

Delaware River Basin Commission

Hydrologic Conditions

Fanghui Chen

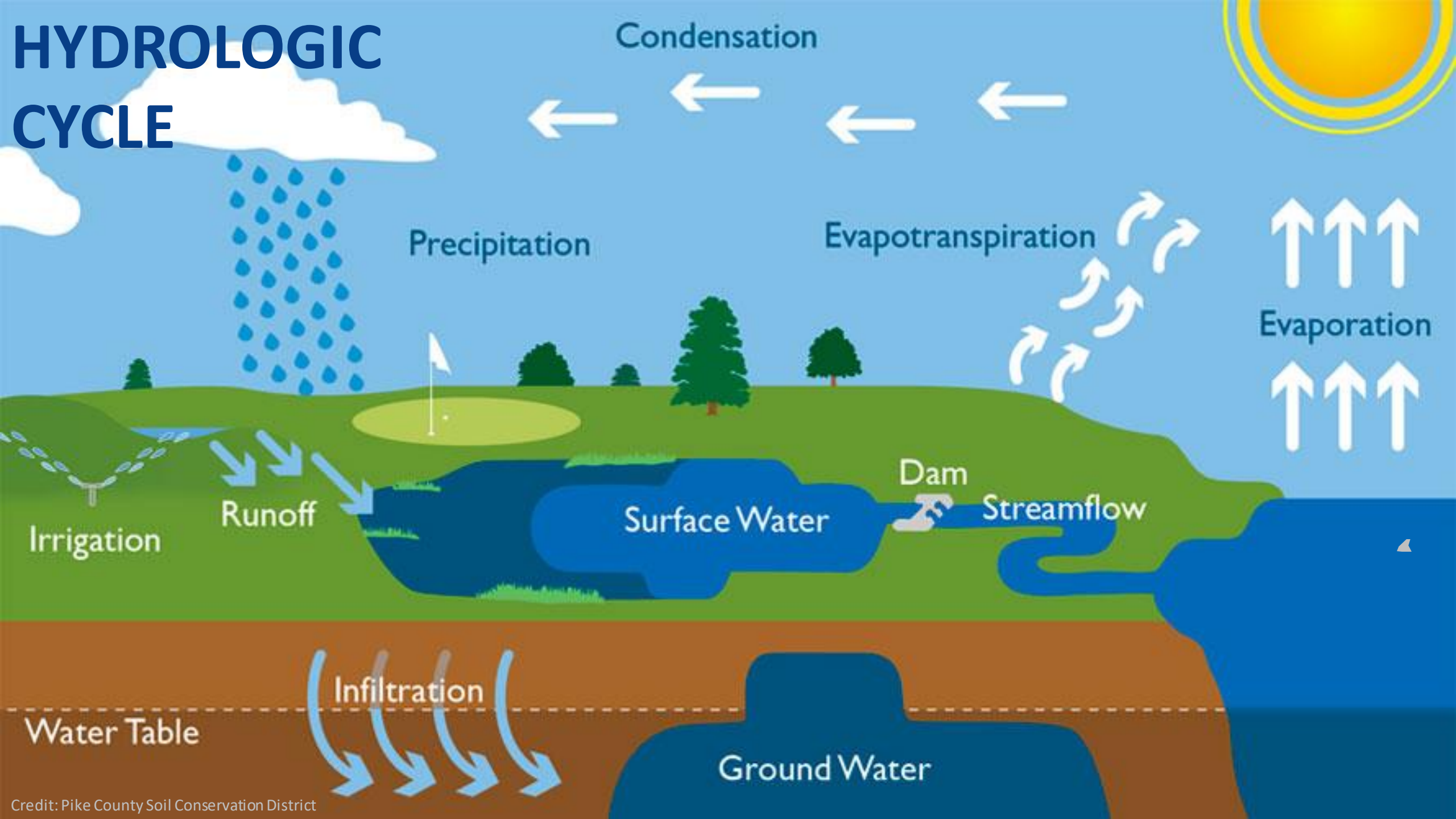
Senior Water Resource Engineer
Water Resource Operations

Water Management Advisory
Committee meeting
February 14, 2024

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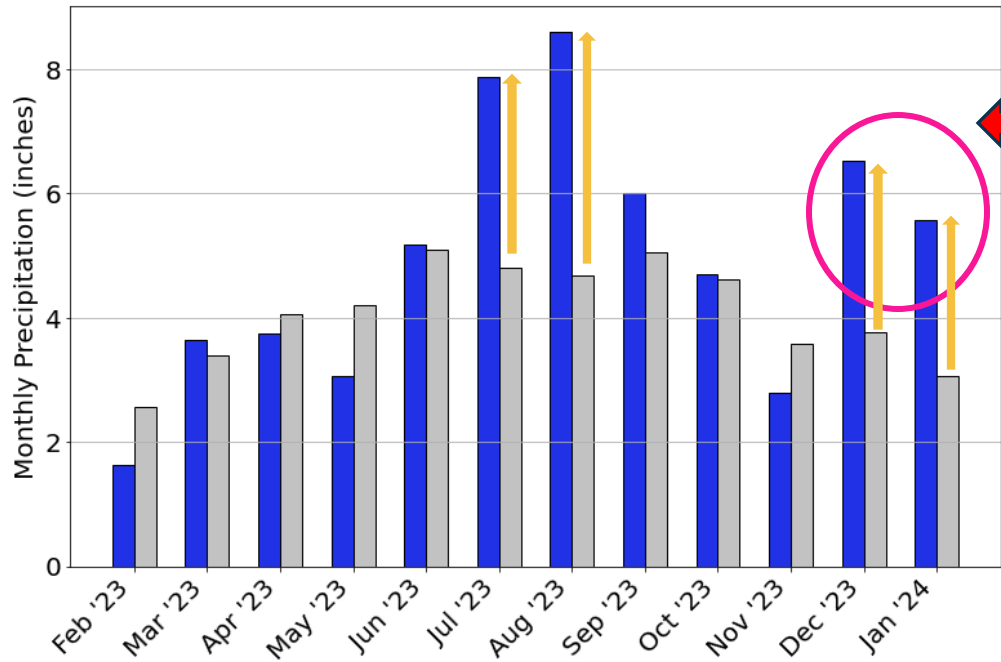
HYDROLOGIC CYCLE



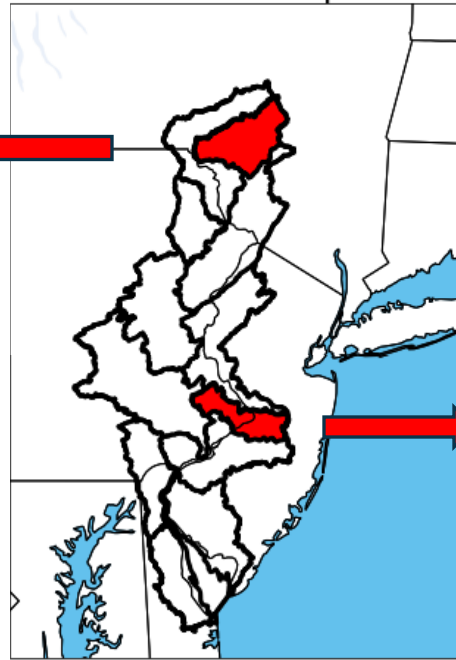
Precipitation from February 2023 to January 2024

(past 365 days)

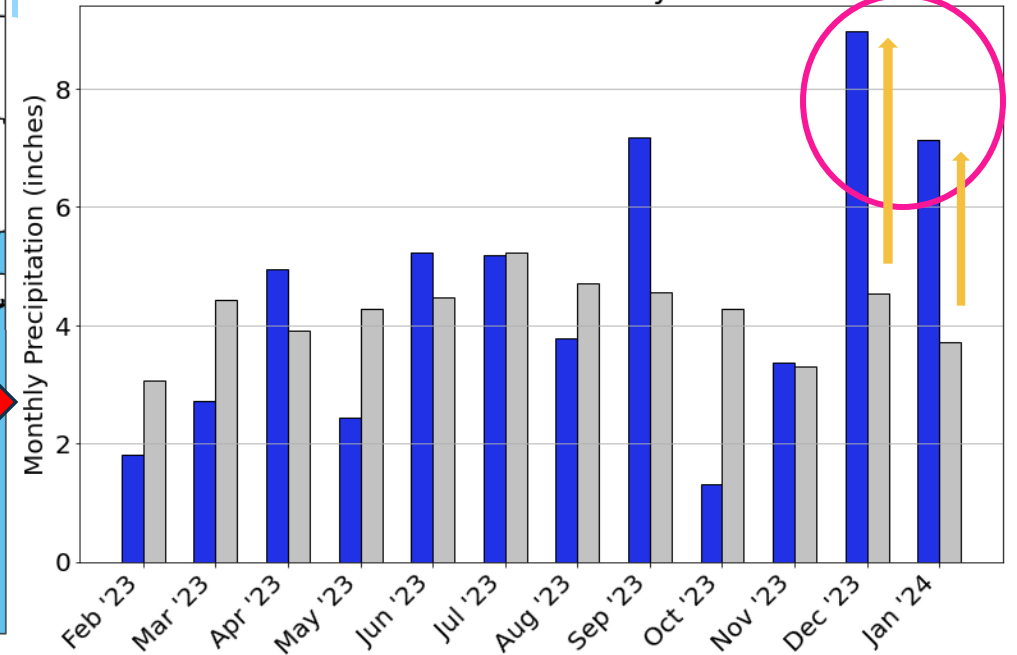
Monthly and Normal Precipitation
East Branch Delaware basin



Locator Map



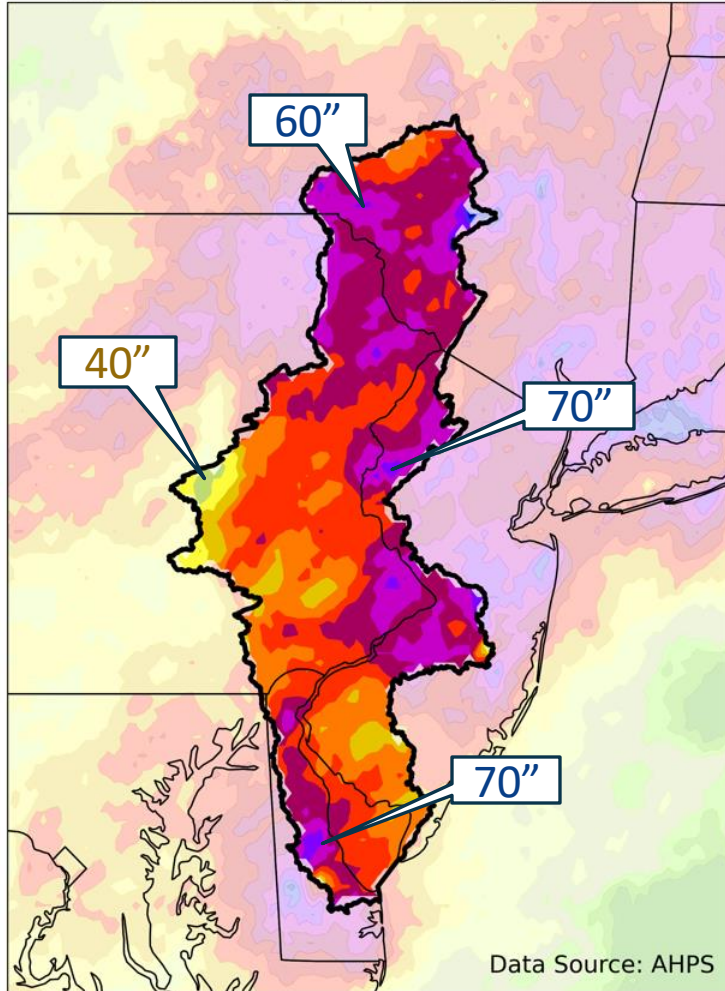
Monthly and Normal Precipitation
Crosswicks-Neshaminy basin



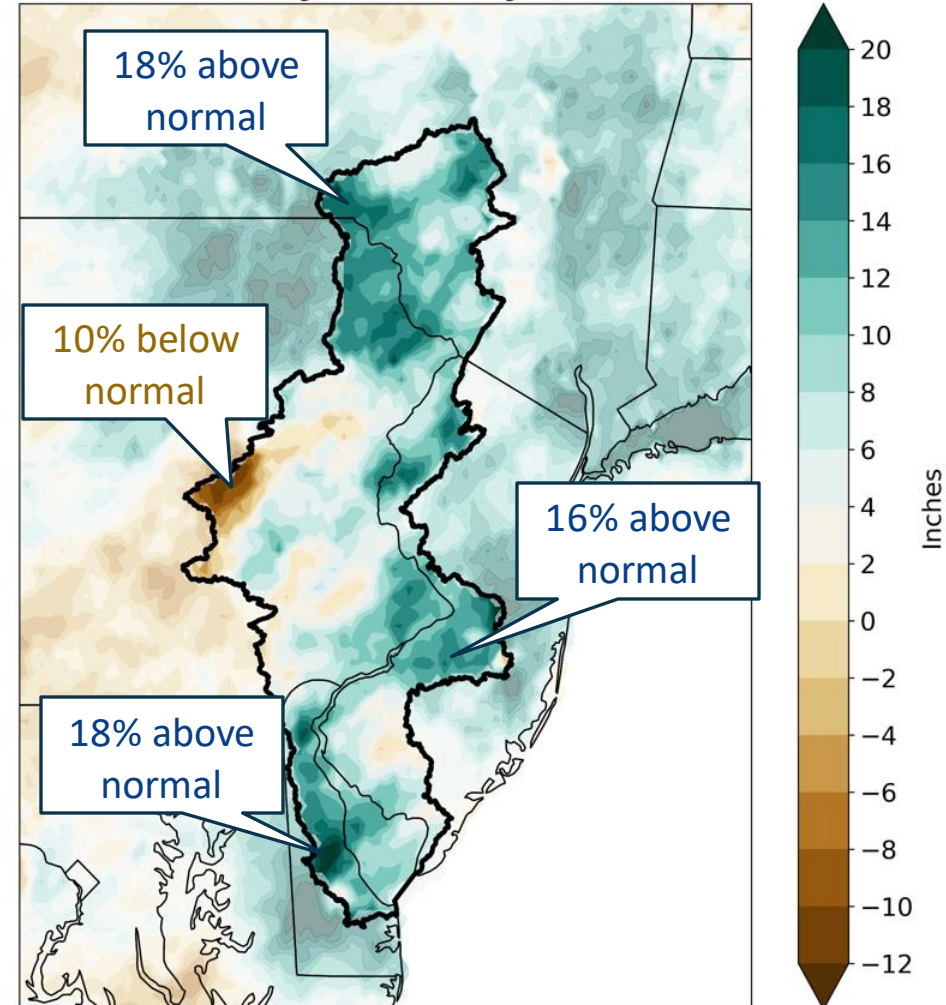
Monthly Observed Precipitation
 Monthly Normal (1991 - 2022)

Precipitation – past 365 days (2/9/2024)

**Total Precipitation Accumulation
Last 365 Days (February 9, 2024)**



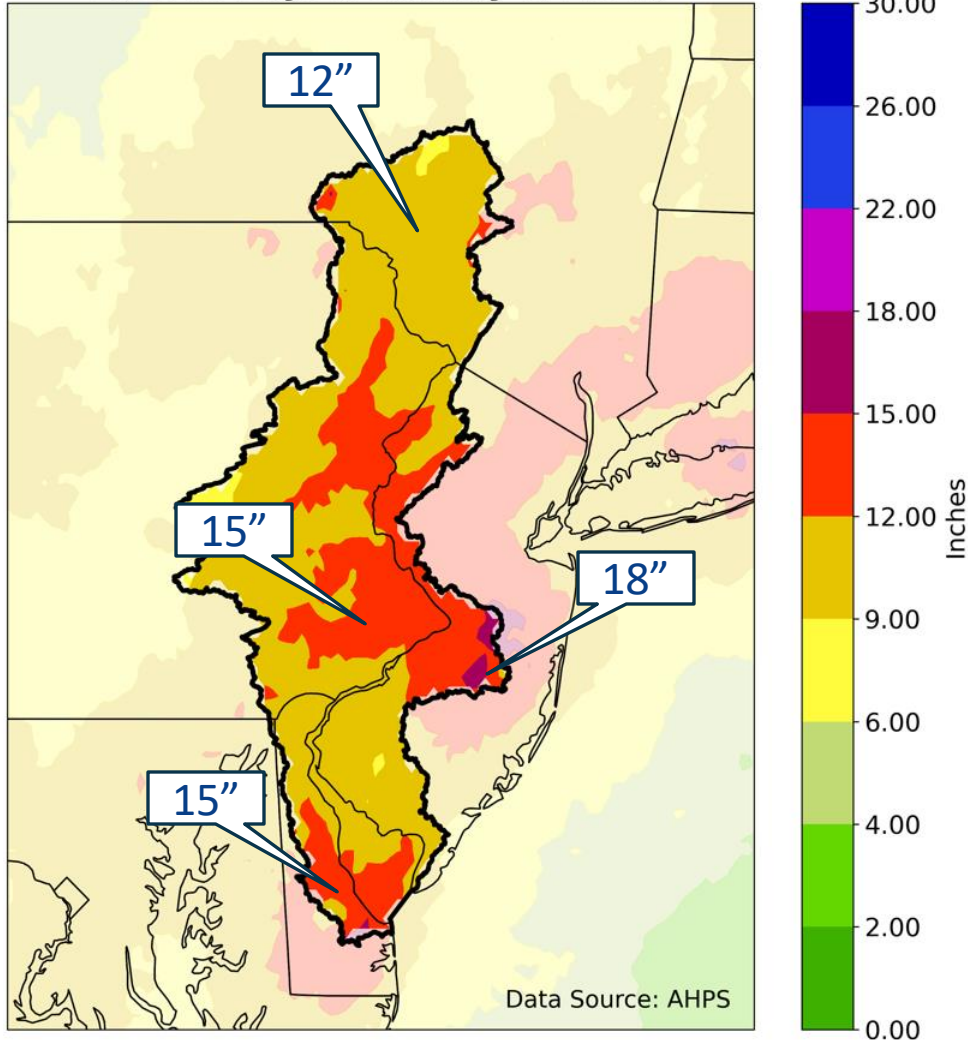
**Departure from Normal Precipitation
Last 365 Days (February 9, 2024)**



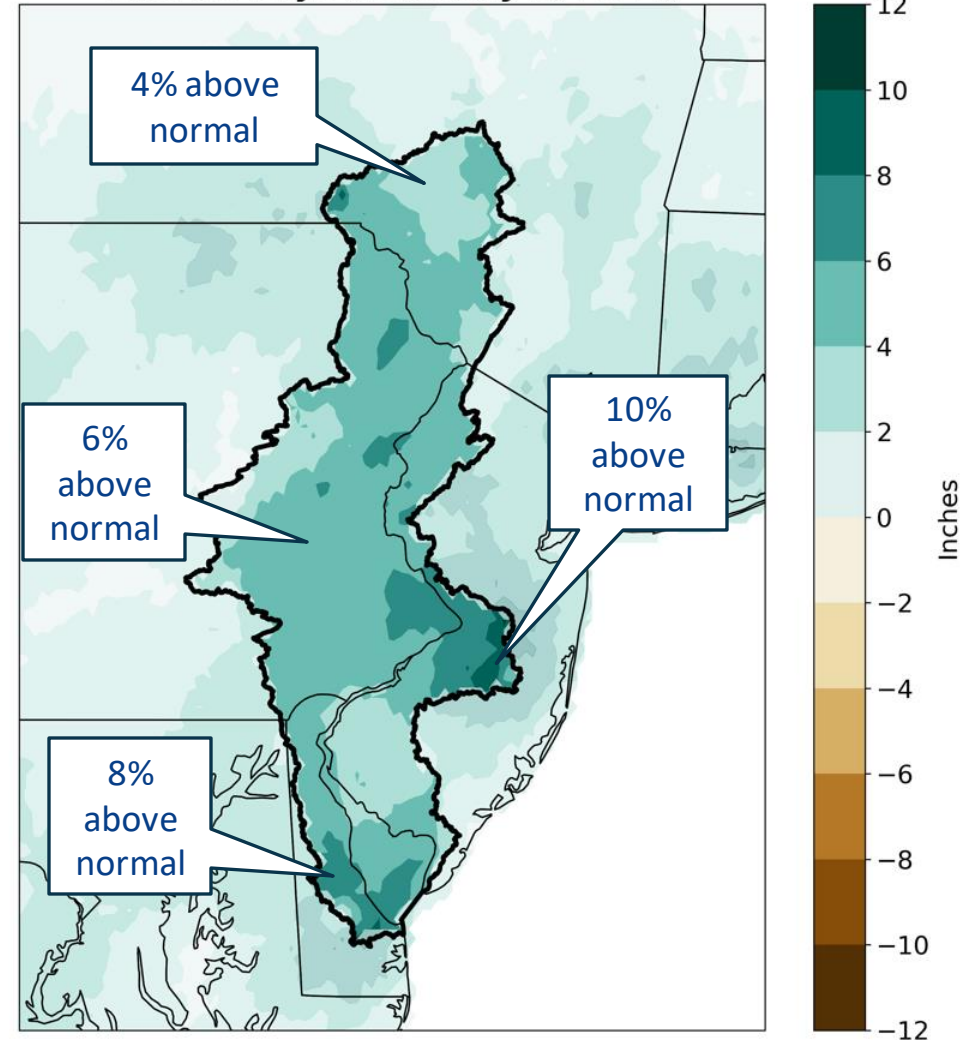
Data:
AHPS

Precipitation – past 60 days (2/9/2024)

**Total Precipitation Accumulation
Last 60 Days (February 9, 2024)**



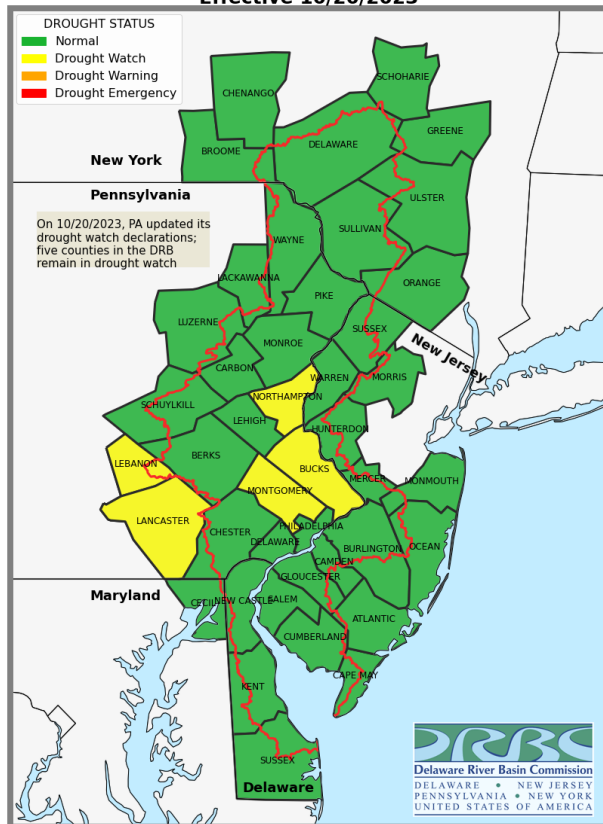
**Departure from Normal Precipitation
Last 60 Days (February 9, 2024)**



Drought Conditions

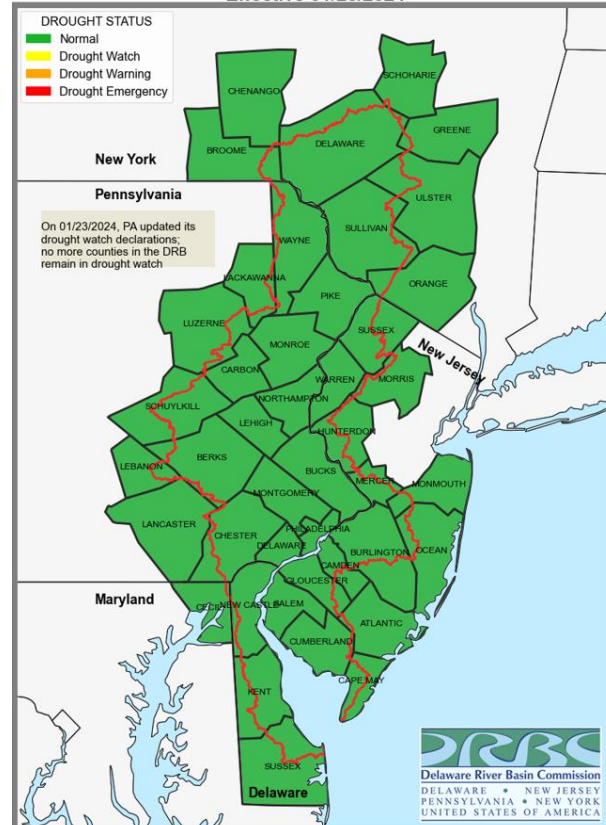
October 20, 2023

**Drought Status In the Delaware River Basin
As Declared by the Individual Basin States
Effective 10/20/2023**



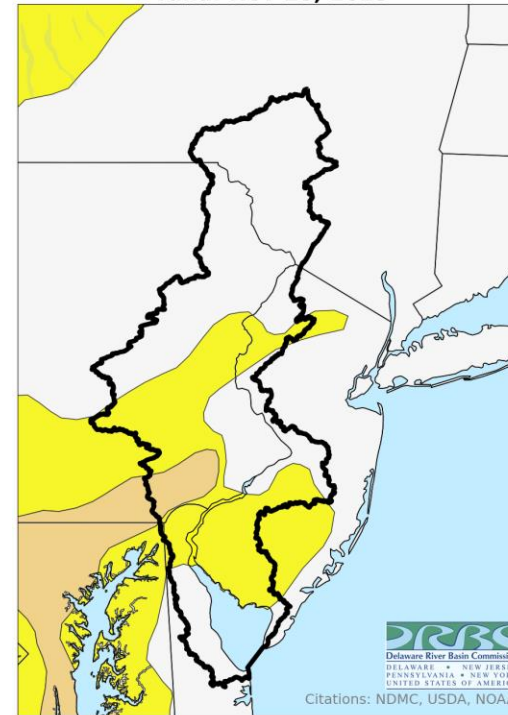
January 23, 2024

**Drought Status In the Delaware River Basin
As Declared by the Individual Basin States
Effective 01/23/2024**



Drought Monitor 11/28, 2023 → 02/06, 2024

**Drought Monitor
Valid: Nov 28, 2023**



**Drought Monitor
Valid: Feb 06, 2024**



- Basin Boundary
- D0 - Abnormally Dry
- D1 - Moderate Drought
- D2 - Severe Drought

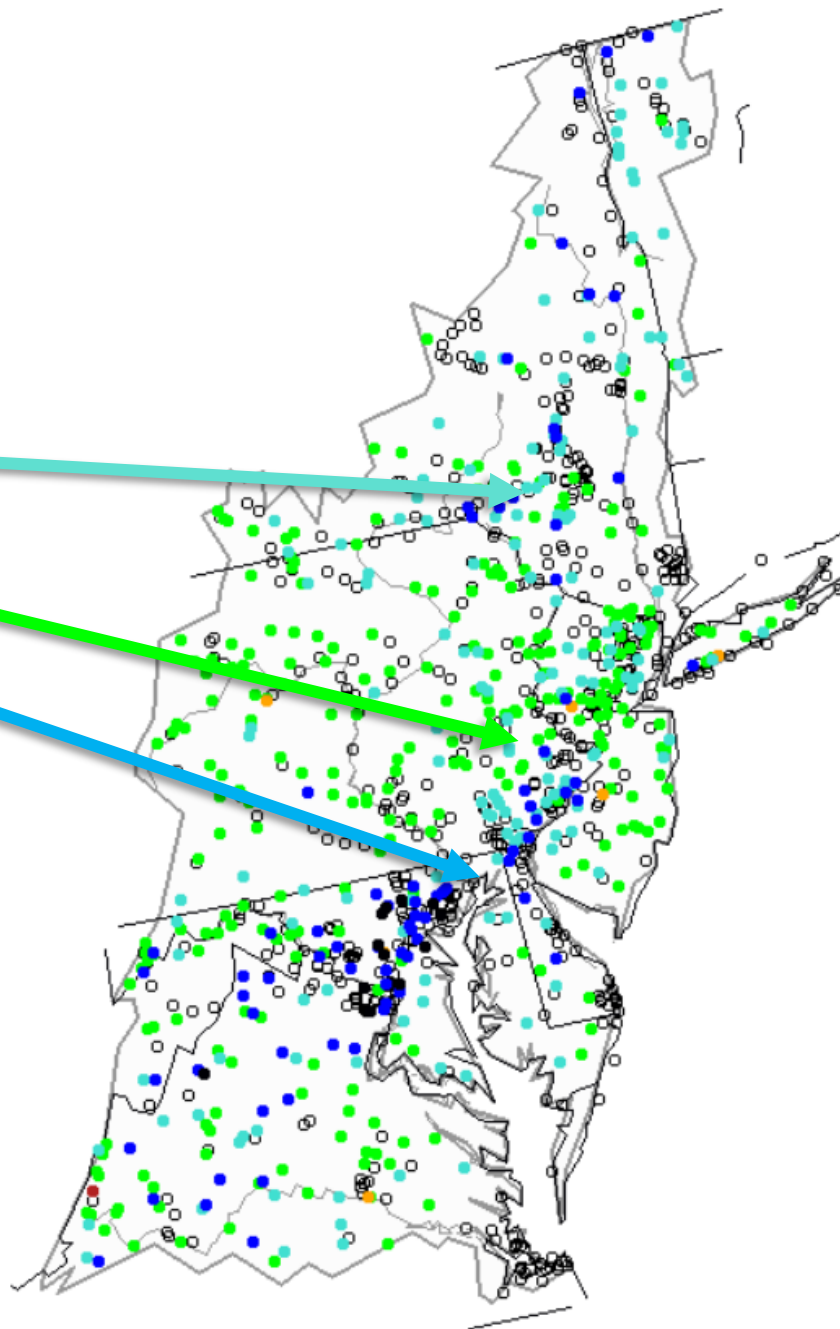
Data from NOAA

Streamflow

Upper Basin: Above Normal
Central Basin: Normal/ Above Normal
Lower Basin: Above Normal

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

Map last updated:
8:31ET Tuesday, February 13, 2024

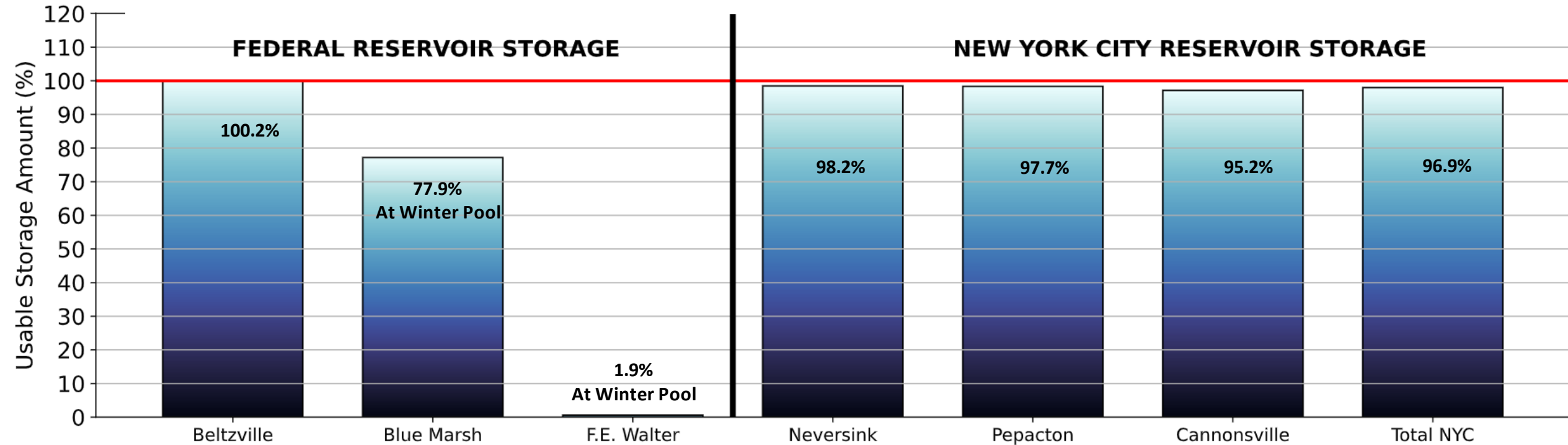


Reservoir Storage and Releases

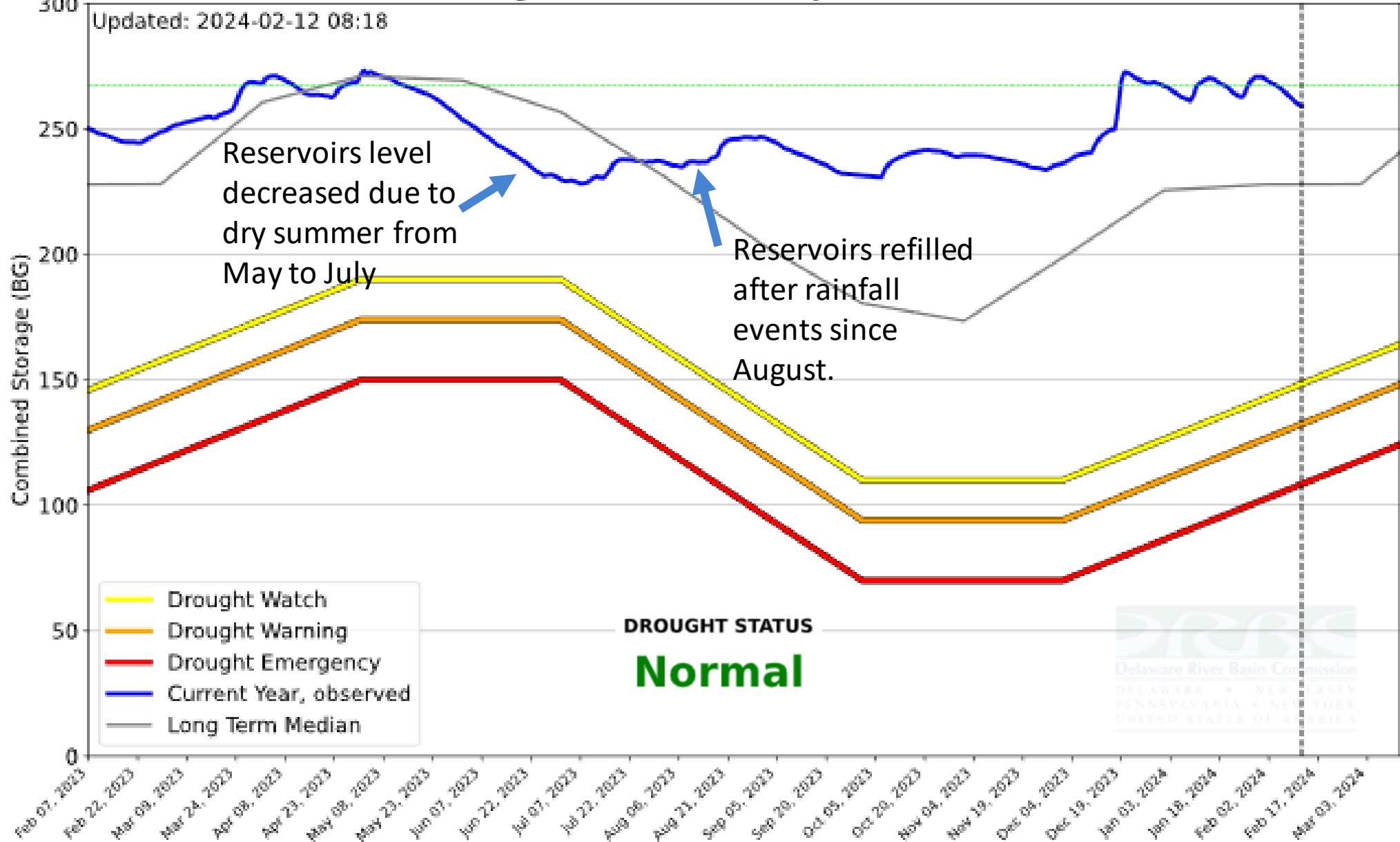


- * Thirteen major reservoirs in the basin's **drought management plan**
- * Two Flow Objectives
 - * Montague, NJ
 - * Releases from NYC Reservoirs
 - * Compensation for out-of-basin diversion of water
 - * Trenton, NJ
 - * Releases from DRBC Storage in USACE Reservoirs
 - * Repel salinity to protect water users

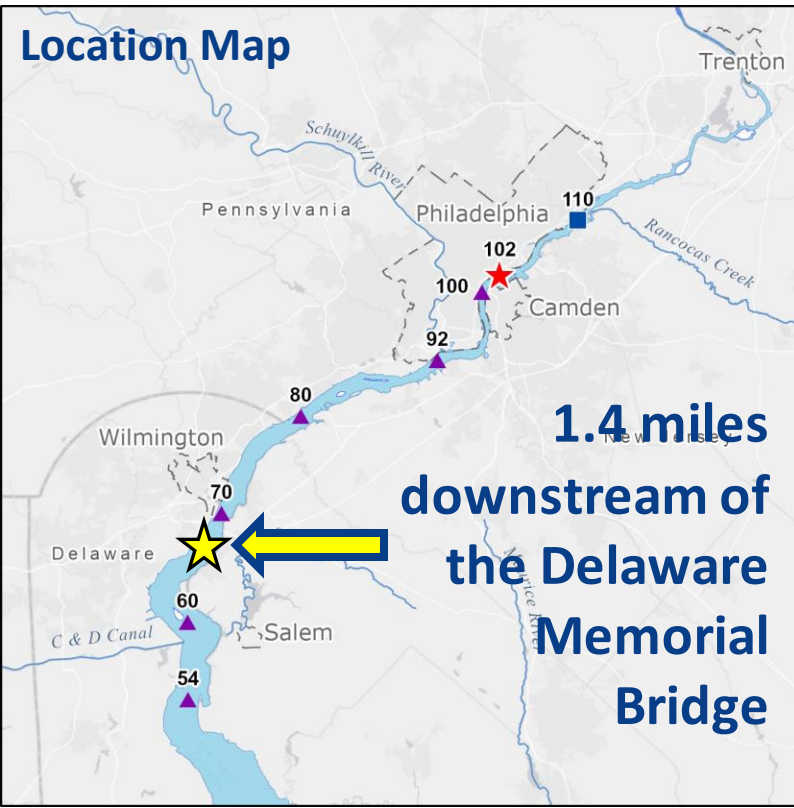
Basin Storage (2-12-2024)



Total Combined Storage (BG) of New York City Delaware River Basin Reservoirs



Usable Storage	Cannonsville	Pepacton	Neversink	Total	BG above drought watch = 110.7	BG above median = 31.2
BG	88.9	136.1	34.1	259.1	BG above drought warning = 126.7	BG above one year ago = 11.9
%	95.2	97.7	98.2	96.9	BG above drought = 150.7	

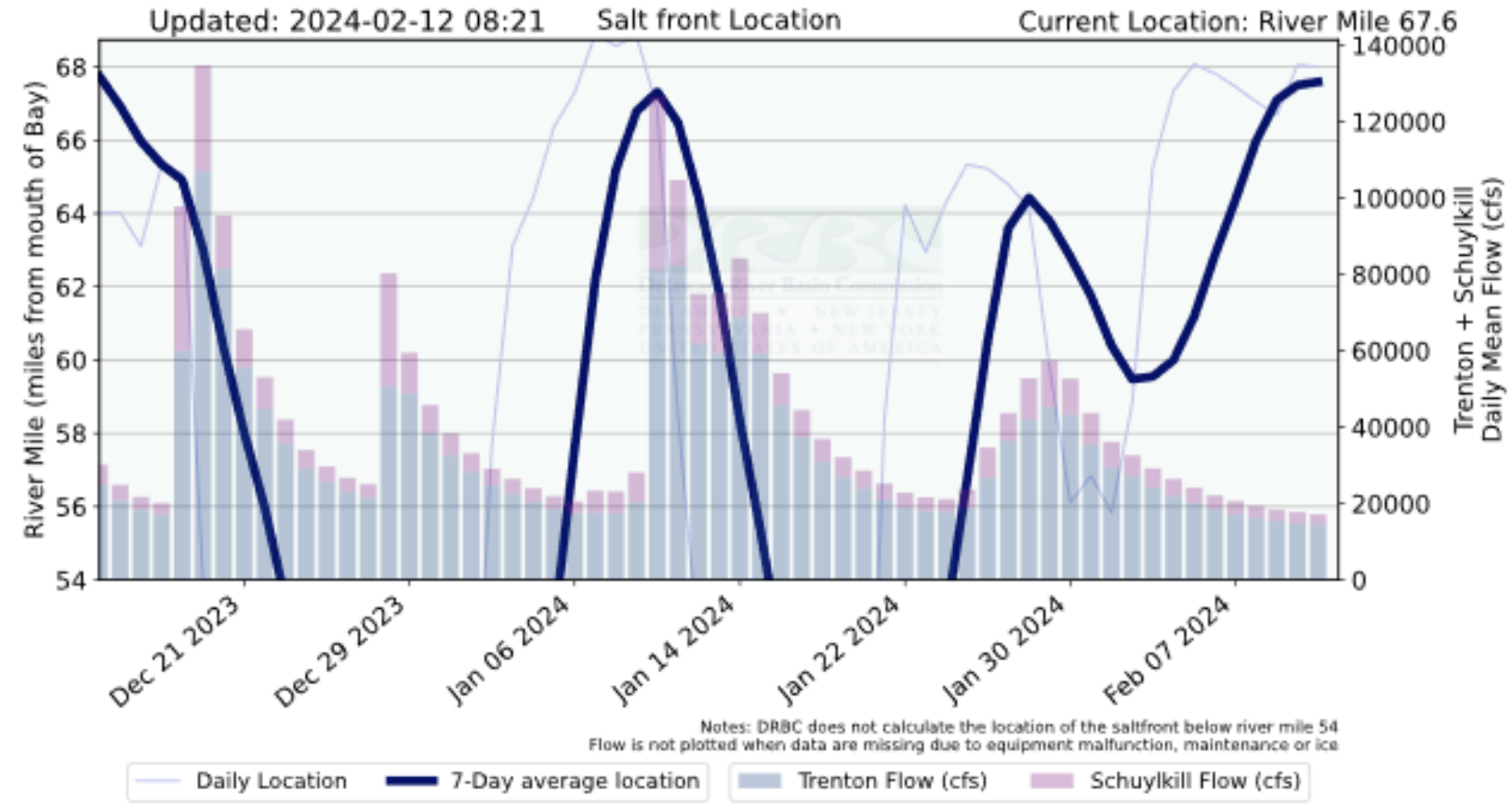


Salt Front (2/12/2024)

the Estuary Salinity Indicator

The salt front is the 7-Day Average Location of the 250 mg/L isochlor

The Flow Objective at Trenton was designed to repel salinity for the protection of drinking water treatment facilities and industrial intakes.

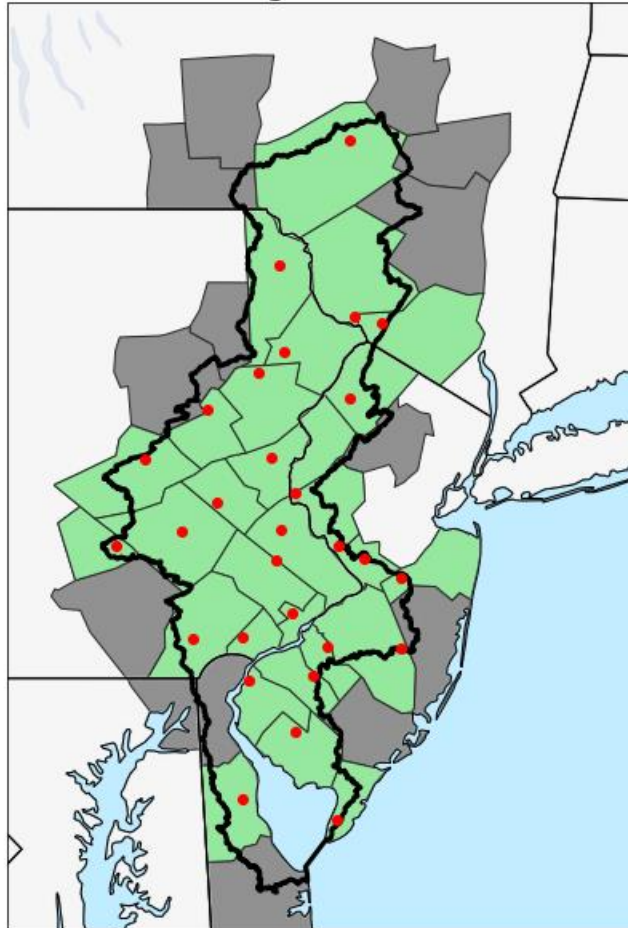


Current (2/9/2024): 67.6
February Median: 71

Updates to hydrologic conditions can be viewed daily on hydrosnap.drbc.net

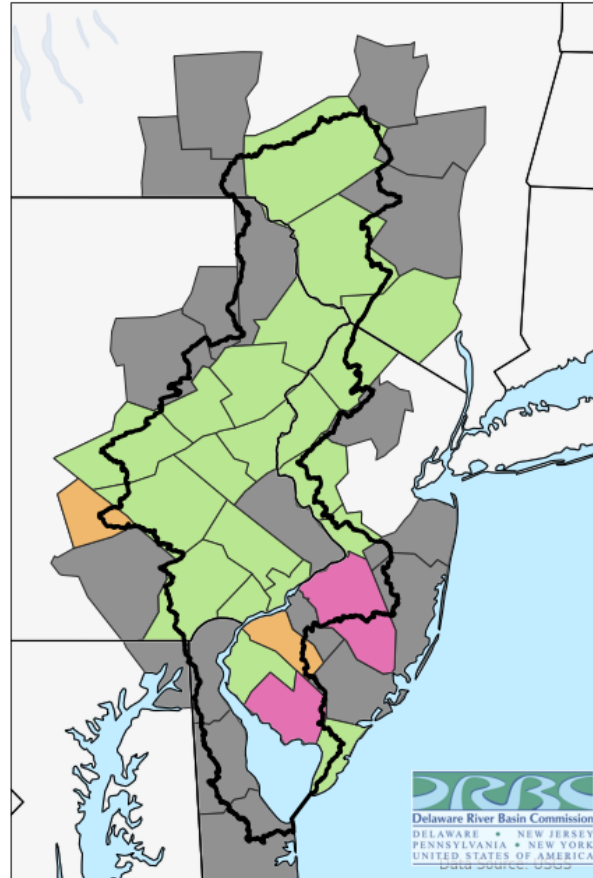
Groundwater Level Status

Location of groundwater wells



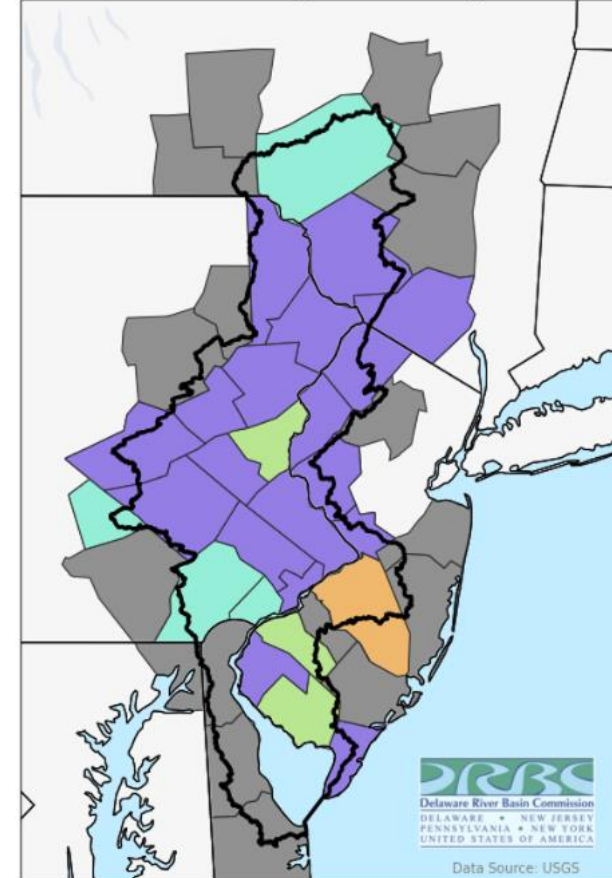
- Basin Boundary
- Well Location
- County contains well
- No well available within DRB

Groundwater Ranking on December 04, 2023



- Basin Boundary
- Much Above Normal
- Above Normal
- Normal
- Below Normal
- Much Below Normal
- Data unavailable

Groundwater Ranking on February 01, 2024



- Basin Boundary
- Much Above Normal
- Above Normal
- Normal
- Below Normal
- Much Below Normal
- Data unavailable

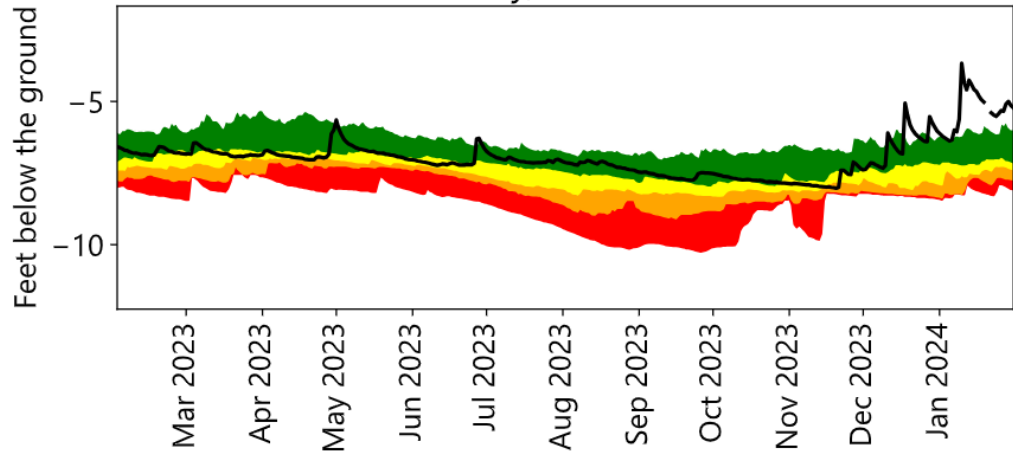
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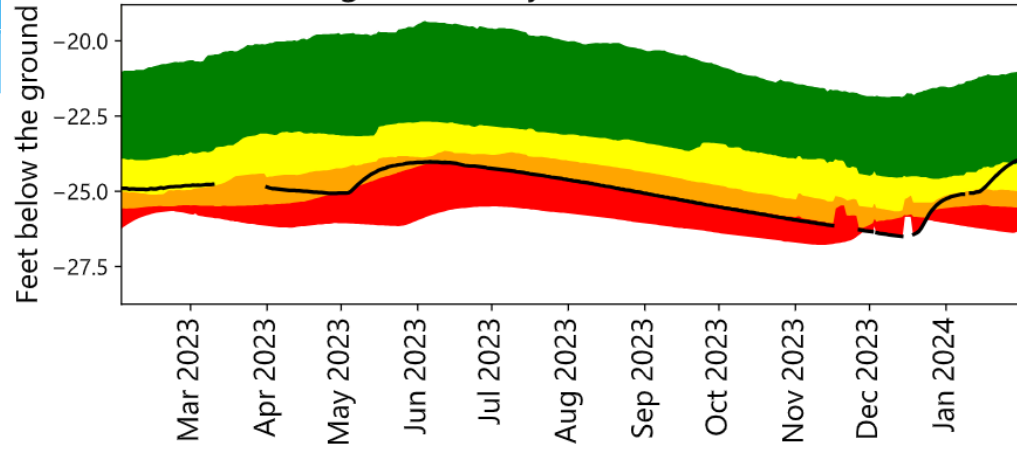
Data Source: USGS

Groundwater Levels (on 1/31/2024)

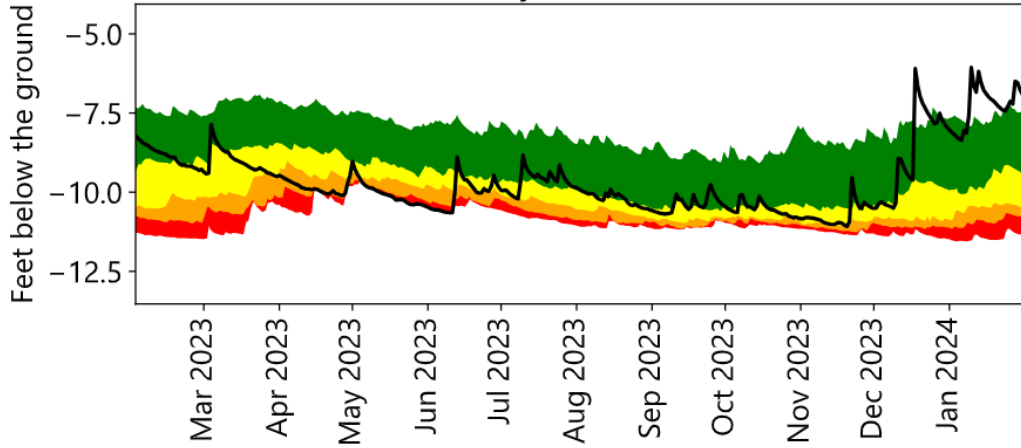
Delaware County, PA Observation Well



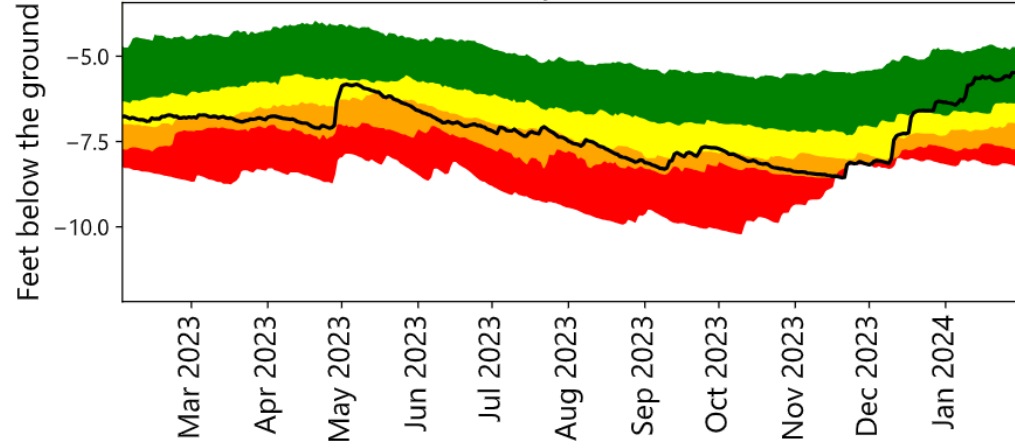
Burlington County, NJ Observation Well



Lebanon County, PA Observation Well

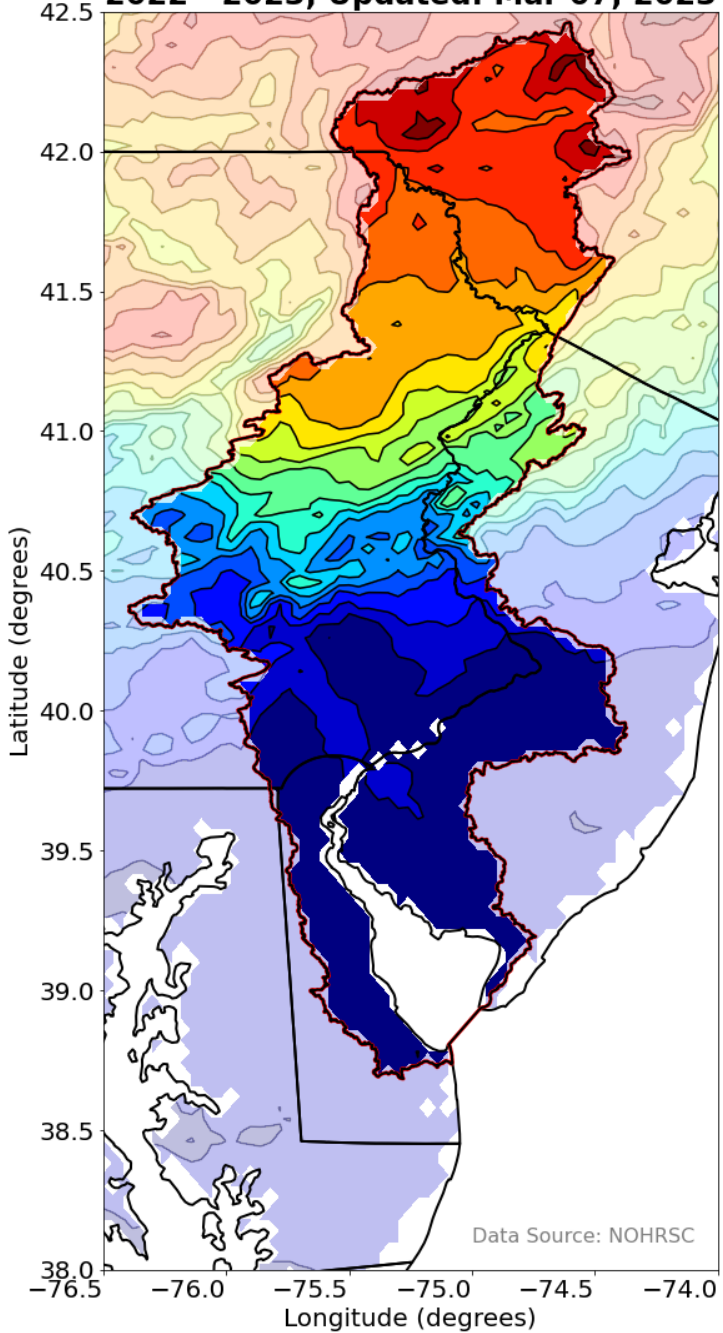


Cumberland County, NJ Observation Well

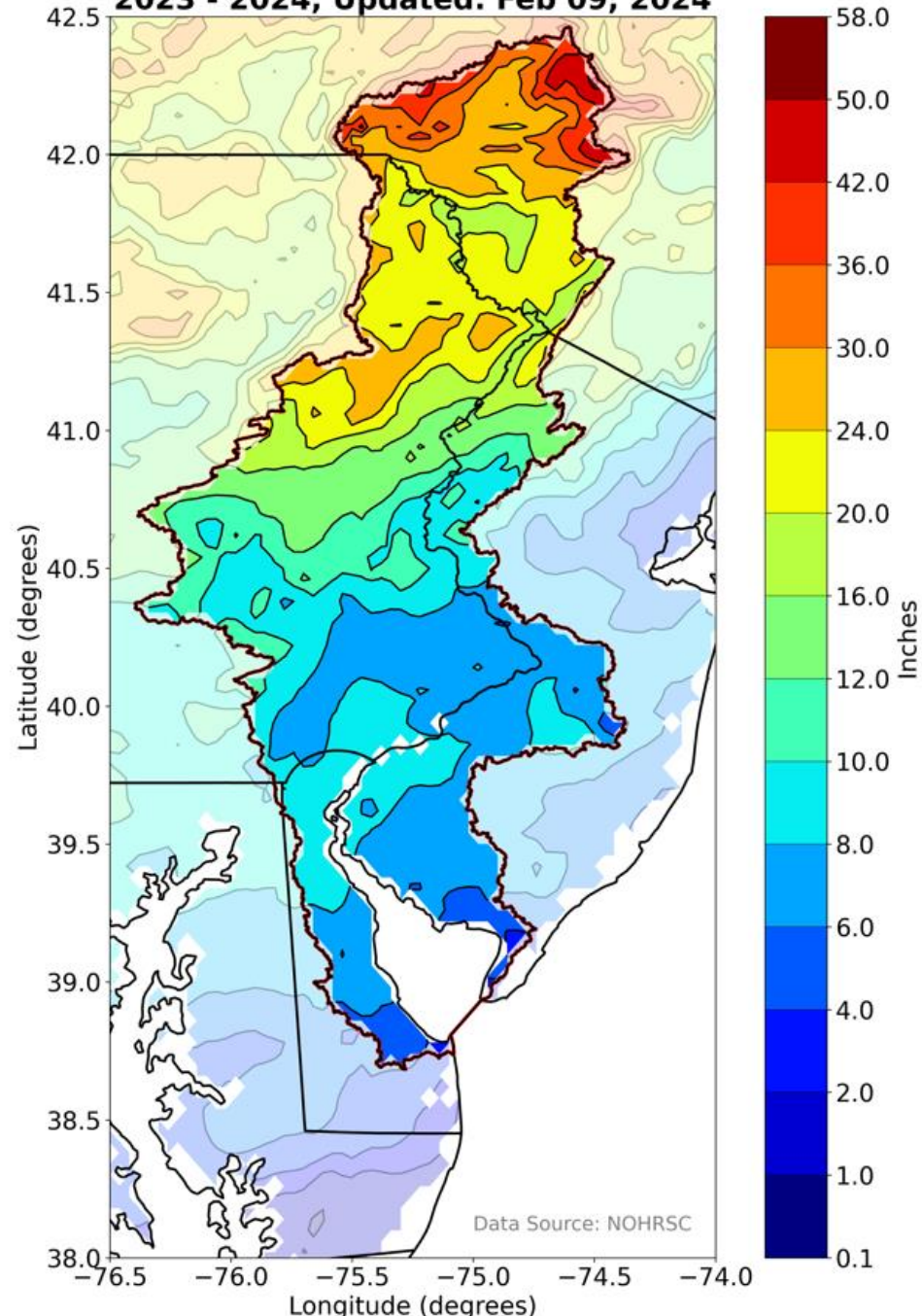


- Observed
- Drought Emergency
- Drought Warning
- Drought Watch
- Normal Conditions

**Seasonal Snowfall in the DRB
2022 - 2023, Updated: Mar 07, 2023**



**Seasonal Snowfall in the DRB
2023 - 2024, Updated: Feb 09, 2024**



Snowfall
9/30, 2023
through
2/9, 2024

compared
to last
winter

Data source: NOAA



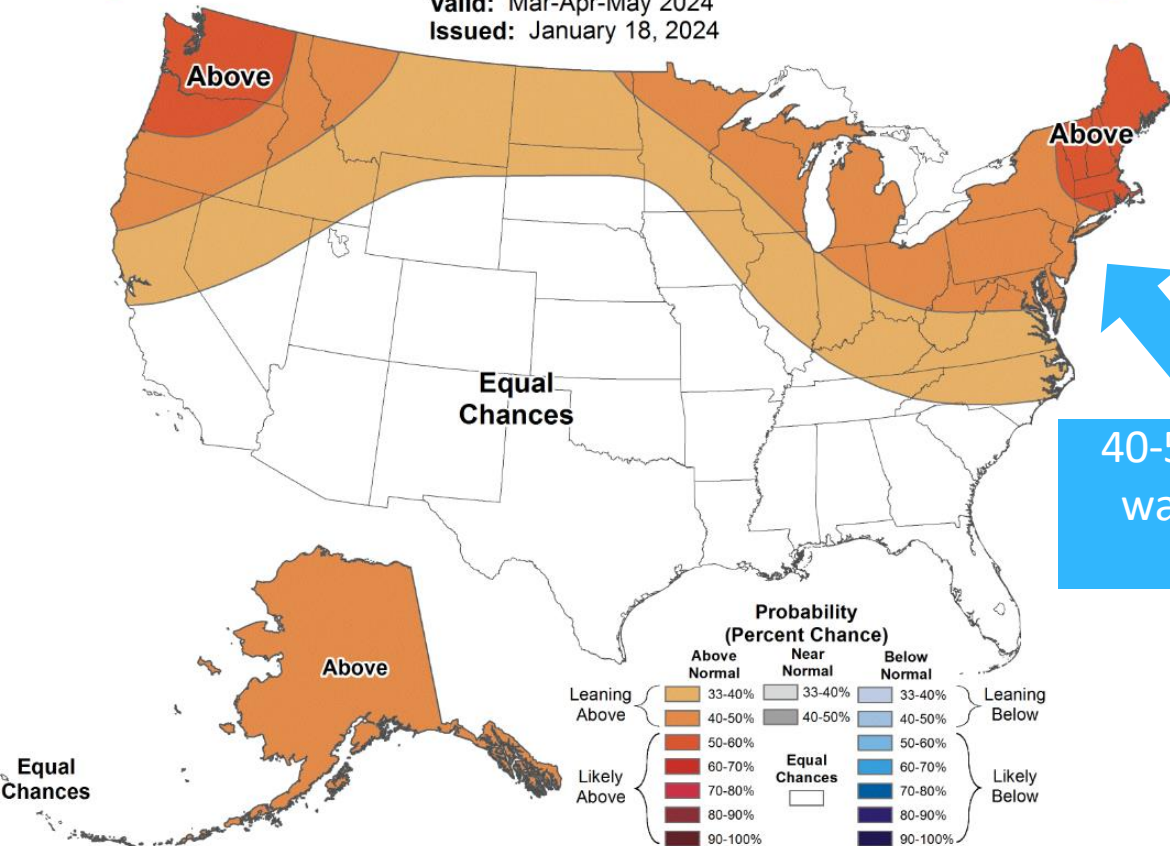
NOAA Seasonal Outlook



Seasonal Temperature Outlook



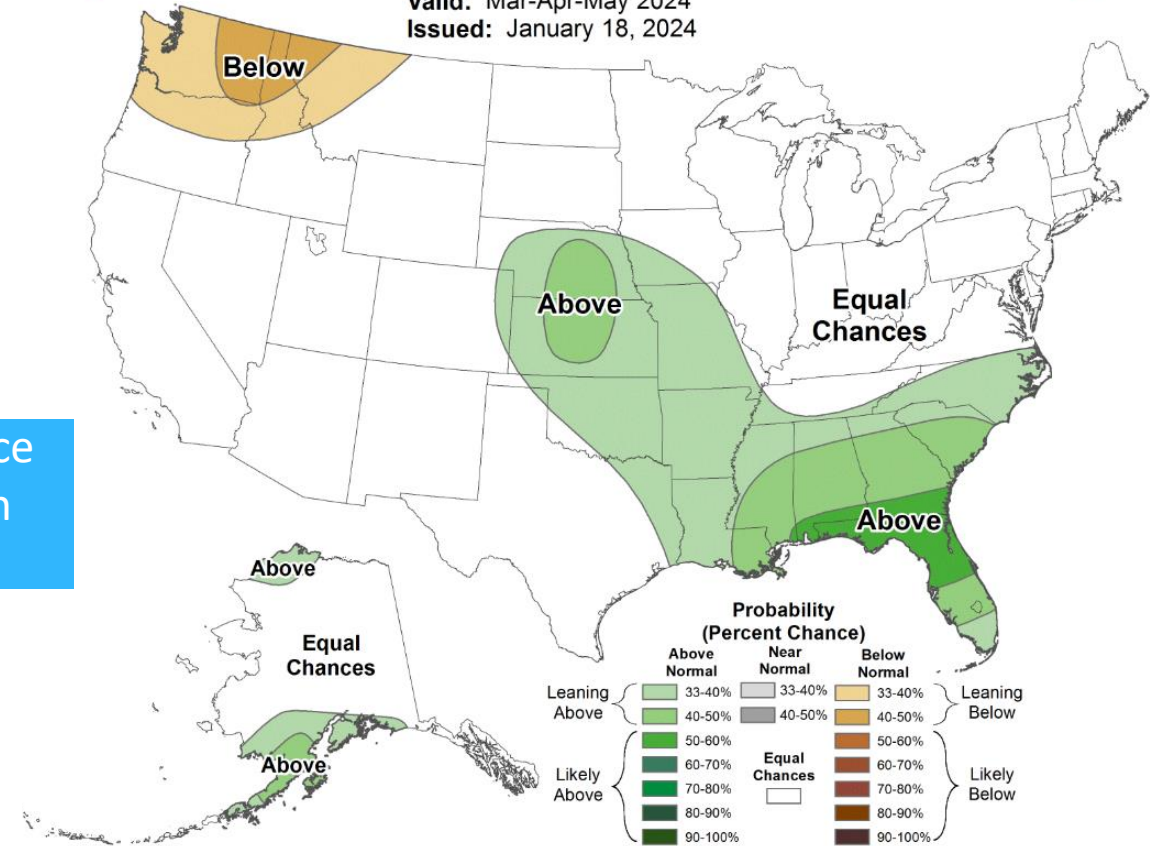
Valid: Mar-Apr-May 2024
Issued: January 18, 2024



Seasonal Precipitation Outlook



Valid: Mar-Apr-May 2024
Issued: January 18, 2024



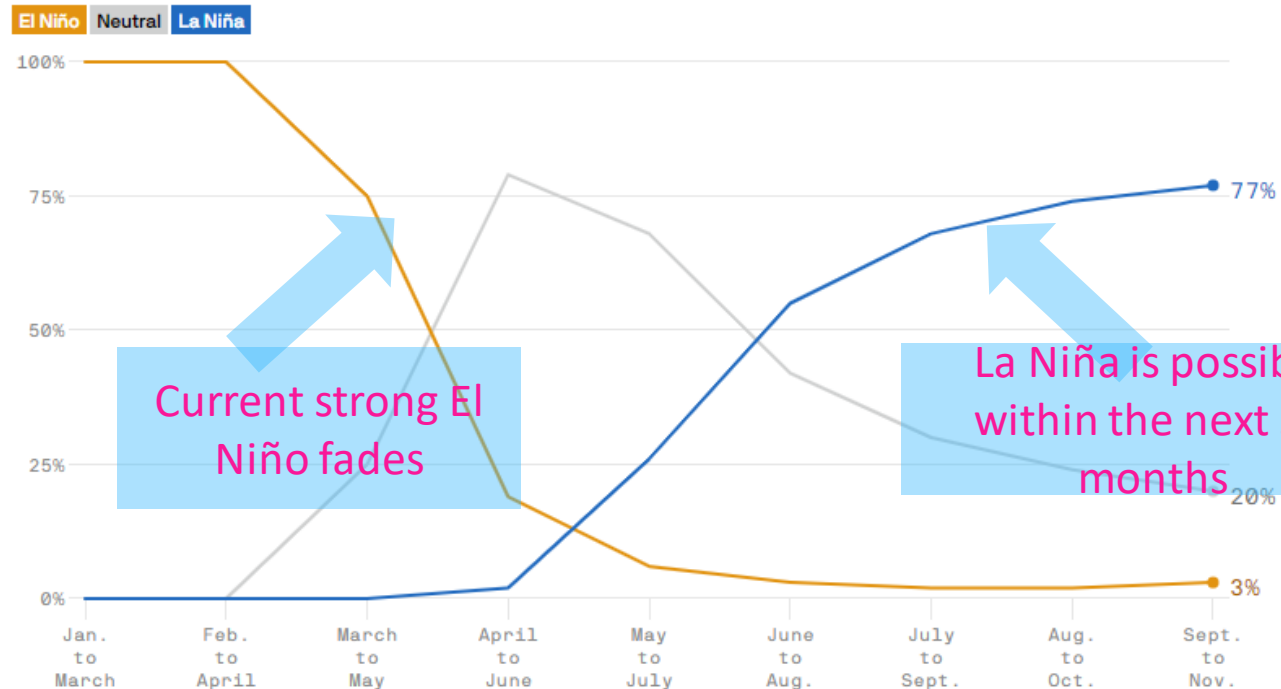
Probabilities for March, April and May 2024

Other Outlooks

NOAA issued a La Niña watch on Thursday 2/8/2024

Probability of El Niño or La Niña

Rolling three-month averages; January to November 2024; Forecast as of February 2024



Data: NOAA; Chart: Erin Davis / Axios Visuals

The National Oceanic and Atmospheric Administration (NOAA) issued a La Niña watch on Thursday morning, indicating that the [current strong El Niño](#) may be headed for the exits.

- Going back to 1950, over half of the El Niño events were followed shortly thereafter by a transition to La Niña (after a brief period of time in ENSO-Neutral). So, it would not be at all uncommon to see this sort of potential outcome this year.
- Potential busy hurricane season by the September through November
- Tend to favor drought for the lower 48 states, including southwest and Texas.
- 2023 became the hottest year on record associated with a strong El Niño. La Niña tends to cool global average temperatures.

Wishing you and yours a safe
and happy dragon year!

Thank you!

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lucky-zodiac-signs-for-
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