Delaware River Basin Commission

Hydrologic Conditions

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Commission Business Meeting
March 10, 2021

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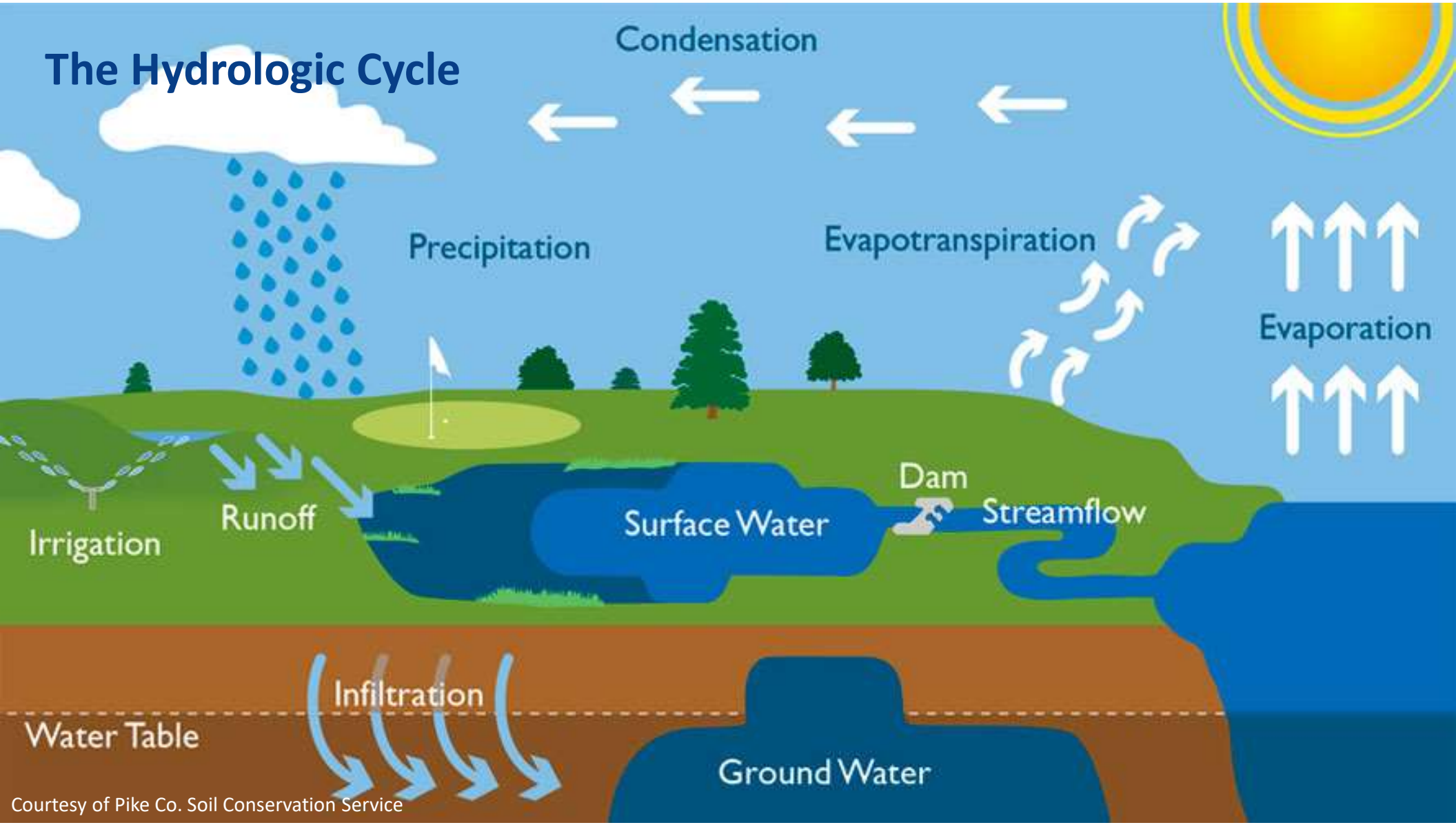
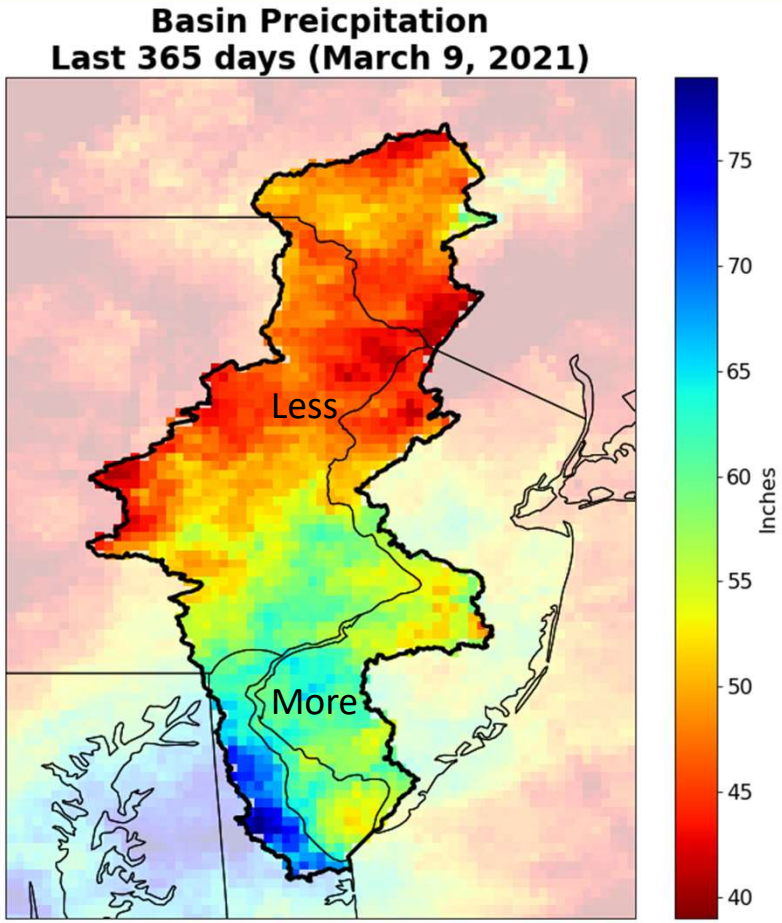
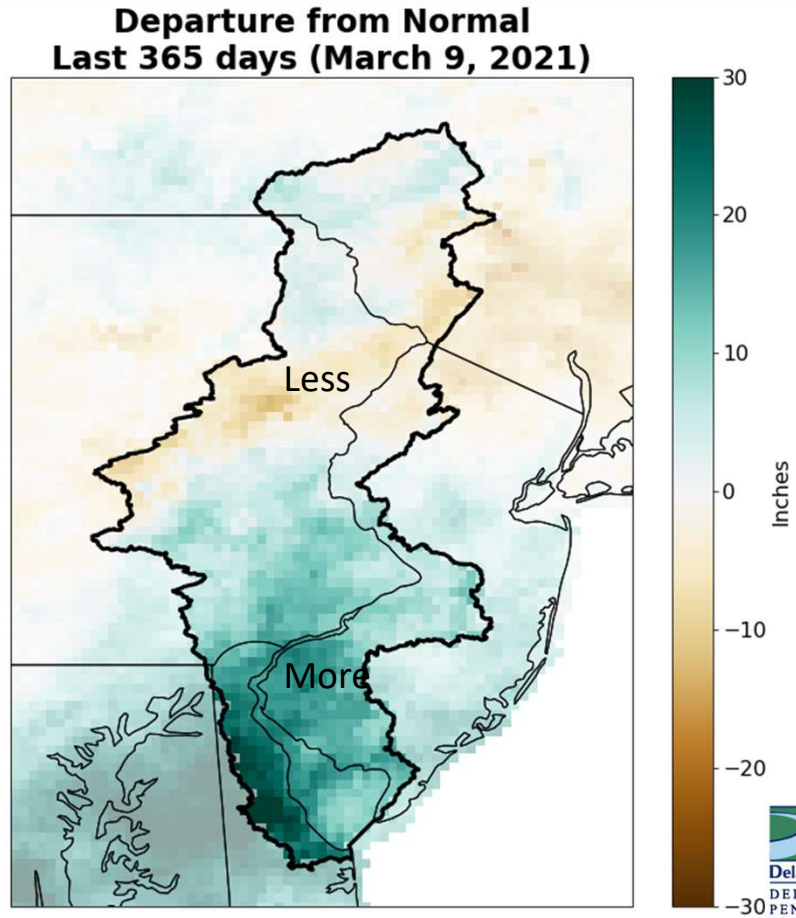
The Hydrologic Cycle



Courtesy of Pike Co. Soil Conservation Service

365 Day Precipitation





Data Source: AHPS

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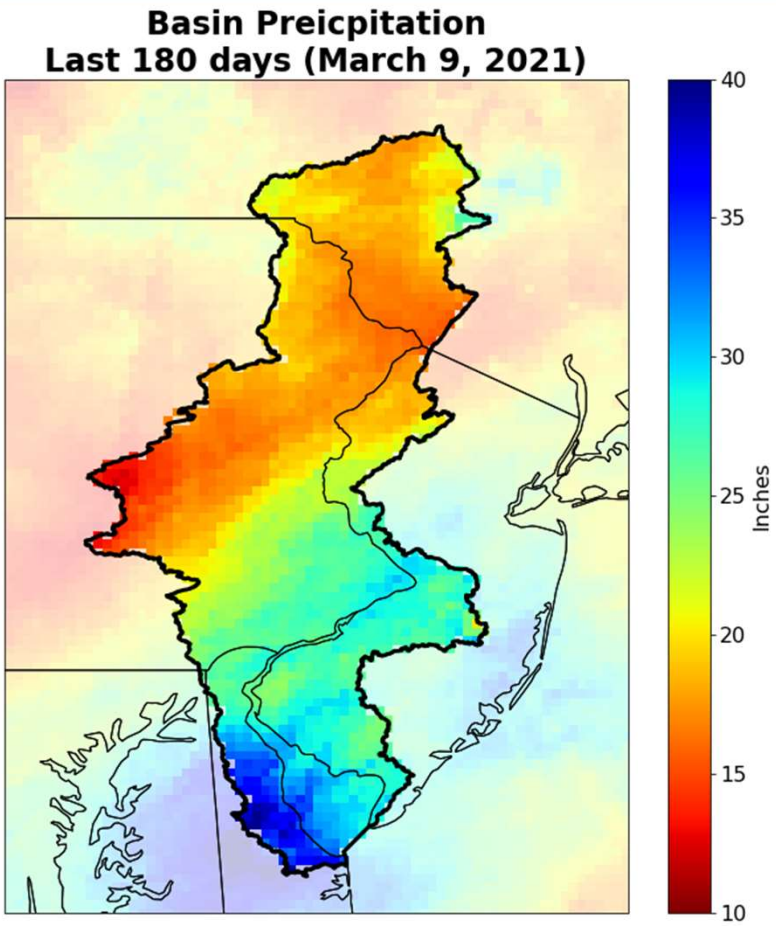
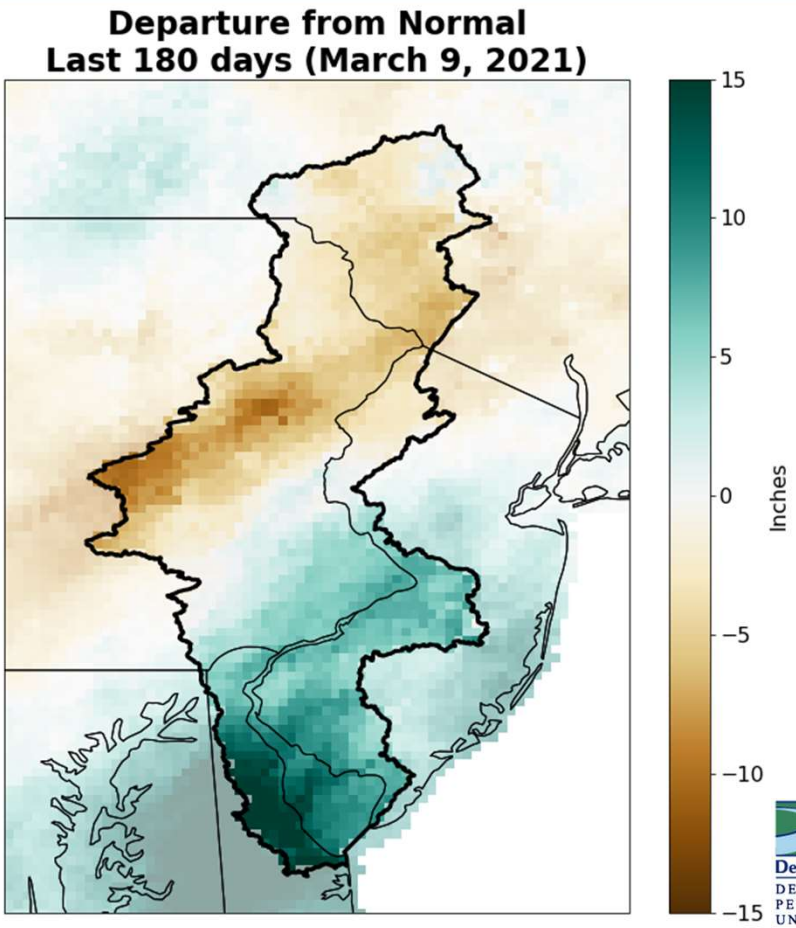
180 Day Precipitation





Data Source: AHPS

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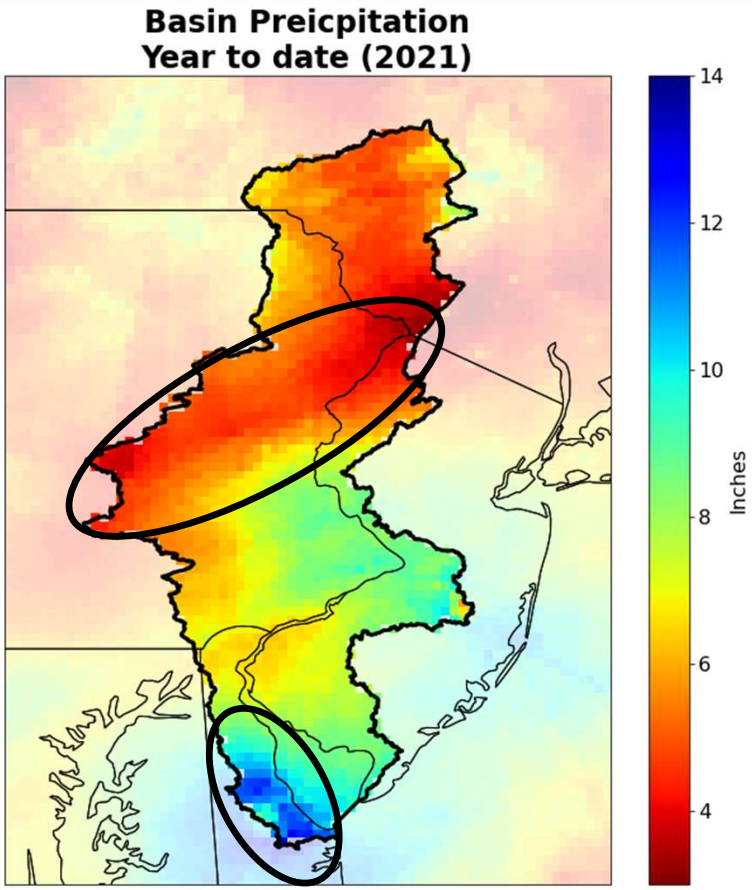
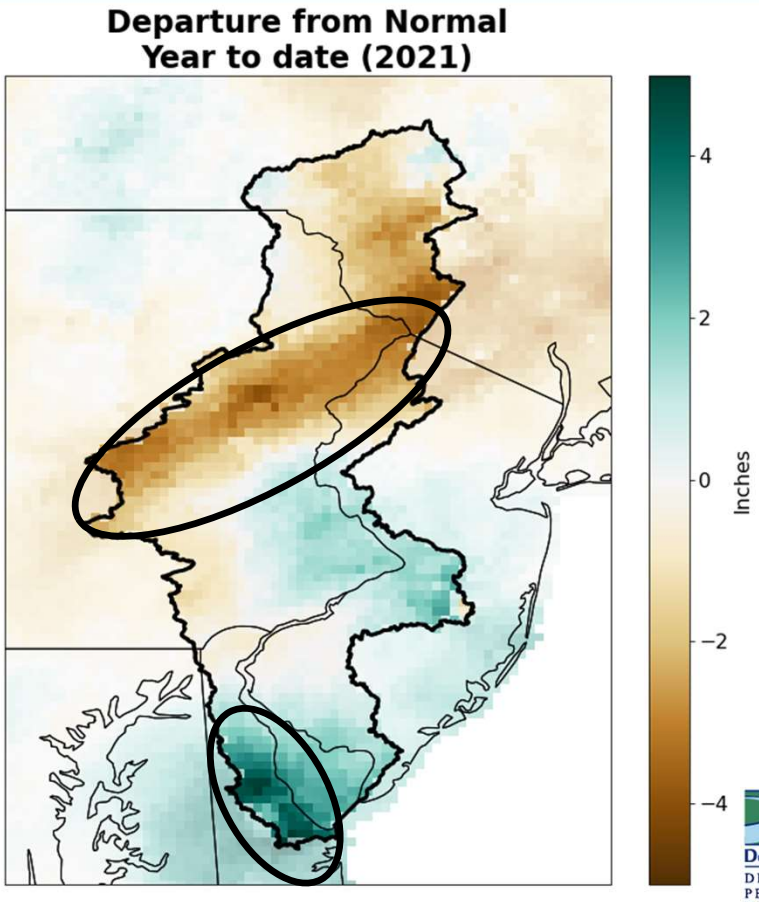
Year to Date Precipitation





Data Source: AHPS

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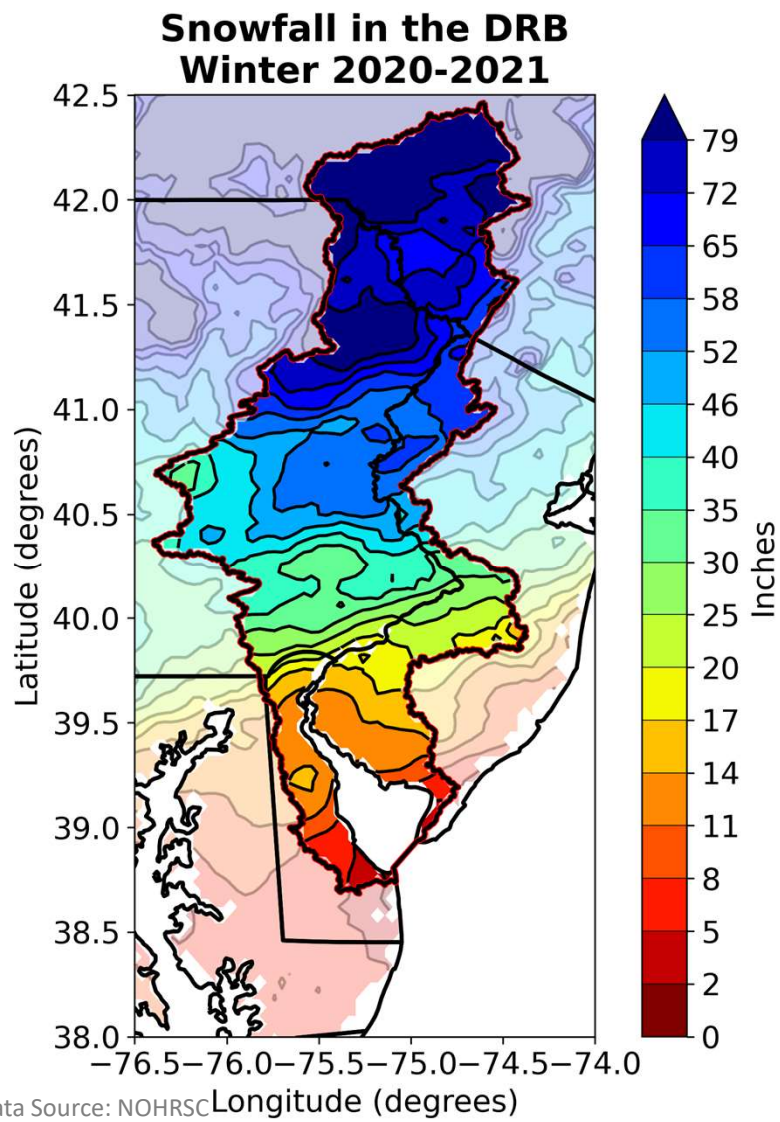

Data Source: NOHRSC

Winter 2020 – 2021 Recap

- La Nina Weather Pattern
- More Variable Jet Stream led to more "storminess" in the second half of the season
- Negative Phase of the North Atlantic Oscillation led to colder air and precipitation fell as snow

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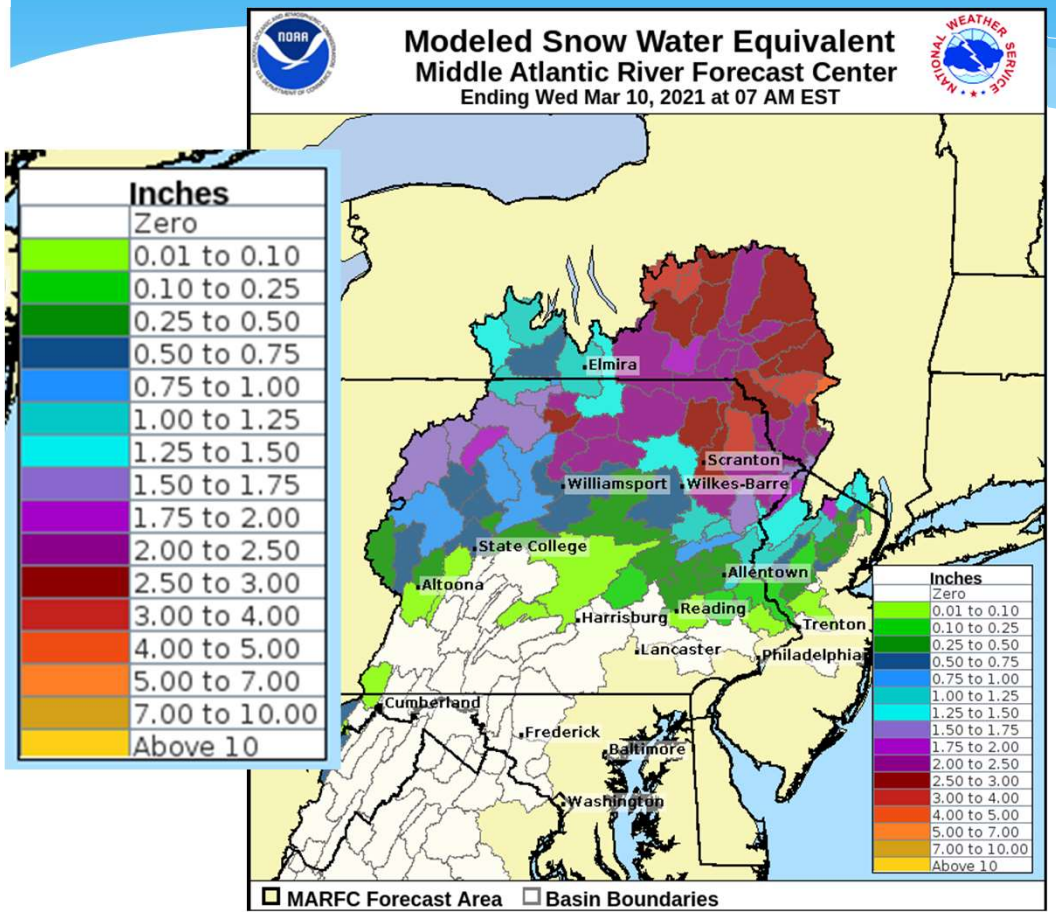
Snow Water Equivalent



- Snow Water Equivalent (SWE) is the amount of water contained in the snowpack not the total depth of snow on the ground.
- Upper Basin Snow Depths = 4-20”
- Upper Basin SWE = 2”-6”
- Recent measurements indicate that 40 BG of water is stored in the snowpack above the NYC Reservoirs (1.5*historical average).
- Spill Mitigation plan is in effect.

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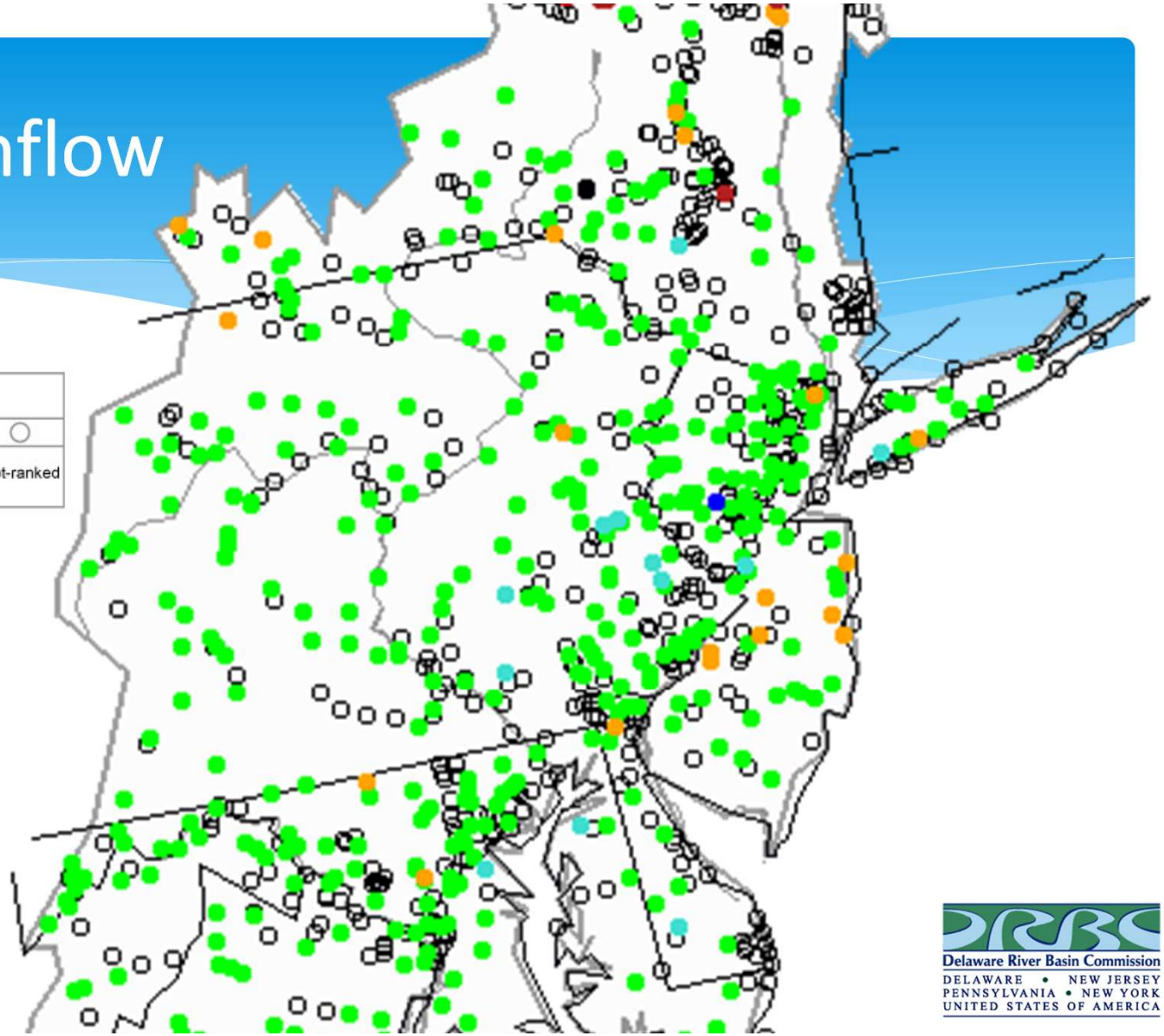
Streamflow



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

March 9, 2021 – 12:30 pm

Source: USGS

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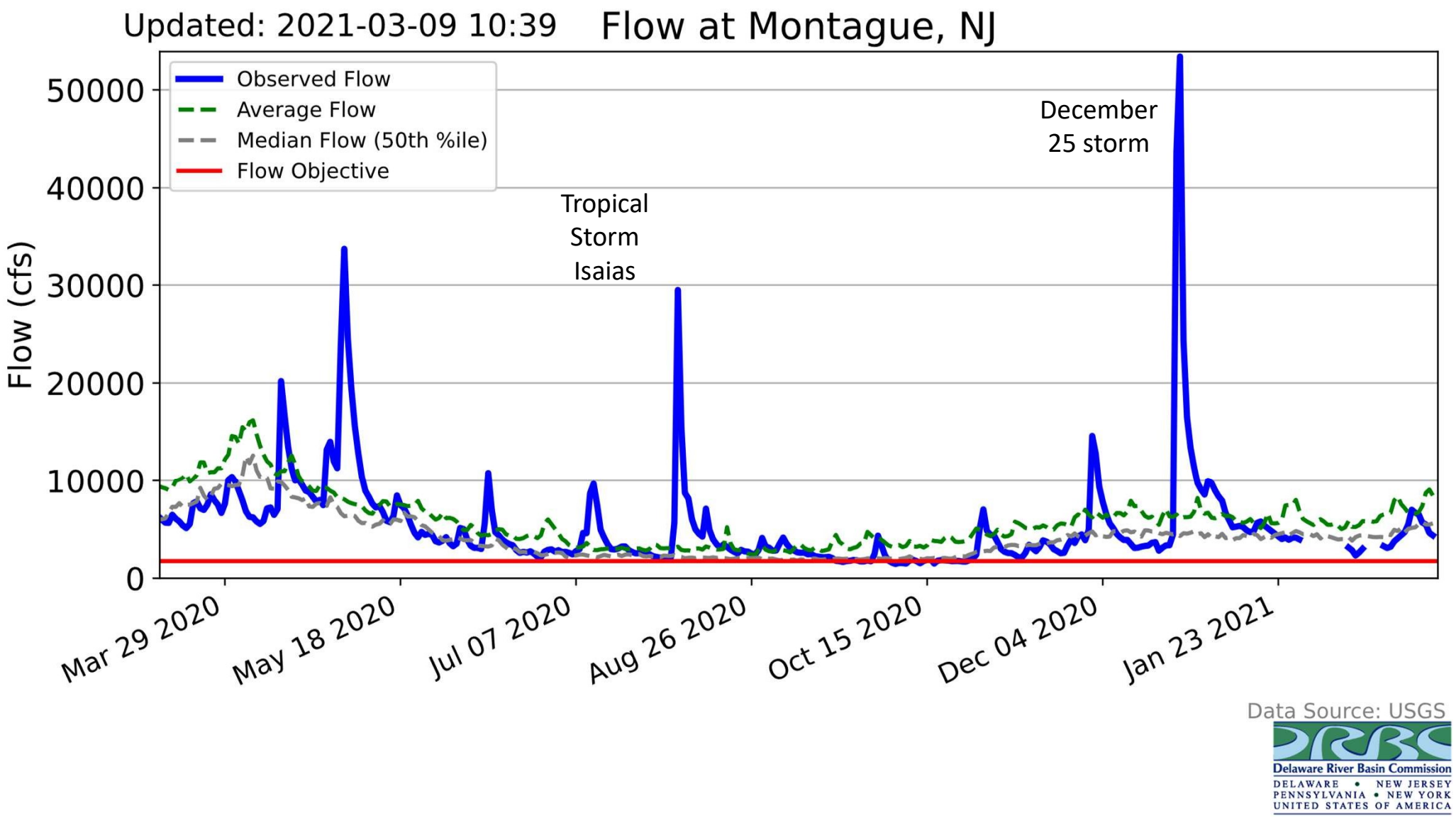
Updated: 2021-03-09 10:39
Flow at Montague, NJ
Observed Flow
Average Flow
Median Flow (50th %ile)
Flow Objective
Flow (cfs)
50000
40000
30000
20000
10000
0
Tropical Storm Isaias
December 25 storm
Mar 29 2020
May 18 2020
Jul 07 2020
Aug 26 2020
Oct 15 2020
Dec 04 2020
Jan 23 2021
Data Source: USGS
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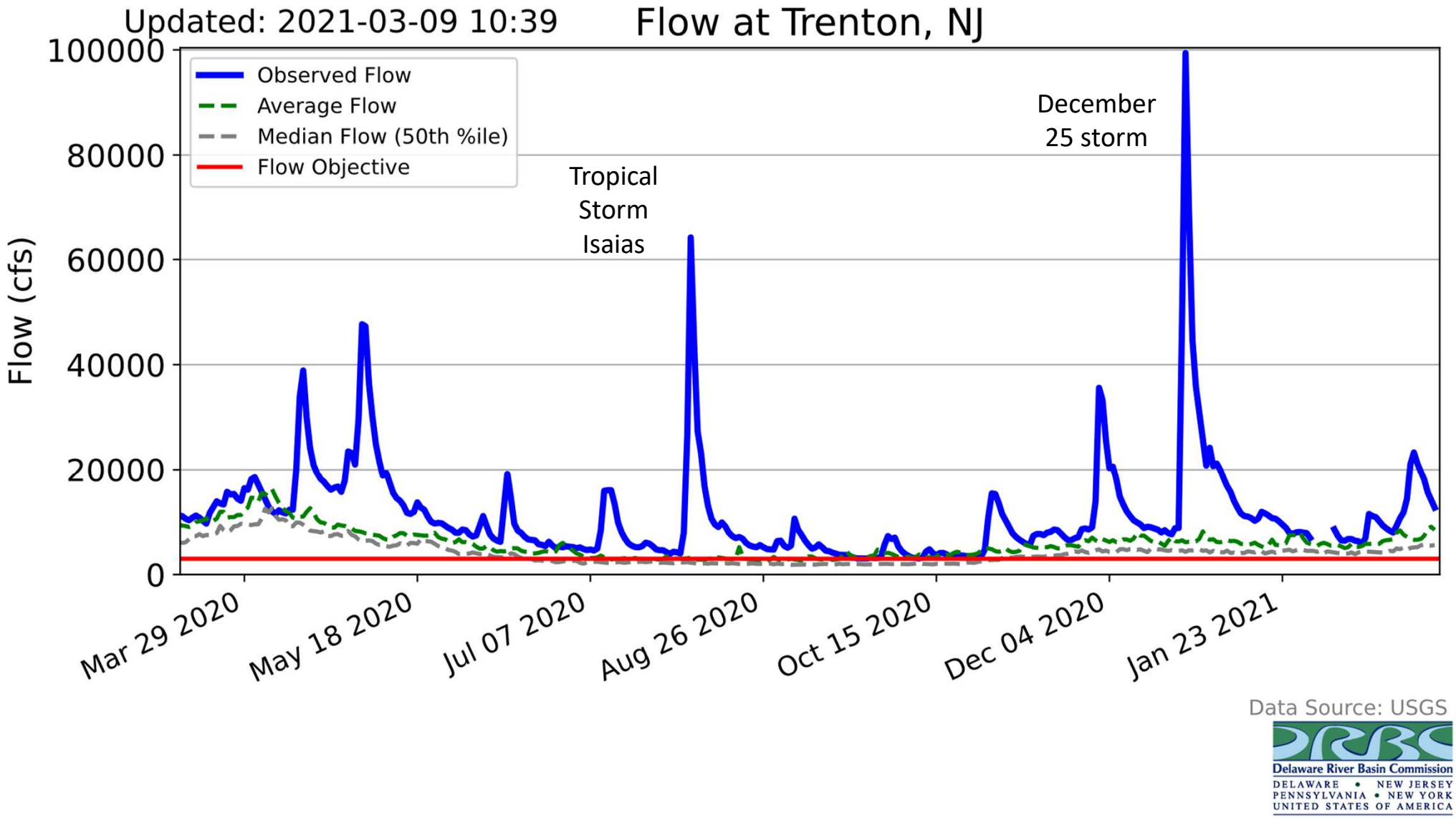
12/26/2020 Along Delaware Canal (L) and River (R) Looking Upstream toward Easton
Photo: Jeff Douglass


Updated: 2021-03-09 10:39
Flow at Trenton, NJ
Observed Flow
Average Flow
Median Flow (50th %ile)
Flow Objective
Tropical Storm Isaias
December 25 storm
Flow (cfs)
100000
80000
60000
40000
20000
0
Mar 29 2020
May 18 2020
Jul 07 2020
Aug 26 2020
Oct 15 2020
Dec 04 2020
Jan 23 2021
Data Source: USGS
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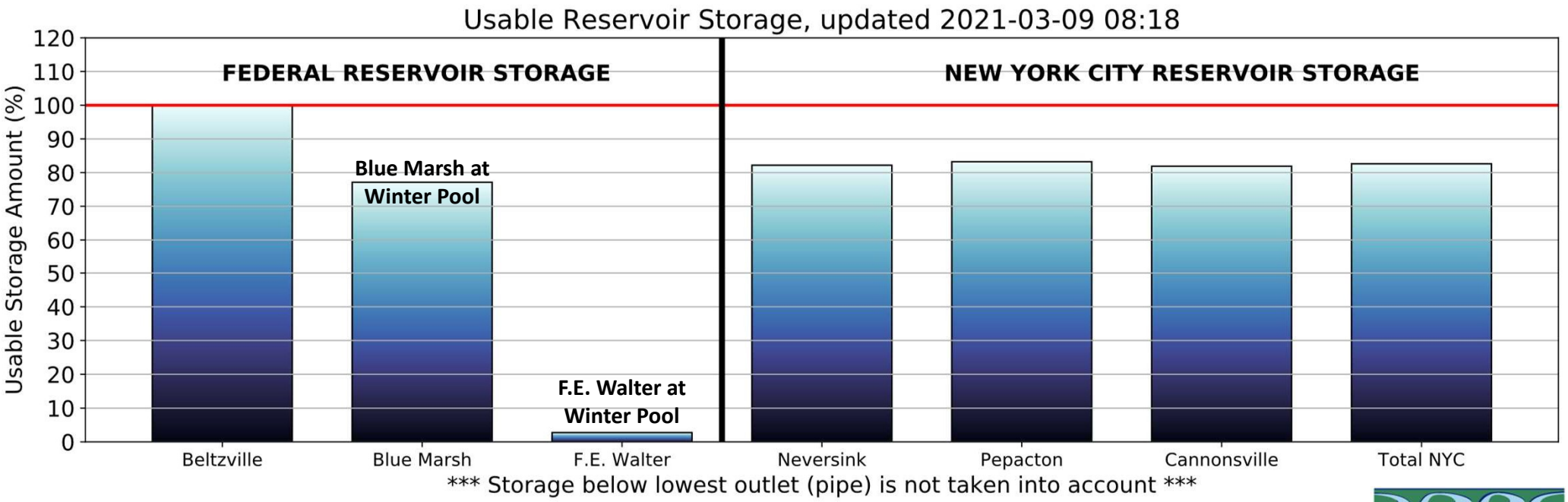
12/26/2020 River Road and the Delaware River
Photo: Elba Deck

Basin Storage



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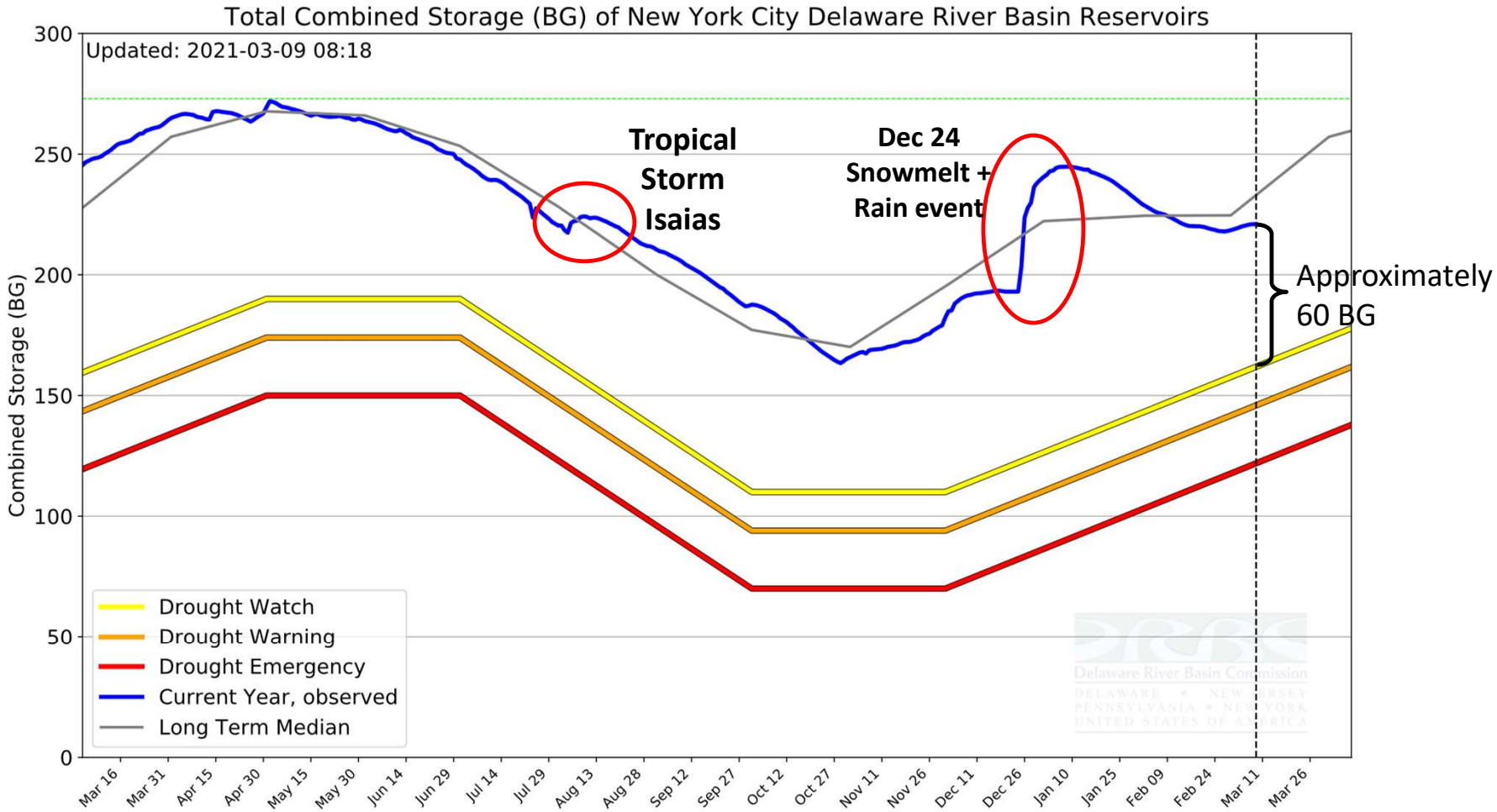
Data Sources: AHPS, USGS



Usable Storage	Cannonsville	Pepacton	Neversink	Total		
BG	76.5	115.9	28.5	221.0	BG above drought watch = 59.1	BG below median = 12.1
%	81.9	83.2	82.2	82.6	BG above drought warning = 75.1	BG below one year ago = 28.1
					BG above drought = 99.1	

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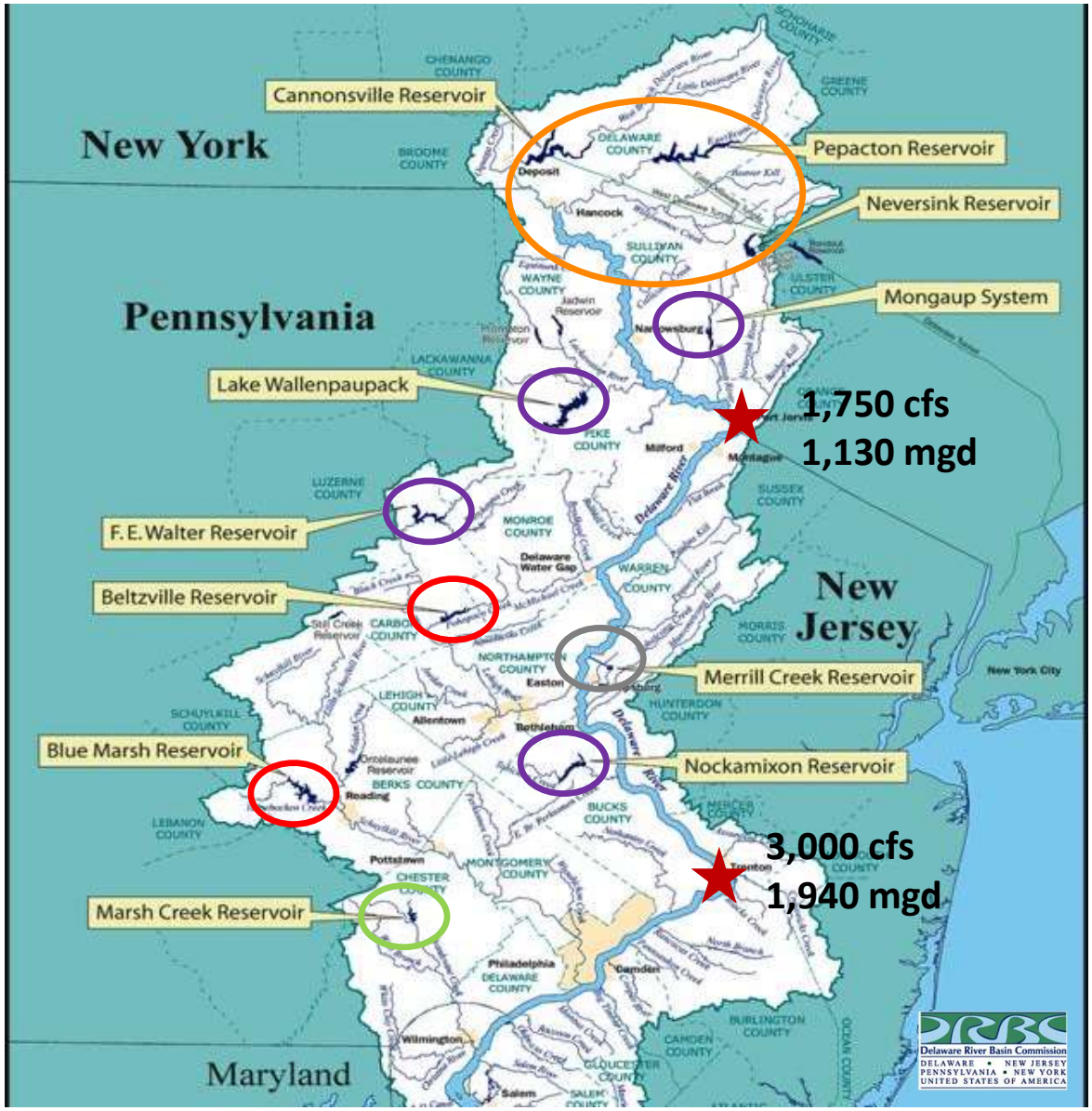
* Source: USGS



Sources of Water

- NYC Reservoirs - instream flow support - Montague)
- USACE Reservoirs (Flood and Recreation; DRBC - instream flow support – Trenton)
- Emergency (Private, PA)
- Consumptive Use Replacement (Thermoelectric)
- Dockets
- Others not shown

Flow at Montague and Trenton can be 60 percent or more from reservoir releases in dry periods

Salt Front Location: March 8, 2021

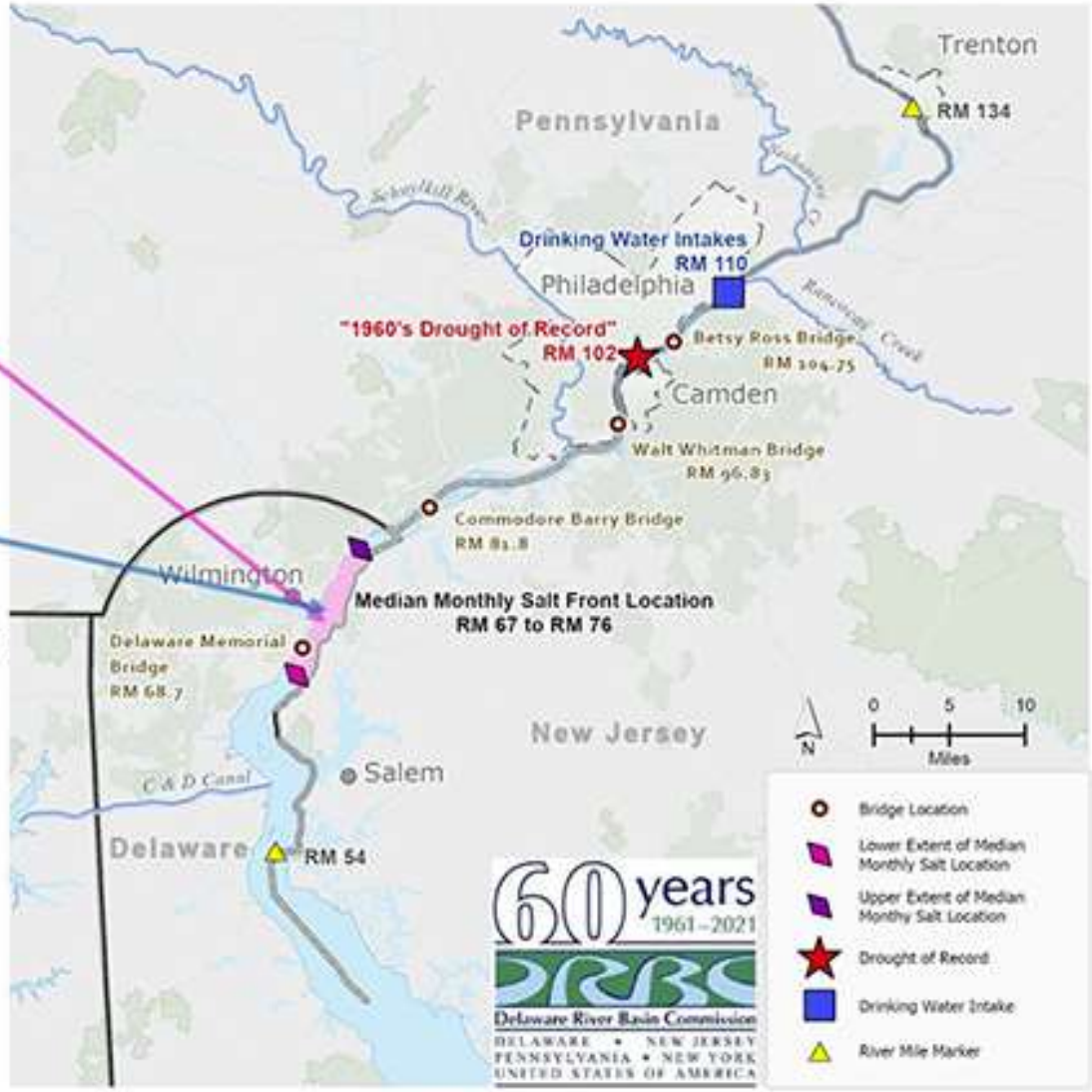
Normal March Location: RM 70

3/8/2021 Location: RM 70.5

Salt front not tracked below RM 54.

Median Monthly Salt Front Locations

January	69
February	71
March	70
April	67
May	68
June	69
July	70
August	74
September	76
October	72
November	70
December	69



Groundwater Conditions

COUNTY	STATE	DATA SOURCE	WELL ID	INDICATOR AS OF 2021-03-09
Wayne	PA	USGS	WN 64	Normal
Monroe	PA	USGS	MO 190	Drought Watch
Carbon	PA	USGS	CB 104	Normal
Schuylkill	PA	USGS	SC 296	Above Normal
Lehigh	PA	USGS	LE 372	Above Normal
Bucks	PA	USGS	BK 1020	Above Normal
Chester	PA	USGS	CH 10	Above Normal
Delaware	PA	USGS	DE 723	Above Normal
Lebanon	PA	USGS	LB 372	Normal
Burlington	NJ	USGS	050689	Normal
Cumberland	NJ	USGS	110042	Above Normal

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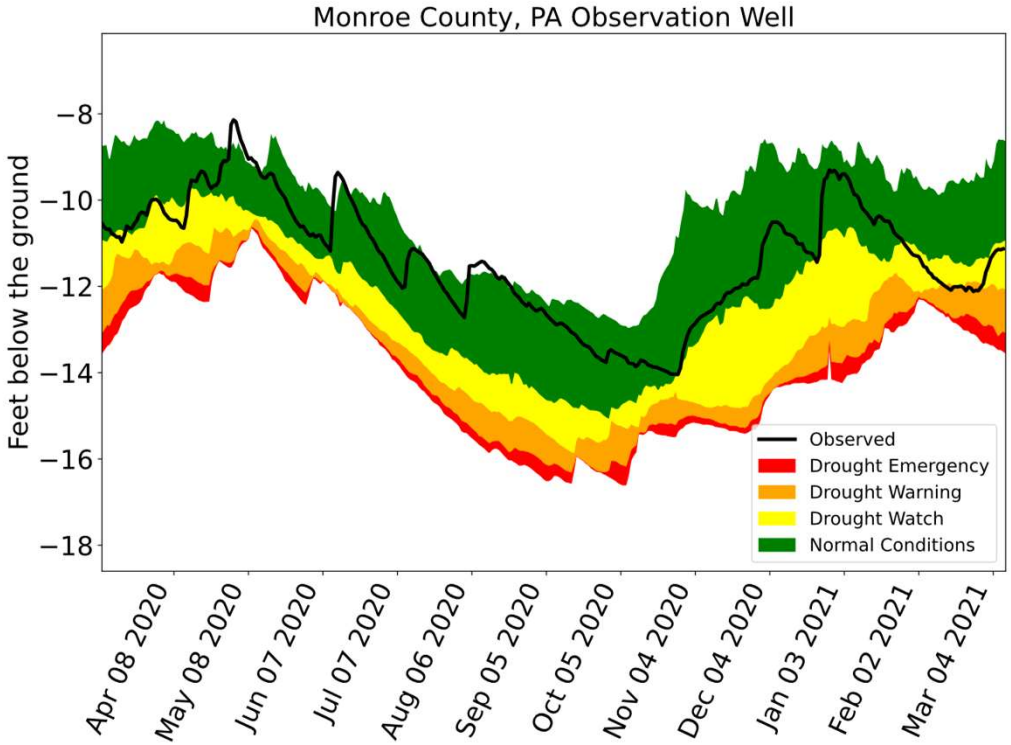
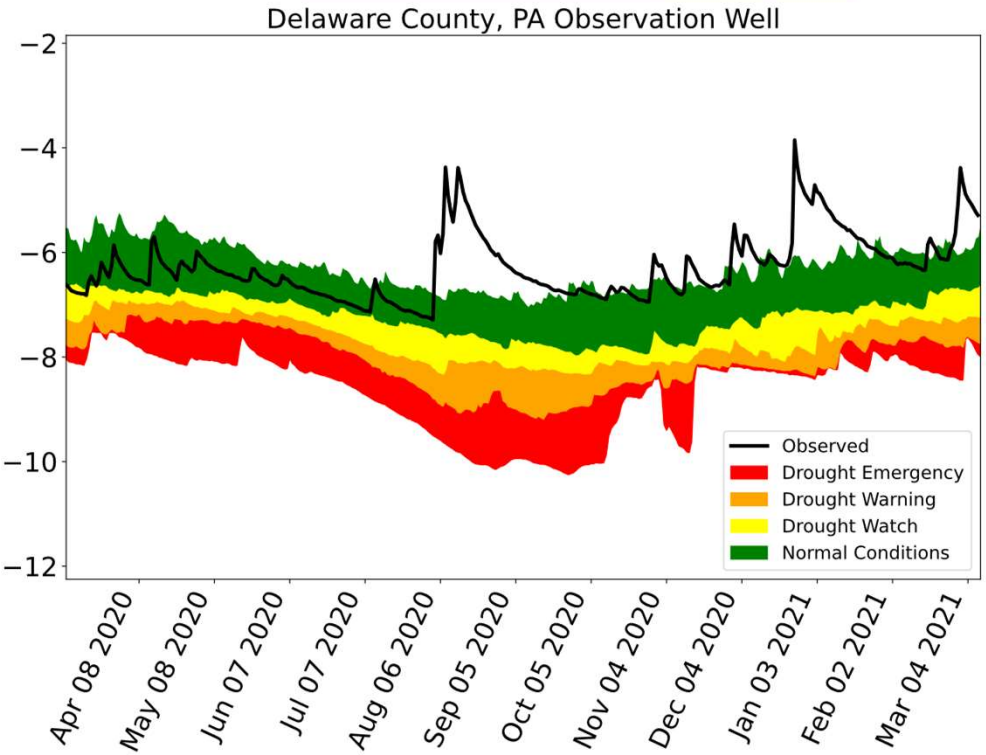
Data Source: USGS

Well Hydrographs





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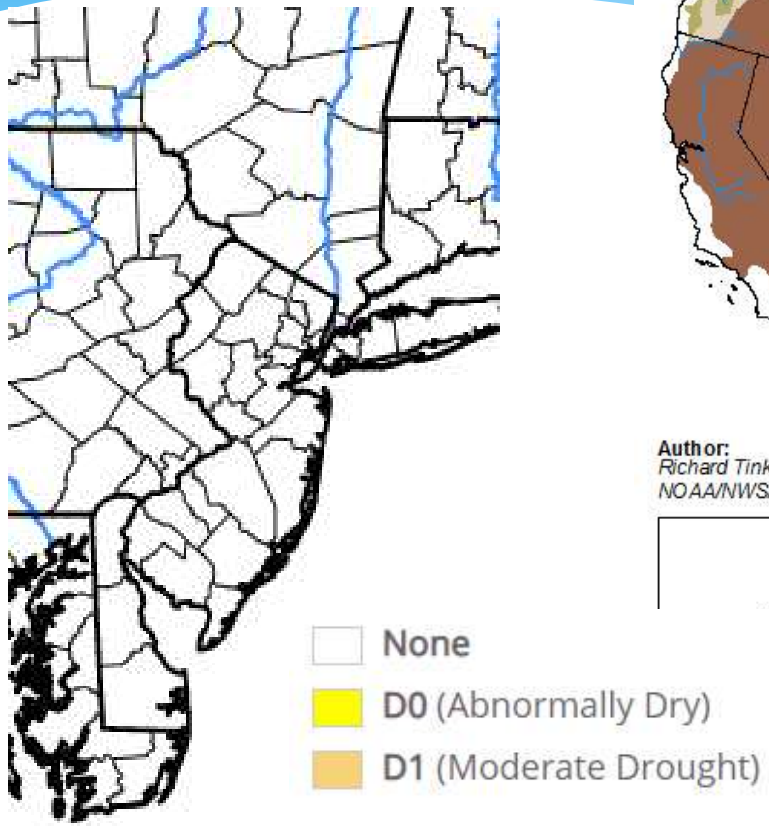
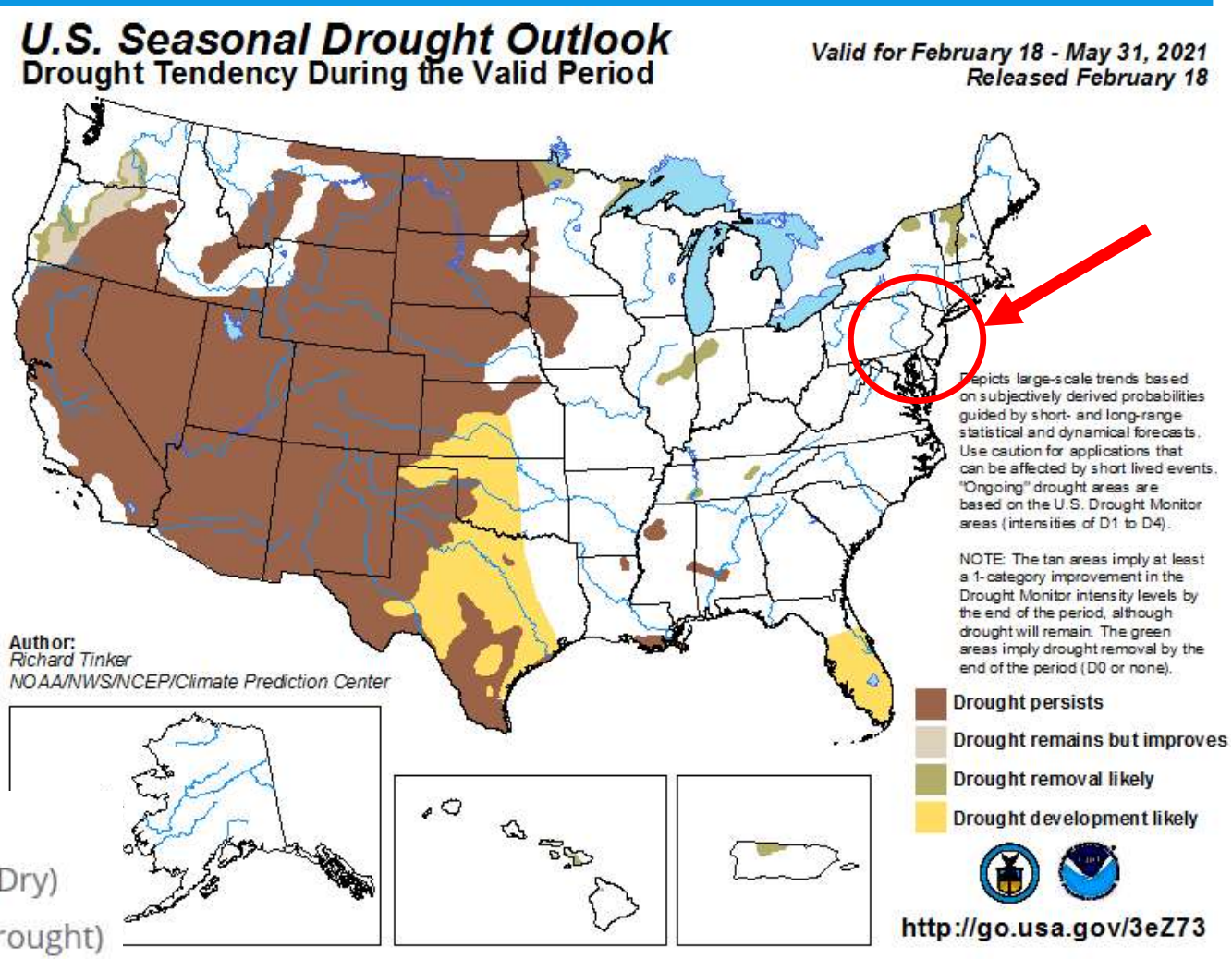
Data Sources: USGS, DGWS

Drought Monitor

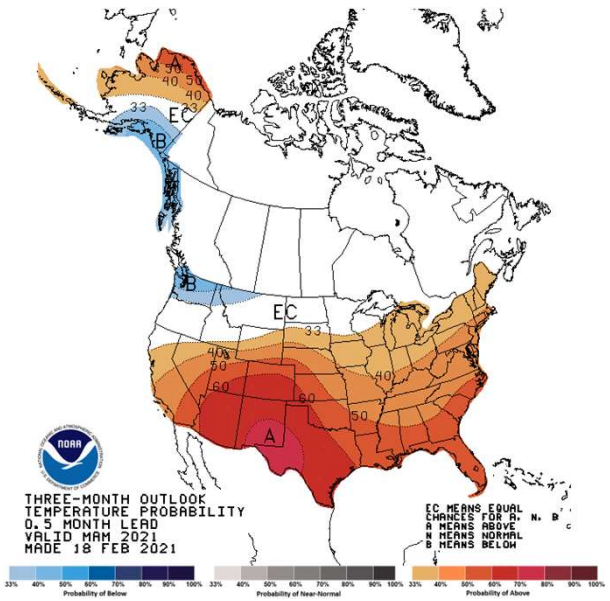
March 2, 2021

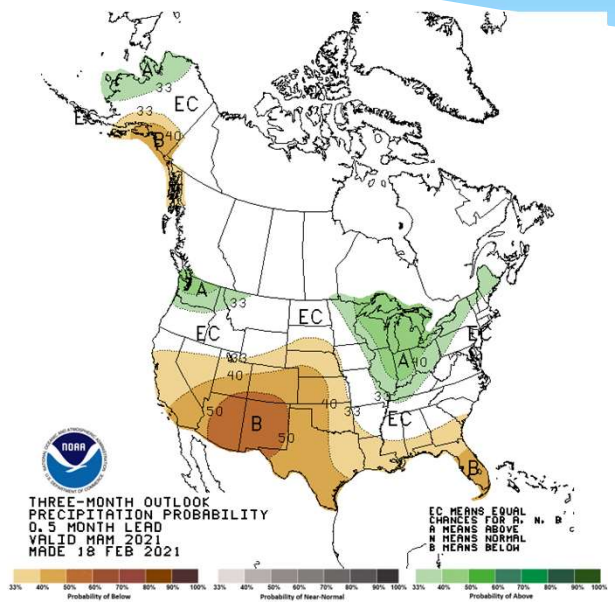




Data Sources: NOAA

Spring Outlook 2020 - 2021





Three Month Outlook from Climate Prediction Center shows a 40% to 50% chance of above normal temperatures. Precipitation has equal chances of being above or below normal.

Philadelphia April Normal: 60 – 70 degrees

Binghamton April Normal: 48 – 60 degrees

Philadelphia Spring Normal: 11 inches

Binghamton Spring Normal: 10 inches

Data Sources: NOAA, ACIS

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For Graphics in this presentation, see:

hydrosnap.drbc.net