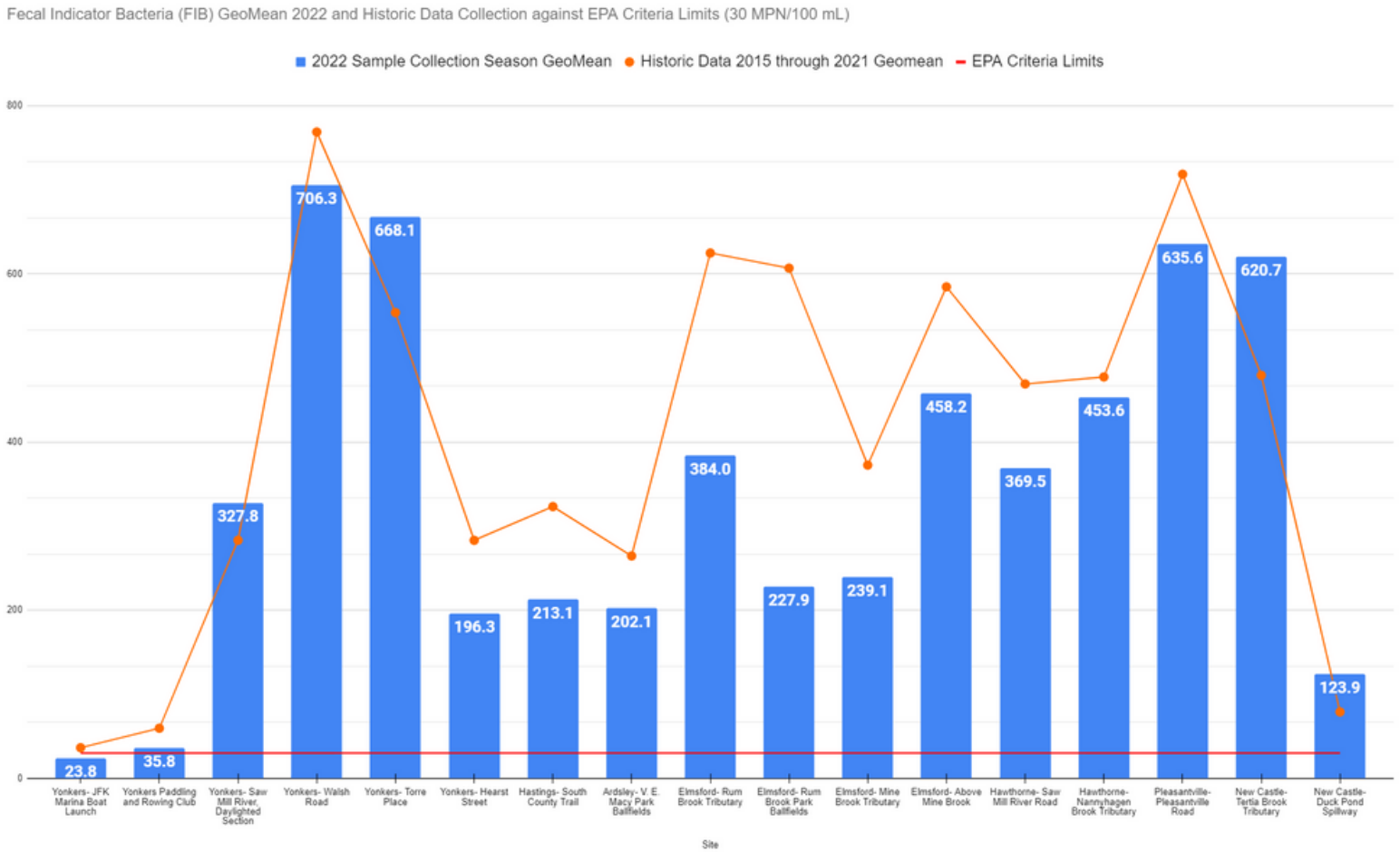
Saw Mill River and Hudson River Stakeholder Review of 2022

There are many things I can say with confidence about the 2022 sampling season. The first being this year holds a record for being one of the driest seasons in terms of rainfall within the summer months. The second is that our stakeholder and sampling cohort for the year reached a record of 14 samplers engaged in the collection of water from the Saw Mill and Hudson Rivers. Each of these participants in the program are a critical component in the overall understanding of the rivers' health. The final highlight of the bacterial indicator study this year is that we have seen some of the lowest amounts of fecal bacterial indicators in our rivers due to the lack of rain and dedication of samplers collection of water. What does this mean? In short, it confirms something that we have thought for a while - rain is a main transport mechanism of bacteria into local rivers and their tributaries.

During our last sampling collection date (which took place on October 27th), wet weather conditions were reported within the 4 day review period with upwards of 0.4+ inches of rain across the watershed. Only two sites on the Saw Mill River showed alarmingly high indication of of fecal indicator bacteria presence in comparison to other locations along the river. Torre Pl. in Yonkers and Pleasantville Rd. in Pleasantville indicated levels as high as 1,012 Most Probable Number of Colony Forming Units per 100 mL (MPN CFU) and 14,136 MPN CFU respectively - both approximately twice as high as the collective geometric mean (an average which indicates a central tendency of a set of numbers by using the product of their values) of the study history of the prior 7 years.

Both Torre Pl. and Pleasantville Rd. (along with a number of other sites throughout the season) resulted in consistently high levels of fecal indicator bacteria through wet and dry weather events. This statement is interesting to me due to the contrast of the sampling site environment at both locations. If you were not actively looking for the Torre Place sampling location, it could be easy for a person to simply drive over it in the area, as the river gets lost within the industrial area full of grey parking lots and buildings. If we were to zoom out at the Pleasantville Road site, the first stark difference is the use of land around the sampling site. The tree canopy alone shadows the river and makes it difficult to see the stream like water trickling south. These two sites do have one thing in common - neither site held any bacterial counts lower than 86 cfu MPN, which is close enough to the single sample limitations for safe interactions with the water; but, still exceeding the criteria limitations for what is considered to be safe by the federal Environmental Protection Agency (EPA).



In reviewing any sampling season, it can become customary to look at single sampling dates and the conditions of the weather that may impact the sample. When looking at the history of the Saw Mill River and this study, it is important to look at trends and how this year compares to the overall results of the tests for the fecal indicator bacteria over time. As mentioned, we use a geometric mean (also used and recognized in federal standards) to compile the results from many one time sampling results into one number representing the site overall. In this case study, we are looking at 6 years of data collection as orange line (2015-2021, sampling did not take place in 2020), against the collection of approximately 13 samples per site over 6 months for 2022 as blue bars.

With the exception of 4 sampling collection sites, most of the other sites fell below the historic geometric mean. These sites also follow very similar trending patterns for 2022 as they have historically. A lack of rainfall is a contributing factor at sites along the river that resulted in lower than historic averages. Even on days where rainfall occurred, their measurements fell at lesser values than that of past years.

Samplers at the Tertia Brook location (The four sites that tested above the historic average) reported a number of oddities throughout the summer - including a red subaquatic plant overgrowth never seen at the site before, an unknown film sheen atop the water and the presence of an orange overflow out of a pipe. These things reported are not currently correlated with elevated fecal indicator bacteria; however, demonstrate the impacts of human use of areas near natural waterways and how it can impact or be impacted by poor water quality.

Another important focal point of looking at these data as a whole is that water in rivers are not stationary. These waters move and they collect and deposit water in different areas along the way. The movement of water in a river and throughout a watershed means that the health of larger bodies of water are also incredibly dependent on the health of smaller bodies of water. In our study this means the Hudson is influenced by the water quality of the indicated tributary, the Saw Mill River. Ultimately, waters are all connected and the health of all connecting waters is important.

Of all of the sites, only JFK Marina in Yonkers met the requirements of safety considerations by standards set by the federal EPA in 2022, with Yonkers Paddling and Rowing Club just barely missing the mark. This information is important to many community members that use such sites for recreational enjoyment.

Saw Mill River Sampler Appreciation

This sampler was one of the first people I met when I first arrived at CURB and he welcomed me to the Hudson River with warmth, community and patience. This Saw Mill and Hudson River protector has hosted the role of Commodore for the Yonkers Paddling and Rowing Club, organizer of the Yonkers Bike Club Tour de Yonkers and is - ultimately - the keeper of the secrets to safely sampling at Rum Brook Tributary. Bill is a critical connector between the CURB lab and the upper reaches of the Saw Mill River. I quote from sampler Sharon AvRutick, "there's a decent chance that our four sites wouldn't be actively sampled" without Bill.

We acknowledge and congratulate **Bill Dennison** with the 2022 Sampler Appreciation Award for the Saw Mill River.

Winter Opportunities on the Saw Mill River

Sampling Salt:

Our rivers do not stop being part of a watershed as we add melting salts to our driveways, sidewalks and roads after snow events. The melted snow and salt mixture travels about to the lowest elevations of our environment, often here being storm drains, rivers, and streams. This can be especially harmful when it concerns freshwater systems, such as the Saw Mill River. Organisms living in the river, although incredibly resilient, are unable to handle excessive salt additions to their ecosystem. Buffer zones along the banks of rivers and streams can act as a sponge and store some of those salts, restricting large amounts from entering the waterway. Areas along the river with non-permeable concrete have a higher chance of direct runoff of the nonpoint source pollutant. The Izaak Walton League of America provides community members with a FREE salt watch kit and training videos that make sampling for salt in freshwater systems easy and fun!

To obtain your kit and learn more about this sampling, visit www.iwla.org/water/stream-monitoring/salt-watch.

Tracking Flooding:

Flooding is a very serious consequence of extreme weather - damaging personal belongings and putting lives in danger. With an increase interest in the topic of changing climates. more policy makers and researchers are collecting data to track said changes. MyCoast, a web-portal and app that acts as a centralized resource for collecting and sharing locally sourced information about change to New York's coasts and water bodies, will be collecting photos uploaded by volunteers and translates them into data. The portal and app are running as a pilot from July 1, 2022 until June 30, 2024 with possible extension past this time period pending funding. Registration to contribute to the data set is very easy and can be a way Saw Mill stakeholders can contribute information about our river throughout the winter.

To learn more about this opportunity, visit https://mycoast.org/ny.

SARAH LAWRENCE COLLEGE
CENTER FOR THE URBAN RIVER AT BECZAK

SPECIAL ACKNOWLEDGMENTS

The program is funded in part by ConEdison and is part of the Lower Hudson Urban Waters Collaborative which includes CURB, Riverkeeper, and Bronx River Alliance.

We also take a moment to thank YOU!

conEdison

WE ACKNOWLEDGE YOUR SUPPORT IN HELPING US CREATE A UNIFIED VOICE SURROUNDING OUR LOCAL WATERWAYS THROUGH VOLUNTEERING, RESEARCH, EDUCATION, AND OUTREACH. IF YOU WISH TO BECOME MORE INVOLVED AND LEARN HOW YOU CAN SUPPORT US, VISIT OUR WEBSITE AT

WWW.CENTERFORTHEURBANRIVER.ORG

TO ACCESS PAST NEWSLETTERS, VISIT
WWW.CENTERFORTHEURBANRIVER.ORG/RESEARCH/WATER-QUALITY.HTML