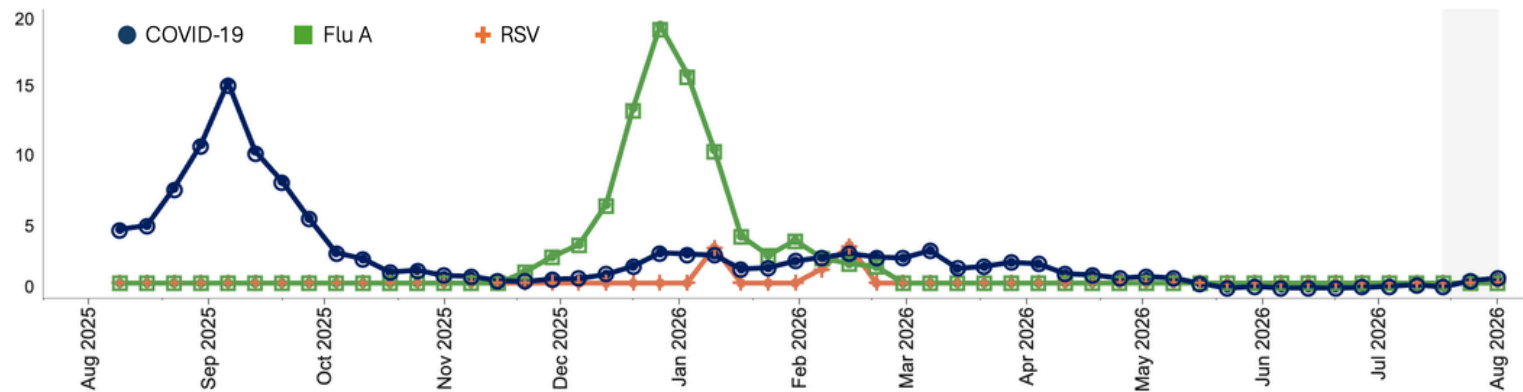


STATEWIDE WASTEWATER SURVEILLANCE

Wastewater Viral Activity Level (WVAL) for core pathogens over the past year



The wastewater viral activity level indicates whether the amount of virus is Very Low, Low, Moderate, High or Very High. Levels vary by virus.

Trends in core pathogens over the last quarter

- **COVID-19** and **RSV** levels are currently low after remaining low through winter and spring.
- **Flu A** levels are currently very low and have been low since peaking in late December 2025.
- **Flu B** detections have tapered off after numerous detections in February and early March.

There was a positive **measles** virus detection in a sample collected July 27 from North Durham.

SCIENCE UPDATE

Perspective: From wastewater analysis to public health action

NCWMN director Ariel Christensen coauthored this perspective with Dr. Justin Lessler (UNC Department of Epidemiology) in response to a [research article](#) published by members of the New York wastewater Center of Excellence. The latter found that genetic diversity of SARS-CoV-2 was an effective indicator of disease spread, as an alternative to typical wastewater normalization methods. The perspective supports the role of sequencing in improving wastewater monitoring, but warns that more research is needed to see if the approach outlined in the research article would apply to other disease contexts.

Assessment of different subsampling intervals with time-based composite sampling for decentralized wastewater monitoring programs

This paper compared various sampling intervals for composite sampling. Authors found that samples collected at 60 to 180 min intervals had similar virus concentrations to those at 15 min intervals. While negative predictive value and sensitivity were slightly lower, longer intervals had practical advantages: reduced autosampler wear, energy use, and clogging risks.

VOICES FROM THE COMMUNITY

"[Wastewater data] allows me to have the necessary consent about the space around me now that there is nearly no other communications of viruses. This is a very important resource that should be maintained and supported to be even more user friendly."

- Anonymous dashboard user

NCWMN PARTNER SPOTLIGHT: METROPOLITAN SEWERAGE DISTRICT (MSD) OF BUNCOMBE COUNTY

The Metropolitan Sewerage District (MSD) of Buncombe County serves the greater Asheville area with coverage throughout Buncombe and into Henderson County. We caught up with Schuyler Taylor (Operations Manager) and Chad Ledford (Pretreatment Supervisor) to learn more about MSD Buncombe and its involvement with wastewater monitoring.

Can you tell us more about MSD Buncombe and the work it does?

The MSD Buncombe system serves about 277,000 people and includes almost 35,000 manholes and 38 pump stations. The wastewater treatment plant is a 40 million gallon per day facility, processing about 7.7 billion gallons per year. We have the largest rotating biological contactor facility in the United States. Treatment plant staff includes 13 operators, 3 administrators, and 5 pre-treatment staff. MSD Buncombe as a whole is much bigger, with a staff of about 150 people with teams involved in collection system services, engineering, IT, and administration.

How long have you been involved in wastewater monitoring efforts?

We've been working with NCDHHS on wastewater monitoring since June 2021. But we've been going to PFAS conferences and sampling for contaminants of emerging concern since 2019. We love data and to be at the forefront of any research to improve public and environmental health.



MSD Buncombe's Wastewater Treatment Plant

What does your involvement in wastewater monitoring look like?

The Operations team collects samples and brings them to the Pretreatment group to process. Lab analysts then handle the storage and packaging of samples. We regularly sample and inspect wastewater throughout the service area to monitor and protect safety of the environment, while communicating and engaging with industries and the public when questions arise. It's been great to see the way the public uses wastewater data and the sustained interest in it. In addition to routine sampling, we worked with the state to explore optimal sampling approaches for E. coli testing.

What are you most excited about for the future of wastewater monitoring?

We're excited about monitoring and potentially removing anything that can become a concern for the public, whether it's microplastics, pharmaceuticals, or STIs. The more we know about what's coming into our system, the better we can potentially treat it and assess public health risk.

How do you like to spend your time outside of work?

Folks who work at MSD Buncombe, much like others who live in this area of North Carolina, love to be outdoors. We like to fish, hunt, mountain bike, hike, the list goes on. Our love of the outdoors is part of why it's so important to us to protect our environment.

Do you have any funny stories about wastewater?

Back when we were first talking about starting wastewater monitoring for Covid-19, we were trying to assess if we could squeeze in pathogen sampling. We told staff it'd just be for a short while, maybe 6 months maximum. But here we are, 5 years later and are prepared for many more! We didn't know what we were getting ourselves into, but we're happy to be a part of it.

NCWMN PARTNER SPOTLIGHT: BUNCOMBE COUNTY HEALTH AND HUMAN SERVICES

Ellis Matheson is the Public Health Director at Buncombe County Health and Human Services (HHS), where she's been working for over 22 years. She chatted with us about Buncombe County HHS and how they use wastewater data to improve public health.

Can you tell us more about Buncombe County HHS and the work it does?

Buncombe County Health and Human Services agency has about 150 staff members. The largest program is clinical services, which includes the communicable disease team, tuberculosis clinics, immunization clinics, a home visiting program, and services related to reproductive health, sexually transmitted infections, and breast and cervical cancer. Other programs include Women, Infants, and Children services, environmental health, health preparedness, behavioral health strategic planning, and harm reduction syringe exchange program with peer to peer support.



What do you find most valuable about wastewater monitoring for public health?

What's so cool about wastewater is that it can provide an early signal that a disease is ramping up in the community. It's great to have the opportunity for early detection and preparedness. It's just one additional tool in our toolbox for communication and encouraging people to take precautions. The public also really appreciates it so they can know how to protect themselves.

What are some instances when wastewater data informed public health practice in Buncombe?

One of the most impactful times was when we had a detection of avian flu in wastewater. We were able to push out education for the public and to have conversations with our partners in agriculture, since farmworkers were at the greatest risk. More recently, I really appreciated how rapidly measles was brought on board. There were instances when measles detections would pop up before clinical cases, and that was really helpful. I also use the data frequently in presentations. It informs funding and other decisions within the county.

What are you most excited about for the future of wastewater monitoring?

I'm most excited about bringing more pathogens on board. In the beginning, it was really fascinating to see how well it captured COVID circulating in the community. As more pathogens come online, it's just more helpful information for the public. When measles was added, it helped that people were already familiar with wastewater monitoring. As the technology improves and more viruses are able to be detected, wastewater monitoring will only become more useful.

Do you have any fun facts about you or the department?

Humor is important in public health to keep everyone sane amidst all of the hard work we do. That's why I love that my name, Ellis, backwards is sill-e! In the spirit of silliness, our communicable disease nurses like to dress up in fun costumes when they're out in the community.