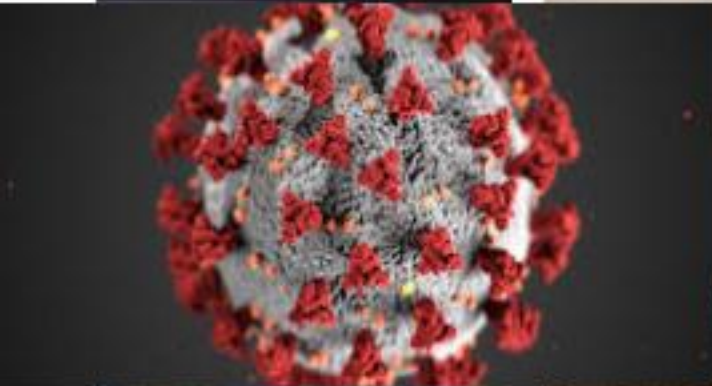




THE UNIVERSITY OF ARIZONA
Yuma Center of Excellence
for Desert Agriculture

COVID-19 EARLY WARNING WORKFORCE/COMMUNITY PROTECTION PROJECT



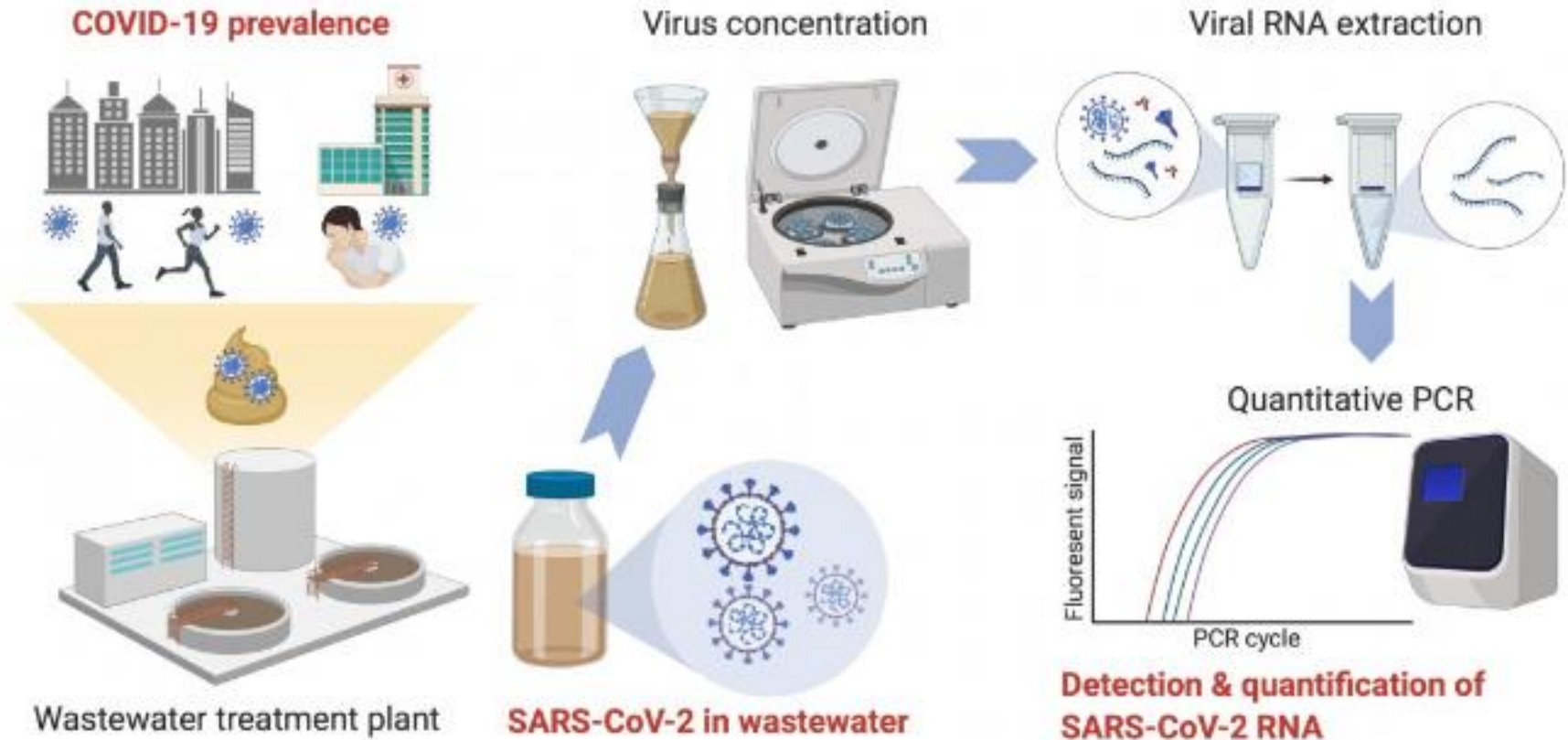
Paul Brierley
YCEDA Executive Director
University of Arizona



WHAT IF YOU HAD ADVANCE WARNING OF AN OUTBREAK?

- What if you knew a COVID-19 outbreak was happening in your community a week before symptoms appeared? It would undoubtedly help you slow the spread.
- The University of Arizona has been a significant contributor to the fight against COVID-19. The Water & Energy Sustainable Technology (WEST) Center has led on Wastewater-based Epidemiology (Sewage Testing). The University of Arizona's Yuma Center of Excellence for Desert Agriculture (YCEDA) is working with the WEST Center and Yuma County and its municipalities to provide local testing for Yuma County's invaluable Ag workforce, municipalities, schools, dormitories, military facilities and other affected populations.
- When test results show nascent breakouts of COVID-19 infections, municipal and public health officials, YRMC and other healthcare facilities can work to limit the spread and prepare for a possible increase in cases presenting themselves in 1-2 weeks.

How Does Waste-based Epidemiology (WBE) Work?



POSSIBLE USES OF WBE

- Any defined community where we can sample sewage
 - Municipalities
 - Schools
 - Student dormitories
 - Food Processing and other Ag/industrial facilities
 - Long-term Care facilities and other vulnerable populations
 - Military bases
 - Tribal nations



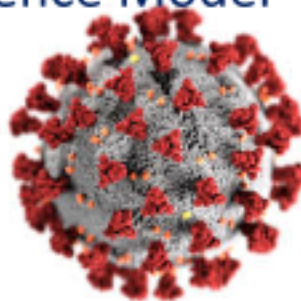
WBE Efforts in Yuma County since June 2020

- COVID-19 donation from T&P Farms
- Discussed WBE with UArizona WEST Center
- Funding committed
- YCEDA Lab set up at Yuma Ag Center
- Hired Lab manager and technician
- Datepac and AWC outbreaks averted
- Brought on Dr. Bradley Schmitz, WBE expert
- County-wide monitoring and response project initiated
- Schools pilot project
 - Elementary, Middle, High Schools, College, Municipal
- Variant monitoring and sequencing
- Estimated Disease Prevalence Model



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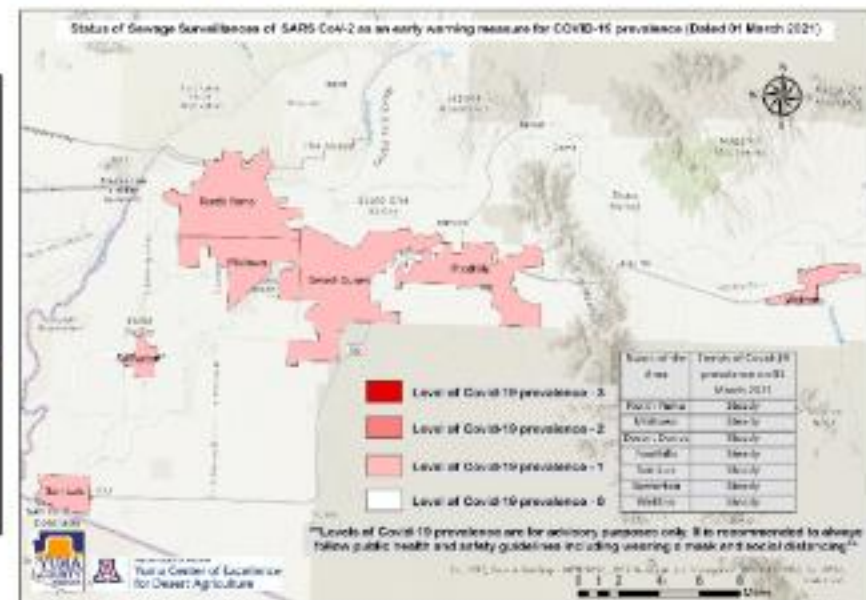
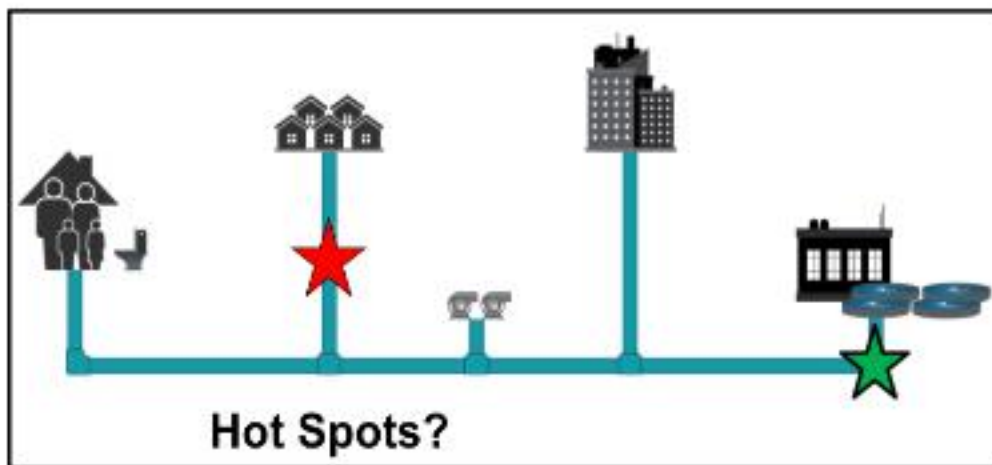
WEST | 
CENTER
WATER & ENERGY SUSTAINABLE TECHNOLOGY

Arizona Department of Health Services Yuma County Pilot Project: COVID-19 Community Protection Early Warning and Response Program

- Assess WBE as an early-warning tool for identifying high or increasing COVID-19 prevalence throughout Yuma County communities
- Allowing targeted response plans to focus resources on susceptible communities.
- Sampling scheme: 2x per week from designated sites within 'zones'

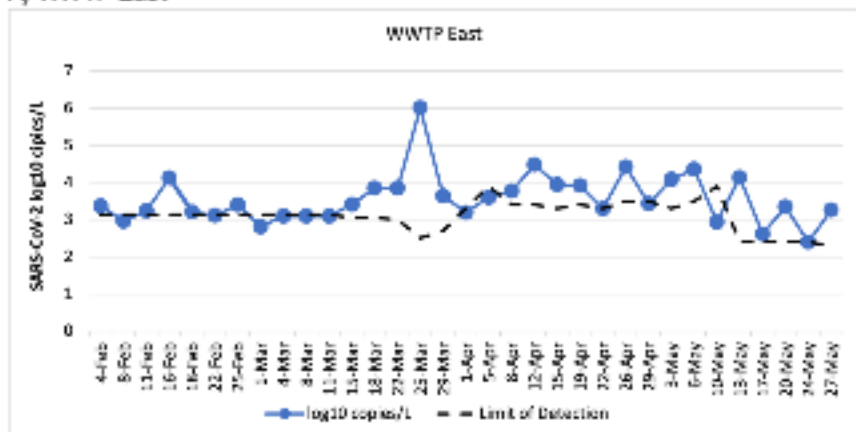
Localized Surveillance

- Identify 'hot spots' for prioritized sampling and response
- Characterize community infection by geographic location

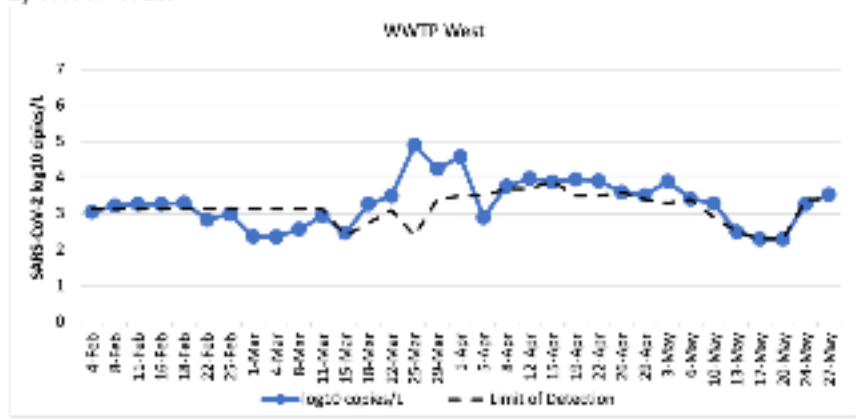


Weekly (Tue/Fri) Reporting of San Luis Results

A) WWTP East



B) WWTP West



C) Gadsden

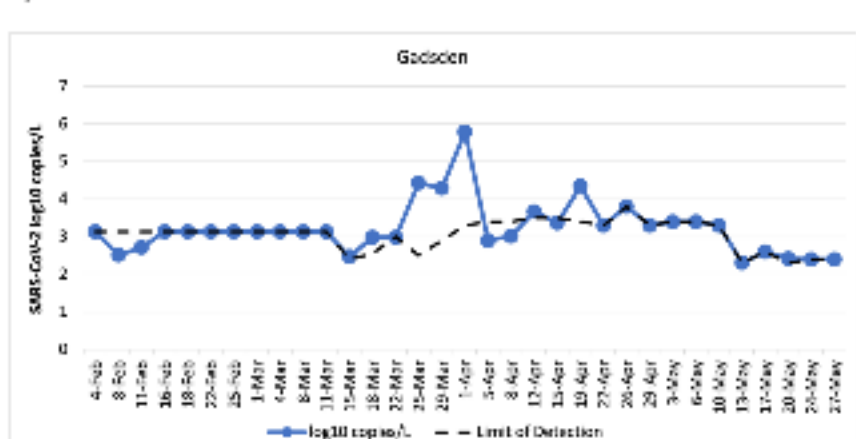


Table of Recommended Response Actions

SARS-CoV-2 concentration (copies/L)	Level of Concern	Response Action
Non-detect	0	No response needed
$10^1 - 10^3$	1	Enhanced awareness (i.e., wear a mask, social distancing)
$10^4 - 10^6$	2	Recommend clinical testing of community residents
$>10^6$	3	Recommend stay-at-home

Response actions are for advisory purposes only and will be communicated with the LSRT and/or steering committee. Decisions and implementation regarding response actions is the responsibility of the municipalities and public health officials.

Results interpretations (Tuesday/Friday)

Attached are the results from wastewater samples processed for SARS-CoV-2 on April 8.

Results Interpretation:

Section14: Concentrations are increasing at Level of Concern 1. Enhanced awareness of wearing masks and social distancing is recommended.

Oro Plant: Sample resulted in non-detect. Proceed with Level of Concern 1. Enhanced awareness for wearing masks and social distancing is recommended

Marwood: ALERT: Concentrations have increased to Levels of Concern 2. Please coordinate with Public Health Services if you choose that response action is necessary.

Weekly Steering Committee Email Updates

Dear Yuma WBE Steering Committee,

The purpose of this email is to provide an update and insights on our SARS-CoV-2 wastewater testing results from the week of March 22. The table below summarizes the week's trends for SARS-CoV-2 detection in wastewater throughout Yuma County.

Summary of SARS-CoV-2 Trend in Wastewater and Associated Level of Concern

Municipality	Decreasing	Steady	Increasing	Level of Concern
City of Yuma			X	2
San Luis			X	2
Somerton		X		1
Wellton		X		1
Yuma Foothills			X	2

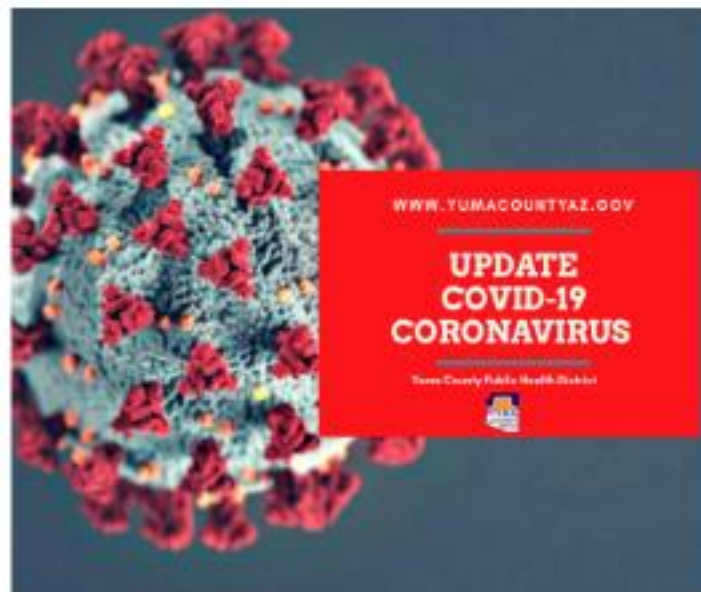
The liability disclaimer included in each spreadsheet is also attached.

IMPORTANT: Concentrations of SARS-CoV-2 have been increasing since March 15, and are now increasing at a rate that suggest high levels of concern. Several wastewater samples from multiple locations throughout the county are now at concentrations for Levels of Concern 2. In fact, some samples are at or are barely below the threshold for Level of Concern 3. Viral RNA is now detectable from locations that have previously been reported as non-detect throughout the entire project. This suggests that the number of infected individuals is also increasing in those areas even though concentrations are still low. Increased clinical cases of COVID-19 are also being reported by the Yuma County Public Health Services District. Some municipalities have chosen to conduct targeted sewage testing to better understand the source of high concentrations in their service area. We will continue to closely monitor the situation across the county and will keep fluid communication with the entire steering committee as we obtain results.

News

Elevated levels of COVID in sewage, County encourages precautions, testing and vaccination / Niveles elevados de COVID en las aguas residuales, el condado recomienda precauciones, pruebas y vacunación

Post Date: 03/26/2021 5:00 PM



Elevated levels of COVID in sewage, County encourages precautions, testing and vaccination

The University of Arizona COVID Early Warning Sewage Testing Project has detected an increased presence of SARS-CoV-2, the virus that causes COVID-19 disease, in many of the testing sites throughout Yuma County. It is important for everyone to remember they could be asymptomatic and still transfer the virus to others. The CDC recommends wearing a mask, social distancing and handwashing in public settings.

An effective way to slow the spread is to get tested even if you don't feel sick. As a reminder, there are many places in Yuma County where anyone can be tested, often for free. Please visit the Yuma County [COVID UPDATE Testing Location \(https://tinyurl.com/zathefa9\)](https://tinyurl.com/zathefa9) portal. Another way to protect yourself is to get vaccinated. You can make a vaccination appointment at: <https://podvaccine.azdhs.gov/>

THANK YOU FOR READING YUMA'S COMMUNITY NEWSPAPER

Yuma Sun

SATURDAY, MARCH 27, 2021

124th YEAR, 335th ISSUE



Truck fire Vehicle in flames forces closure of I-8 lanes/A2



Follow us on Twitter @YumaSun and Facebook

Today's high: 82°

Details on D4

\$1.00



Rising COVID levels found in sewage testing

Increased rates detected at sites across county

BY MARA KNAUB
SUN STAFF WRITER

Sewage testing has revealed an increase of the virus that causes COVID-19 throughout Yuma County. Officials announced the elevated levels in the wastewater on Friday and encouraged precautions, testing and vaccination.

This testing does not involve tap water. The COVID-19 virus has not been detected in drinking water supplies and the public can use and drink their tap water as normal, county officials noted.

The rising levels of the
SEE LEVELS/A4

TRACKING COVID-19

LOCATION	TOTAL CASES MARCH 26	TOTAL CASES MARCH 25	DIFFERENCE	DEATHS
Yuma County	36,700	36,676	+24	819
Arizona	838,558	837,987	+571	16,898
United States	30,155,046	30,076,486	+78,560	548,067
Worldwide	126,026,603	125,421,349	+605,254	2,766,824

Sources: Yuma County, Arizona Department of Health Services, Johns Hopkins University

YUMA COUNTY CASES BY THE NUMBERS

Yuma County's total number of positive COVID-19 cases here is 36,700 according to the county's March 26 update, and there have been 819 deaths. There were 24 new case reported.

Here's a look at Yuma County cases by the numbers:

Numbers Tested: 136,132
Total Confirmed Positive: 36,700

Female: 18,349
Male: 18,349
Deaths in Yuma County: 819
AGE GROUP
Ages 0-19: 5,357
Ages 20-44: 16,188
Ages 45-54: 5,628
Ages 55-64: 4,686
Ages 65+: 4,841

—Reported by YRMC as of 8 a.m. March 26

YUMA COUNTY VACCINATION DATA

- Number of vaccine doses administered: 83,920
- Number of new vaccine doses reported today: 1,886
- Percent of people vaccinated: 25%

YRMC UPDATE

For March 26:

- **Total hospitalized:** 9 COVID patients
- **Total in ICU:** 3 COVID patients (of 42-bed ICU)
- **Vents/and available vents:** 10 vents in use / 73 available + 10 portable
- **Total COVID-19 patients admitted improved and discharged from hospital:** (2,428 total)
- **Arizona Surge Line Transfers:** 0 (331 total)

*County numbers include only those persons who live in Yuma County

State's mandatory virus restrictions are no longer needed, health chief says

BY HOWARD FISCHER
CAPITOL MEDIA SERVICES

PHOENIX — The state's top health official said Friday there's no reason to continue to limit business occupancy, prohibit large group gatherings and require customers to wear masks because Arizona hospitals now have plenty of space.

Dr. Cara Christ said the main reason that restrictions were imposed and bars were closed entirely was the fear of overwhelming the state's health care system with COVID-19 pa-

tients.

Now, she said, the use of hospital and intensive-care beds is way down. More to the point, Christ said many of the people who are most at risk, meaning the elderly, already have been vaccinated.

The health chief acknowledged that some businesses are not following her advice that, despite dissolution of the gubernatorial orders, they should continue to enforce mask use and to maintain social distancing. There even were reports of

SEE STATE/A4

Yuma County is a model for WBE

- Gold-standard case study across the entire USA
- Public Health officials utilizing WBE for targeted response actions
 - Preventing transmission and averting outbreaks
- Trends in wastewater correlated with clinical data
 - Decreasing detections in wastewater = decreasing new cases of infection
- Economic impact
 - Resource management
 - Keep workers and students safe, businesses open (i.e. Datepac, AWC)
 - Avoid shutdown/lockdown etc.
 - Cost-effective option for proactive monitoring



QUESTIONS?



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