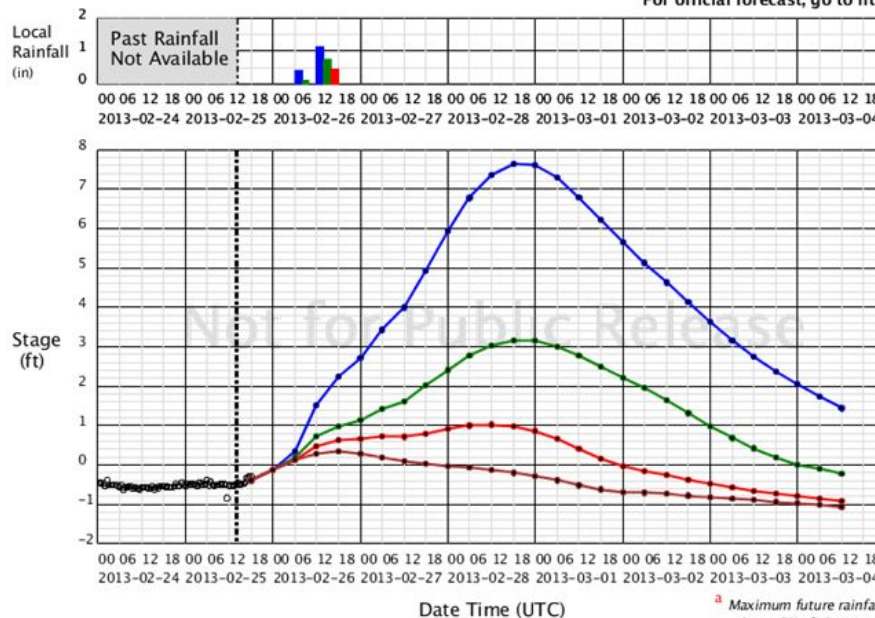
Spring Flood Outlook 2025 - Contingency/Ensemble Forecasts 24 hours QPF

Preliminary River Model Output – Use with Caution

NCRFC Ensemble Model Output
EADM7 -- Mississippi River -- St Louis (Eads Bridge), MO

This product has not been reviewed by NWS Forecasters

For official forecast, go to <http://water.weather.gov/ahps>



Graph Creation Date: Mon, 25 Feb 2013 18:10:45 +0000 UTC

- ^a Maximum future rainfall – 95th percentile, or the amount of precipitation has a 5% of chance of being reached/exceeded.
- ^b Best estimate future rainfall – 50th percentile, or the amount of precipit having a 50% chance of being reached/exceeded.
- ^c Minimum future rainfall – 5th percentile, or the amount of precipitation has a 5% of chance of being reached/exceeded.

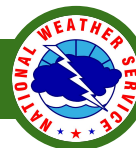
River Model Output with 24 hrs Future Rainfall

- Maximum^a Future Rainfall (24 hour)
- Best Estimate^b Future Rainfall (24 hour)
- Minimum^c Future Rainfall (24 hour)
- Zero Future Rainfall (24 hour)

Observed Values

Major Stage = 40 ft.
Moderate Stage = 35 ft.
Minor Stage = 30 ft.
Flood Stage = 30 ft.

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Spring Flood Outlook 2025 - Contingency/Ensemble Forecasts 72 hours of QPF

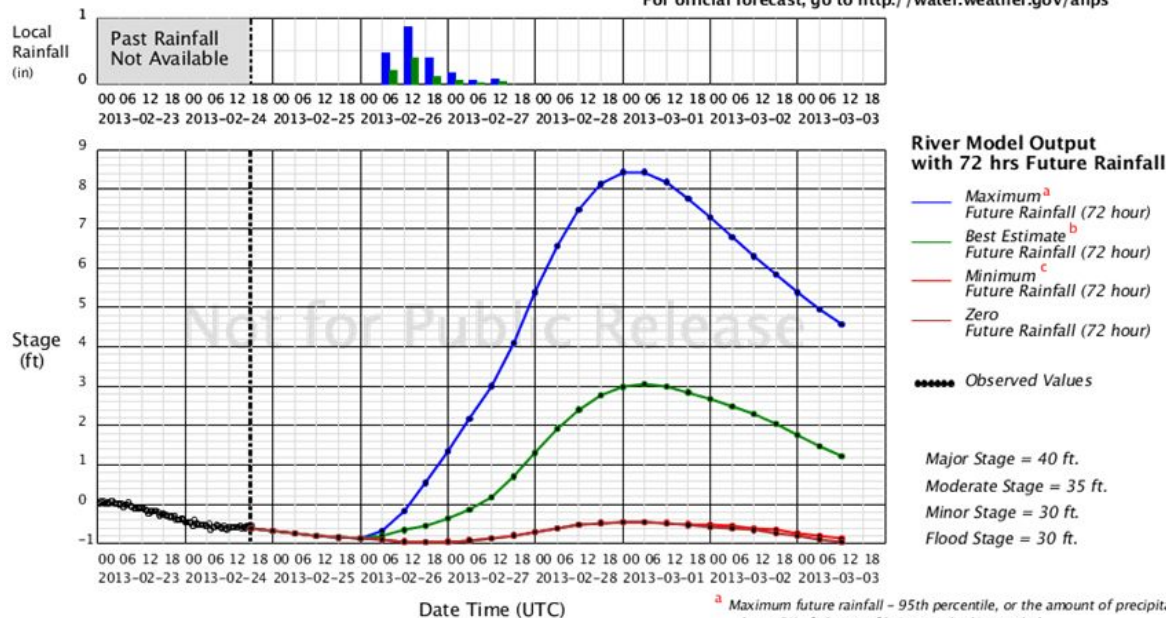
Preliminary River Model Output – Use with Caution

NCRFC Ensemble Model Output

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EADM7 -- Mississippi River -- St Louis (Eads Bridge), MO

For official forecast, go to <http://water.weather.gov/ahps>

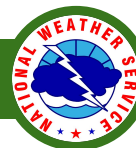


Graph Creation Date: Sun, 24 Feb 2013 18:30:46 +0000 UTC

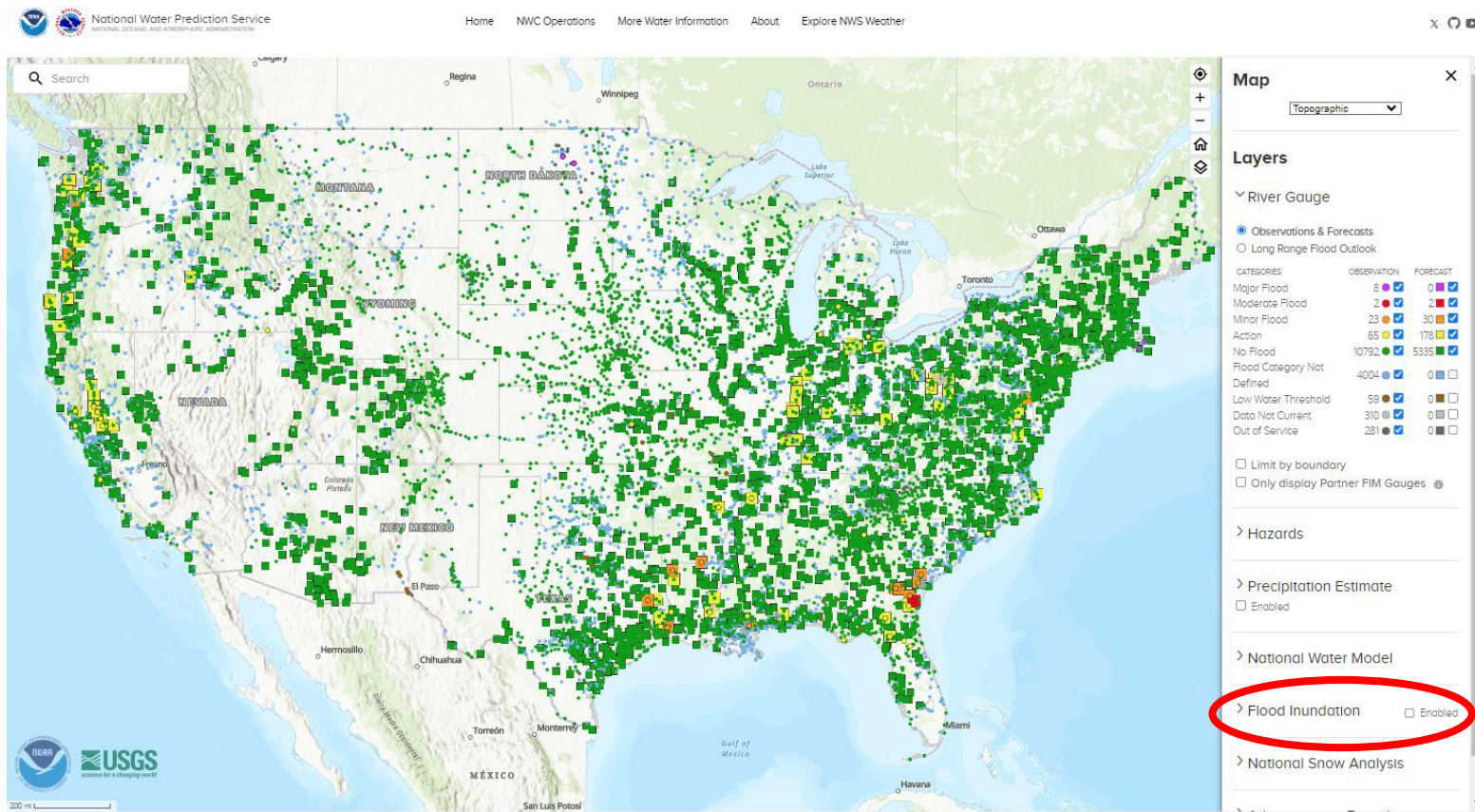
^a Maximum future rainfall – 95th percentile, or the amount of precipitation has a 5% of chance of being reached/exceeded.

^b Best estimate future rainfall – 50th percentile, or the amount of precipitation having a 50% chance of being reached/exceeded.

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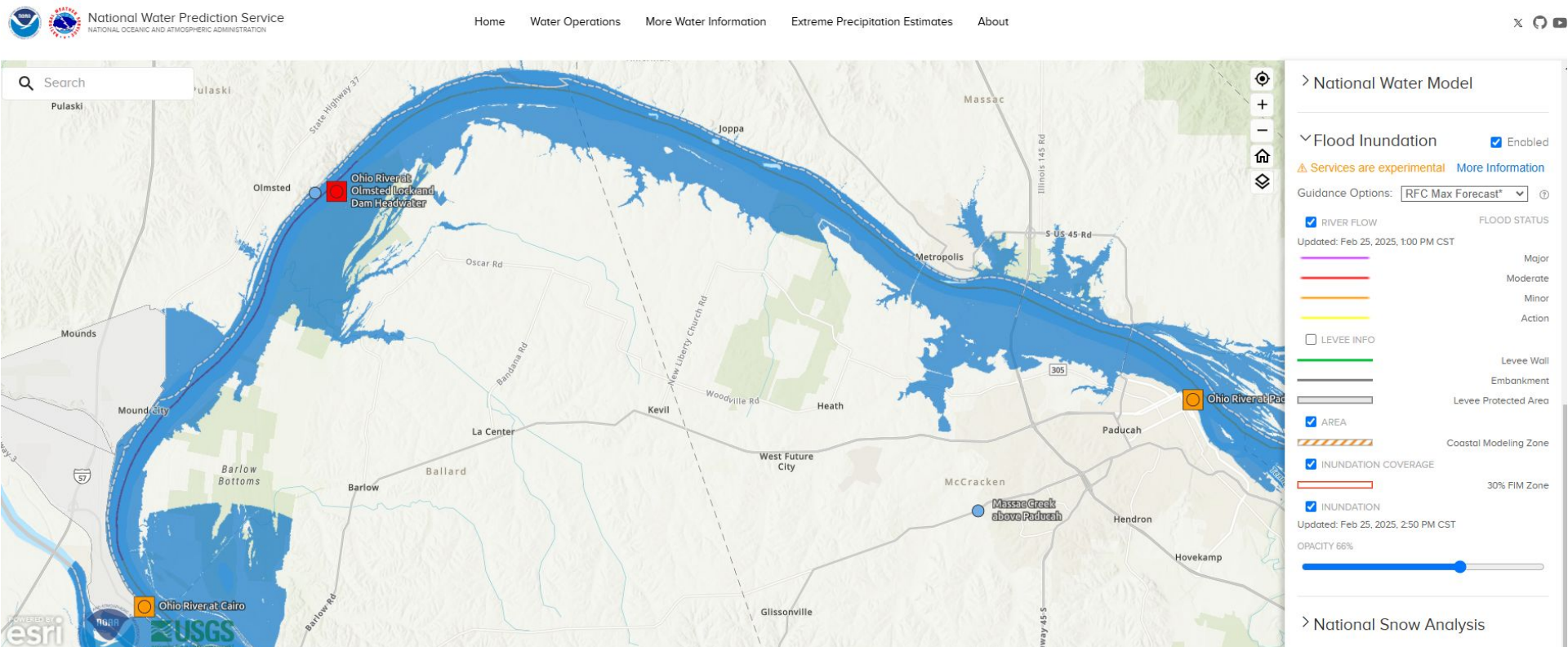
Flood Inundation Mapping Services - Went live in late September 2024



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Flood Inundation Mapping Services - Went live in late September 2024



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Questions???

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