

Delaware River Basin Commission

DRBCs PFAS monitoring and collaborators in the Delaware River Basin

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I arrived at DRBC in December 2022 after >8 years as a professor in Texas. While we've done a lot on PFAS in my brief time here, all of this work was either done or initiated by my predecessor, who many of you may know, Dr. Ron MacGillivray who was at DRBC for ~20 years.

DRBC Vision & Mission

- **VISION:** The Delaware River Basin Commission (DRBC or Commission) provides trusted, effective and coordinated management of our Basin's shared water resources.
- **MISSION:** Managing, protecting and improving the water resources of the Delaware River Basin.



Delaware River Basin Commission

DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA

DRBC is an Interstate Commission that works very closely with our watershed states.

We are a small regulatory body of 37 people that oversee the quantity and quality of water and health of the Delaware River Basin. We are somewhat independent from states, although the governors of each state are commissioners that meet quarterly to oversee our operations.

The vision of the Delaware River Basin Commission is built upon the Compact signed in 1961 by the states of Delaware, New Jersey and New York, the Commonwealth of Pennsylvania and the federal government. The vision as set forth in the Delaware River Basin Compact is for, "the conservation, utilization, development, management and control of water and related resources of the Delaware River Basin under a comprehensive multipurpose plan [to] bring the greatest benefits and produce the most efficient service in the public welfare."

DRBC PFAS Directions



PFAS
Monitoring



Data
Synthesis



Source
Identification



Source
Reduction



With ~20 years of work on PFAS at DRBC we have a large dataset to pull from and plans to take that work from basic monitoring to synthesizing our data to identify hot spots in the basin with a goal of identifying sources and reducing discharges.



PFAS Monitoring Data



Fish



Water



Sediment



Crabs



- At DRBC we have examined multiple environmental matrixes, starting with fish in 2004, then water in 2007 and sediment in 2016.
- Summarize data on WQX portal
 - Data range from 2004 to present with
 - 11-13 compounds in early analysis, up to 40 now
 - Water, sediment, fish, crabs and muscle data



PFAS Monitoring Data



Home Explore WQP Sites Help & About

Basic **Advanced**

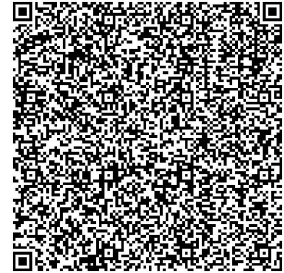
Select Location Parameters

Specify location parameters to describe the spatial extent of the desired dataset. All fields are optional.

Country [Ⓢ] All Countries	Point Location [Ⓢ] Within	Bounding Box [Ⓢ] North: 90	Site Type [Ⓢ] All Site Types
State [Ⓢ]	miles of	South:	Organization ID [Ⓢ]

<https://www.waterqualitydata.us>

DRBC PFAS Query



DRBC PFAS Data File



DRBC makes all of our data publicly available shortly after we receive it, meaning it is typically available publicly before we've written a report. All data is uploaded to the USEPAs Water Quality Exchange website and can be accessed at "www.waterqualitydata.us". Our PFAS data on here goes back to 2004 and stretches to present.



PFAS Monitoring



Dr. Michelle Lorah & Dr. Adam Mumford:
MD-DE-DC Water Science Center
Kelly Smalling: NJ Water Science Center



Dr. Mi-Ling Li: U. Delaware School of
Marine Science & Policy

SEPA Regional PFAS Discussion Group



Dr. Anna Robuck: Atlantic Coastal
Environmental Sciences Division
Laboratory, Narragansett, Rhode
Island



Dr. Rominder Suri & Dr. Gangadhar
Adaluri: WET Center

Regional PFAS Track down

THE
UNIVERSITY
OF RHODE ISLAND

GRADUATE SCHOOL
OF OCEANOGRAPHY

Izak Hill (grad student) &
Dr. Rainer Lohmann

DRBC Advisory
Committees



These are the contacts and collaborations that I have been involved with over these first 11 months of my time at DRBC. During the course of our sampling we collected parallel samples for a joint project between the USGS and University of Delaware and a joint project between the USEPA and University of Rhode Island.

SEPA PFAS discussion group started in 2020, Philly Water Department, DRBC, US Navy, USGS and a few others to generally get up to speed on PFAS and share info about what everyone was working on. Not very active that this time, but helped get people into the same room to talk about the issue and start their work on PFAS.

DRBC Advisory Committees provide a forum for the exchange of information and viewpoints. There are currently 8 Advisory committee's, with most having 1-2x annual public meetings. I'm the liaison for the Toxics Advisory Committee. This committee has largely focused on PFAS for the last few years. The committees consist of experts and stakeholders with varying backgrounds serving 2-3 year terms.



PFAS Monitoring & Links

DRBC PFAS Webpage



<https://www.nj.gov/drbc/programs/quality/pfas.html>

DRBC Advisory Committee Webpage



<https://www.nj.gov/drbc/about/advisory/index.html>





Data Synthesis

<https://echo.epa.gov/trends/pfas-tools>



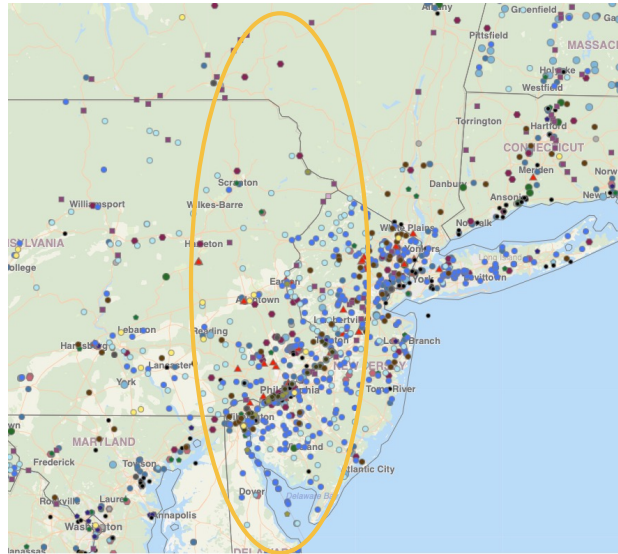
The USEPA has also built and recently released another PFAS tool that will help you further explore our PFAS data and others in our region and nationally.

This tool pulls data regularly from many sources, including the water quality portal I previously mentioned, but it also pull data from the EPA Compliance website (ECHO), so it has information about industrial sources/users, superfund sites, spill and discharges.

We are going to take the data from this website, which is updated with data at regular intervals, so the data reflects recent trends.

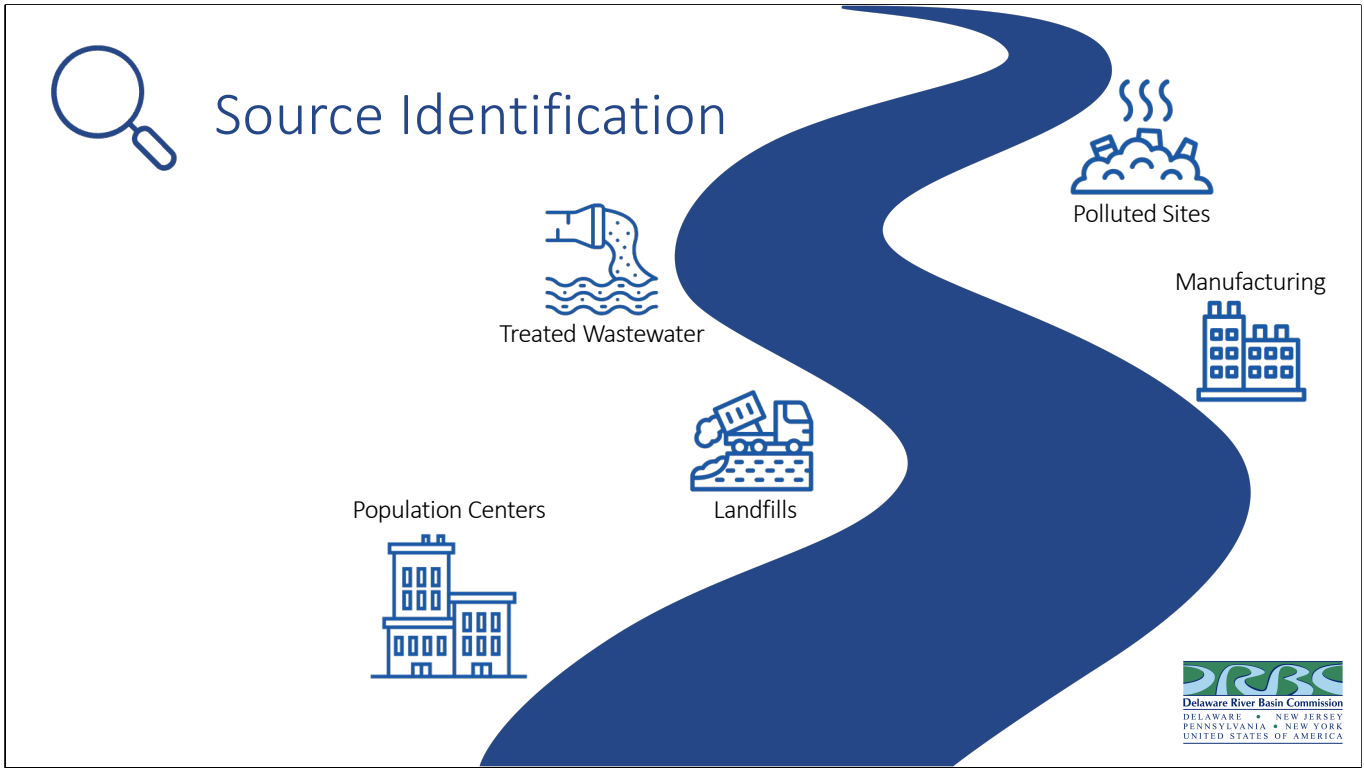


Data Synthesis



Generally speaking, this is the outline of the Delaware River Catchment. Relative to other parts of the country, the Delaware River Basin has a growing, but already robust and long-term dataset. By exploring this whole dataset we can better understand trends for compounds and their concentrations as well as hotspots in the mainstem and its tributaries to help us with monitoring study designs for Source Identification.

On a related note, Catchment isn't a preferred word, but I think when we talk about water pollution, especially PFAS, which are also known as Forever chemicals, catchment best describes a watershed. What we put into the basin is caught in the catchment, whereas watershed implies shedding or loss, rather than catching and holding onto something.



With all of the spatial data from the last 20 years, both mainstem and tributary data, we can identify hotspots and then look to assess upstream land uses to determine sources of PFAS. The USGS recently published a study doing this only in Pennsylvania, but we need to do it catchment wide.



Source Reduction



This is the ultimate goal to protect human, ecological and organismal health. How do we do this? Source reduction is what all the work we have done and plan to do will work towards. With all the data DRBC and others have been collecting we will have a firmer grasp on the status of PFAS in the Delaware River catchment. Using our networks of federal, state and local agencies as well as academics, citizens and community groups we can work toward solutions together.

Currently we have no concrete plans for how to achieve Source Reduction, but we will be working towards this in the future.

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www.drbc.gov



Managing, Protecting and Improving Our
Shared Water Resources since 1961