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

Delaware River Basin Commission
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Steven J. Tambini, P.E.
Executive Director

Monitoring Advisory and Coordination Committee (MACC)

Meeting Highlights

December 16, 2021 – 9:30 AM

Delaware River Basin Commission – Remote Autumn Meeting

Zoom Link:

https://us06web.zoom.us/j/87585998966?pwd=TjVqK0ZoSC9GZmY3anM0d3NndFFvZz09

Attendees:

Namsoo Suk (DRBC)
Ron MacGillivray (DRBC)
Elaine Panuccio (DRBC)
John Yagecic (DRBC)
Jake Bransky (DRBC)
Kristen Bowman Kavanaugh (DRBC)
Eileen Murphy (NJ Audubon)
Preston Luitweiler (WRA DRB)
Heather Heckathorn (USGS)
Chris Kunz (NJDEP)
Brian Henning (NJDEP)
Matthew Fritch (PWD)
Li Zheng (DRBC)
Kevin Pregent (DRBC)
Sheila Eyler (USFWS)
Aaron Bitler (PWD)
Kelly Somers (EPA)
Dave Wolanski (DNREC)
Kari St. Laurent (DNREC)
Kurt Cheng (PDE)
Jacob Gibbs (retired)

1) Welcome and Call to Order

- Welcome & Call to order around 9:40 AM with introductions on the call. Elaine Panuccio called off each person's name in order of the Attendees List on Zoom meeting.

2) Overview of 2021 DRBC Monitoring and Planned 2022 Monitoring

- All DRBC monitoring updates are available under December 16, 2021 "Meeting Materials and Summaries." Starting off the DRBC Monitoring discussion, John Yagecic provided updates on a number of projects:
    - Estuary bacteria monitoring and source tracking: Shore-based monitoring occurred in 2021 at 9 locations within Zones 3 and upper 4 of the Delaware Estuary. Stool samples are being collected and will be submitted to Montclair University for eDNA analyses. Montclair currently has a library of various specimens' DNA markers in their database

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and DRBC collected samples within the study area to confirm their current DNA markers. Stool samples were collected from both NJ and PA for: horse, cow, dog, deer, and goose. Future DRBC estuary bacterial sampling will include microbial source tracking in addition to water sample analyses. The microbial source tracking will be performed by qPCR.

  - Boat Run monitoring program: successfully completed Boat Run monitoring, which occurred from March 2021 through October 2021 once per month. PFAS surface water samples and 1,4-dioxane samples were added in 2021. Data will be uploaded to WQX and available to the public.
  - Thermal Shading assessment: DRBC staff tested out equipment on canoe in 2021 as the manufacturer of the equipment said that would work well, but it did not work well, so a new method will be established for 2022 monitoring.

- Jake Bransky provided updates on three projects at DRBC:
  - Dissolved Oxygen profiles: DRBC staff measured dissolved oxygen along transects at Ben Franklin and Chester three times in 2021. Data was collected at both sites in May, July, and September. Vertical profiles for dissolved oxygen were conducted along the transect to identify if any stratification of the water column occurs during spring through summer. Results indicate no stratification, and that the system is well-mixed.
  - Biological monitoring update: DRBC collected from 8 sites in 2021, but due to high flow events, the remaining 17 sites are left to complete in 2022. A flow target of 10,000 CFS at Trenton is required to move forward with sampling.
  - Microplastics monitoring update: Microplastics samples were collected from 2019-2021 using a range of methods, including net and grab samples. Results from Temple have been received and a report will come out in early 2022.
- Non-tidal chloride monitoring and expanded parameters: Elaine Panuccio provided status update on chloride monitoring for 2021. As it is year-round, the monitoring is ongoing, however, the group was updated about the high flow events associated with the hurricanes in August and September and how they displaced the continuous loggers. Since this occurred, DRBC tethered the logger bases so that they will most likely withstand such future events. For 2022 monitoring, the site list will be expanded to include various ions. The parameter list is included on the DRBC Monitoring Updates presentation. It was suggested by Preston Luitweiler during the meeting to keep silica on the list as it is important for understanding diatom assemblages. John Yagecic informed the group that the Boat Run collects for silica, thus there is a large dataset for silica for the estuary and bay. Kari St. Laurent mentioned that this data is needed for the freshwater interface as there is a larger focus on ocean acidification monitoring. Kari St. Laurent also mentioned that dissolved inorganic carbon is important for evaluating pH in addition to establishing the relationship between specific conductance and chloride. Elaine Panuccio shared some draft graphs (with limited data) that show the relationship between chloride and specific conductance on a site-specific basis. Although most sites showed a positive correlation between the two parameters, some sites showed no, or a negative, correlation. Chris Kunz commented that this negative trend is seen at Dunnfield Creek at the Delaware Water Gap as

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well. It is possible that it is well-forested area and not exposed to road salt runoff, and this phenomenon will be monitored moving forward. Lastly, the freshwater salinization workgroup was discussed, and plans will be made soon to coordinate this effort.

- Delaware River PFAS Monitoring: Ron MacGillivray updated the group about the surface water, sediment and fish collection implemented in 2021. Samples were collected from both the tidal and non-tidal mainstem in addition to some PA tributary sites. Wild tidal mussels, and freshwater mussels that were caged in the non-tidal Delaware River in 2019 through 2020, had been submitted to the analytical lab for PFAS analysis also. Additionally, surface water samples for PFAS were added to the DRBC's Boat Run in 2021 and will continue in 2022. Sampling and analysis of fish, water, and sediment will continue in 2022. PCBs, dioxins/furans, pesticides, total mercury, and methylmercury will be monitored in cooperation with basin state agencies. Heather Heckathorn inquired about which analytical lab is performing the analyses, in which Ron informed the group that SGS Axys Analytical will be performing the work. Joe Duris asked about the location of fish tissue sampling for PCBs, and Ron replied that this work will occur near the confluence. Matthew Fritch asked about the cause of the Neshaminy Creek PFAS advisory, however, PADEP has not released information yet. Lastly, Brian Henning informed the group that NJ is collecting water, sediment, and fish PFAS samples around the airforce bases and/or known sources. Lastly, NJDEP and DRBC will need to coordinate regarding Lower Delaware Basin tributary 2022 fish collection for PCBs.

3) Group monitoring updates

- NJDEP:
  - Brian Henning – Worked on PFAS Bioaccumulation Factor (ANS) for freshwater and saline waters of NJ in 2021 in addition to PFAS monitoring. In 2022, the Lower Delaware tributary fish collection for PCBs will occur. In 2021, stream eDNA monitoring for American Shad (presence or absence) above dam on Musconetcong occurred in which some shad DNA were found. In spring 2022, real-time shad will be collected.
  - Chris Kunz – Cooperative network monitoring with USGS currently sampling 40 sites (various tributaries) within the DRB. Conventional parameters are collected, but a subset of sites will be sampled for pesticides, trace metals, etc. In early 2021, follow-up for PFAS sampling occurred (in 2020, two rounds of PFAS sampling done at all 40 sites) at a subset of sites (4 or 5) to collect for water column and sediment as well. Later in 2021, started synoptic study for 1,-4 dioxane at all 40 sites. Future work will include adding PFAS twice per year for all 40 sites and a road salt study (outside of DRB).
- USGS:
  - Joe Duris – Routine WQN monitoring (nutrients, metals, ions) ongoing. PFAS-related work: In 2021, upstream and downstream sampling around dischargers (six WWTPs that accept leachate, oil, and gas waste) with PADEP. Next, PFAS partitioning of foam (mass balance between foam, sediment, water, etc.) will occur in Neshaminy (2022) and Wissahickon (2023) Creeks. USGS chloride project is ongoing and data sharing is

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recommended. In 2022, there are plans to move multi-level sonde for conductivity, temperature, and depth from Ben Franklin to Chester gage sites. Adding new sonde to Marcus Hook NOAA Ports station (sp cond, temp, discharge, etc.). Late spring-early summer 2022: aerial electromagnetic survey along main channel in Estuary where saturated zone is to help with mapping saltwater intrusion (funded by NGWOS). Ecomapper data about to be released, which includes CTV footage along with the data. Isotope synoptic study planned to estimate recharge potential using stable isotopes. This data is intended to feed a model to characterize recharge potential.

  - Heather Heckathorn – Seawater monitoring to assess sea level rise and saltwater intrusion in cooperation with NGWOS. This work is to evaluate risk on drinking water. Sites include tributaries in the DRB such as Cohansey, Maurice, and Alloway. Additionally, groundwater seawater intrusion is also being studied through isotope monitoring at 30 wells. Novel bacteria monitoring occurred in 2021 using an automatic sampler (Fluidion) in collaboration with DRBC. Real-time monitoring technology assessed against lab data. Data is available in NWIS. Lastly, NWIS discrete sampling was done in 2021 and will continue in 2022.

- PWD
  - Matthew Fritch – Will reassess monitoring plan once contract is renewed for PFAS drinking water monitoring. Matthew expressed interest on behalf of someone else in the chloride workgroup. 1,4-dioxane monitoring occurred in 2021 and may include some bromide monitoring (disinfectant byproducts) in Schuylkill in 2022. Manayunk Canal restoration of gate house and channel wall to reintroduce flow along Schuylkill River. Currently in pre-construction phase. Post-construction phase will include assessment of affects of flow. There is some concern about resuspension of sediments.
- DNREC
  - Kari St. Laurent – In 2021, added 2 PhenoCams (cameras that track vegetation phenology) along St. Jones River to assess vegetation phenology and greening timing. Acidification monitoring occurred in 2021 and will continue into 2022. Already deployed pH sondes at a number of sites and budgeted in 2022 for pCO2 continuous monitoring. Lastly, monthly fish trawls in Black Bird Creek occurred in 2021 since a northern snakehead was found in that system, but none were found in 2021. This monitoring will continue into 2022.
- PDE
  - Kurt Cheng – Bartrams Gardens monitoring conductivity with HOBO loggers in alignment with freshwater mussel studies. In 2022, there are plans to monitor seston quality and quantity along NJ Bay Shore (associated with oyster farms). Since 2020, a New Castle County freshwater mussel project consists of growing freshwater mussels in ponds that were stormwater ponds. Ron MacGillivray asked about the goal of the study, and Kurt informed the group that it is being conducted in order to assess whether mussels can survive in a storm pond and if they will grow and eliminate some pollutants. Kurt

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mentioned that the runoff from these ponds have not shown detrimental effects to the mussels. Kurt also expressed interest in the chloride monitoring workgroup.

4) Roundtable Discussion

- Jacob Gibbs asked about any sediment/legacy contamination data regarding dredging above Schuylkill Dam. John Yagecic responded that prior to dredging, project leads would have likely had to complete soil core samples under US Army Corps of Engineers permitting process, but that DRBC does not have specific information regarding that work. Jacob Gibbs expressed concern in resuspension of contaminants.
- No additional discussion. Open discussion occurred during the earlier part of the meeting, and nothing was added at the end.

    - **Meeting adjourned by 11:00 AM.**