



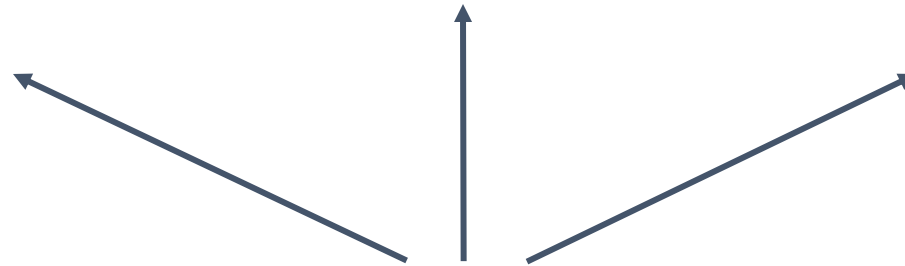
# Lower Raritan River Water Quality Monitoring 2019- 2025 results



# Raritan River Pathogens Monitoring – Project Partners & Funders



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# Why Summer Monitoring?

Warmer temperatures during the summer increases:

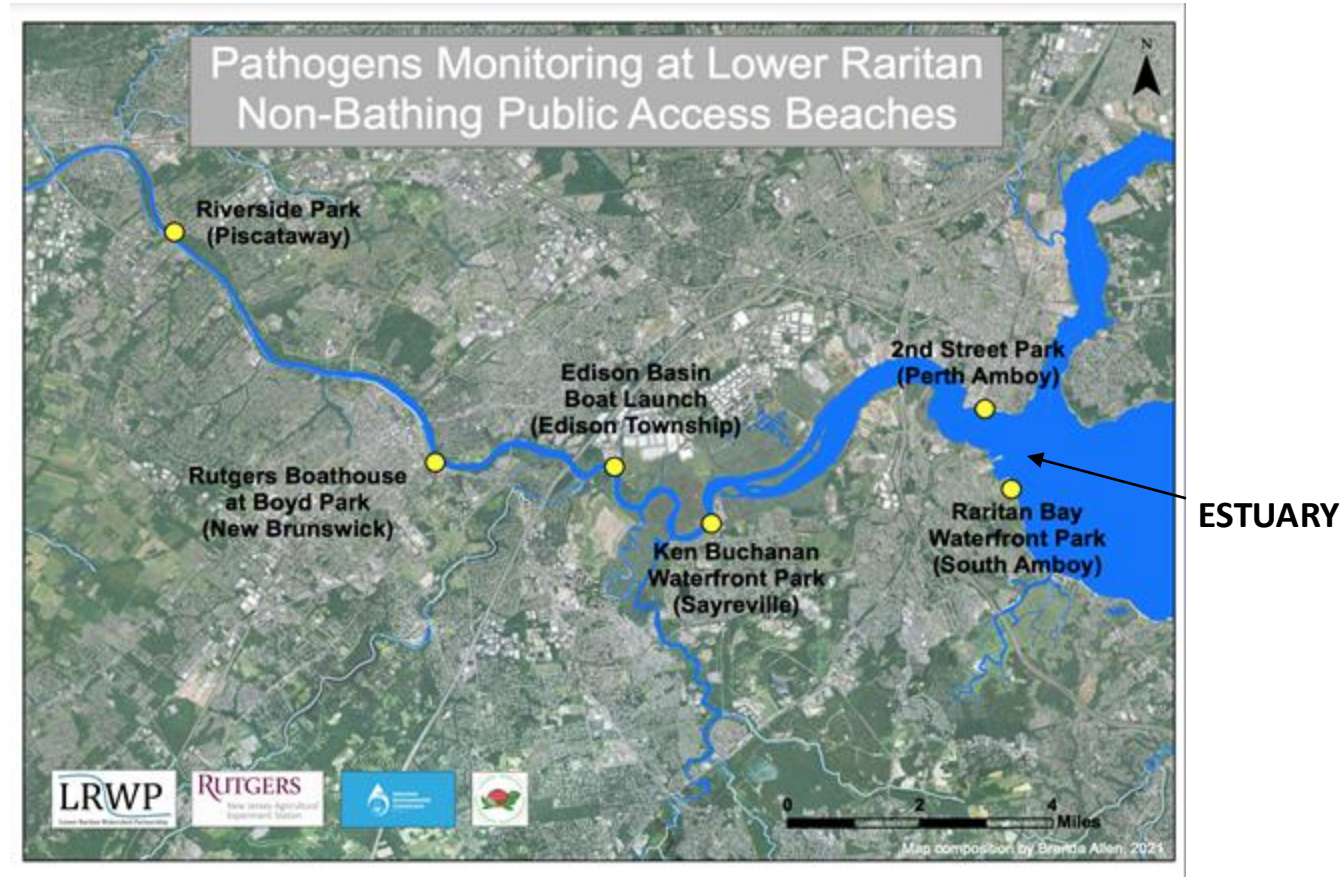
- ❖ Public recreation
- ❖ Bacteria in water

Estuaries (the meeting of salt and freshwater) are critically important:

- ❖ Recreational access points
- ❖ Fish and aquatic breeding grounds

Monitoring helps:

- ❖ Understand baseline data for the estuary
- ❖ Identify potential pollution sources: “hotspots”
- ❖ Increase education
- ❖ Engage people to be stewards of local waterways
- ❖ Better manage our coastal areas

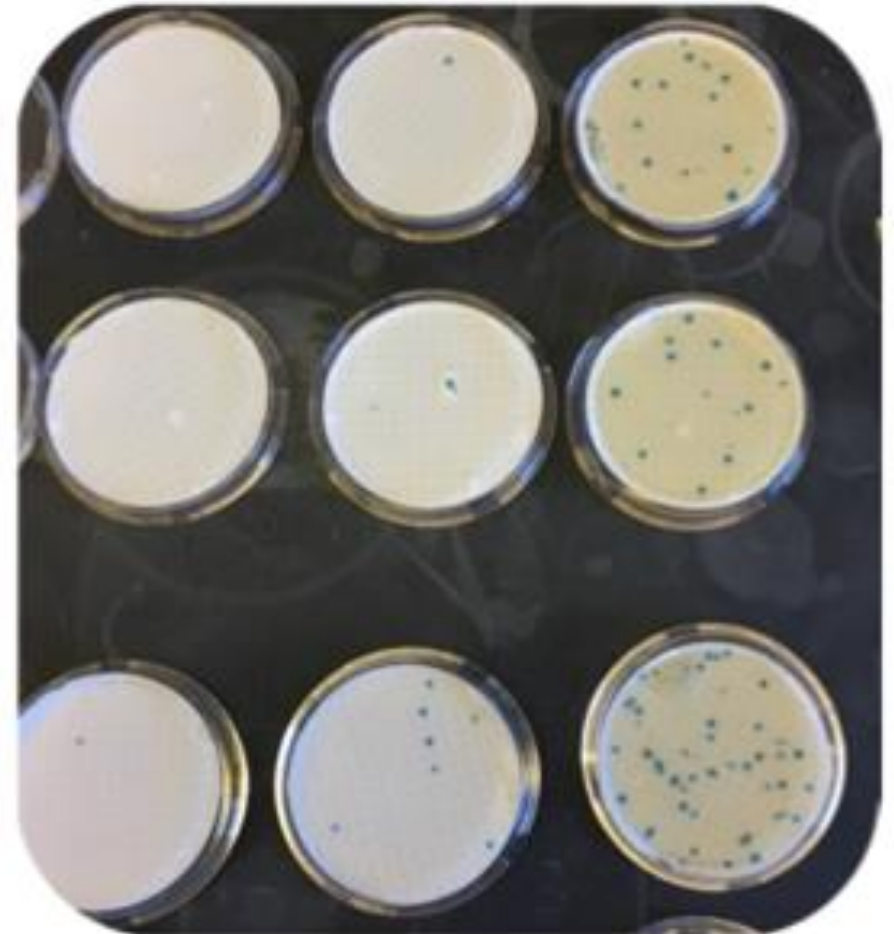


# What do we monitor and why?

## Fecal coliform & Enterococci

### What is Enterococci?

- Spherical shaped bacteria found in the guts and bowels of warm blooded animals, excreted in feces
- Indicator of human pathogens
- Survives in marine waters
- DEP primary contact recreation standard- 104 cfu/ 100 ml or 35 cfu for 30 day geometric mean



# What do we monitor and why?

- Water Temperature
  - Aquatic life -> changes in temperature can be **harmful**
  - Affects pH and DO levels
- Salinity
  - Indicates pollution or wastewater input
  - **Varies** along sites because of estuary
- Dissolved Oxygen
  - Aquatic life -> low levels can result in **hypoxia** and **fishkills**
- pH
  - **Affected by** runoff, algae blooms and human activity
  - Indicates on possible sources of industrial pollution
- Chl-ug/L + Chl-RFU
  - Indicates on **harmful algae blooms (HABs)** through the presence of phytoplankton.
- Latitude/Longitude
  - **Ensure** location accuracy

Interstate Environmental Commission Laboratory  
 NELAP Certified Laboratory - NY Lab ID 10437, NJDEP Lab ID NY240, CTDPH Reg. No. PH-0320  
 BioBAT, Brooklyn Army Terminal | 140 58th Street, 2nd Floor of Building A | Brooklyn, NY 11220

**IEC Volunteer Pathogen Monitoring Field Datasheet**

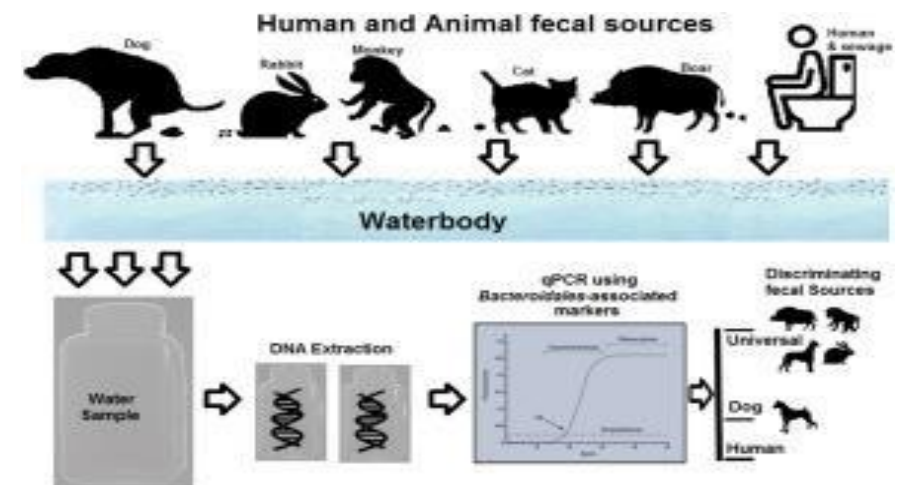
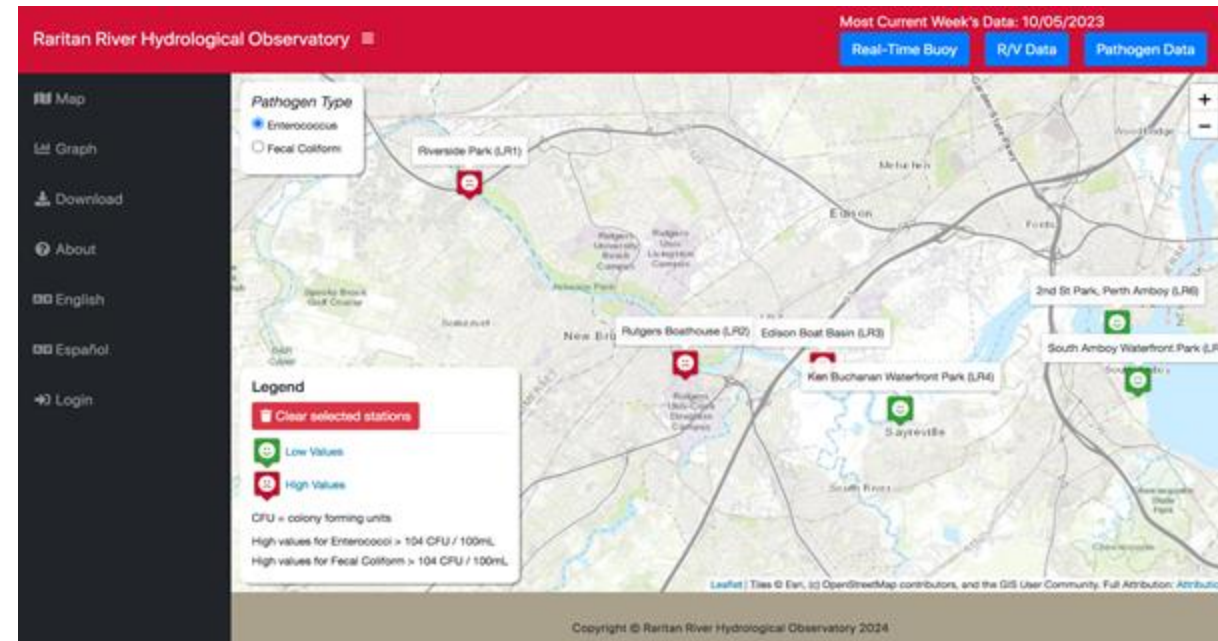
Date of Sampling:						Organization:					
IEC Investigation Number:						Weather Conditions:					
Crew/Sampling Team:											
Station ID	Time	Temp (°C)	Salinity (ppt)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (% sat.)	pH	Chl-a (µg/L)	Chl-a (RFU)	Phycocyanin (µg/L)	Latitude	Longitude

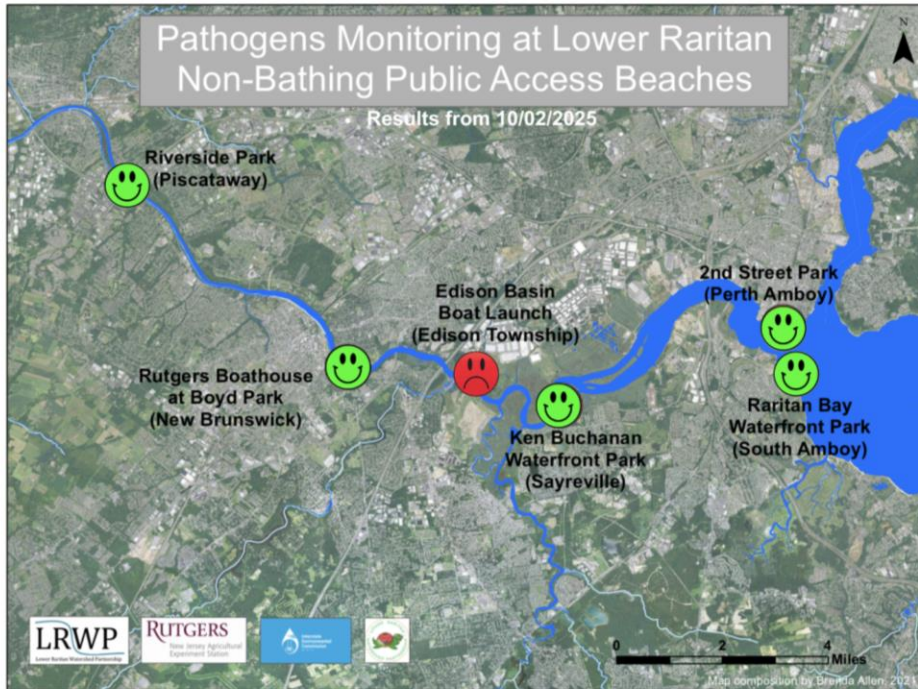
Comments:

Parameter	Range
Temperature (°C)	-5 to 65°C
Salinity (ppt)	0 to 70 ppt
Dissolved Oxygen (mg/L)	0 to 20 mg/L
Dissolved Oxygen (% sat.)	0 to 200%
pH	0 to 14 pH units
Chlorophyll-a (µg/L)	0 to 100 µg/L
Phycocyanin (µg/L)	0 to 199 µg/L

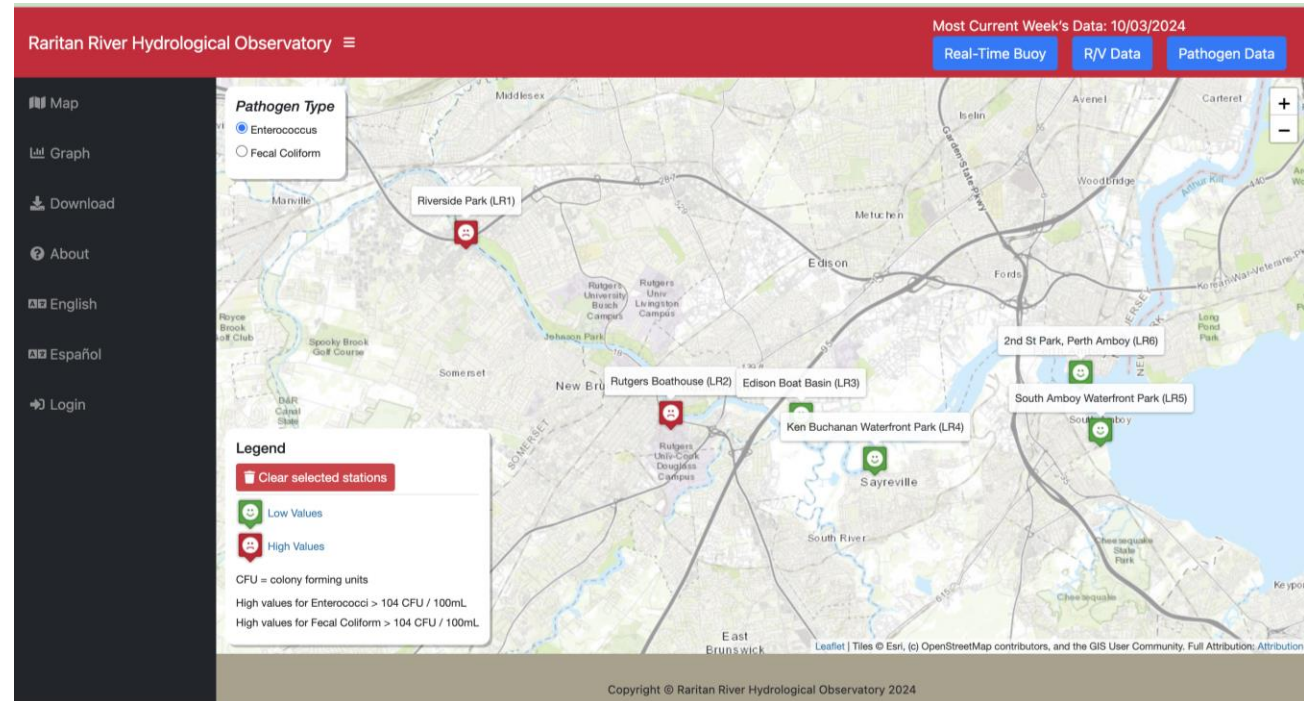
# What do we monitor and why?

1. Friday PM release of bilingual results on LRWP website & RRHO for public awareness and decision-making
2. Collect weekly updates on water conditions through field observations in case needed (HABs or other environmental concerns)
3. Continue genetic source tracking to identify fecal origins in collaboration with Fahrenfeld lab





From left to right, Dr. Anne Gharaibeh (Visiting Professor of Landscape Architecture from Jordan University of Science and Technology), Art Allgauer, Patty Oehmke (Rutgers Family and Community Health Sciences Professor of Practice), Margaret Reinert, and John Meyer. Photo credit: Heather Fenyk.



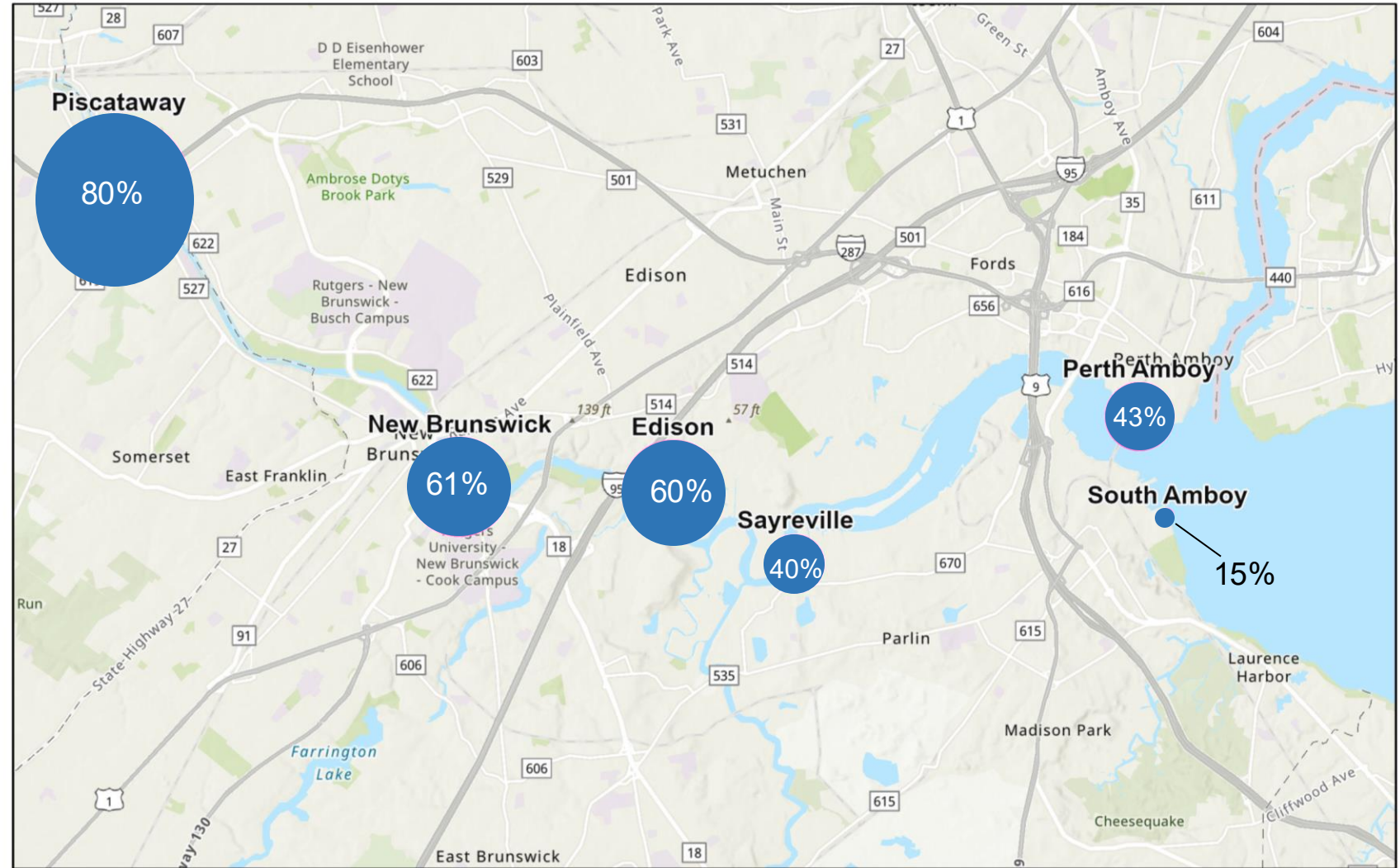
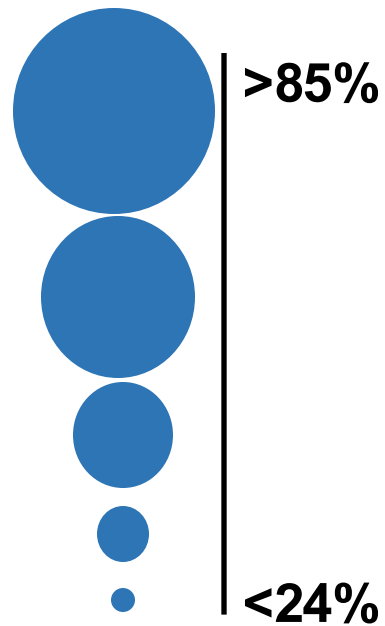
<https://tessera.rutgers.edu/rrho/>

# All years: 2019-2025

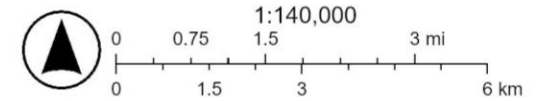
Percent of time each site exceeded the Enterococci health standard.

~130 samples/site

Enterococci NJDEP primary contact recreation standard- <104 cfu/ 100 ml



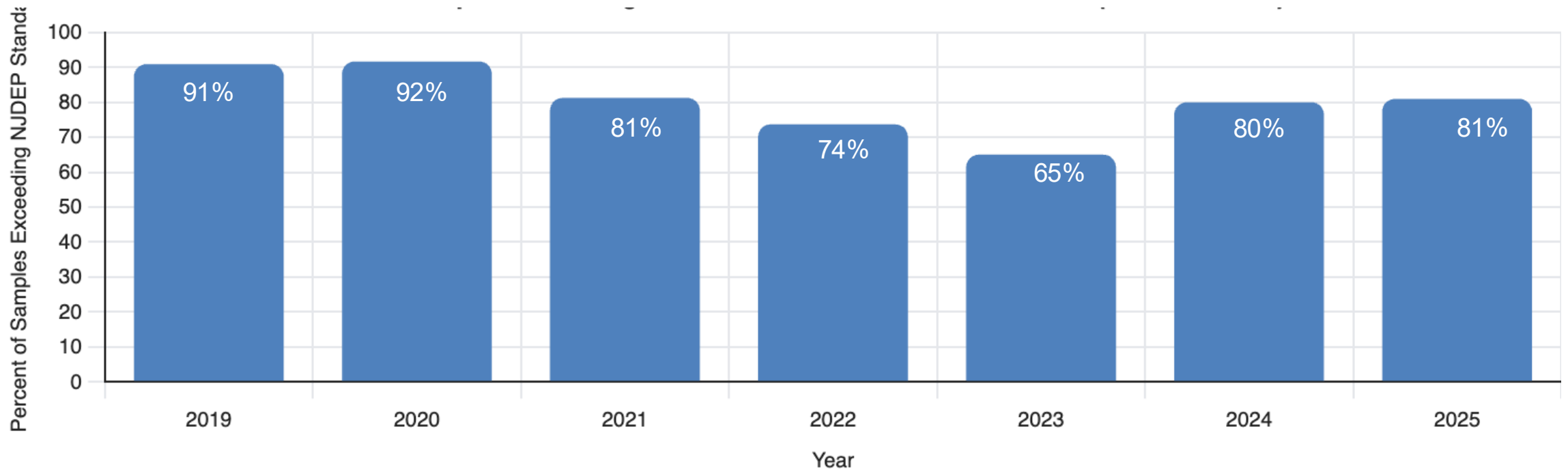
12/13/2024



Esri, NASA, NGA, USGS, New Jersey Office of GIS, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA.

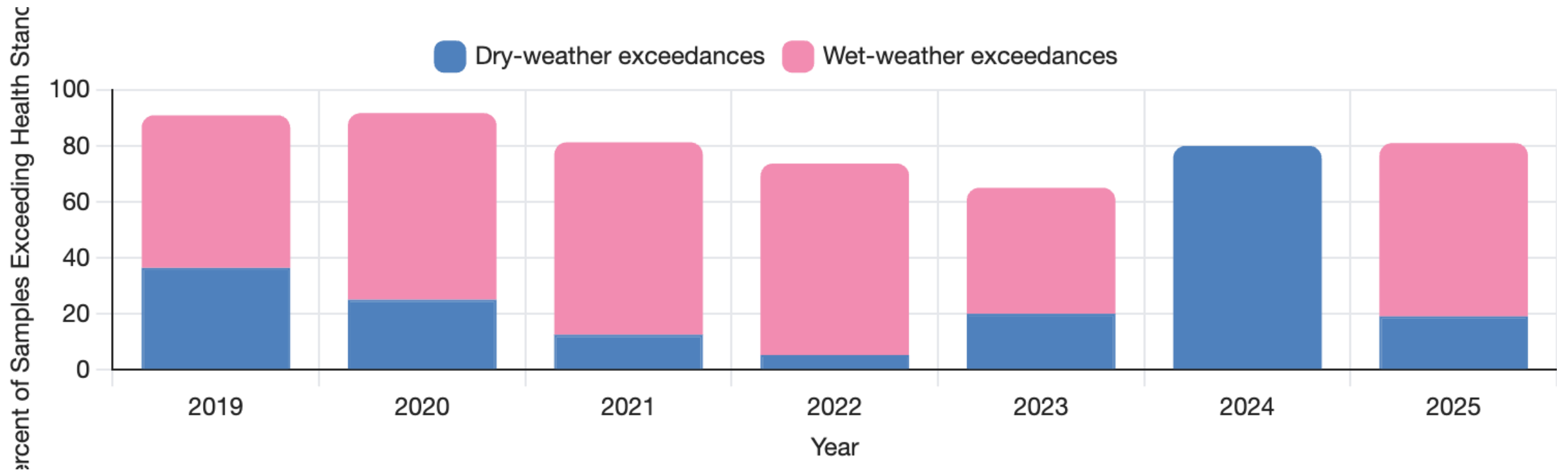
# Riverside Park

Percent of samples exceeding NJDEP enterococci health standard (10<sup>4</sup> cfu/100ml)



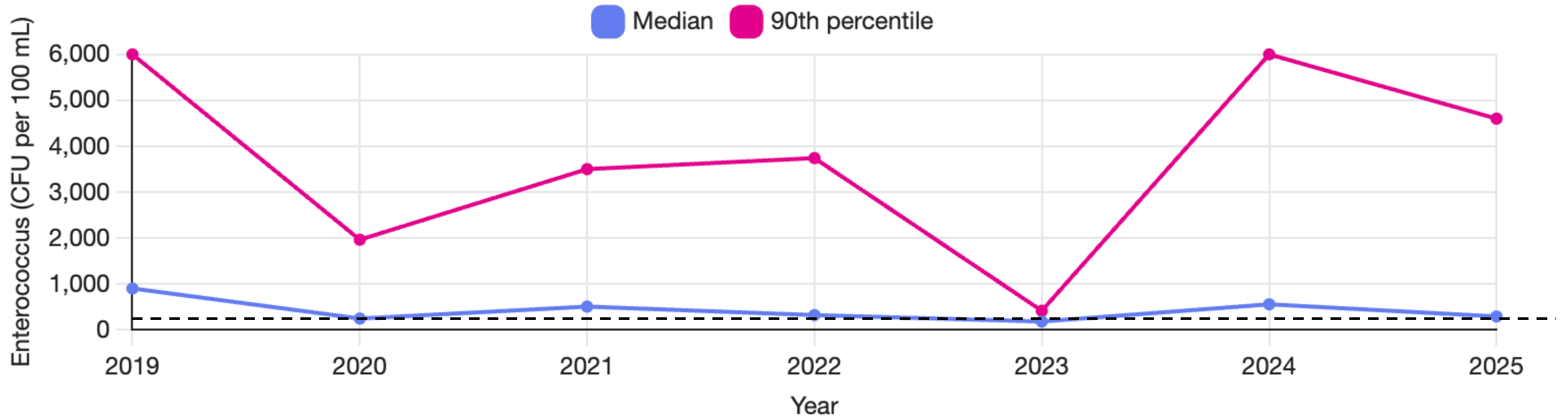
# Riverside Park

Percent of samples exceeding NJDEP enterococcus health standard broken down by dry weather and wet weather



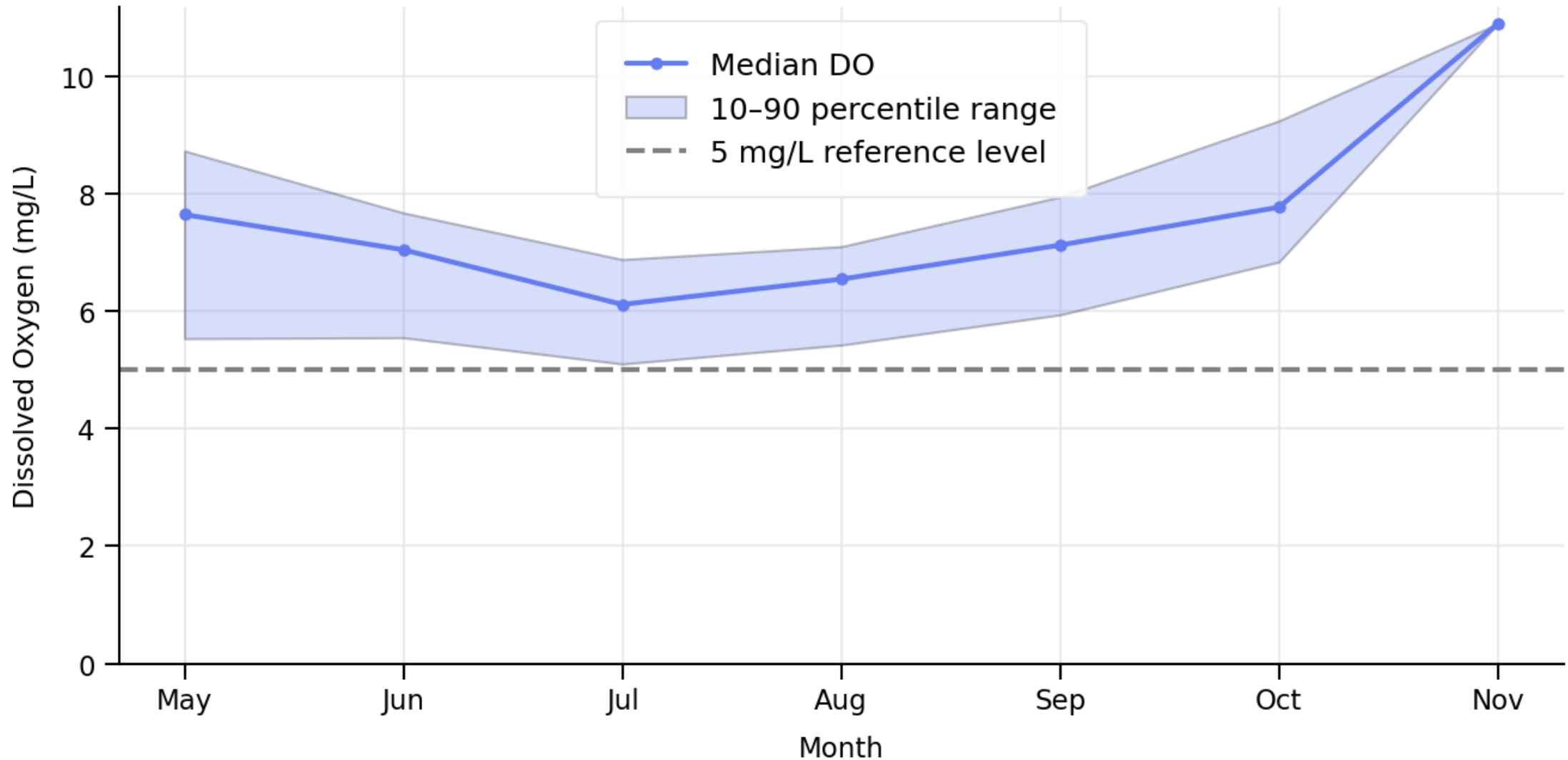
# Riverside Park

## Median Enterococci Concentrations By Year



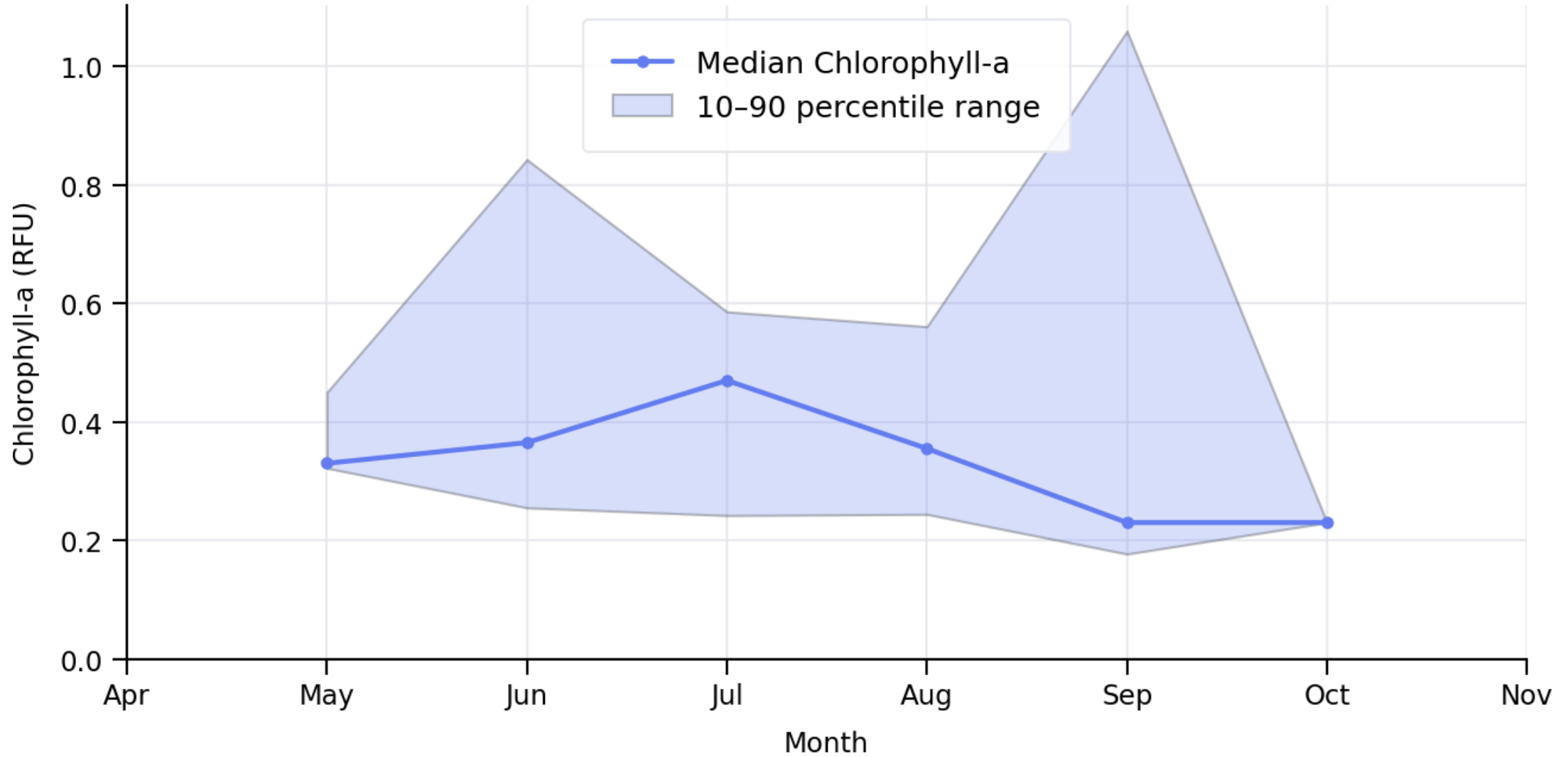
# Riverside Park

## Dissolved oxygen by month (all years)



# Riverside Park

## Chlorophyll-a by Month (all years)



Tell us how you use the River!



Scan this QR code with your cell phone or visit

<https://go.rutgers.edu/RaritanSurvey>