DRBC Science & Water Quality Management Monitoring Updates

May 28, 2026

Annual Joint STAC-MACC Meeting

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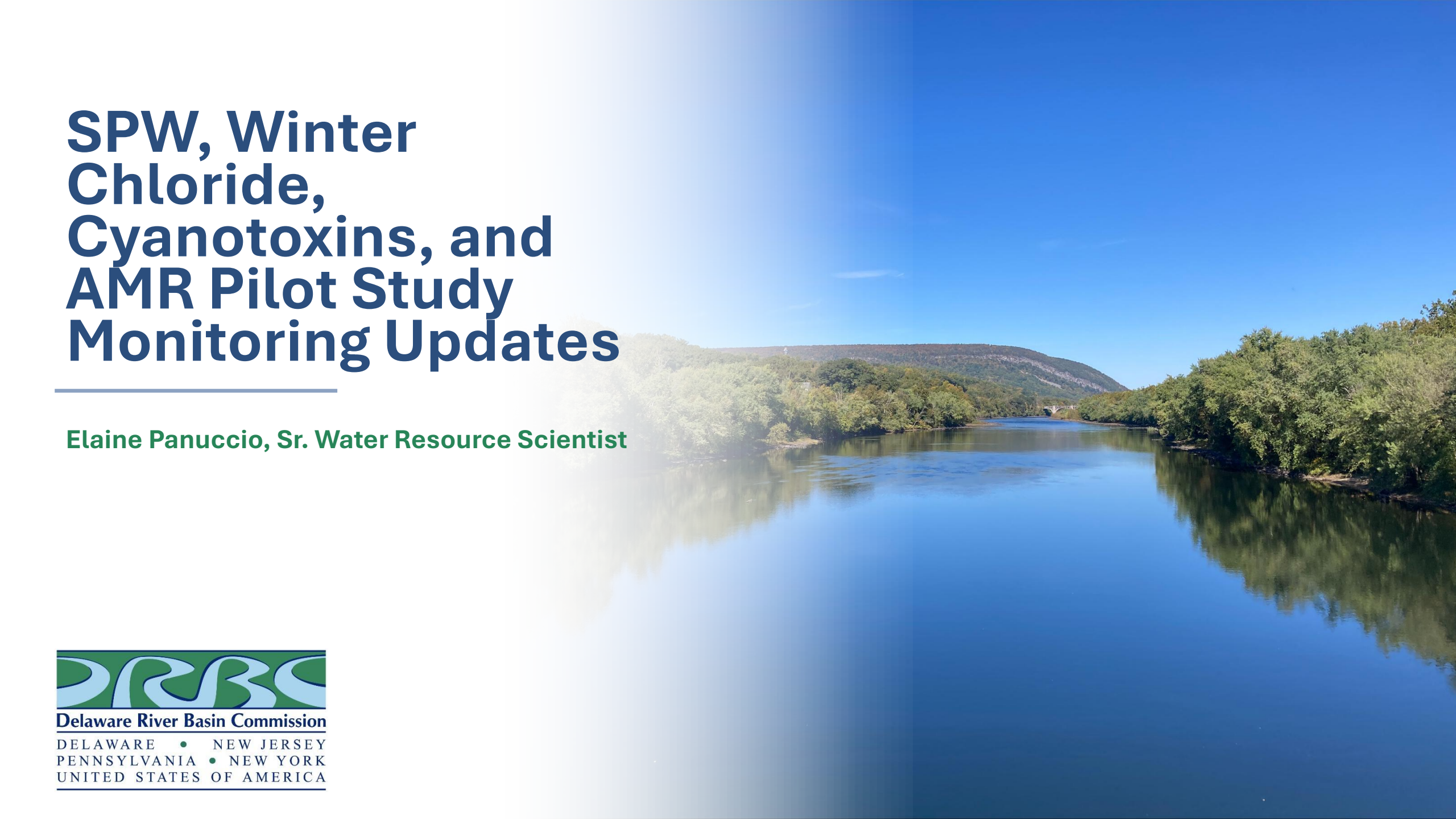
SPW, Winter Chloride, Cyanotoxins, and AMR Pilot Study Monitoring Updates

Elaine Panuccio, Sr. Water Resource Scientist



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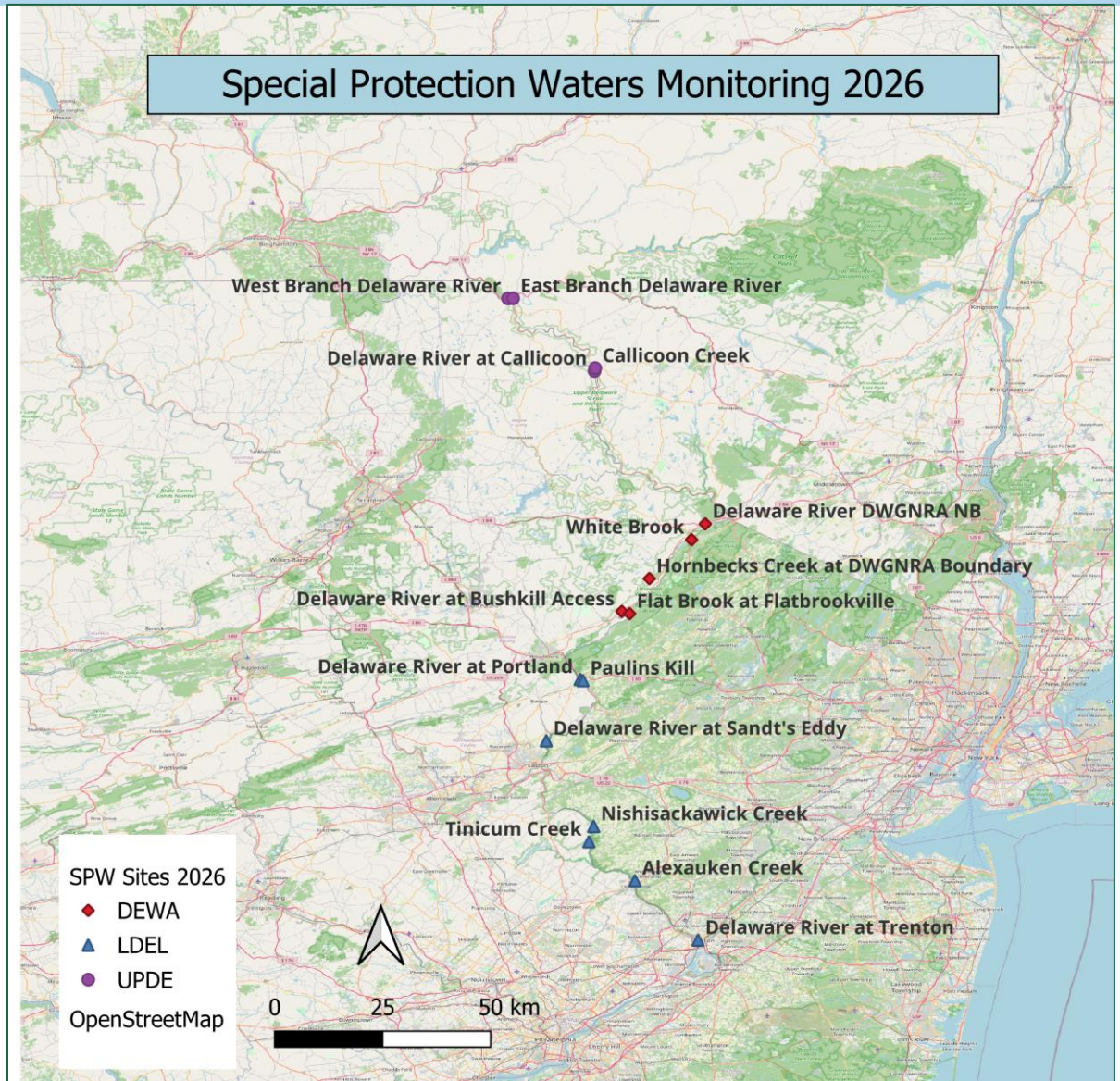
Special Protection Waters (SPW) Monitoring

"No measurable change shall occur"



- **2023 to 2025 Monitoring Assessment Period**
  - Complete with Measurable Change Assessment underway
- **2026 Monitoring**
  - Continued partnership with NPS
  - Twice monthly sampling, May through September
  - **Total Dissolved Phosphorus Methods (TDP) Testing**
    - Test new Rutgers TDP method that eliminates acid-digestion step
    - Evaluating new method against standard EPA 365.1 (automated colorimetric)

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Cyanotoxins Monitoring

- **2025**
  - Monitored May through late July
  - Grab samples at deployment and retrieval
  - ~Weeklong deployments of SPATT (Solid Phase Adsorption Toxins Tracking)
  - *In situ* measurements
- **2026**
  - Expand overall monitoring with more intensive deployments at Bristol Wharf
  - Conduct a 7-day SPATT kinetic adsorption study
  - Deploy a continuous data logger at Bristol
  - Add eDNA sampling for cyanotoxin-producing genes (qPCR / SM 10120)

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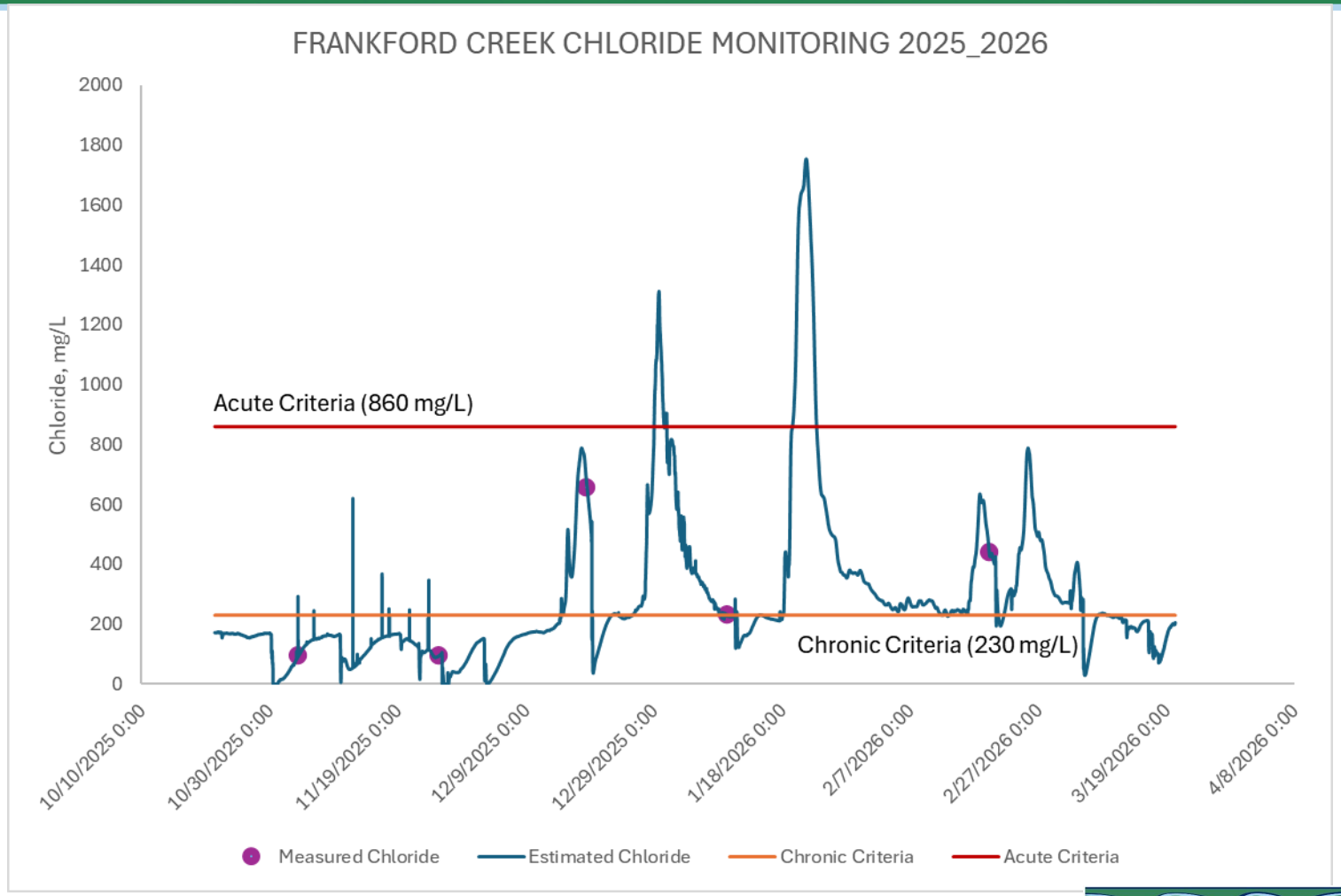
Autumn and Winter Salt Monitoring



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Antimicrobial Resistance (AMR) Monitoring: Pilot Study

What is Antimicrobial Resistance?

- AMR occurs when bacteria and other microorganisms become resistant to drugs like antibiotics, making infections harder to treat.

Why Monitor AMR?

- Aquatic environments spread drug-resistant pathogens, posing risks to public health.

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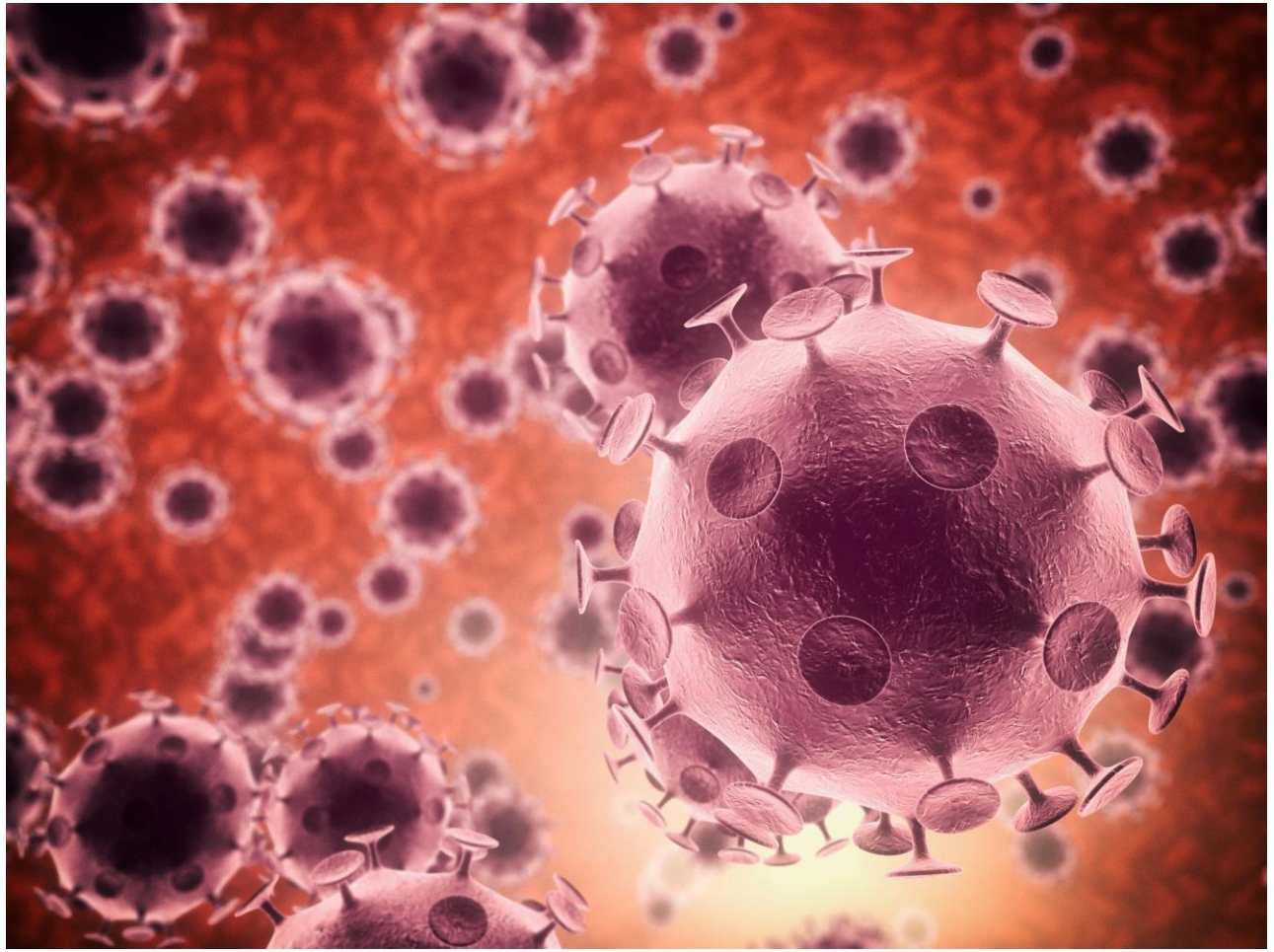
2025 – 2026 AMR Monitoring Status

2025 Delay: Funding delays paused monitoring; no-cost time extension approved

2026: Doubling sample collection to catch up on missed 2025 data

- Collaborating with Rutgers to screen for key antibiotic resistance genes (*sul*1, *tet(G), tet(W), blaTEM, etc.)*



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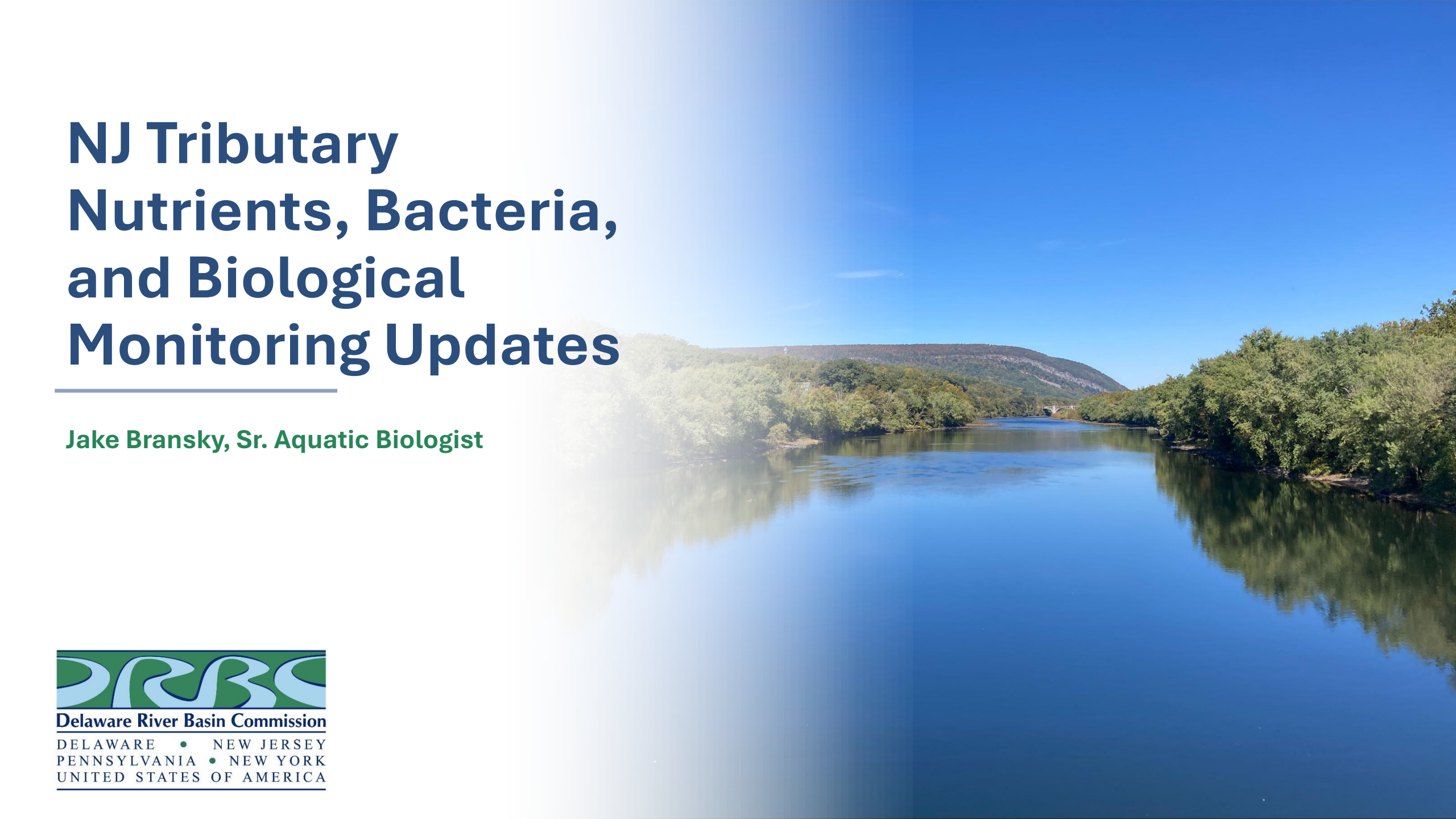
NJ Tributary Nutrients, Bacteria, and Biological Monitoring Updates

Jake Bransky, Sr. Aquatic Biologist



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Tributary Nutrient Monitoring with NJDEP

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- Support NJ efforts to monitor several tidal tributaries for nutrients and water quality
- DRBC will assist on Crosswicks and Pennsauken creeks
- Installation of sondes to measure Temperature, Specific Conductance, Dissolved Oxygen, pH, and Turbidity
- Grab samples for nutrients

- Sampling began in April 2025
- Grab samples monthly
- Logger maintenance as needed

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Bacteria Monitoring with PADEP

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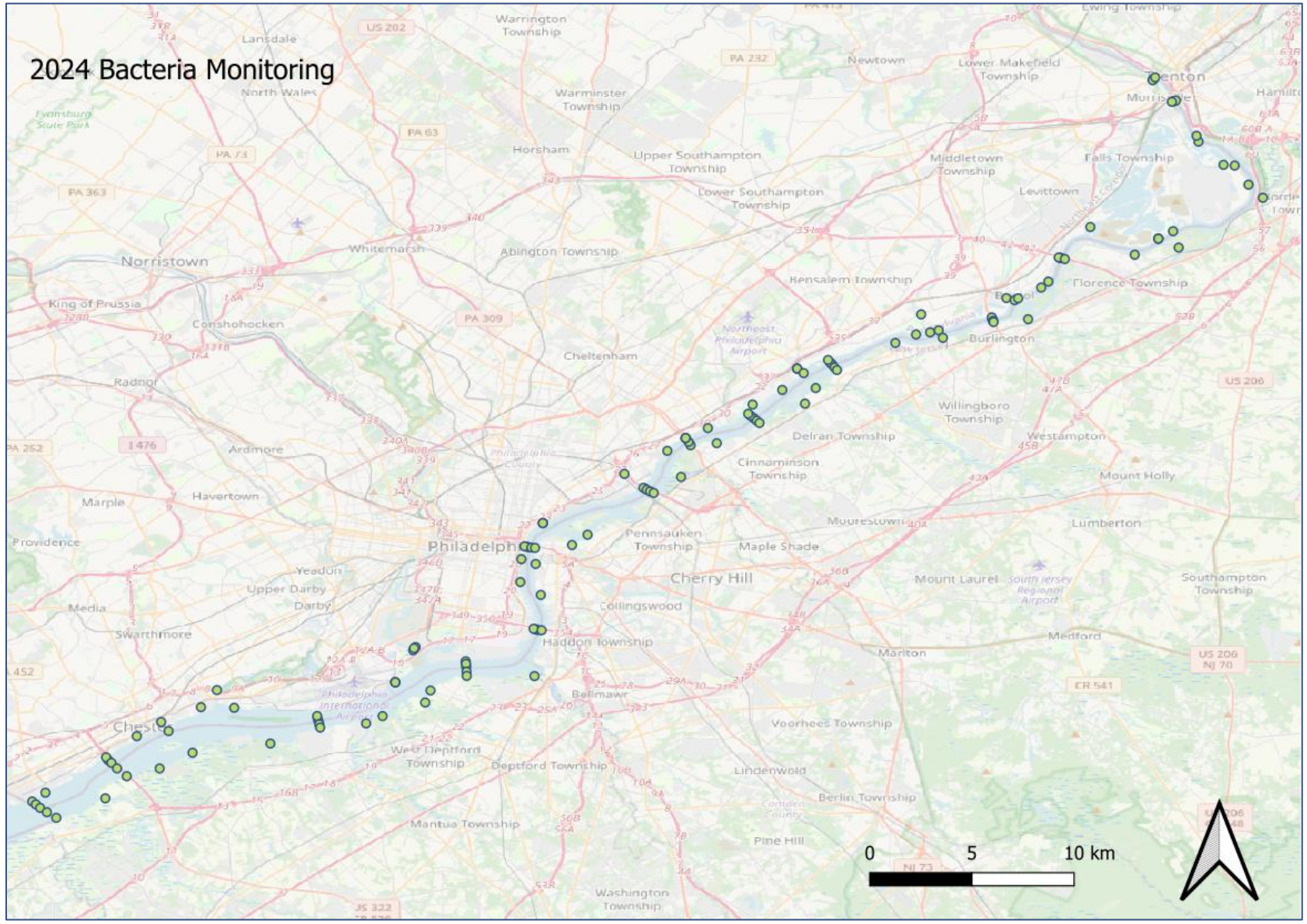
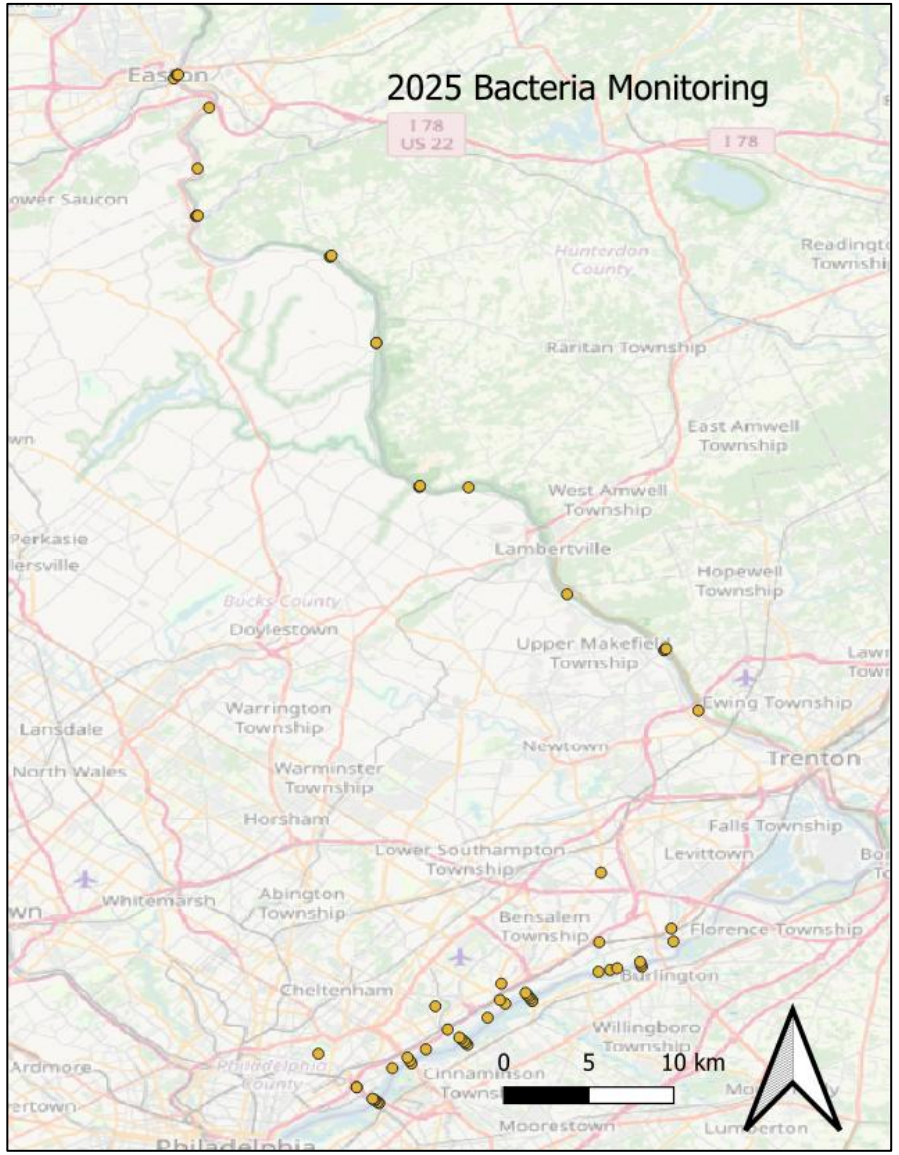
2024 Bacteria Monitoring

- Collaborative effort between DRBC, PADEP, NJDEP, and EPA
- 135 sites sampled 6 times over a 30 day window
- Mostly mainstem estuary with some tidal tributaries near mouth
- Samples analyzed for E. coli, fecal coliform, enterococcus, QPCR



2025 Bacteria Monitoring

- Collaborative effort between DRBC, PADEP, and NJDEP
- 63 sites sampled 6 times over a 30-day window
- Focused on Zone 2/ Zone 3 interface and non-tidal to Easton
- Samples analyzed for E. coli, fecal coliform (reduced), enterococcus, QPCR



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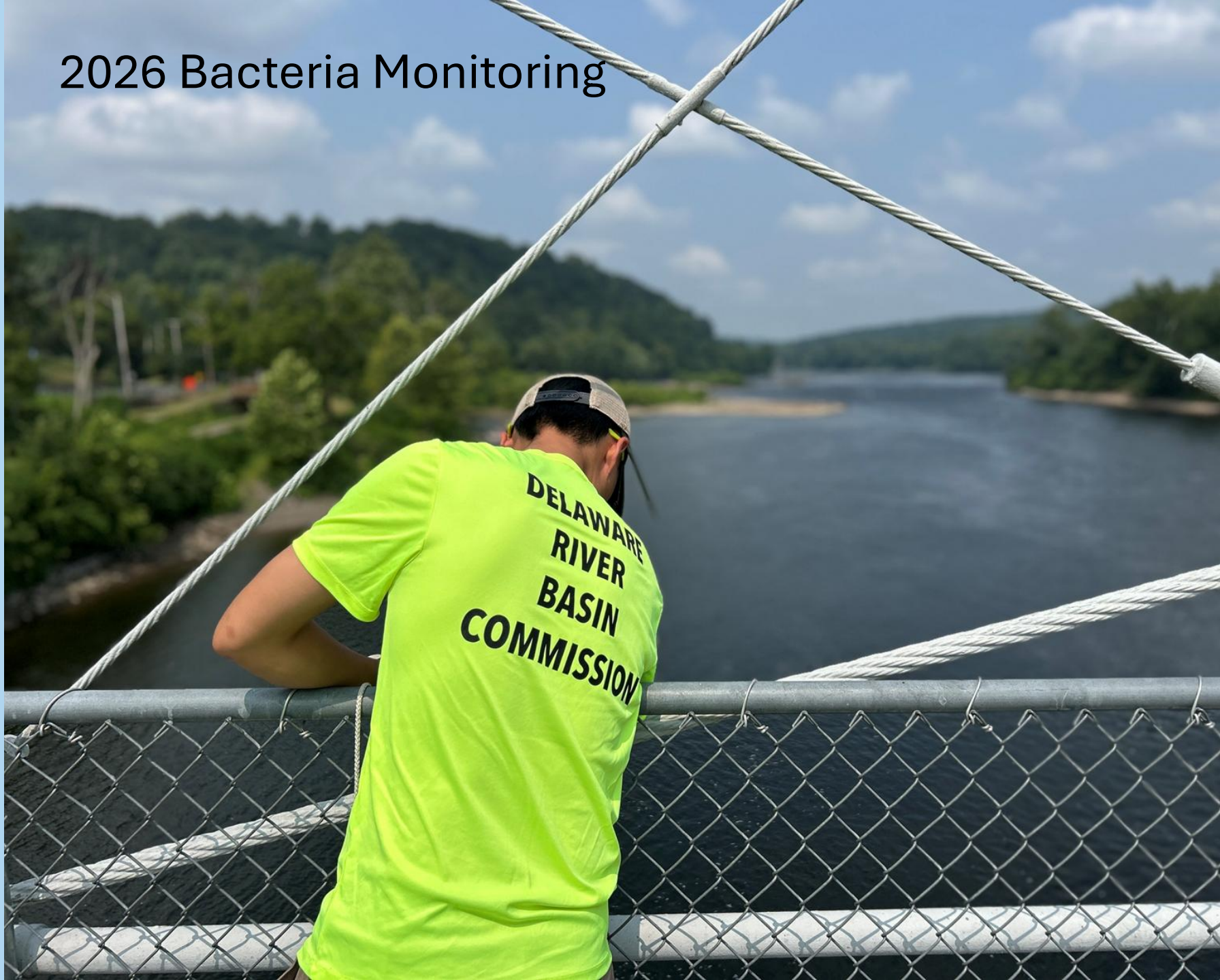
2026 Bacteria Monitoring

- Inter-lab validation
- Repeat of 2025 work
- Extension of sampling upstream of Lehigh River
- Samples analyzed for E. coli, fecal coliform, enterococcus, QPCR



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Non-tidal Biomonitoring

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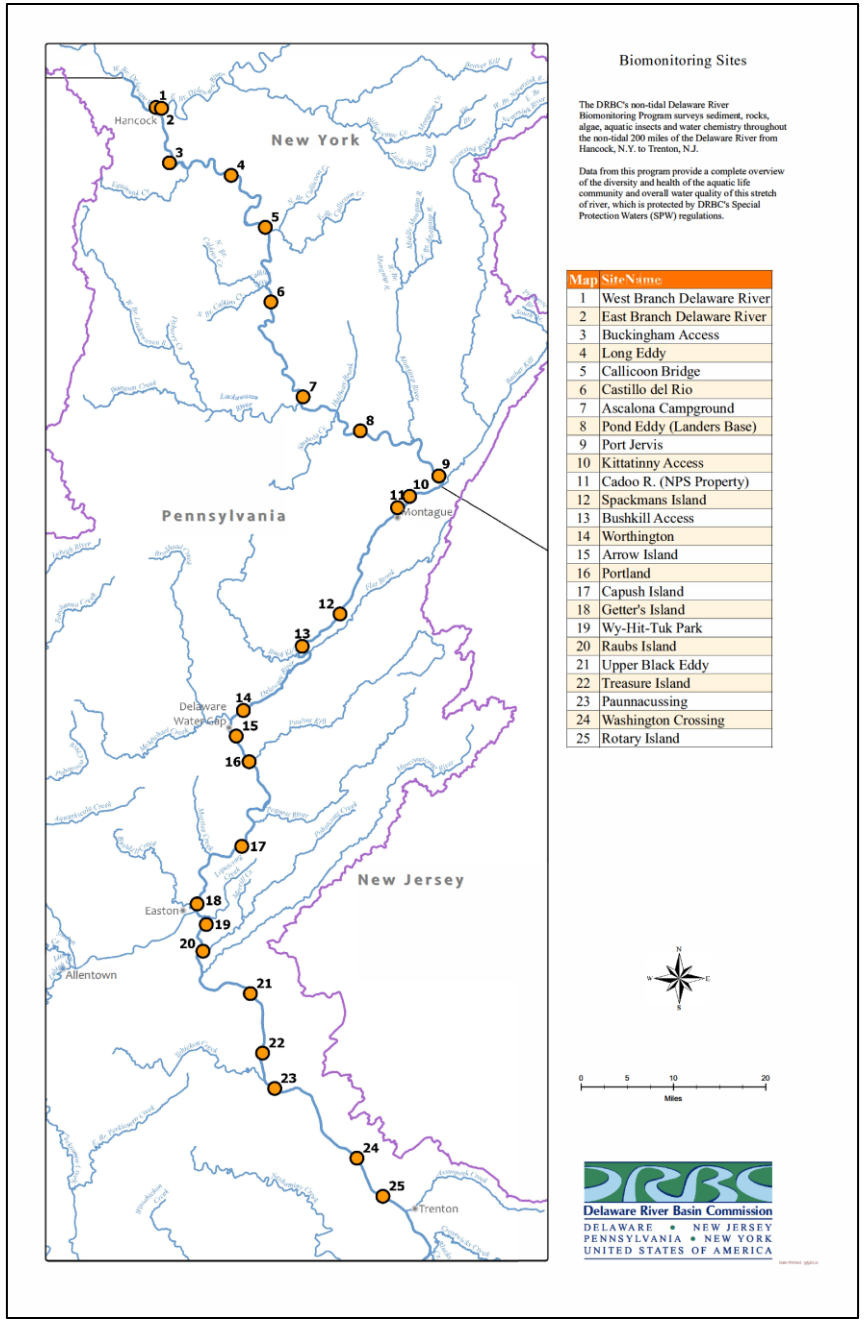
- 25 Stations from Trenton to Hancock
- August and September Index Period
- Collected macroinvertebrates, algae, water quality, and physical habitat data



Map	SiteName
1	West Branch Delaware River
2	East Branch Delaware River
3	Buckingham Access
4	Long Eddy
5	Callicoon Bridge
6	Castillo del Rio
7	Ascalona Campground
8	Pond Eddy (Landers Base)
9	Port Jervis
10	Kittatinny Access
11	Cadoo R. (NPS Property)
12	Spackmans Island
13	Bushkill Access
14	Worthington
15	Arrow Island
16	Portland
17	Capush Island
18	Getter's Island
19	Wy-Hit-Tuk Park
20	Raubs Island
21	Upper Black Eddy
22	Treasure Island
23	Paunnacussing
24	Washington Crossing
25	Rotary Island

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PFAS, 6PPD-Q and Boat Run Updates

Jeremy L. Conkle, Ph.D., Sr. Chemist/Toxicologist
Matt Amato, Ph.D., Water Resource Scientist

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New Release #1

PFAS:
NFWF Year 3
Final Report

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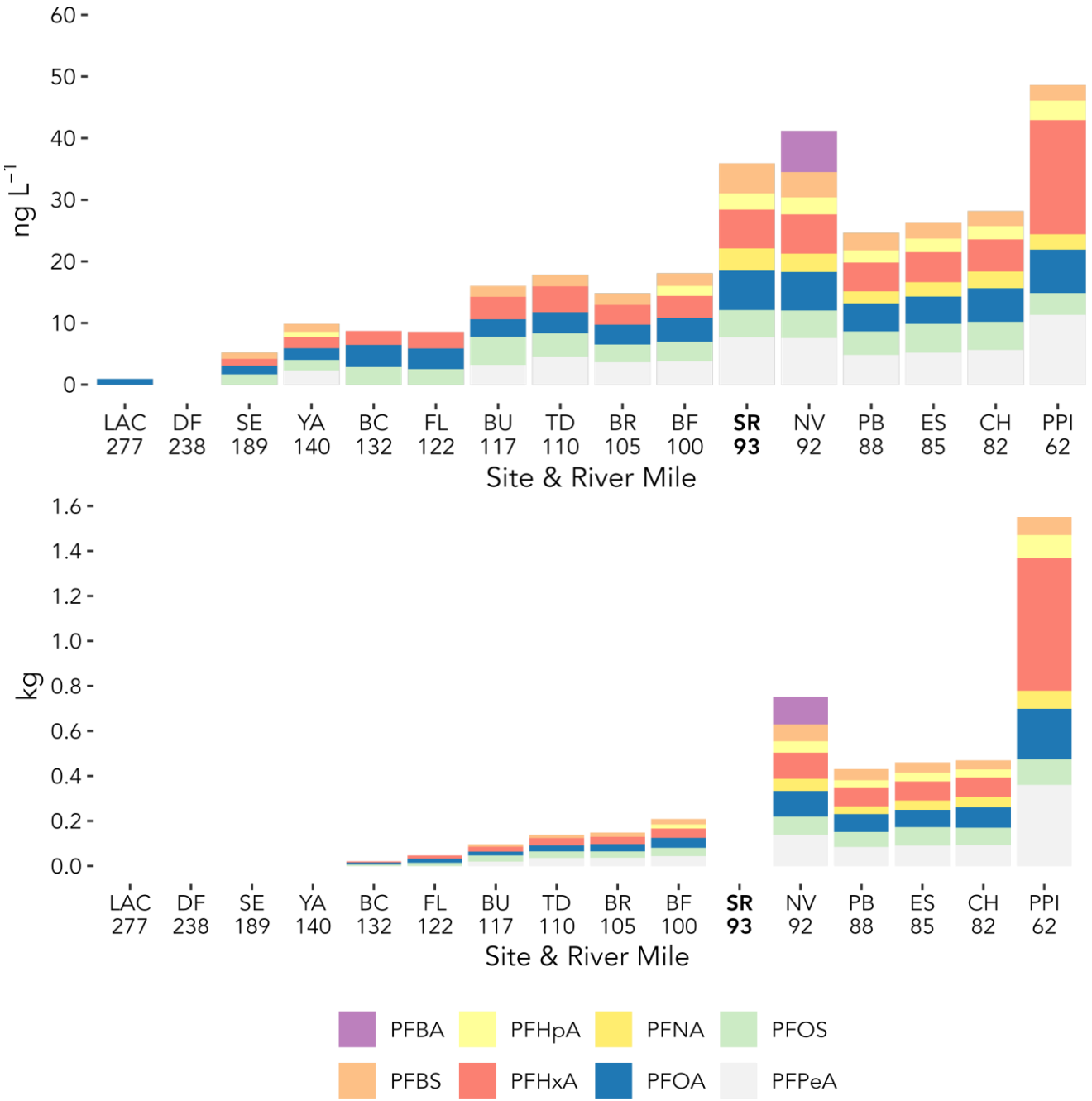
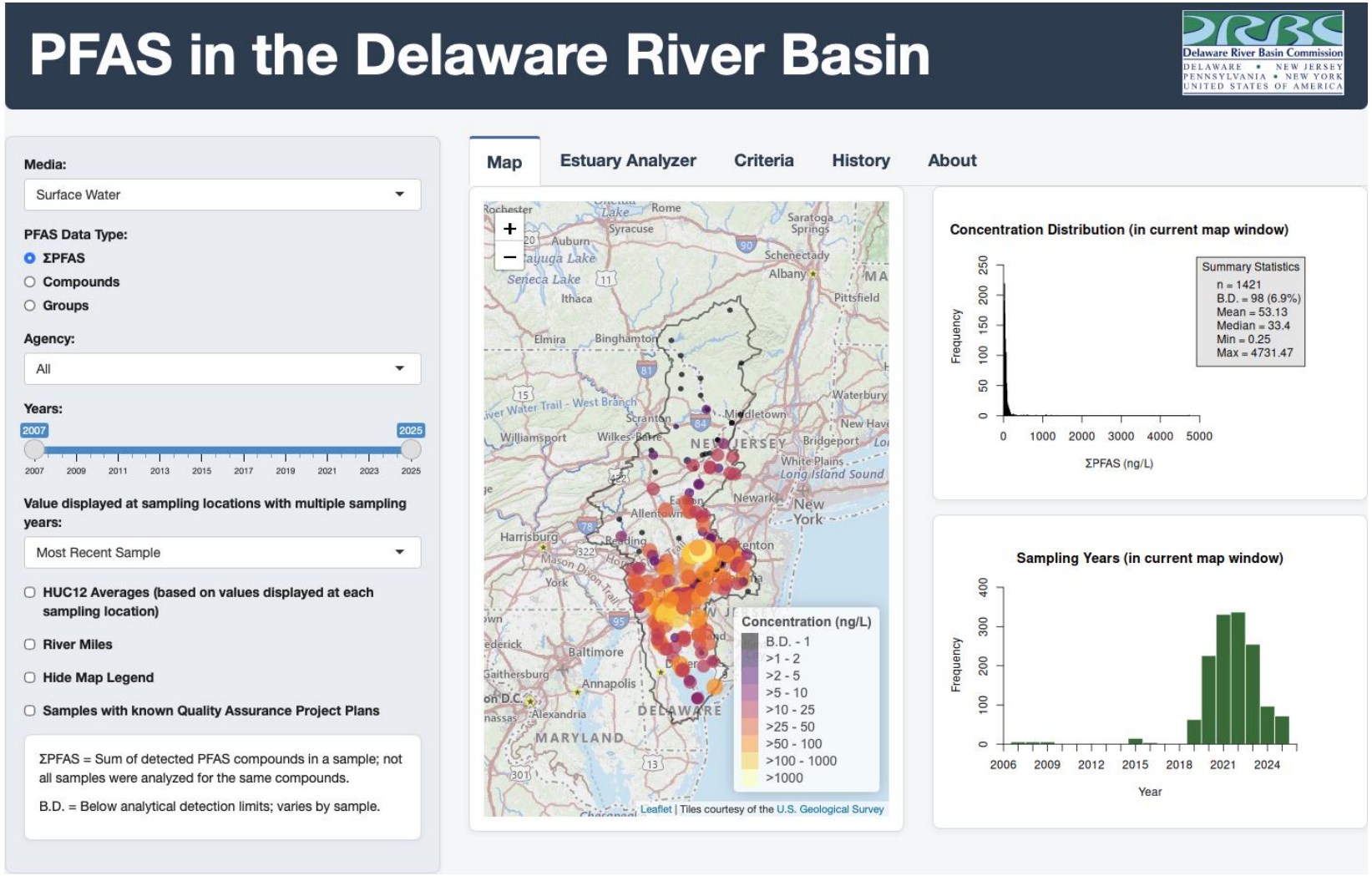


New Release #2

PFAS Web App



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Upcoming PFAS Webinar

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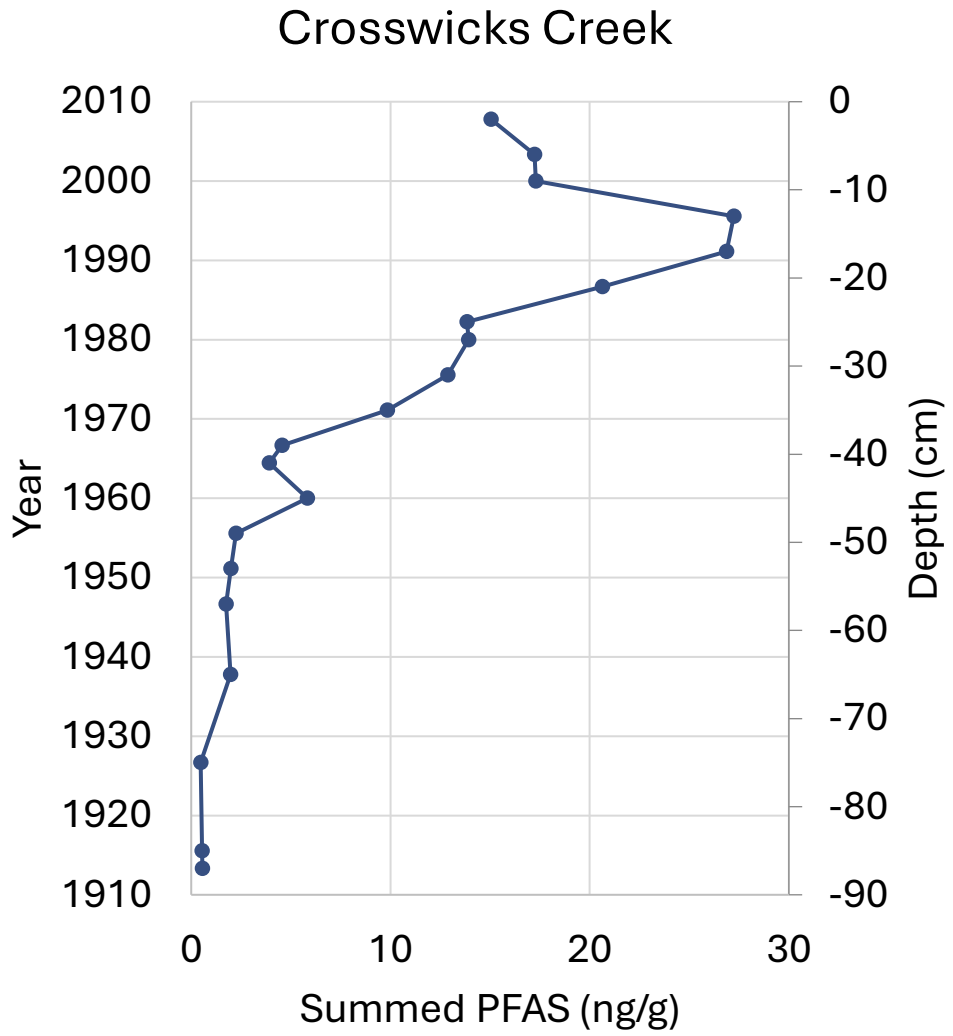
- ***June 15, 2026 from 12 to 1 pm EDT***
  - NFWF Year 3 Final Report summary
  - PFAS Web APP Release and Demonstration

Webinar Registration

https://tinyurl.com/PFAS-Update

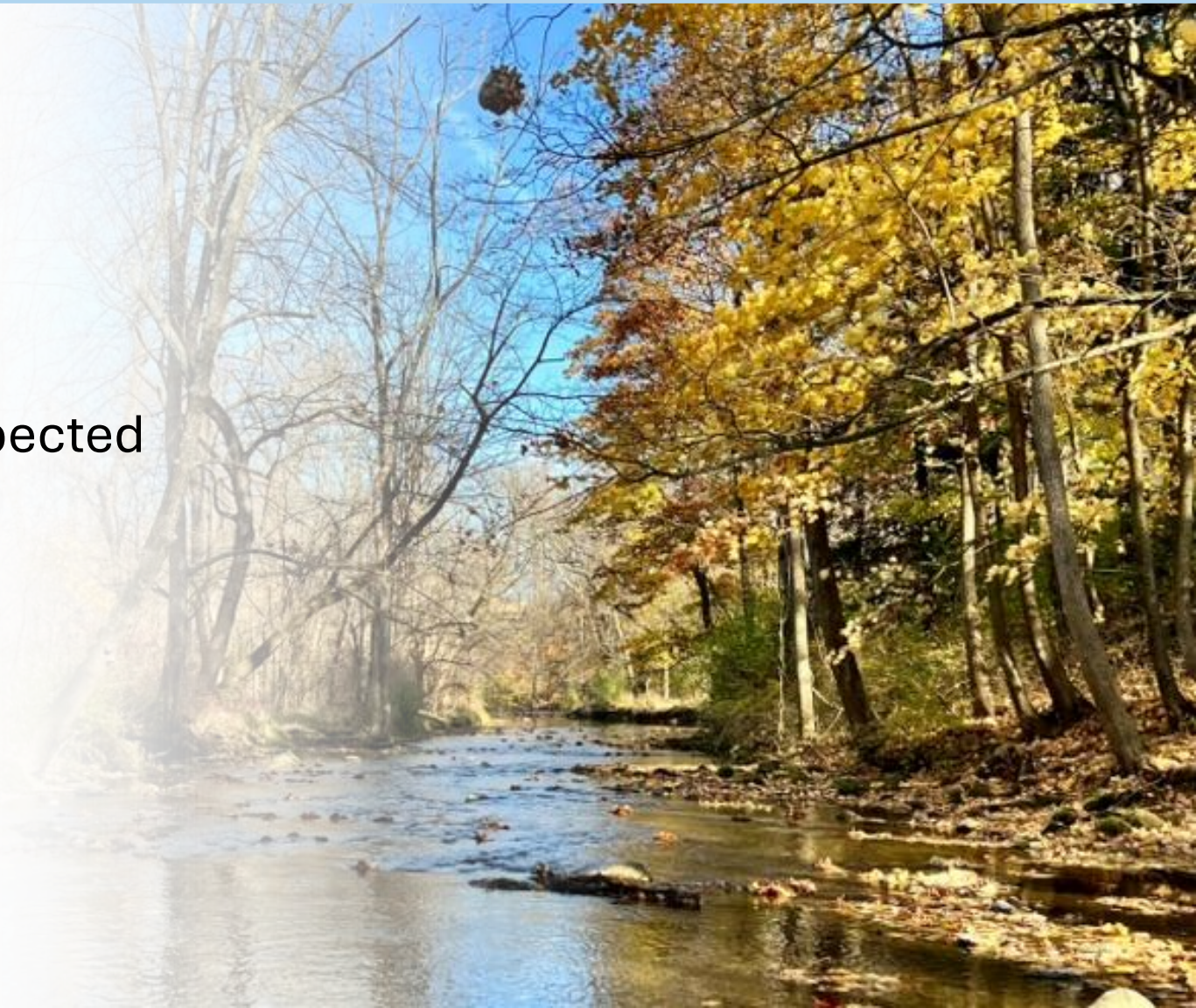
Other PFAS

- Sediment Core PFAS w/ANSD & DNREC
  - 6 sediment cores collected in 2008 are being analyzed for PFAS & Microplastics
- Musconetcong PFAS monitoring Year 2



6PPD-Q

- Project is finished
- Writing the final report with release expected later this year



2026 Boat Run

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