Hydrologic Conditions

Sara Sayed
Water Resource Scientist
Water Resource Operations

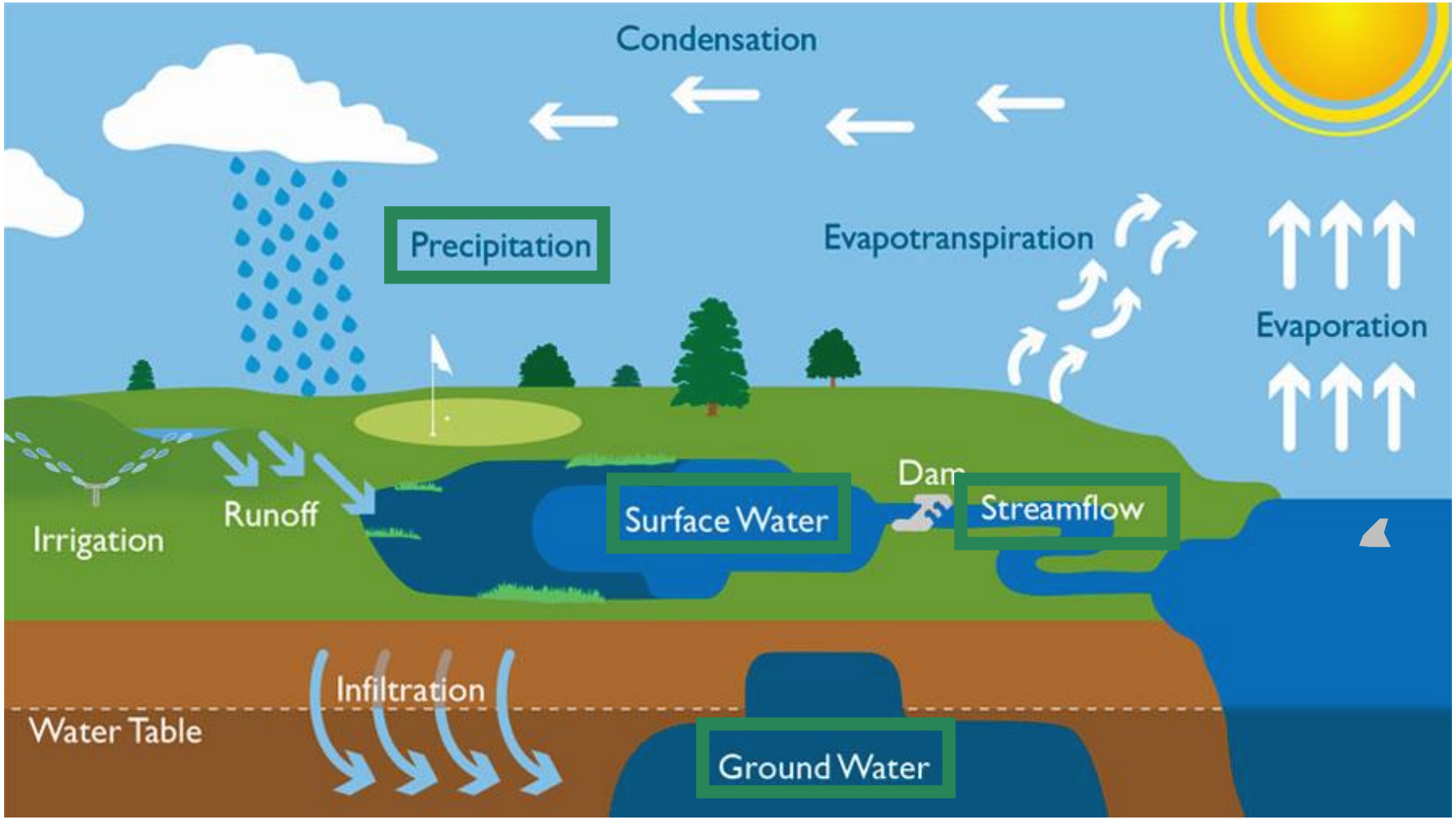
June 26th, 2024

Water Management Advisory Committee Meeting

Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA

The Hydrologic Cycle

Water moves around the earth through air, soil, and over land.

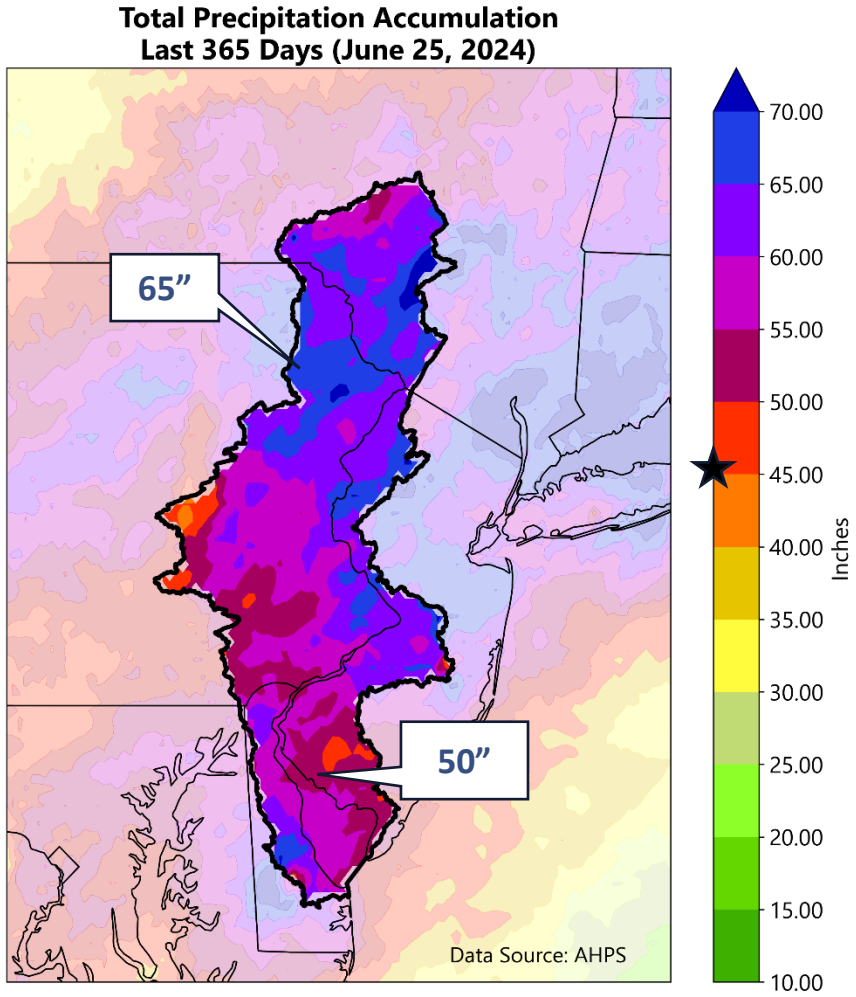


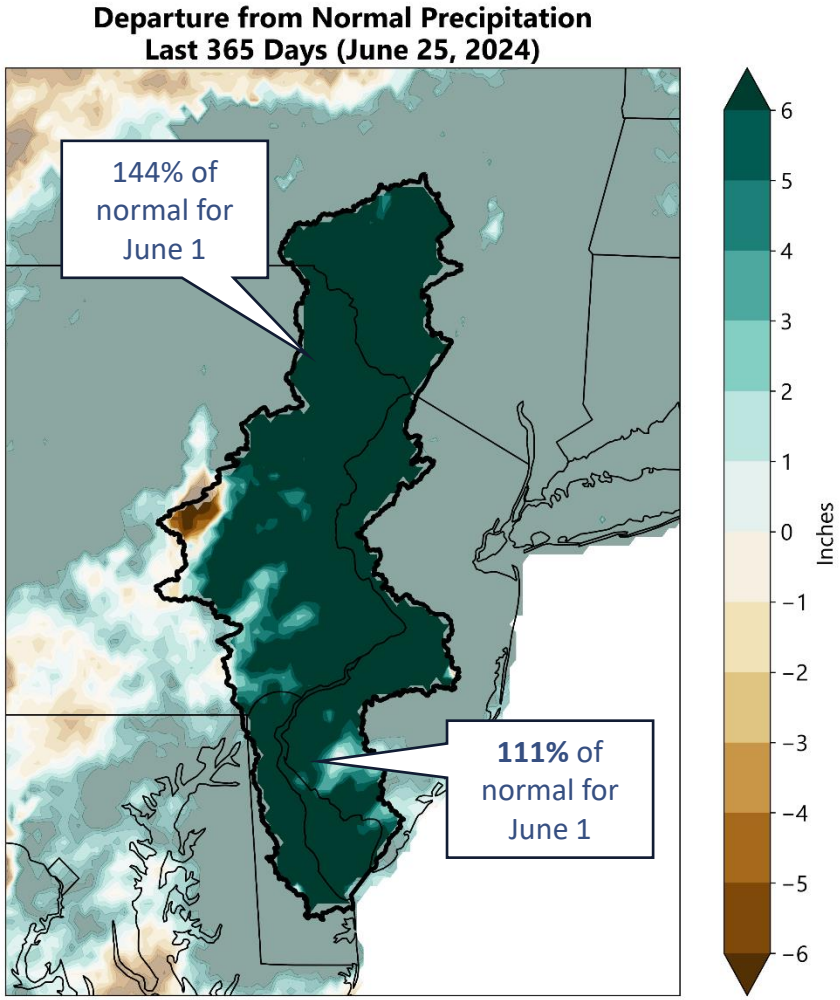
Graphic courtesy of Pike County Soil Conservation District

Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA

Precipitation since January 1

The basin has received much more than normal rainfall so far this year.

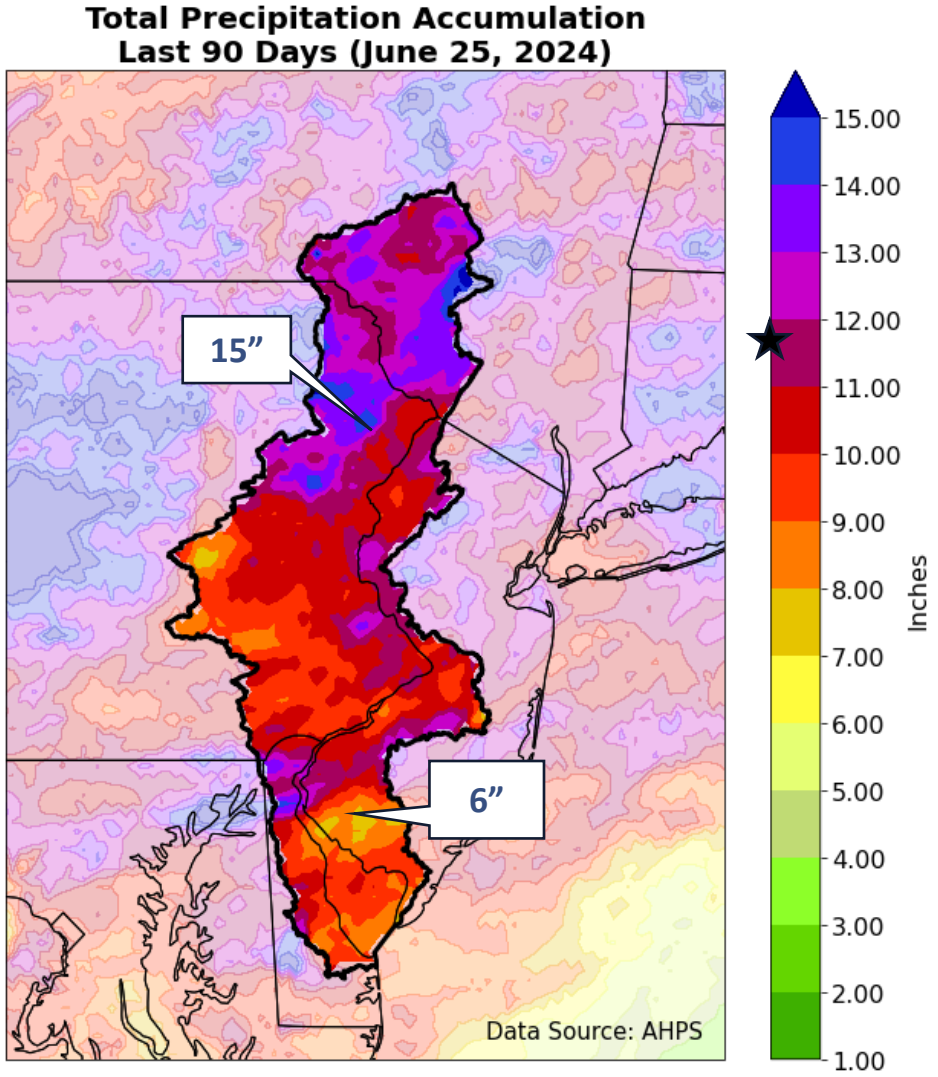


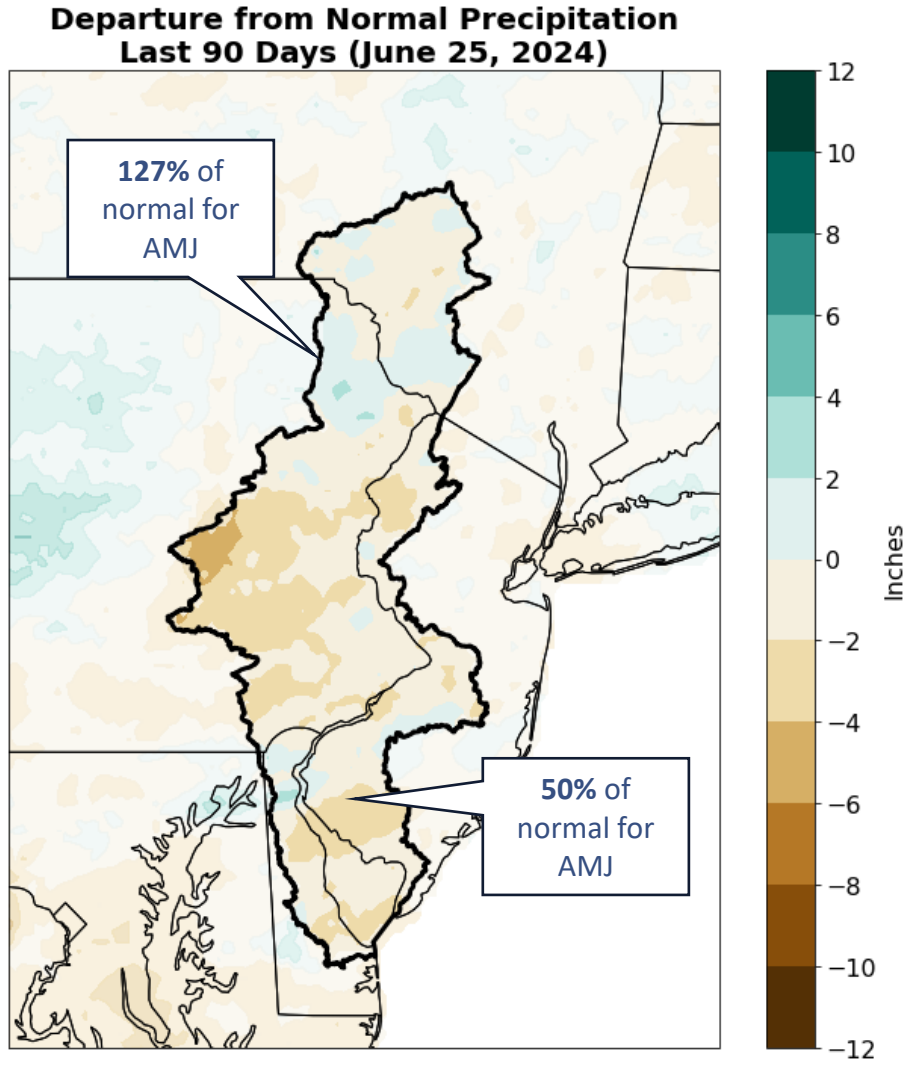


Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA

Precipitation – 90 days

The past three-month period is not as relatively wet as the past five months.

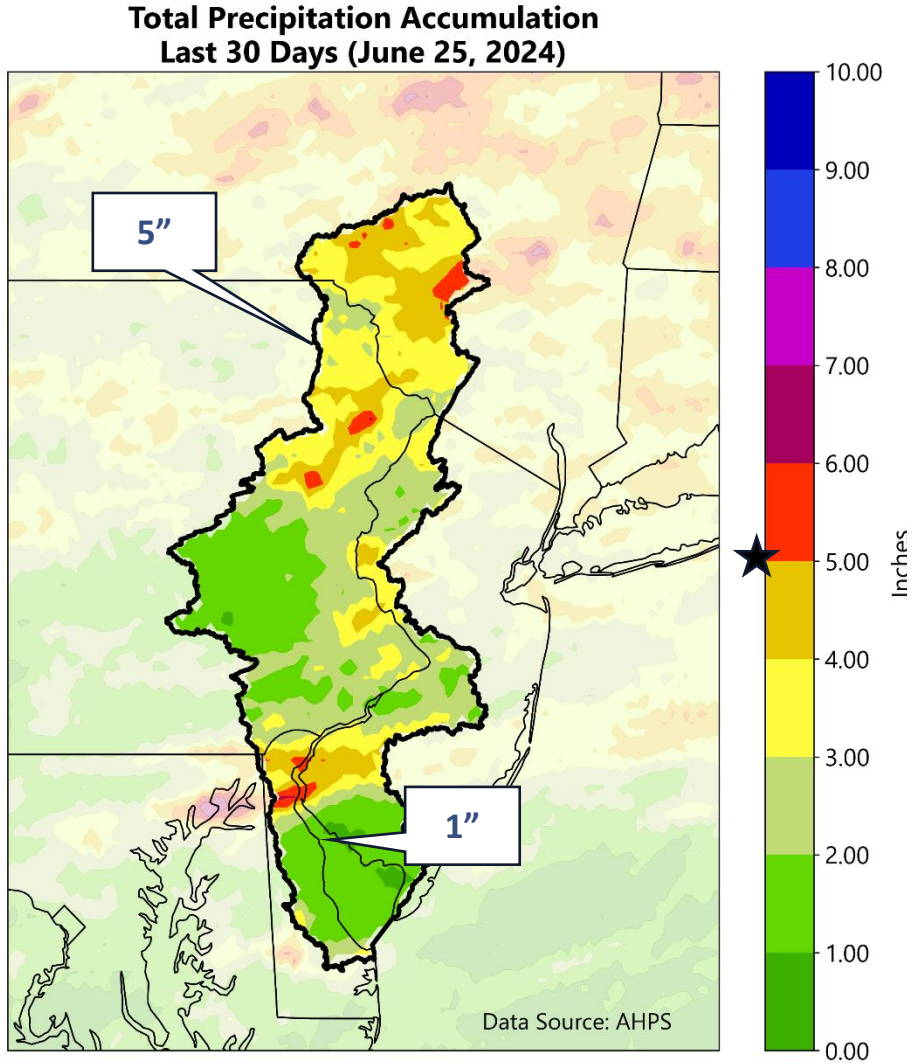


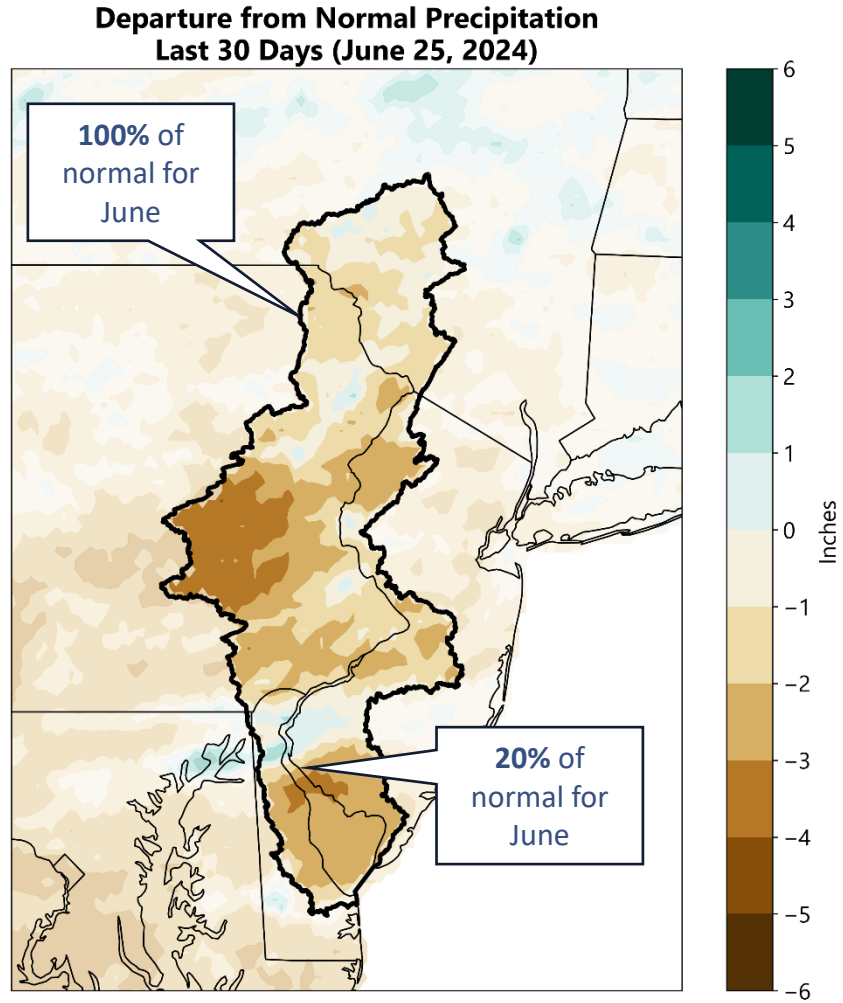


Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA

Precipitation – past 30 days

June was relatively drier in the lower basin than the past few months.



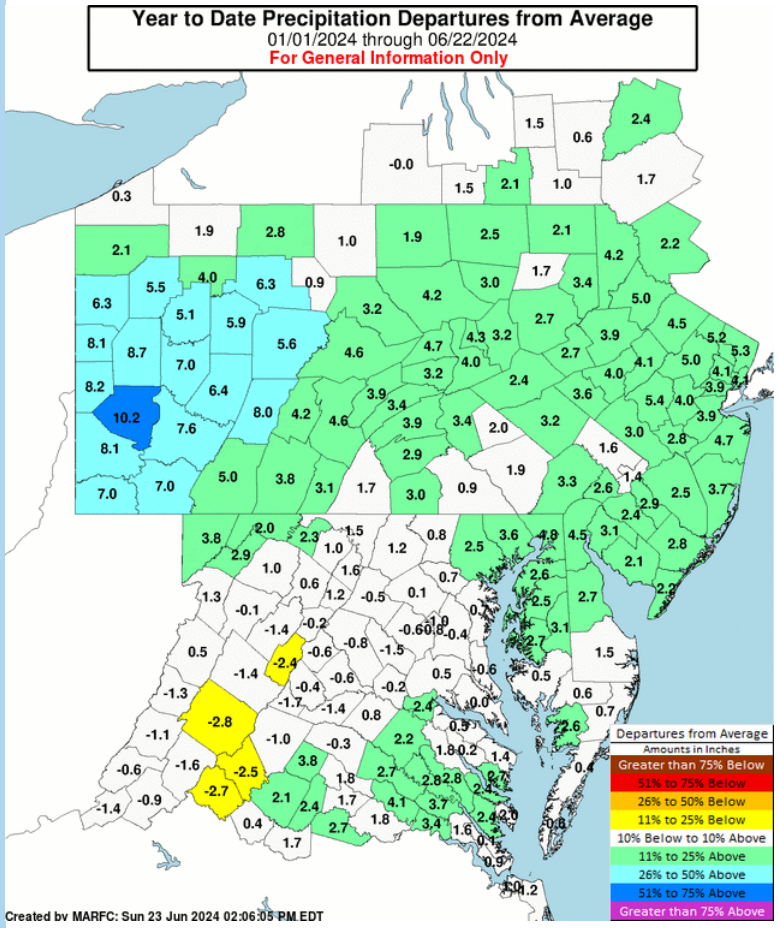


Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA

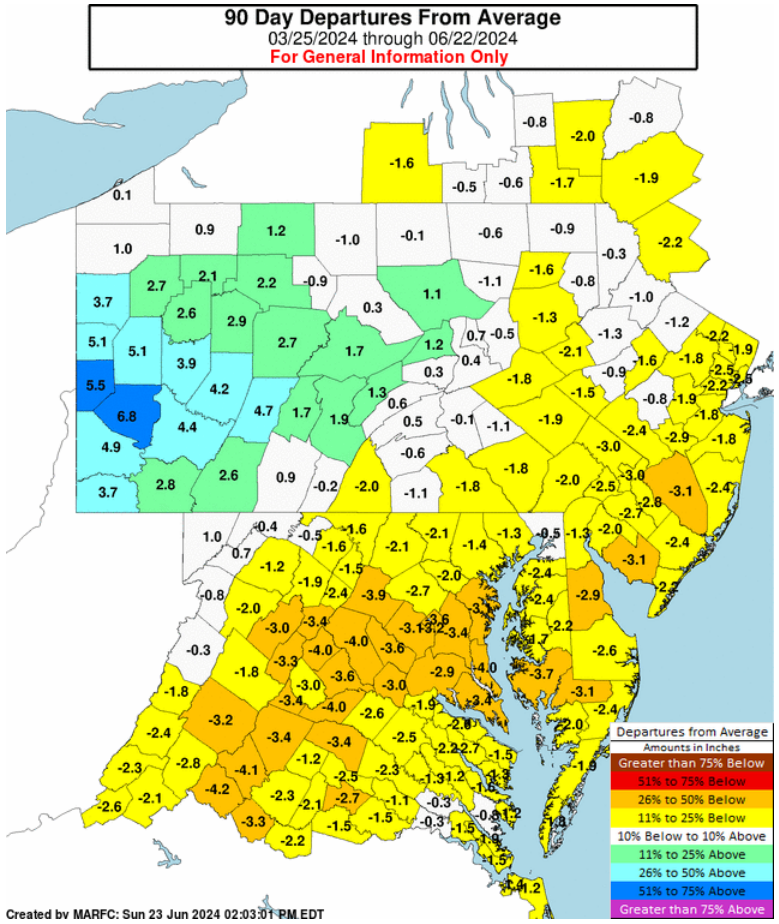
Precipitation Departures

Conditions have become relatively drier over the past quarter and month.

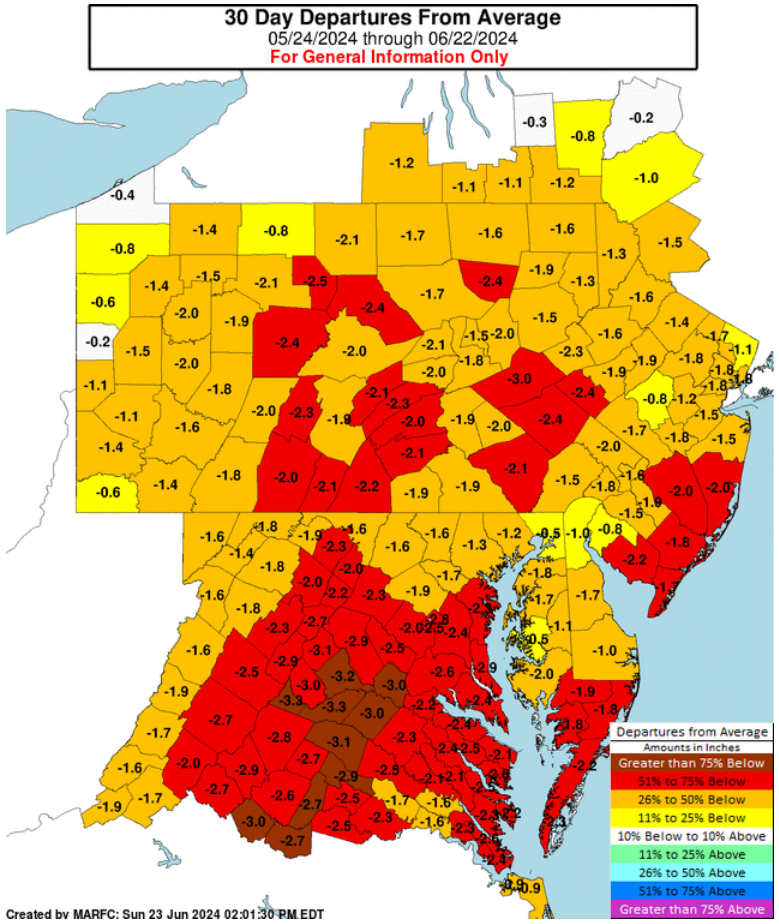
Year-to-date



90-day



30-day



Streamflow

Smaller streams are impacted more quickly than larger rivers by longer periods without rain.

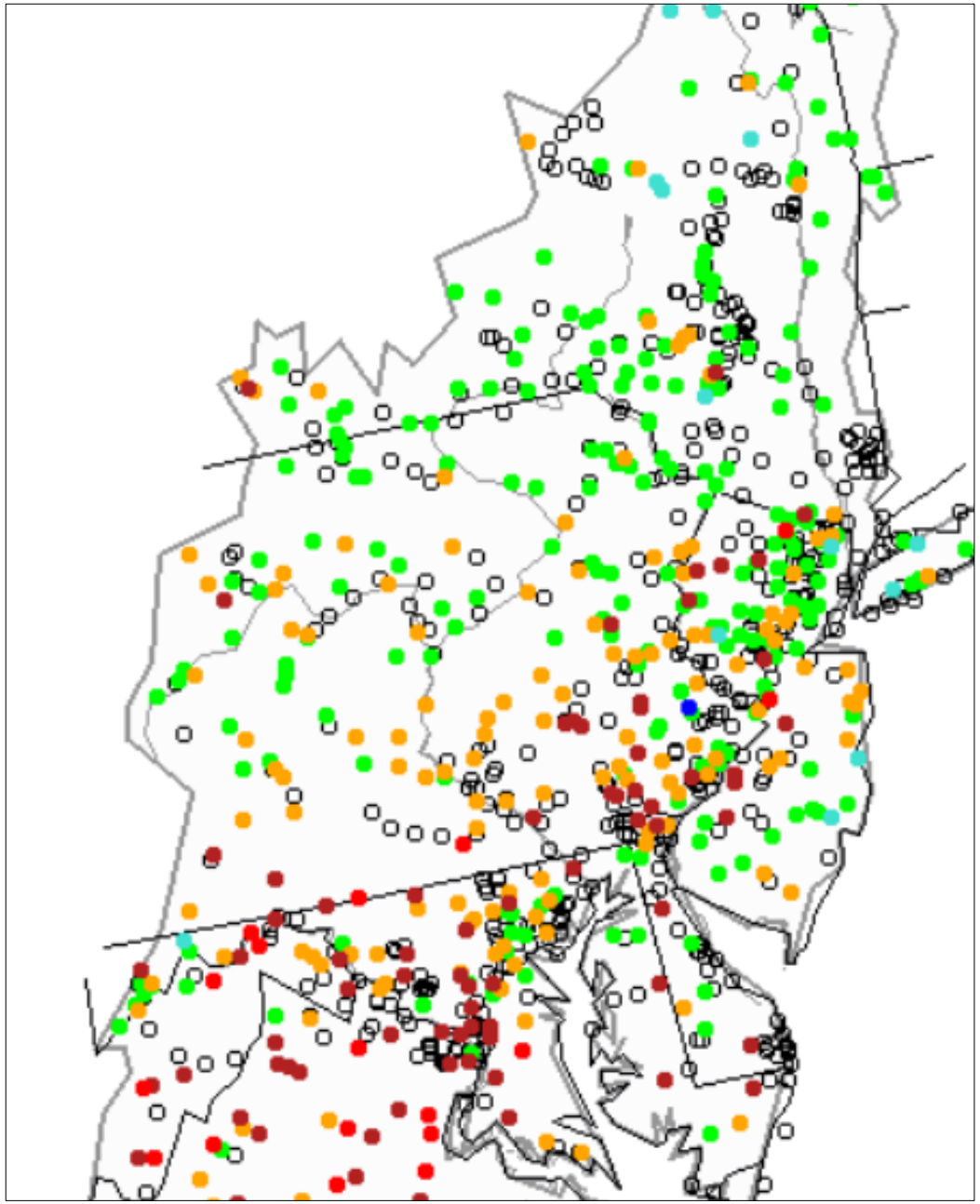
Flow Conditions:

Upper Basin: Normal

Central Basin: Normal/Below Normal

Lower Basin: Normal/Below 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		



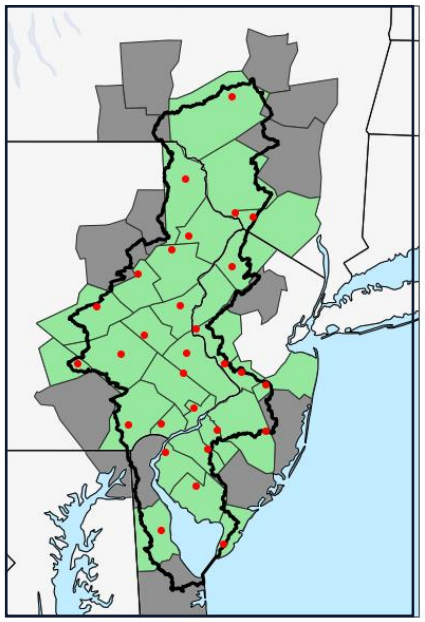
Map last updated:
8:00 am, June 26, 2024

Data Source: USGS

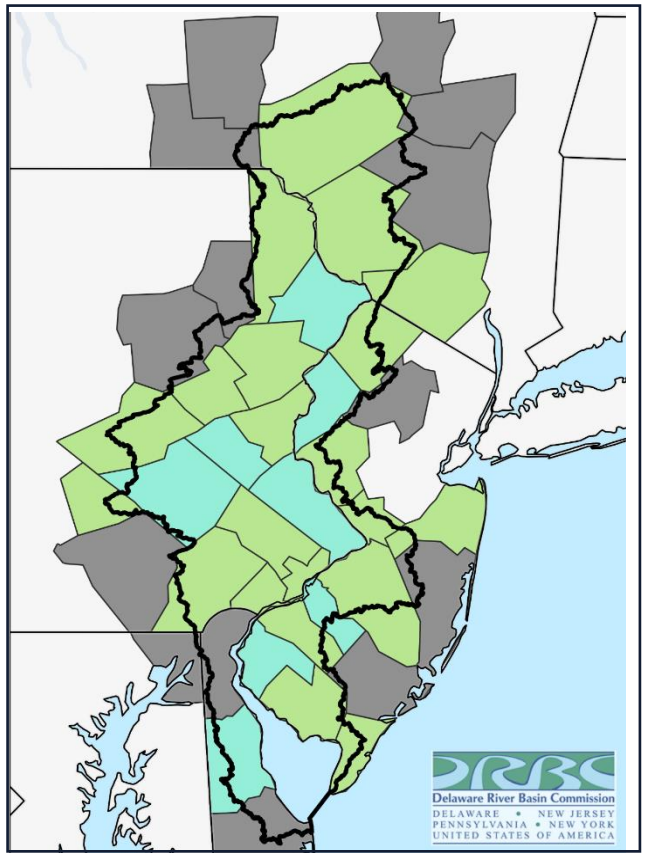
Groundwater Levels

Groundwater levels improved over the spring with higher rainfall.

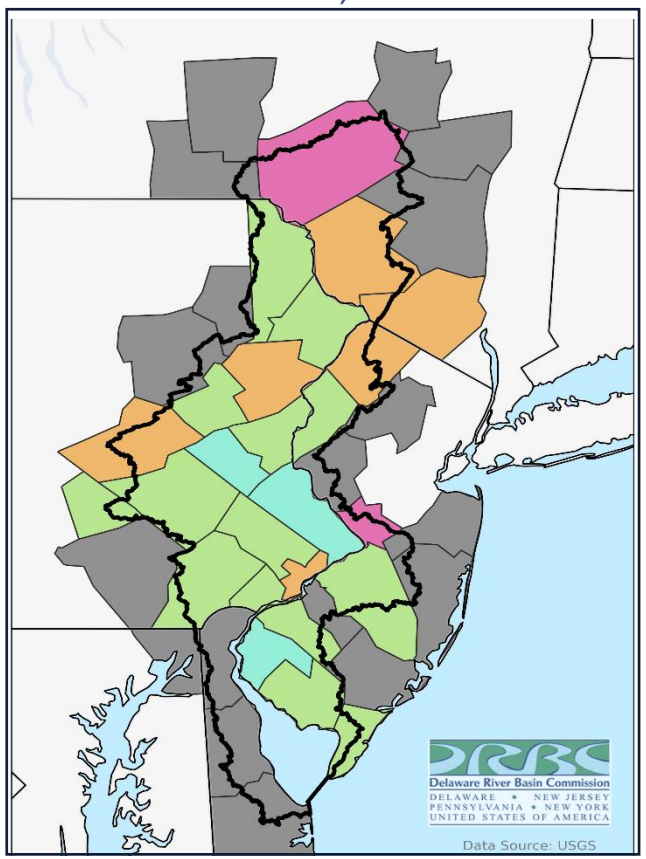
Reference Wells



March 1, 2024



June 25, 2024

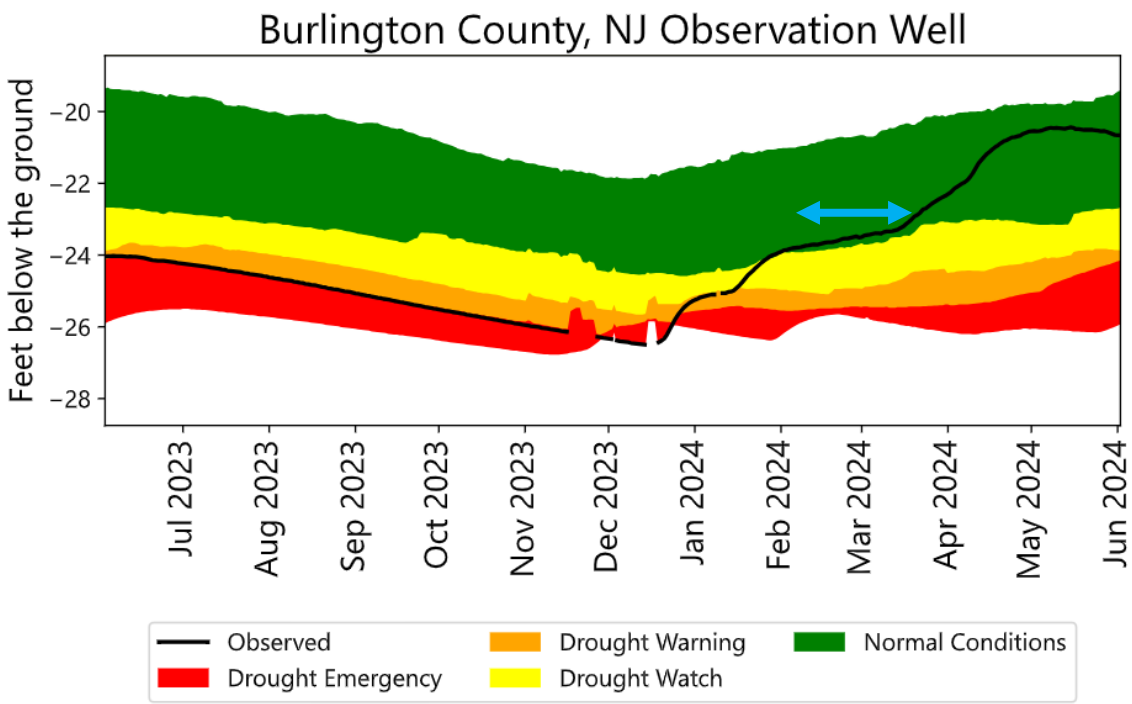


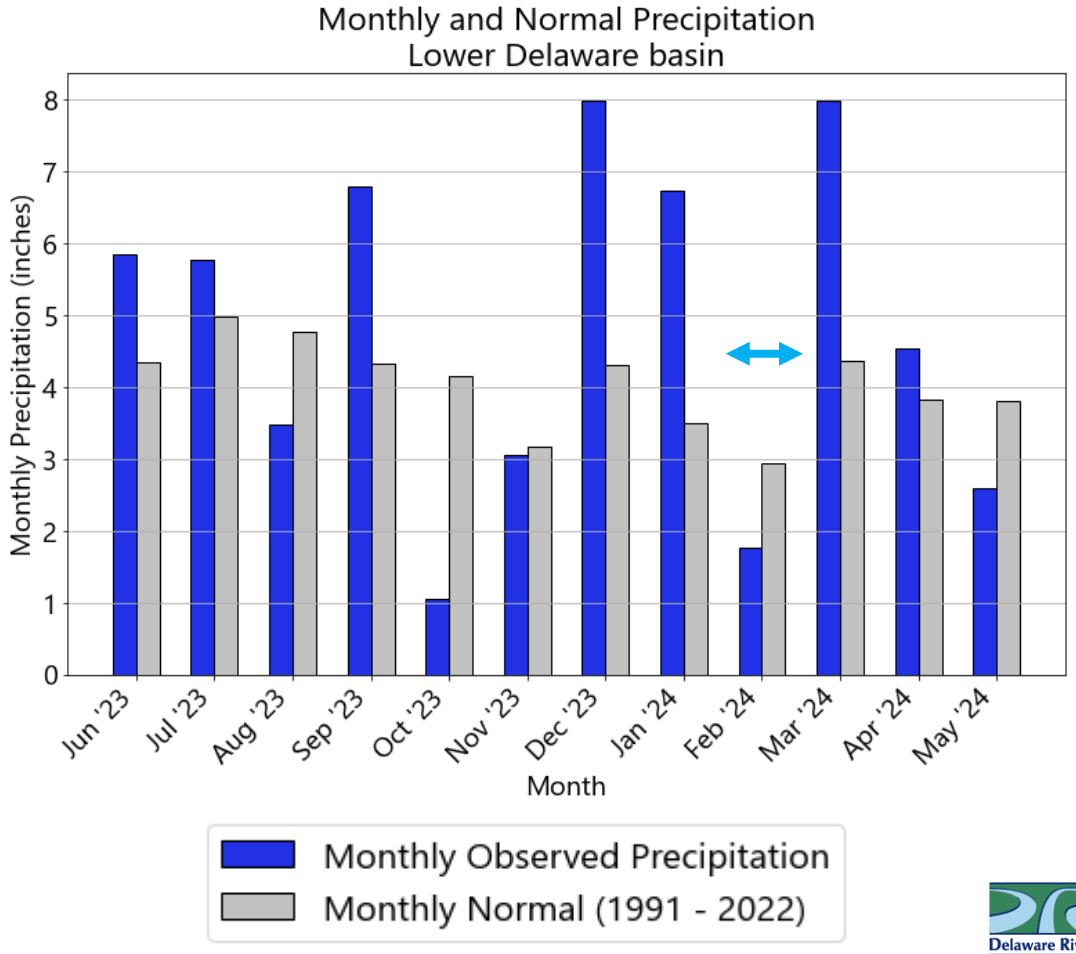
Basin Boundary
Much Above Normal
Above Normal
Normal
Below Normal
Much Below Normal
Data unavailable

Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA

Groundwater Levels

Groundwater levels recovered during and after high rainfall months.

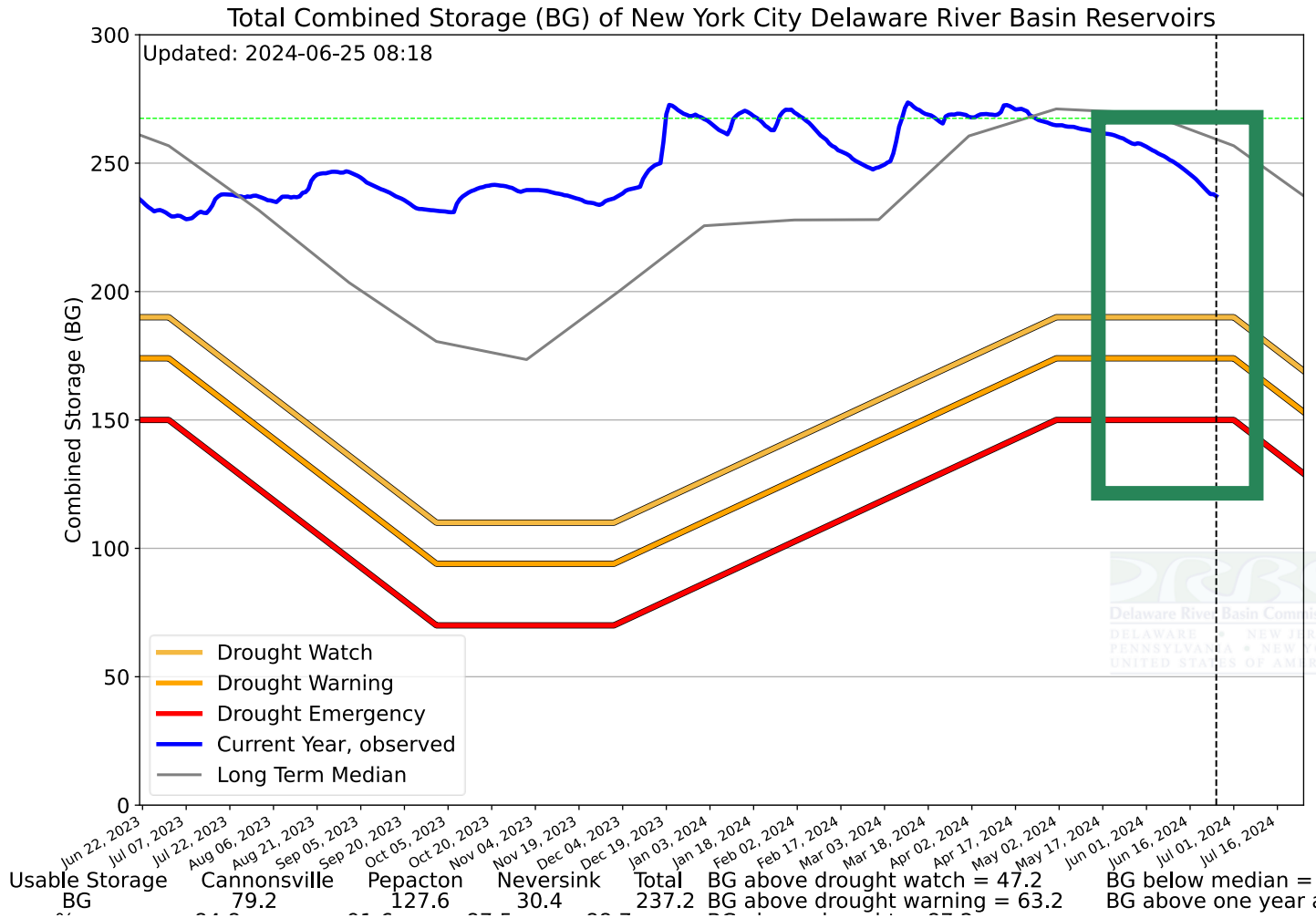




Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA

New York City Reservoir Storage

Low rainfall and high diversions are reflected in the combined storage.



Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA

Delaware Aqueduct Repair (shutdown)

Operations will be in accordance with the **F**lexible **F**low **M**anagement **P**rogram.

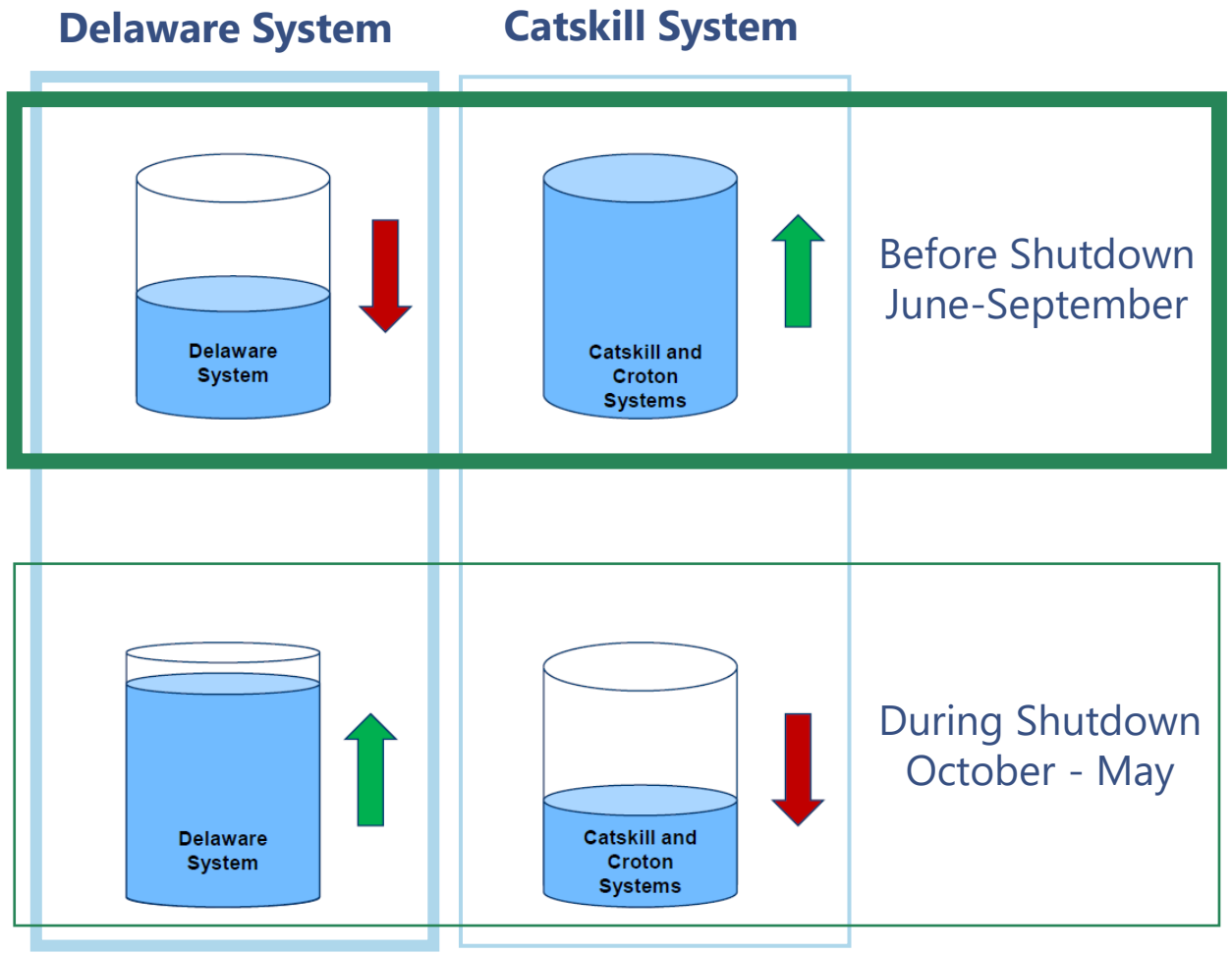
Shutdown is happening.

FFMP provisions are unaffected.

Inflow forecasts inform operations.

Release rates selected based on current AND predicted storage.

FFMP limits the maximum diversion not when water is diverted.



Links to more information:
https://www.nj.gov/drbc/programs/flow/nyc-aqueduct-shutdown.html

Potential Impacts During Shutdown

Impacts are within the range of standard operations under the FFMP.

Drought Conditions are unlikely.

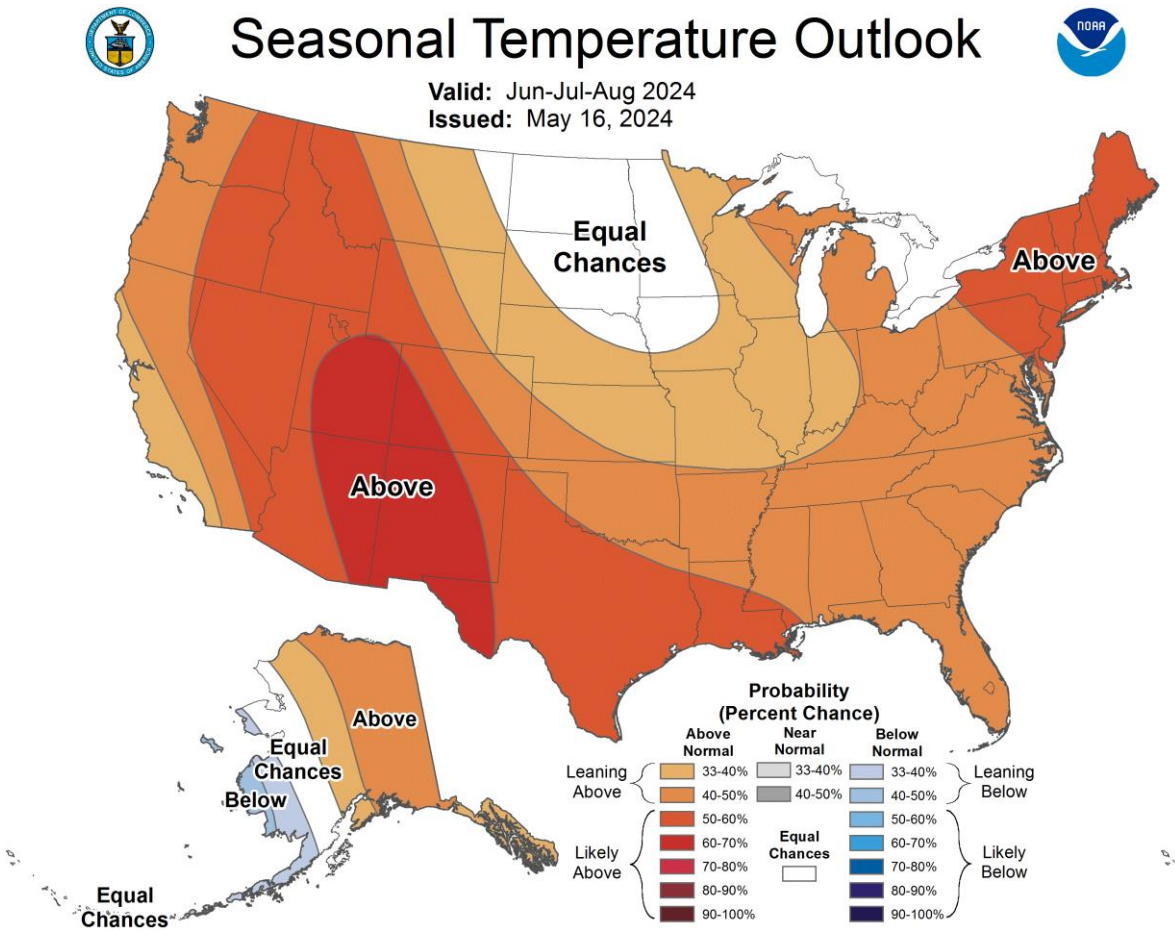
Releases are expected to be at the best levels for fishing and recreation

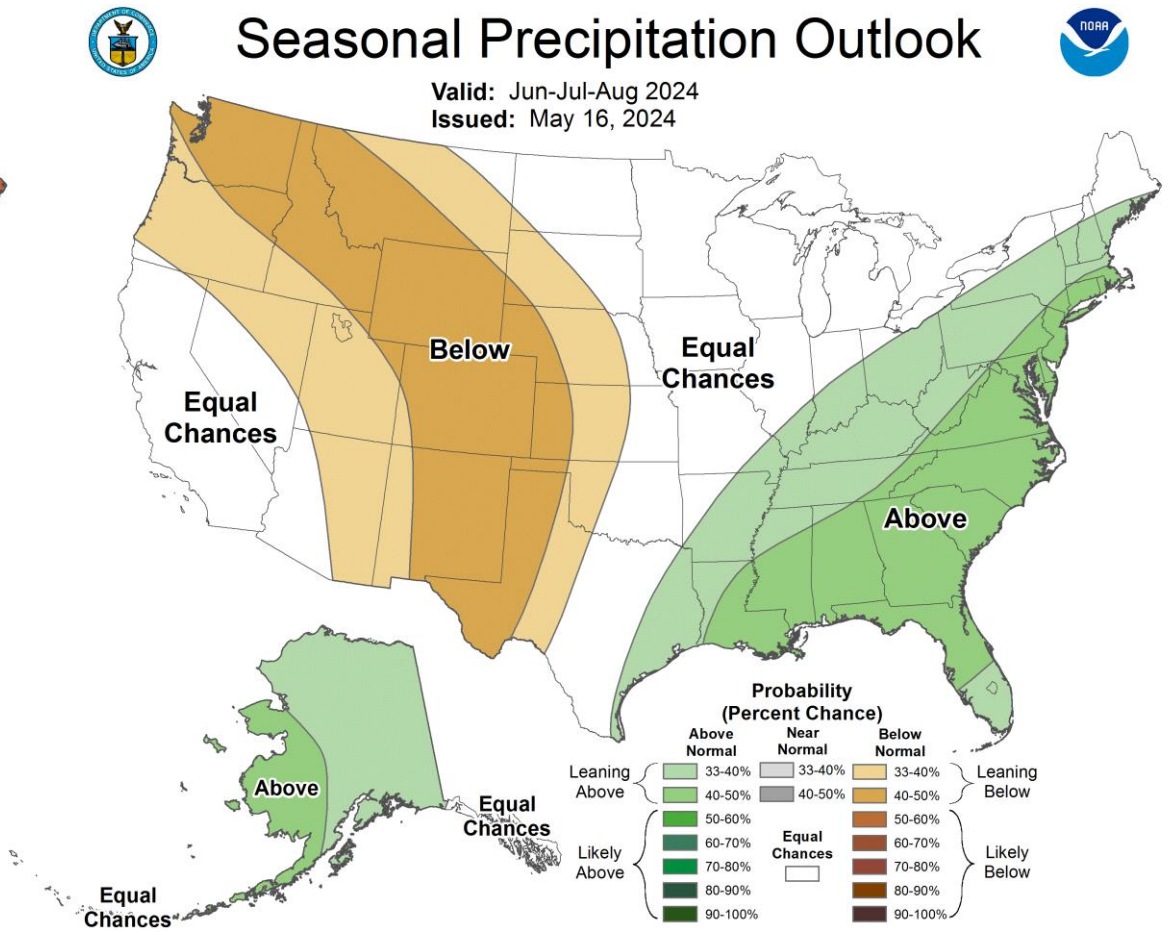
Risk of minor flooding has slightly increased and more likely after the hurricane season.

Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA

NOAA Seasonal Outlook

Above normal precipitation forecast is due to active hurricane season forecast.





Climate Prediction Center: https://www.cpc.ncep.noaa.gov/.

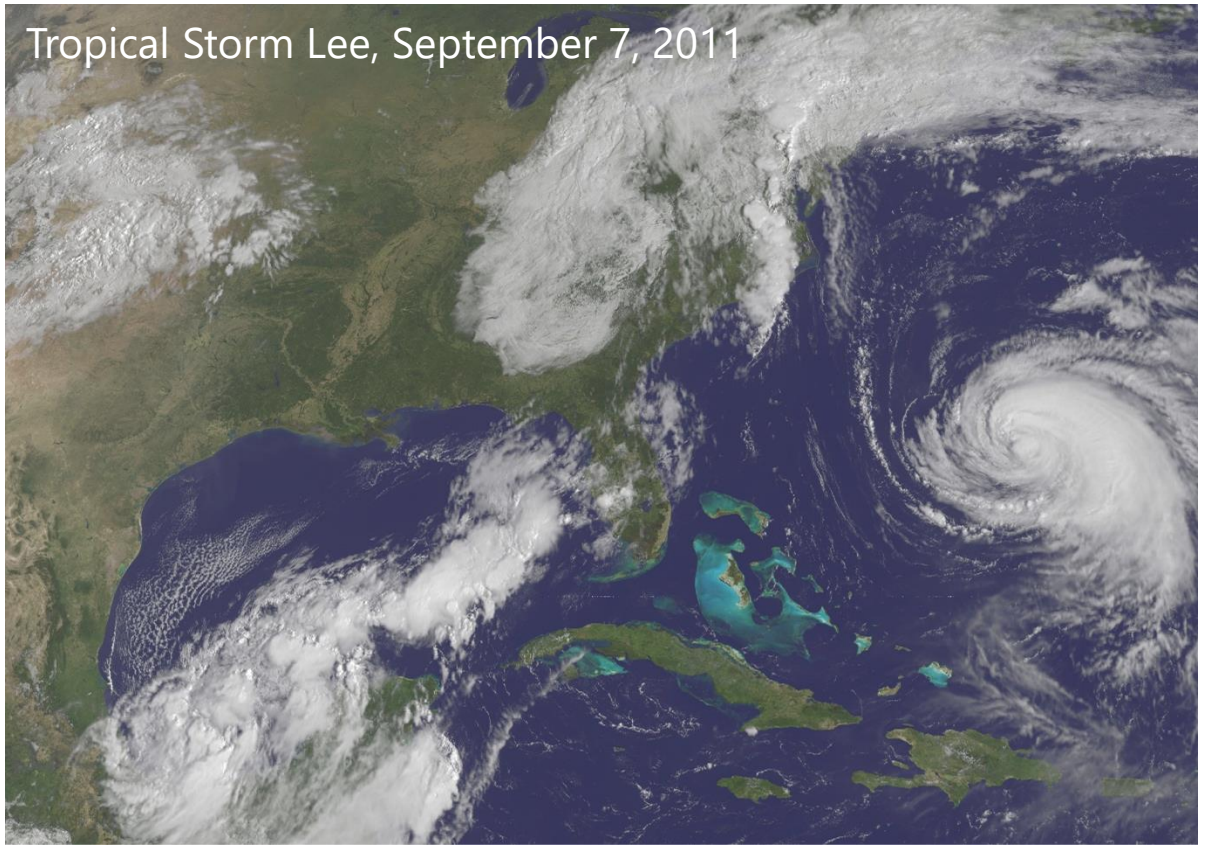
Hurricane Forecast for 2024

Back-to-back hurricanes have produced basin-wide flooding, but not always.

	Forecast 2024	2023	30-year Average
Named Storms	20 - 25	19	14
Hurricanes	8 - 12	7	7
Major Hurricanes	4 - 7	3	3
Likely to Impact US	4 - 6	4	4

The 30-year average was based on 1990-2020 Seasons
NOAA – May 2024; Probability of an above normal season = 85%

Hurricane Names for 2024: Alberto, Beryl, Chris, Debby, Ernesto, Francine, Gordon, Helene, **Isaac**, Joyce, Kirk, Leslie, Milton, Nadine, Oscar, Patty, Rafael, Sara, Tony, Valerie, William.



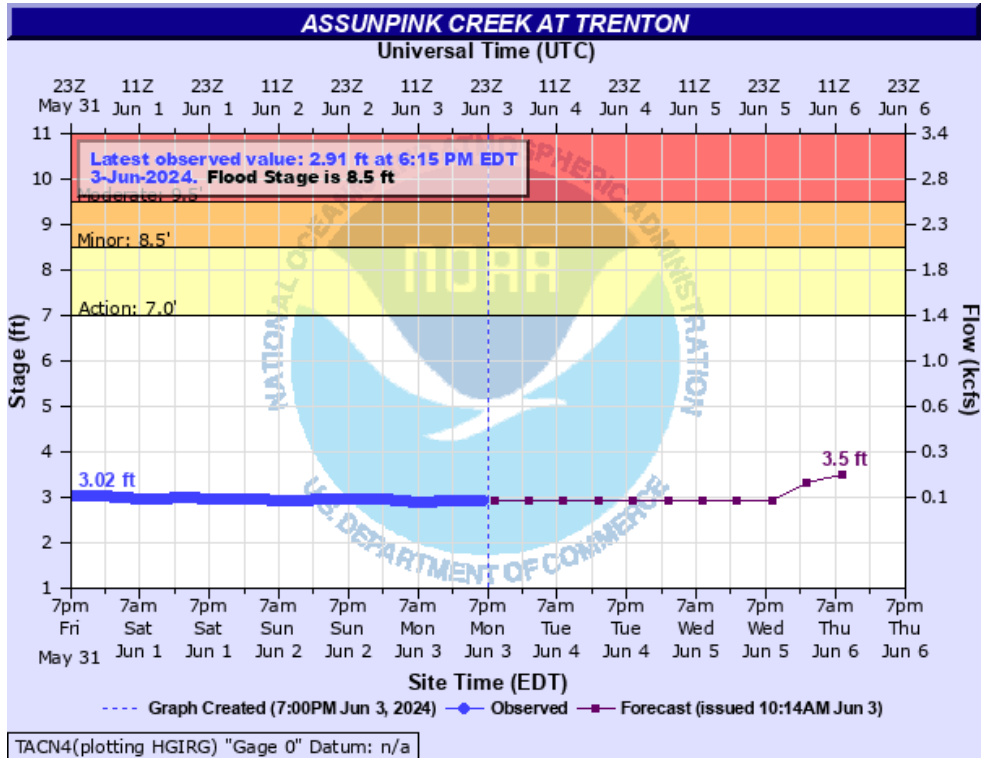
Impacts of Tropical Storm Lee in the DRB:
https://www.nj.gov/drbc/library/documents/Flood_Website/Irene-Lee2011.pdf

DRBC Flood Portal:
https://www.nj.gov/drbc/programs/flood/portal-flood.html

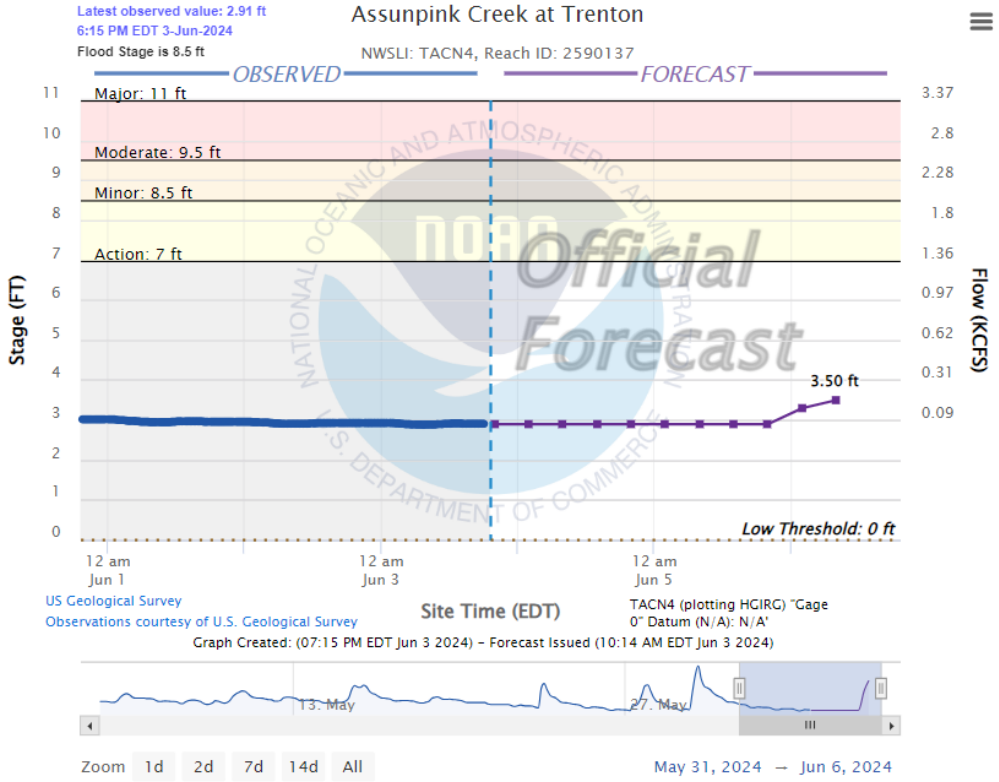
Flood Forecast Information

The NWS AHPS site was retired. For flood forecasts go to: https://water.noaa.gov.

Advanced Hydrologic Prediction Service (AHPS)

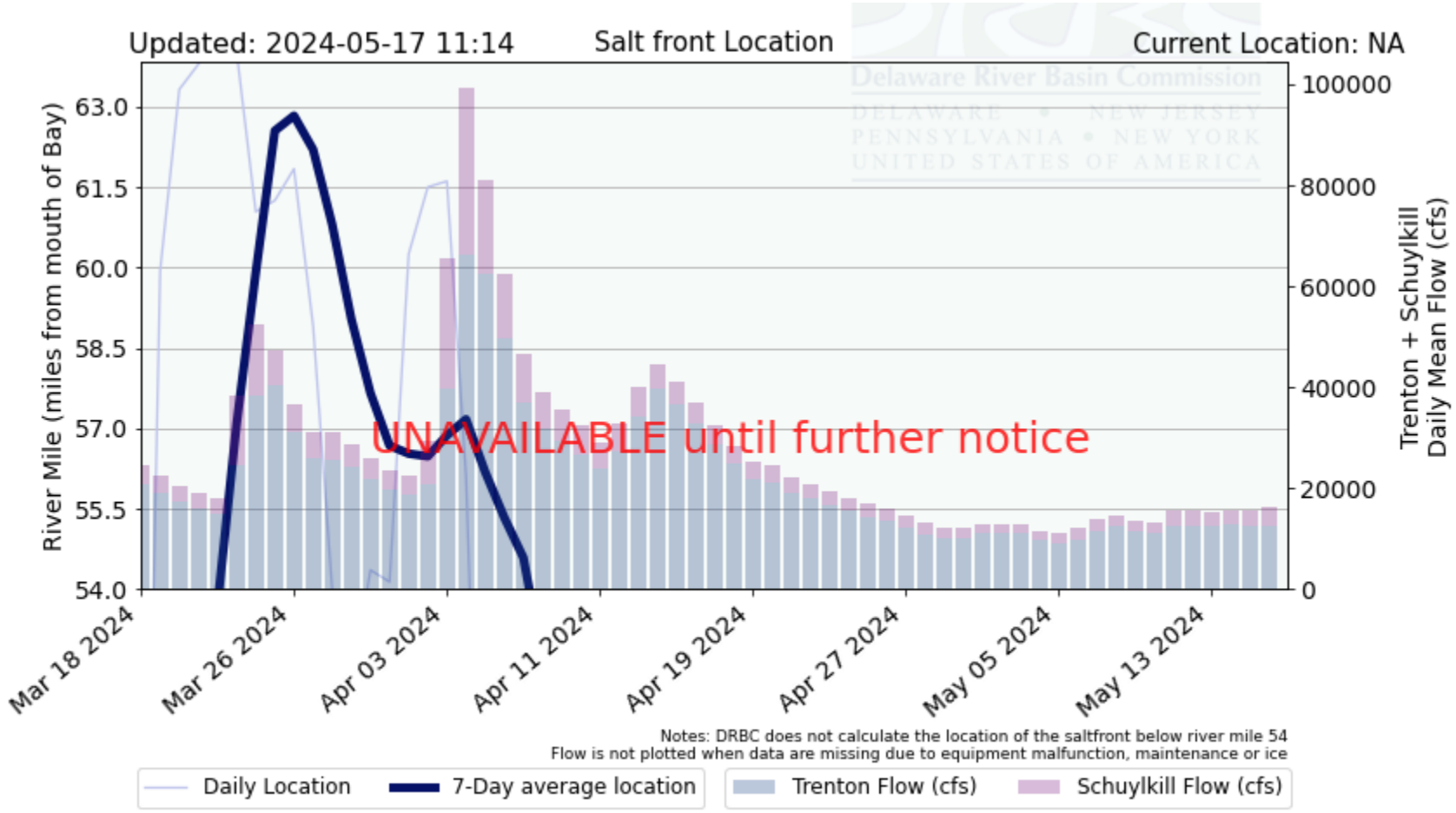


National Water Prediction Service (NWPS)



Salt Front Location

The location cannot be calculated because the Reedy Island Gage is out of service



Hydrologic conditions summary

- Generally normal but beginning getting dry
- Aqueduct shutdown proceeding in October - impacts likely minor
- Hurricane and three-month outlook - wetter weather coming
- The AHPS system has been decommissioned and replaced by NWPS
- HYDROSNAP – data access issues
- Fall RFAC meeting will be held on 9/9 at 10 am

Have a great summer!

Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA