JOINT INFORMATIONAL HEARING

Monitoring Impacts and Progress in the Tijuana River Valley

Thursday, December 11, 2025

SENATOR

Catherine S. Blakespear

Chair, Senate Environmental Quality Committee

ASSEMBLYMEMBER

Damon Connolly

Chair, Assembly Environmental Safety and Toxic Materials Committee

TIJUANA RIVER VALLEY POLLUTION CRISIS

Supervisor Paloma Aguirre
Chair Pro Tem
County of San Diego Board of Supervisors

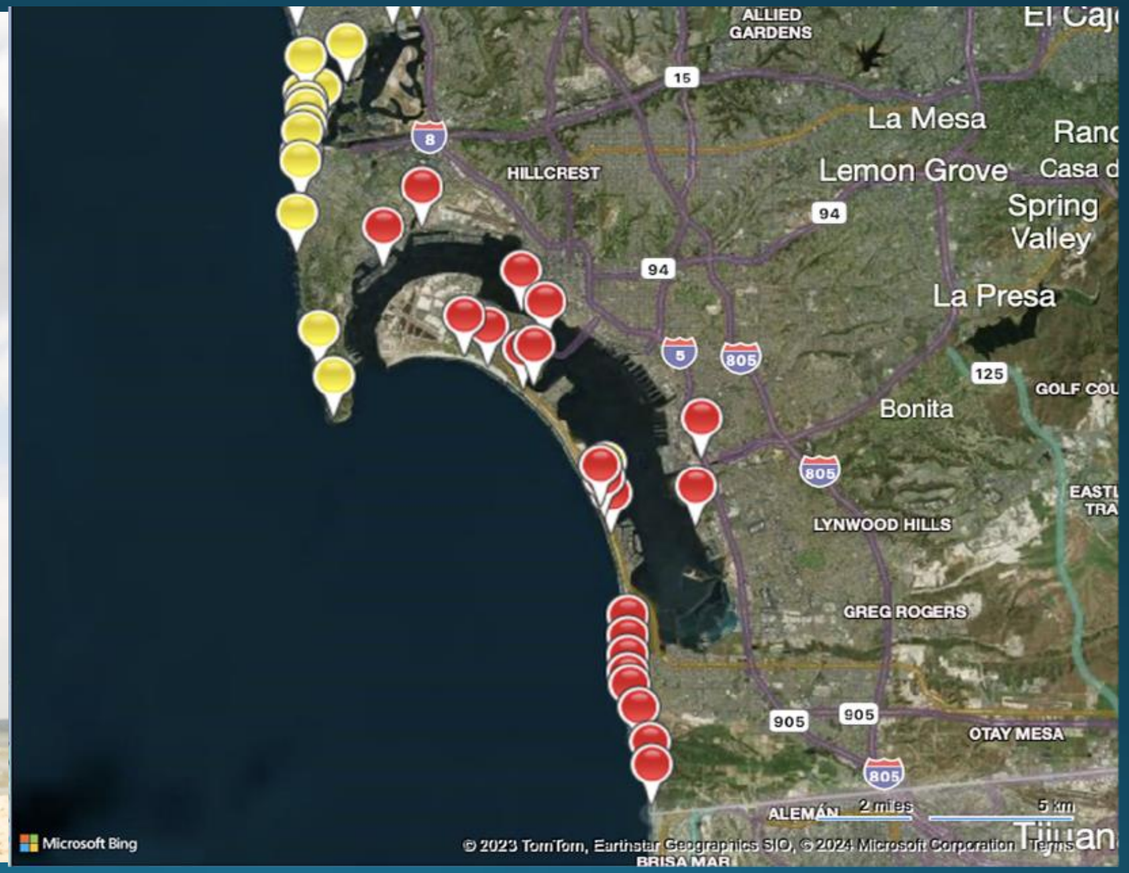
BIGGEST PUBLIC HEALTH AND ENVIRONMENTAL EMERGENCY IN THE WESTERN HEMISPHERE

A Century-Old Crisis with Modern Impacts

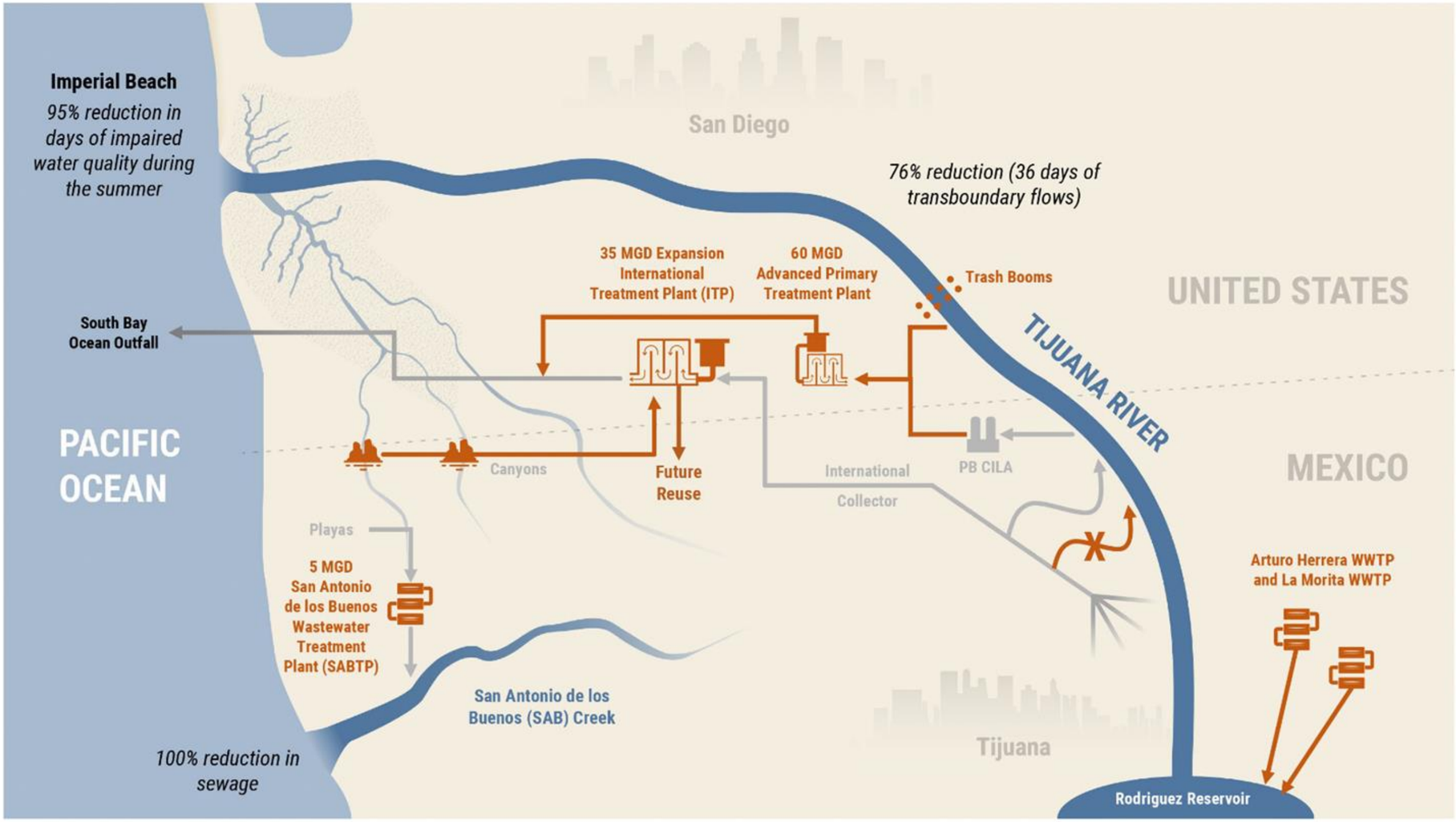
- A binational watershed + aging infrastructure
- Population growth, industrial expansion, and climate-driven storms
  - flows now far exceed system capacity


OVER 200 BILLION GALLONS
OF SEWAGE CROSSING OUR
BORDER SINCE 2018

Nearly 4 Years of Beach Closures



Comprehensive Infrastructure Solution (Alternative I-2)



Saturn Blvd Hot Spot

September 8, 2024

September 8, 2024

September 12, 2024

2017 UCSD Study:

- 34,000 illnesses were attributed to water-quality pollution along the coastline of Imperial Beach

Health Impacts

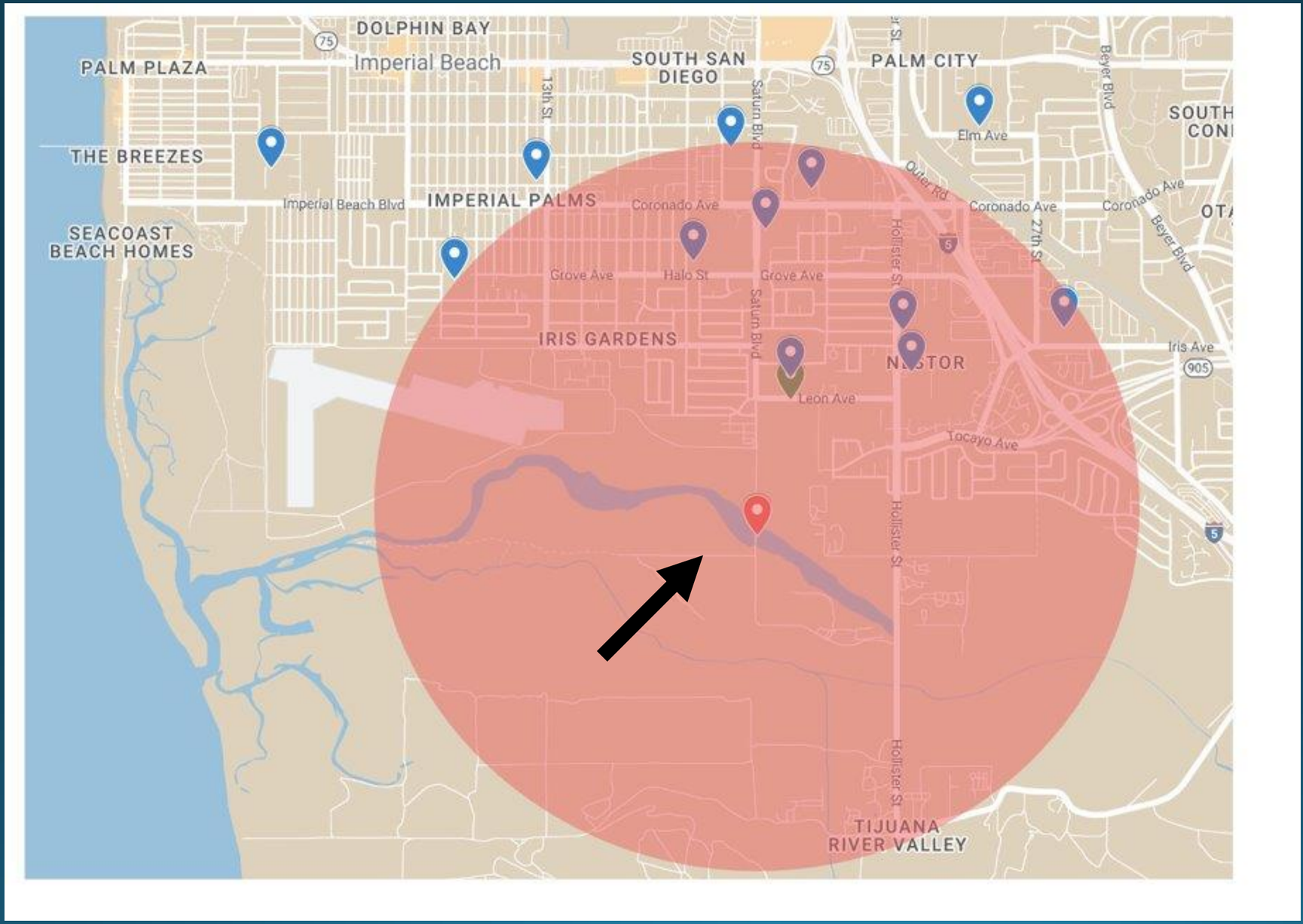
ACE STUDY: 2,100 survey respondents

- 92% do not feel safe in the areas where they live, work
- 64% reported new or worsening physical symptoms
- 28% reported symptoms of anxiety
- 21% reported symptoms of depression
- 65% of participants feel their mental health symptoms are related to the sewage crisis.

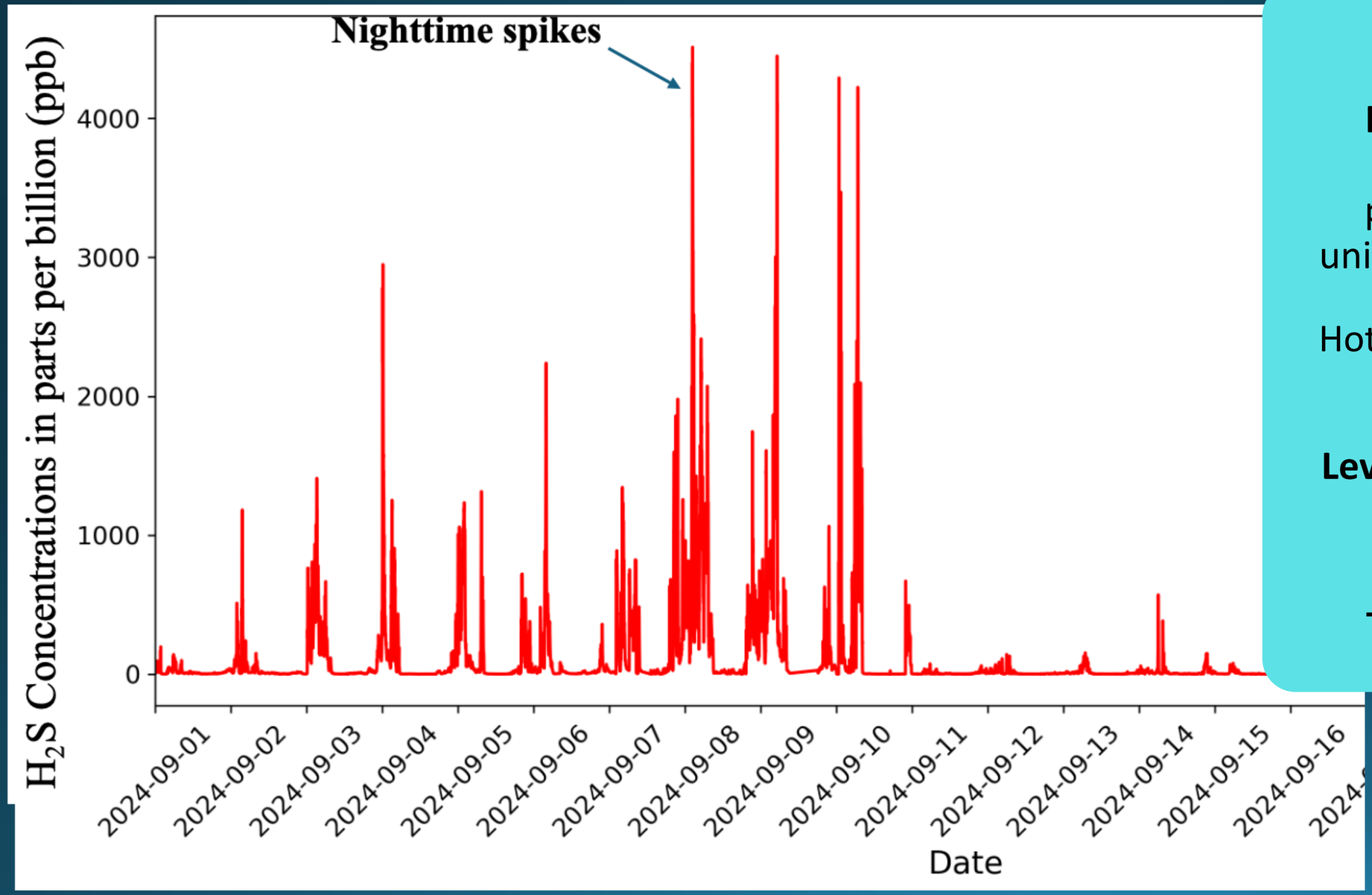
Health Impacts

- **Community Assessment for Public Health Emergency Response (CASPER)**
  - 63% report at least one sign of emotional distress
  - 65% report taking extra steps to avoid certain areas of their own neighborhood.
  - 70% report disruptions in their household life including exercise, social activity, sleep schedule and more.

11 schools within 1.5 miles of the Hot Spot



Peak Level Measurements

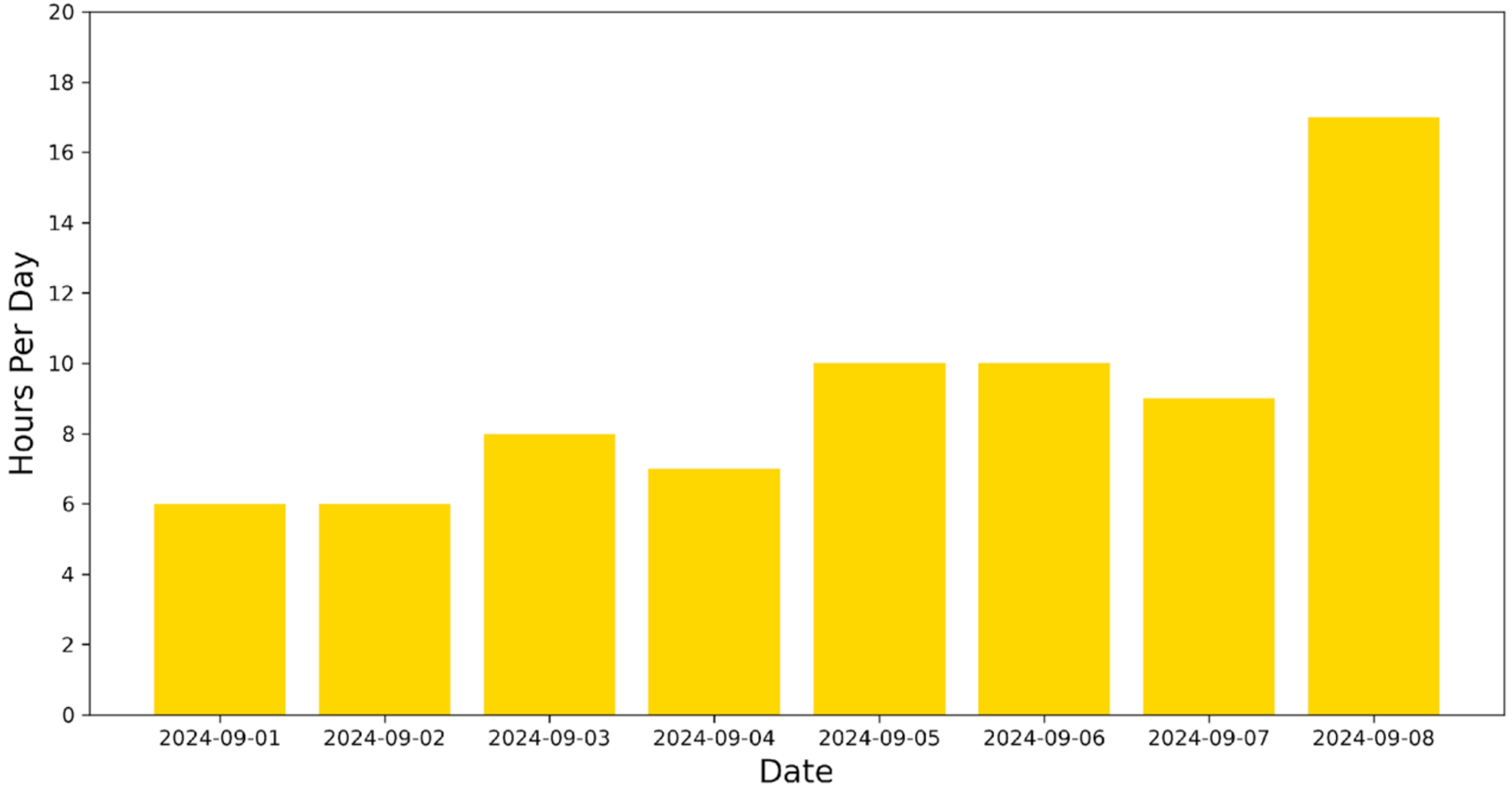


Hydrogen sulfide (H_2S)
plus, <u>hundreds</u> of unidentified pollutants

Hotspot in Nestor (near Saturn Blvd).

Levels peaked at 4,500 ppb

Hours Per Day Exceeding CARB 30 ppb Hourly Exposure Limit (9/1– 9/8)



County Efforts and Priorities

Ad Hoc Subcommittee

- Chaired by Supervisors Aguirre and Lawson-Remer

- Stakeholders: Public Health Professionals, County Staff, Academia, and other experts

- Provides recommendations to Board of Supervisors on solutions

Air Purifier Program

- Stop gap until infrastructure upgrades
- 40,000 impacted households in the South Bay
- 10,000 distributed
- 2026 funding needed
- $10M. $250 per unit
- Building partnerships and working with County, State and Federal entities to secure funding for this program

Epidemiological Study

- First step toward understanding long-term health consequences
- Must protect children **today**—ensuring future generations don’t inherit preventable illness
- This study bolsters evidence and community **voices**

CDC Working on the Tijuana River Valley Health Assessment

Epidemiological Study Options

Study Type	Length	Estimated Cost
Exposure Characterization. Needed to define exposure levels	Several months – one year	$250-$500,000
Retrospective: Looking Back at Health Patterns in the Community	Months to one year	$500,000 - $1M
Long Term Option 1: Ongoing Health Study of the Same People Over Time	Multi-Year, depends on outcomes	$4M - $6M

*Board directed County Staff to explore study options. Will return to Board for final vote.

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HEALTH

Board Approves Next Steps in Tijuana River Valley Soil Contamination Study

- Soil testing in Tijuana River Valley for toxicity and ecological impacts

- Economic impact study to assess ramifications to small businesses, property values, and regional tourism

- Preliminary County analysis indicates 74% local businesses have been impacted

Saturn Boulevard Feasibility Study

Overview and Next Steps

November 20, 2025

Next Steps

- Study Due Jan 2026
- Partnerships: City, County and Navy

State Participation

- Interagency Cooperation—bridging local, state and federal agencies to improve coordination, funding, accountability, and compliance

- Create a state-level Tijuana River Master Plan led by state-lead delegation

- State action will advance environmental justice to disproportionally impacted frontline communities

State Participation

Funding

- Air purifiers

- Air and Water Quality Monitoring

Prop 4 Funding Needed

Priority Funding

Saturn Hot Spot

Prop 4 Funding : $52.5M

- Saturn Ave Crossing Replacement: $20M
- Reclamation of the Nelson Sloan Quarry: $4M
- Tijuana Estuary Tidal Restoration Program (TETRP II) River Mouth and Tidal Inlet Restoration Project: $4M
- Smuggler’s Gulch Sediment Basins: $7.5M
- Trashbooms: $2.5M
- Dredging: $3.5M
- Sediment Management & Implementation Plan: $.5M
- TJRV Cleanup: $2M
- Rehabilitation of PB1A Forcemain: $9.5M

With State Leadership, We Can Deliver Clean Air and Clean Water for Every Family.

Questions?

District1community@sdcounty.ca.gov

Phone: (619) 531-5511

https://www.supervisorpalomaaguirre.com

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scientific advancements in detecting, monitoring, and predicting water quality

11 December 2025
Joint Legislative Informational Hearing
Monitoring Impacts and Progress in the Tijuana River Valley

Sarah N Giddings

Falk Feddersen, Matt Spydell, Akanksha Gupta, Jeff Bowman, Andrew Barton, Vitul Agarwal, Shelby Marhoefer-Jess, Katherine Berman, Koe Inlow, Uwe Send, Matthias Lankhorst, Jeff Sevadjian, Clarissa Anderson, Ian Brunjes, Nathali Cordero Quiros, Bruce Cornuelle, Ganesh Gopalakrishnan, Amaia Ruiz de Alegría Arzaburu

UC San Diego | SCRIPPS INSTITUTION OF OCEANOGRAPHY

Pathogen Forecast Model is funded by the State of California

SIDE project, 12 October 2015, photo by N Statom and L Lenain

multiple regional point sources

San Diego

Impact: Trash, sediment, and sewage enter the U.S. during 153 days of transboundary flow annually, impacting residents and CBP.

Aging canyon pumps in Mexico mean Customs and Border Protection (CBP) is often impacted by sewage spills over the border that ultimately reach the estuary.

The ITP has been operating above its design capacity due to failure of Pump Station 1B to convey flows to SABTP.

UNITED STATES

International Treatment Plant (ITP)

TIJUANA RIVER

Central Tijuana sewage leaks from aging collectors into the Tijuana River.

PACIFIC OCEAN

Canyons

Pump Station 1B

International Collector

MEXICO

PB CILA

Tijuana sewage

Pump Station 1A

Pump Station 1A and 1B are in disrepair and must pump flows over 300 feet in elevation through old and failing pipes

Northward Curren (Summer)

Impact: During the su months, currents c sewage north from SA impacting water qua Imperial Beach and f north.

Aerial photos *credit: Wildcoast*

SABTP is in disrepair due to poor maintenance and fails to properly treat the sewage.

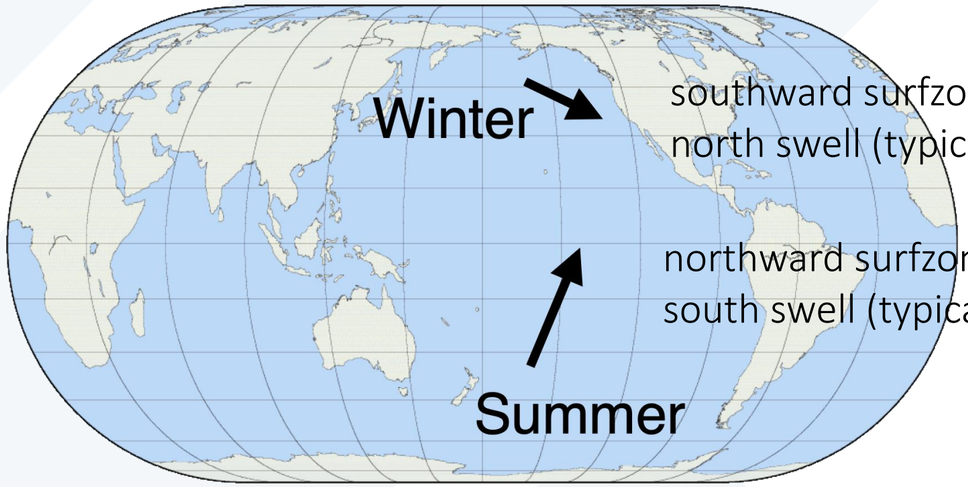
Tijuana

The recently expanded facility diverts dry weather river flows. Shut-downs at PBCILA due to breaks or flows above the operational threshold result in transboundary flows.

Image from EPA https://www.epa.gov/sustainable-water-infrastructure/usmca-tijuana-river-watershed

waves can trap outflow within the surf zone & drive alongshore flow

PiNC dye release, 01 February 2023. *Credit: PiNC drone team*

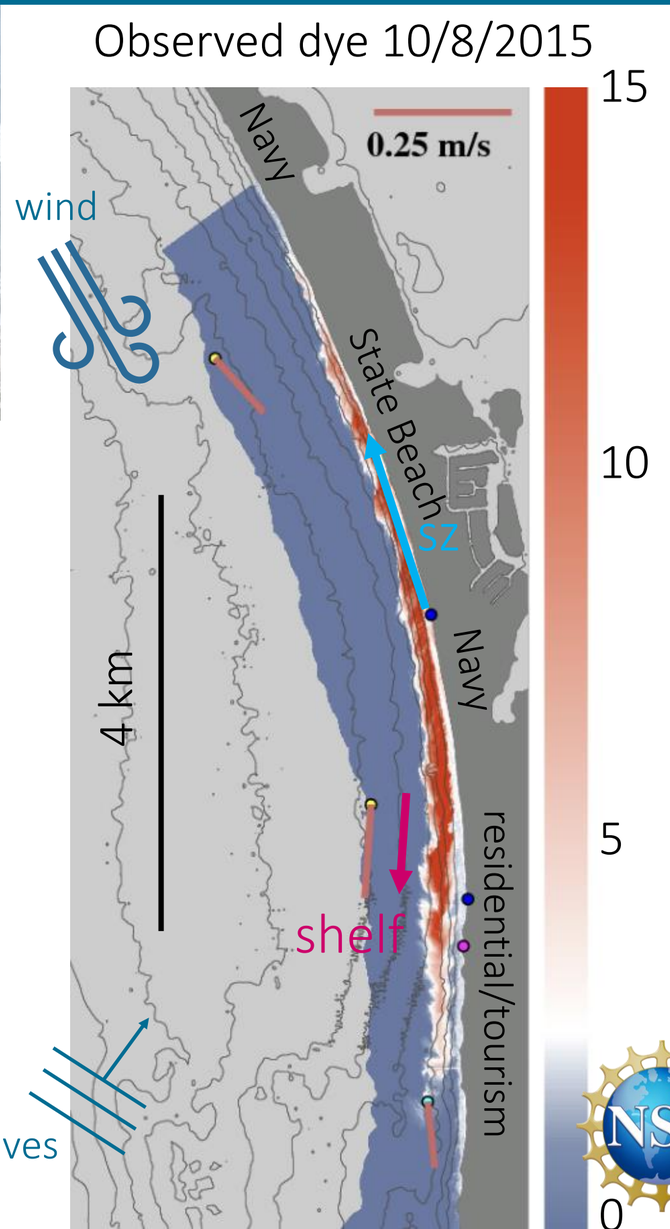


southward surfzone transport during north swell (typically winter)

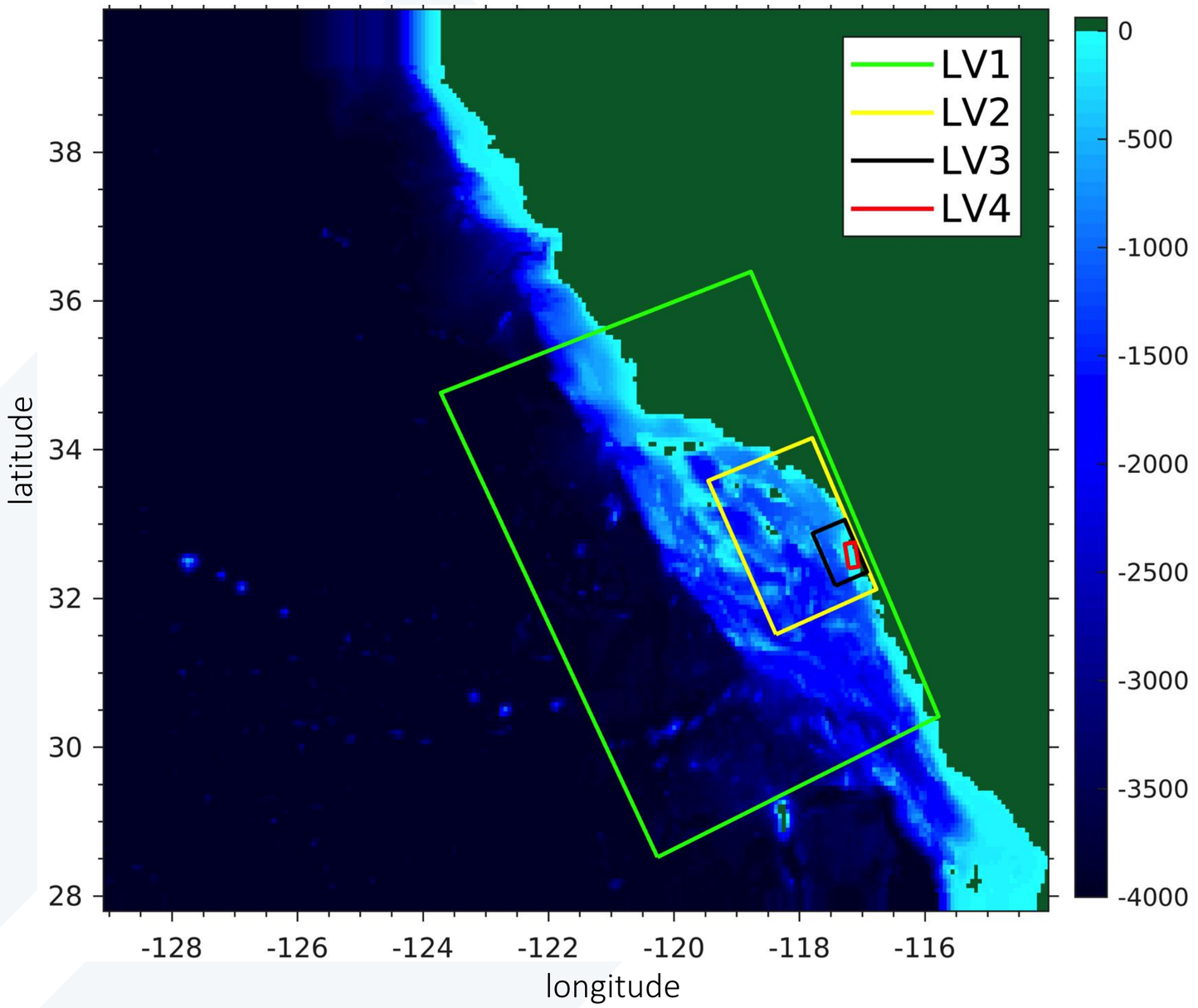
northward surfzone transport during south swell (typically summer)

- waves drive surfzone currents
- winds and other processes drive inner-shelf

Grimes et al., 2020; Longuett-Higgins, 1970; Rodriguez et al. (2018); Kastner et al. (2019); Wong et al. (2013); Feddersen et al. (2016); Spydell et al. (2015)



can we model cross-border pollution, transport & human health?



Wu et al., 2020 & 2021

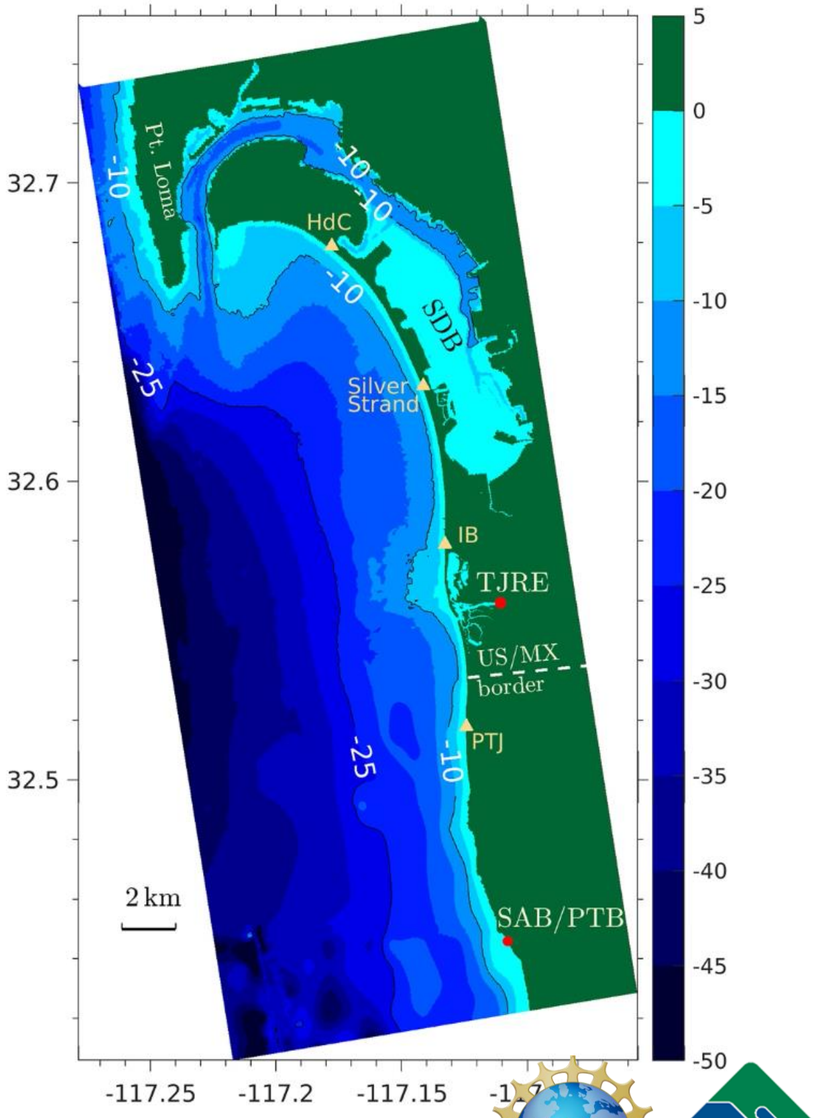
numerical simulations of border pollutant pathways

model forcing includes REALISTIC:

- offshore oceanic + tide
- weather (atmospheric forcing: winds, heat, etc.)
- wave
- river flow

output →

3D currents, salinity, temperature…



Passive dye tracer input at 2 major point sources:

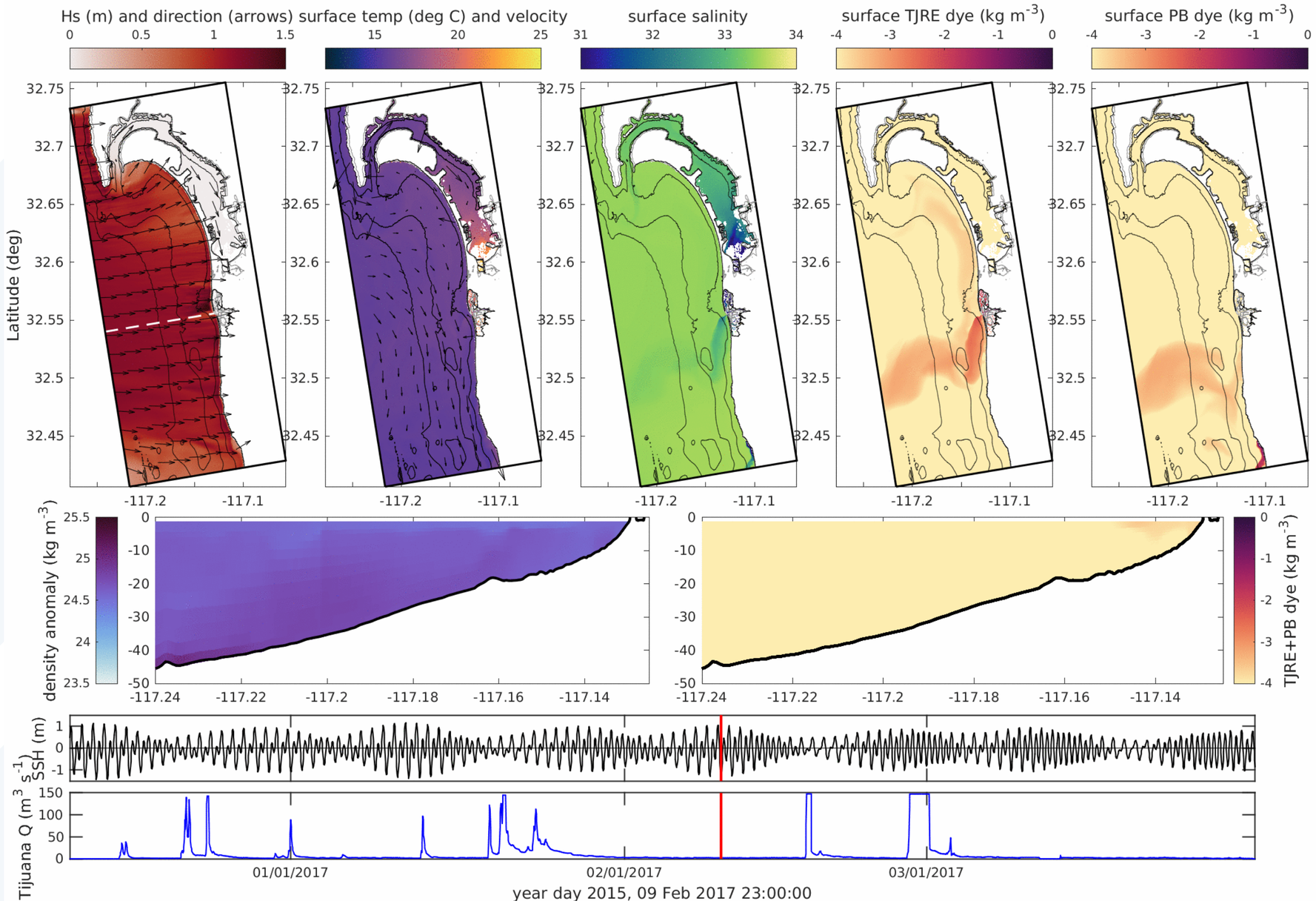
- Pt Bandera: continuous outflow based on SAB ops
- TJRE: input according to river flow gauge

** note: here tracer is NOT pathogens. Pathogens die with sunlight, tracer does not.

However, newest model DOES include representation of a specific pathogen of interest with half-life decay = Norovirus!

Wu et al., 2020 & 2021, Feddersen et al., 2021

numerical simulations of border pollutant pathways & health



COAWST realistic numerical model

Wu et al. (2020)

Feddersen et al. (2021)

tracer representing Norovirus >

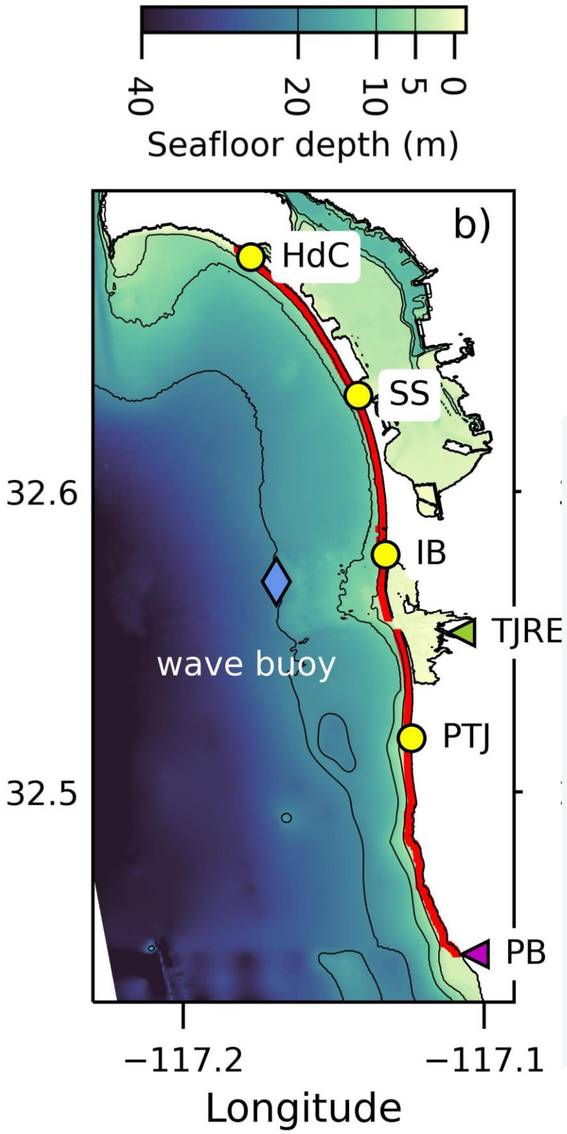
human health model >

swimmer risk

scripps.ucsd.edu/projects/cside/

sccoos.org/nadb-2017/

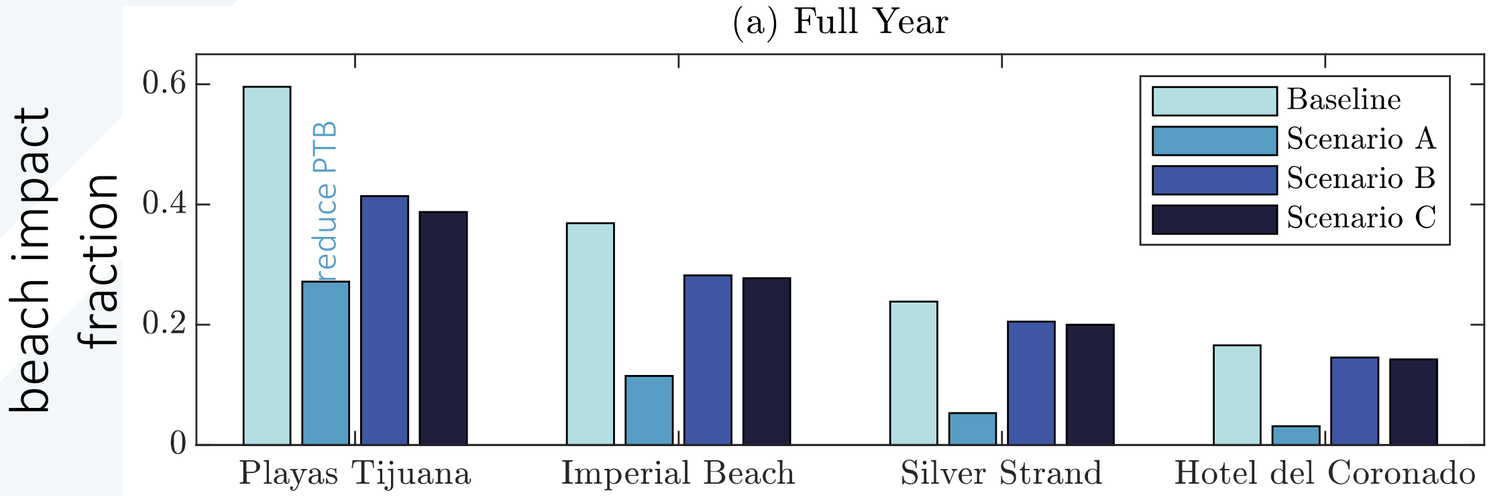
scenario testing for USMCA decision making



Feddersen et al., 2021 Figure 7

"This critical study helped us address beach water quality impacts caused by untreated sewage on both sides of the border more effectively and binationally. Thanks to this effort, EPA proposed a series of projects, to be funded in part by USMCA funds, that will better address U.S. and Mexican sources of sewage."
-Lily Lee, manager of the EPA Region 9 Water Infrastructure Office,

Punta Bandera wastewater treatment plant (San Antonio de los Buenos) became operational in April 2025.



- scenario A (reduce PTB) = largest reduction in beach closures overall
- scenarios B, C have the largest wet season reductions

Pathogen Forecast Model (PFM) pfmweb.ucsd.edu/

Clarissa Anderson, Ian Brunje
Cordero Quiros

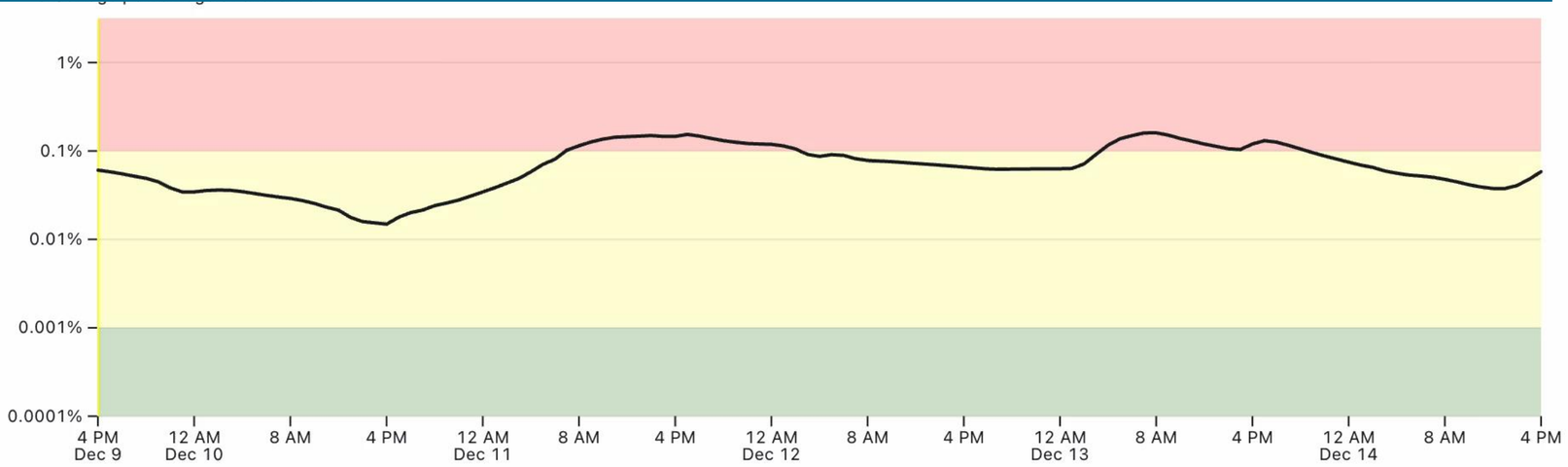
EN

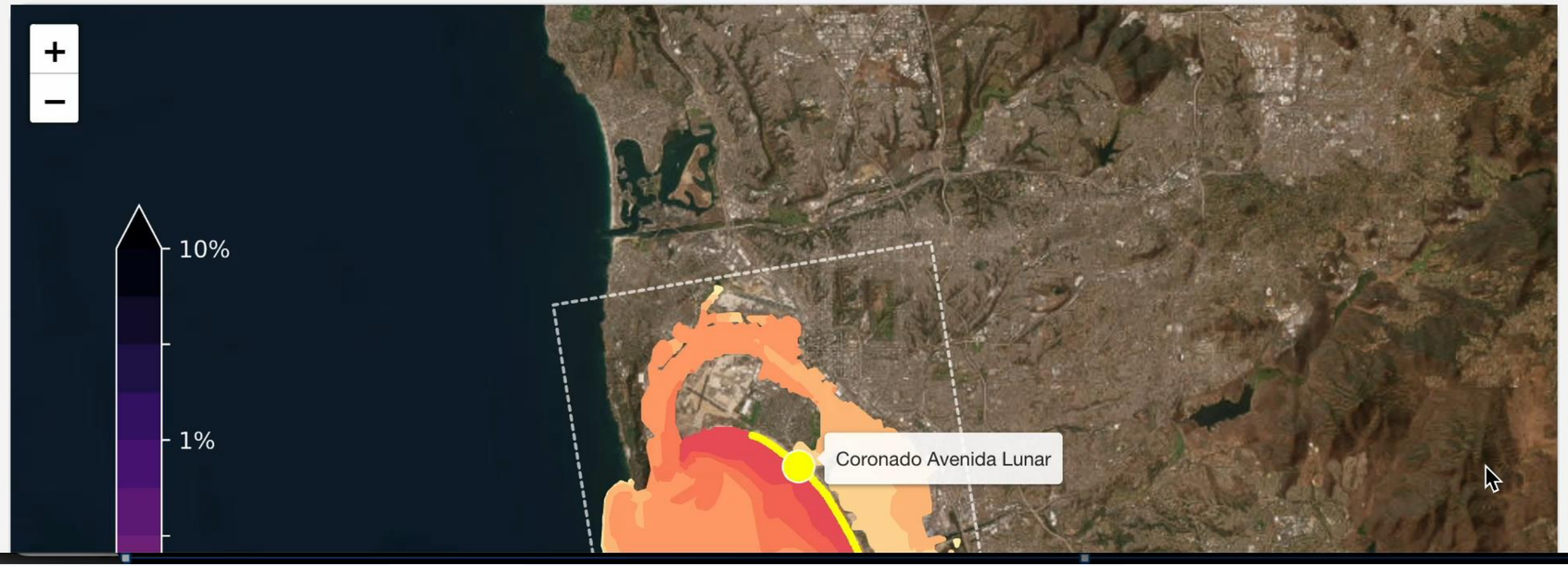
Phase 1 Release Notes:

This forecast updates at 6:30AM US/Pacific. The current forecast range is Tuesday December 09, 2025 4:00:00 PM - Sunday December 14, 2025 4:00:00 PM

Click "Play" below to view the animated forecast of percentage sewage in the ocean. You can also use the scroll bar to move back and forth in time. Click on the location circle on the map to see the detailed forecast at that location to the right.

Play 12/09/25 16:00





Forecasts of sewage at the ocean surface are provided for the San Diego/Tijuana border region. In the map on the left, colored contour lines represent the percentage of sewage at the ocean surface. A value of 100% is pure sewage and a value of zero is pure ocean water. Contours go from a high of 10% sewage to a low of 0.0005% sewage.

The color at the shoreline indicates swimmer illness risk based on sewage percentage with

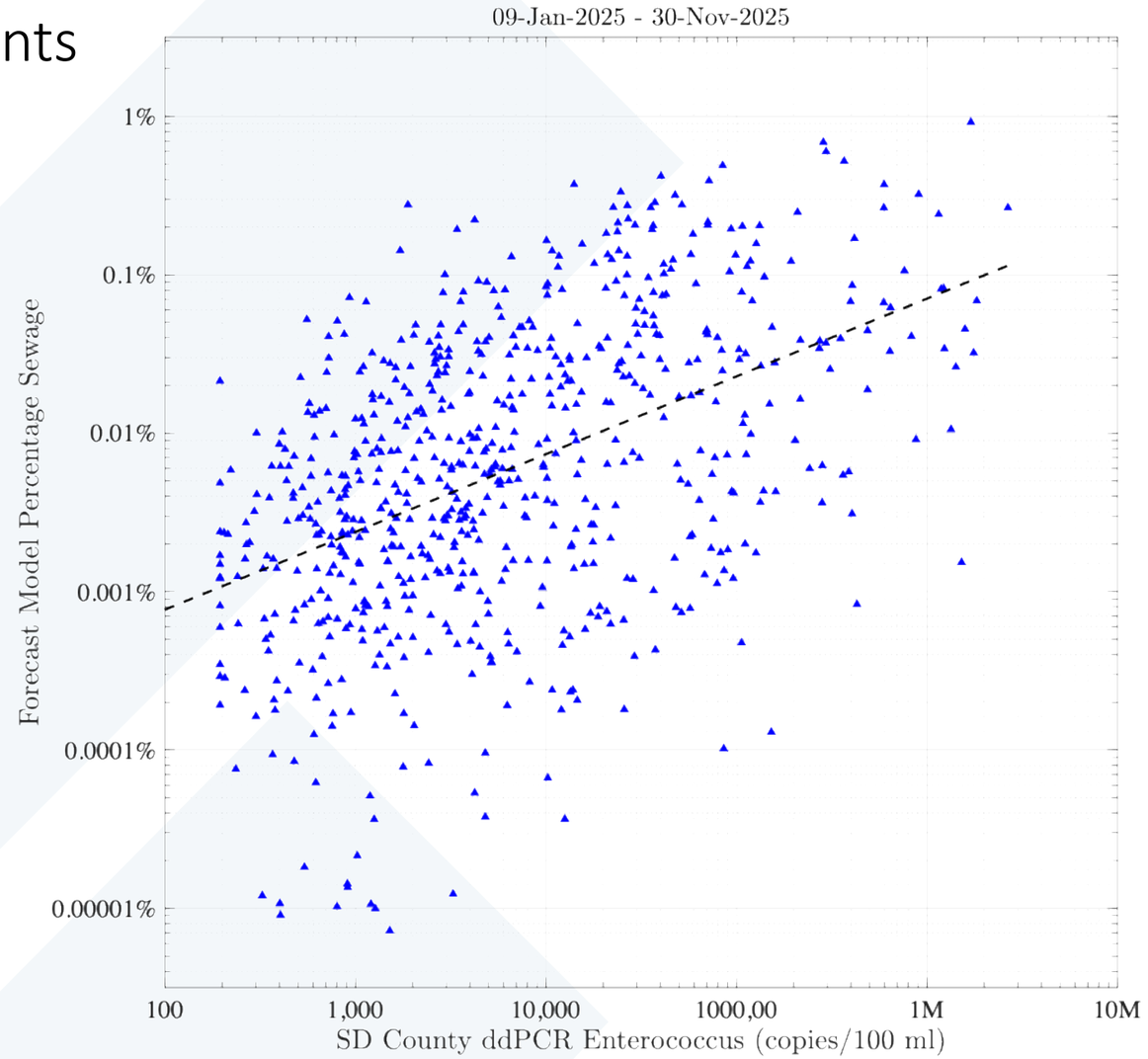
- Red indicates high risk representing greater than 0.1% sewage
- Yellow indicates moderate risk at values between 0.001% and 0.1% sewage
- Green indicates low risk at values less than 0.001% sewage

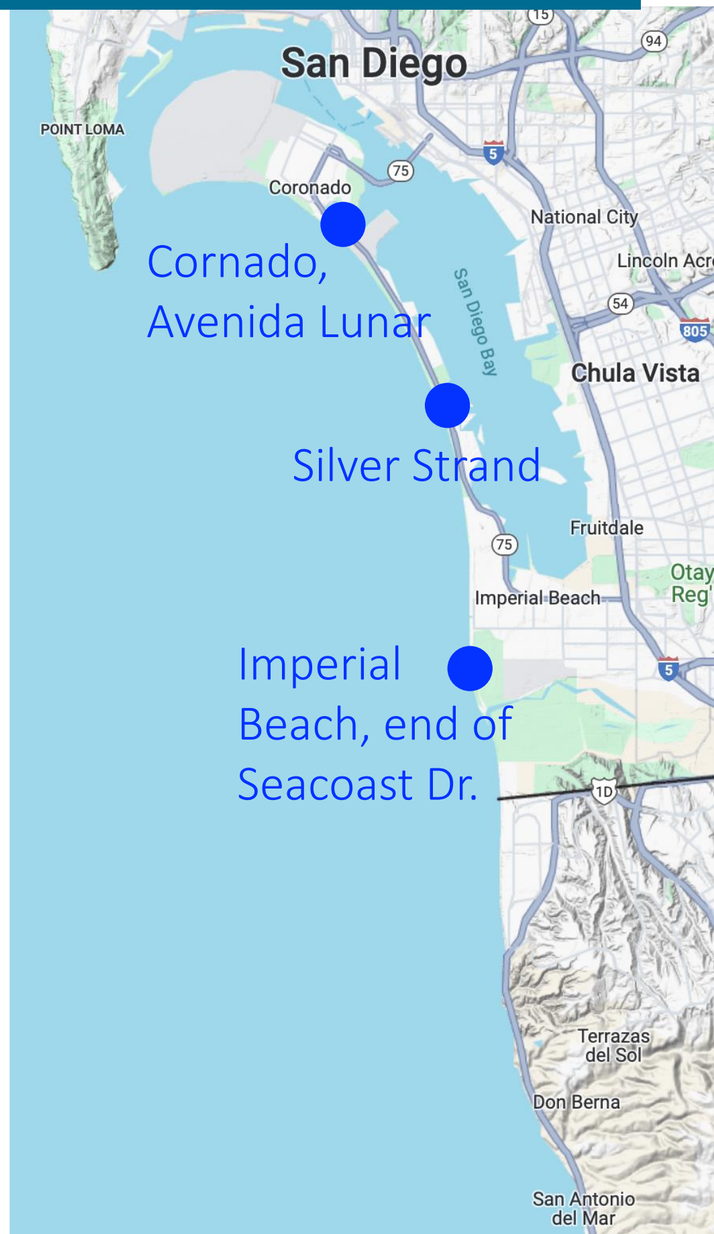
Four swimming locations from south to north – Playas de Tijuana, Imperial Beach Pier, Silver Strand, and Coronado, Avenida Lunar – are labeled with circles. Click on the circle to see a more detailed forecast (shown above) at these locations. There is also a drop-

development of a pathogen prediction tool - grounded in data!

Pathogen Forecast Model Phase one: compare to SD County ddPCR Enterococcus measurements

- SD County frequently samples for Enterococcus (ENT) throughout South Bay using ddPCR
- pick 3 locations spanning large separations (IB, Silver Strand, Avenida Lunar)
- compare ddPCR ENT to the fifth-day of model forecast (Jan 9th - Nov 30th 2025)

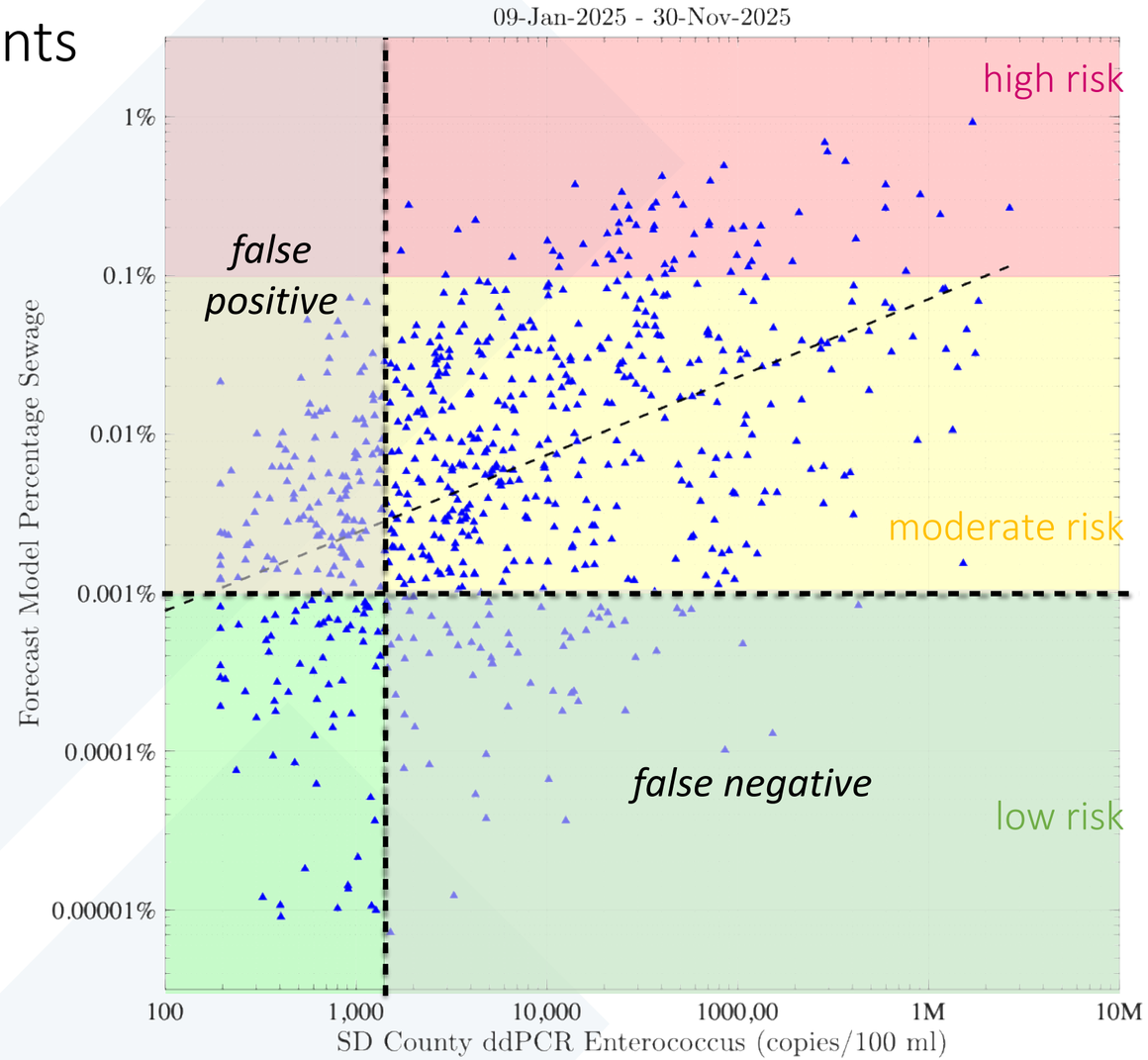


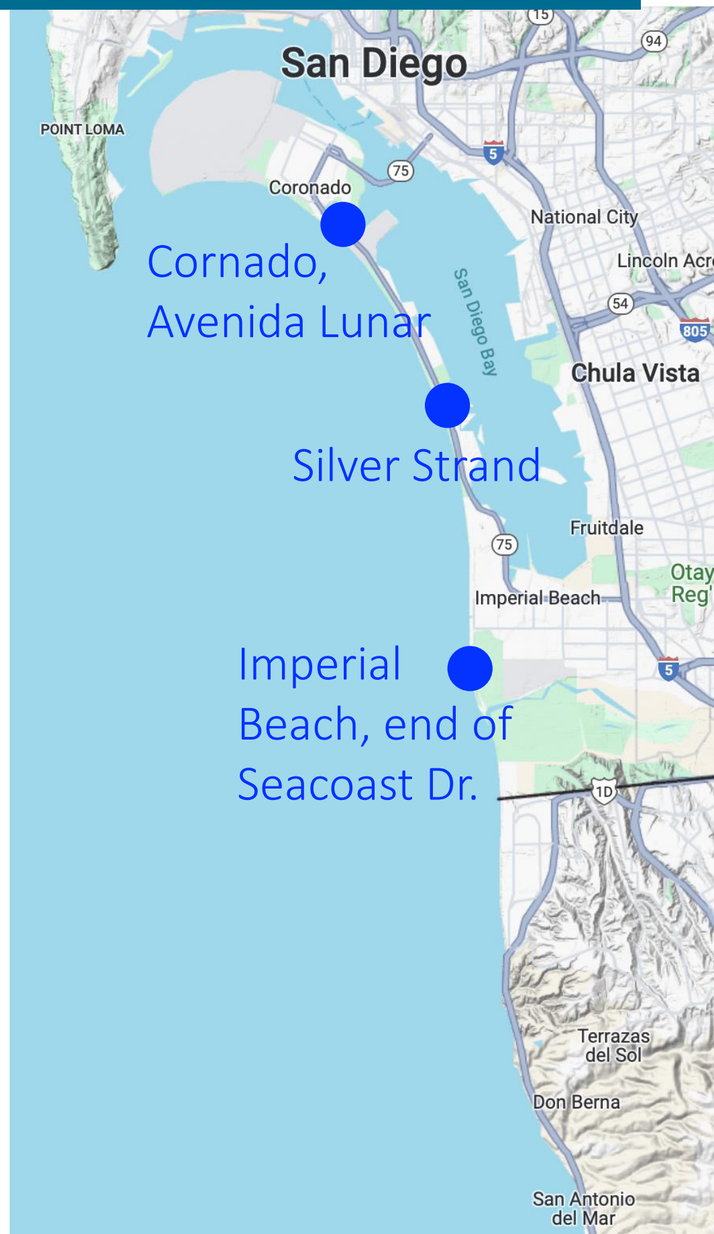


development of a pathogen prediction tool - grounded in data!

Pathogen Forecast Model Phase one: compare to SD County ddPCR Enterococcus measurements

- Model green/yellow threshold is consistent with SD County ddPCR ENT threshold
- 28% false negatives or false positives
- Five day forecast can predict beach advisories with 72% accuracy.
- Similar to weather models, PFM has error, which we are diagnosing and working on reducing.





development of a pathogen prediction tool - grounded in data!

how will we improve it?

LOTS of observational data!!!

Components

1. computing (Feddersen, Spydell, Giddings)
2. real time mooring array development (Send, Lankhorst, Sevadjian, Ocean Time Series group)
3. measurements in US & Mexican coastal waters (Ruiz de Alegria)
4. pathogen sampling & detection method development (Bowman, Barton, Marhoefer-Jess, Agarwal)
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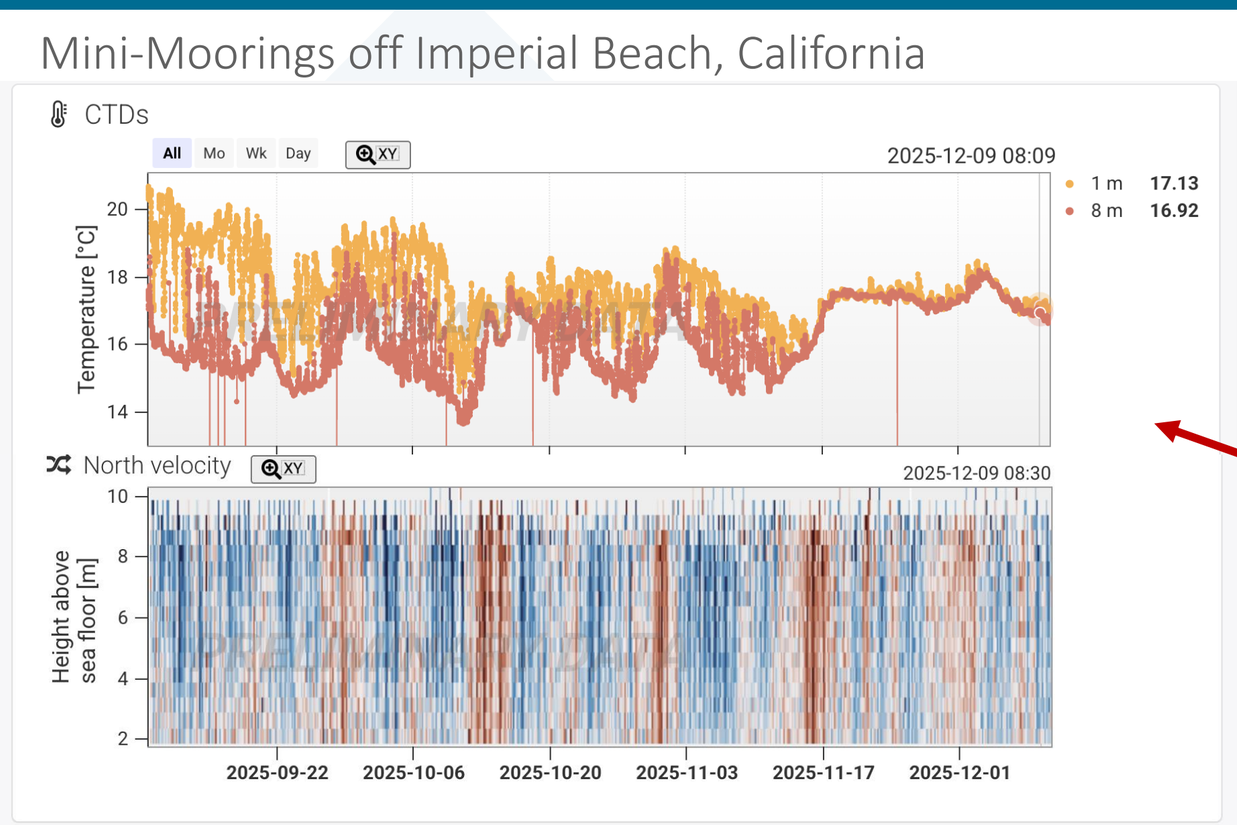

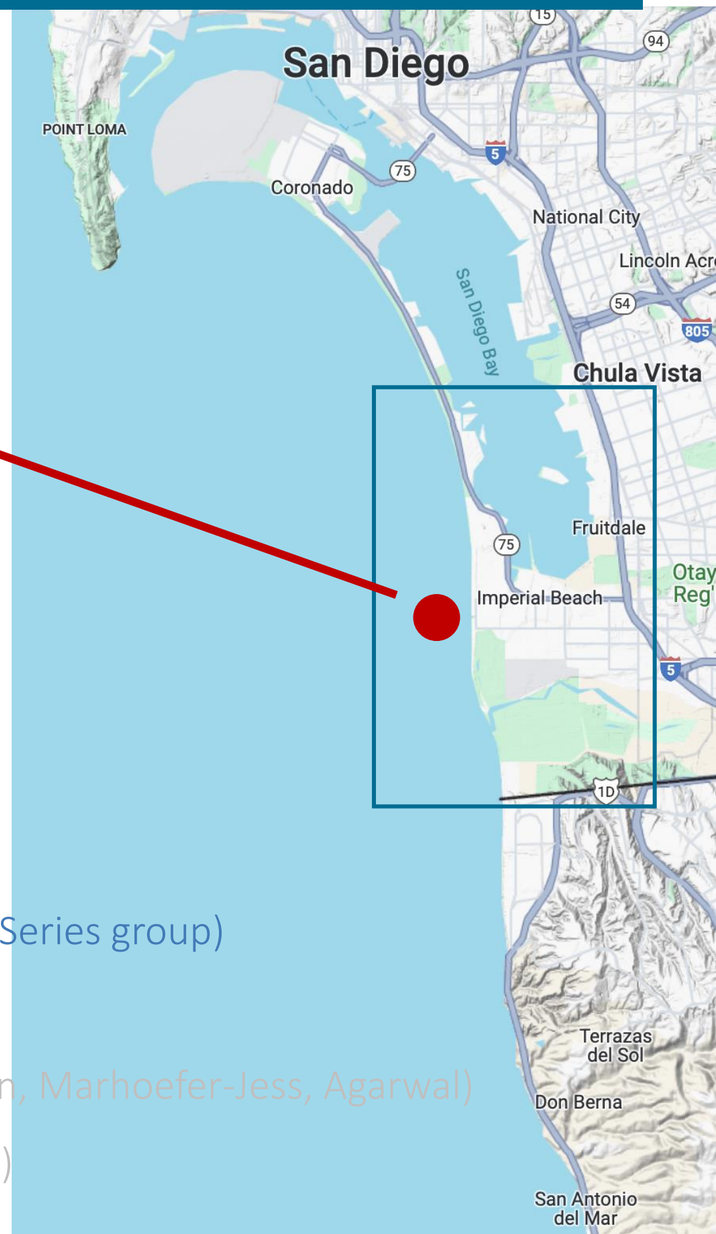

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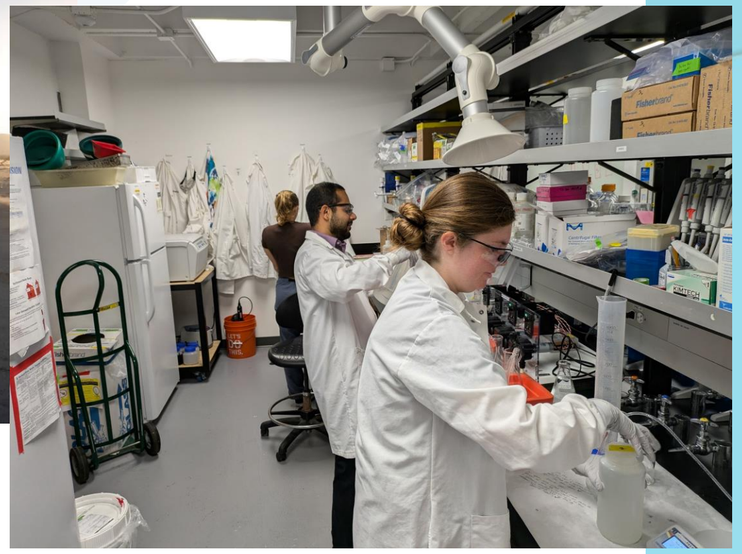
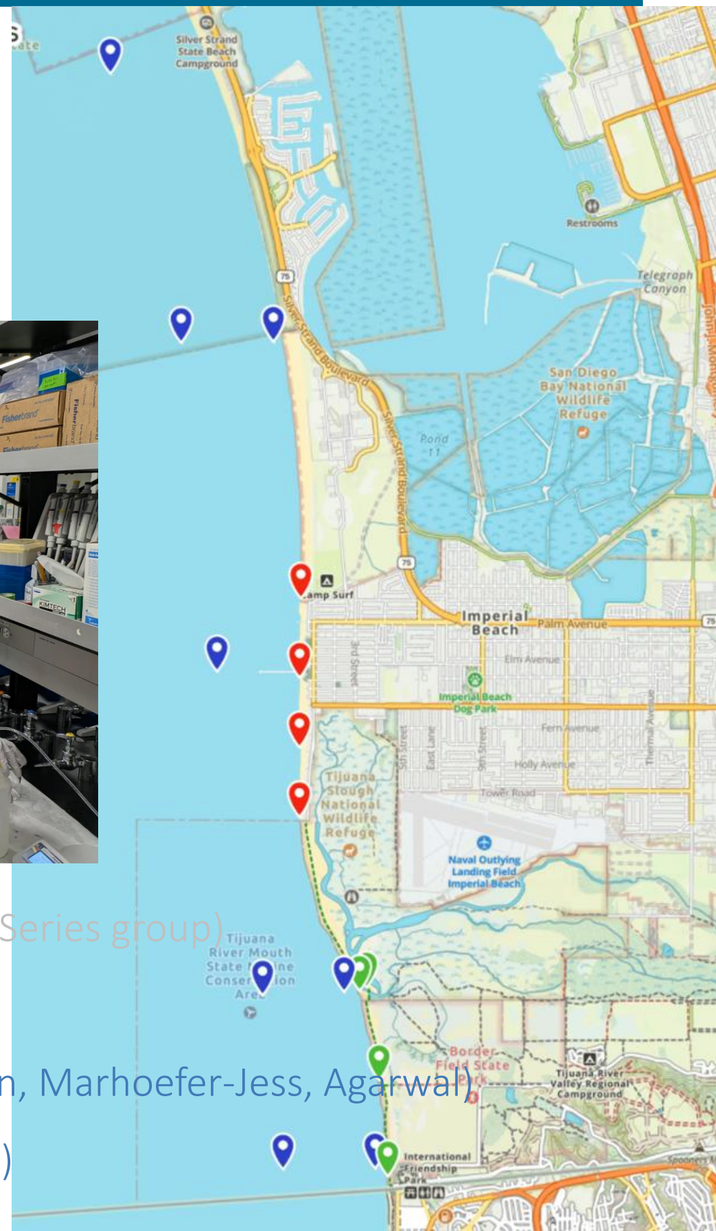


weekly sampling at 16 locations for Norovirus

- 4 x collaboration with County Division Environmental Health
- 4 x land sampling through Border Field State Park
- 8 x boat



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development of a pathogen prediction tool - grounded in data!

collaborations & interaction with

- UABC
- County Division Environmental Health
- San Diego State (Trent Biggs, Natalie Mladenov, …)
- SIO MS student (joint with SDSU, Hadley Menk)
- Cities of IB, Coronado
- PFEA
- Many others!

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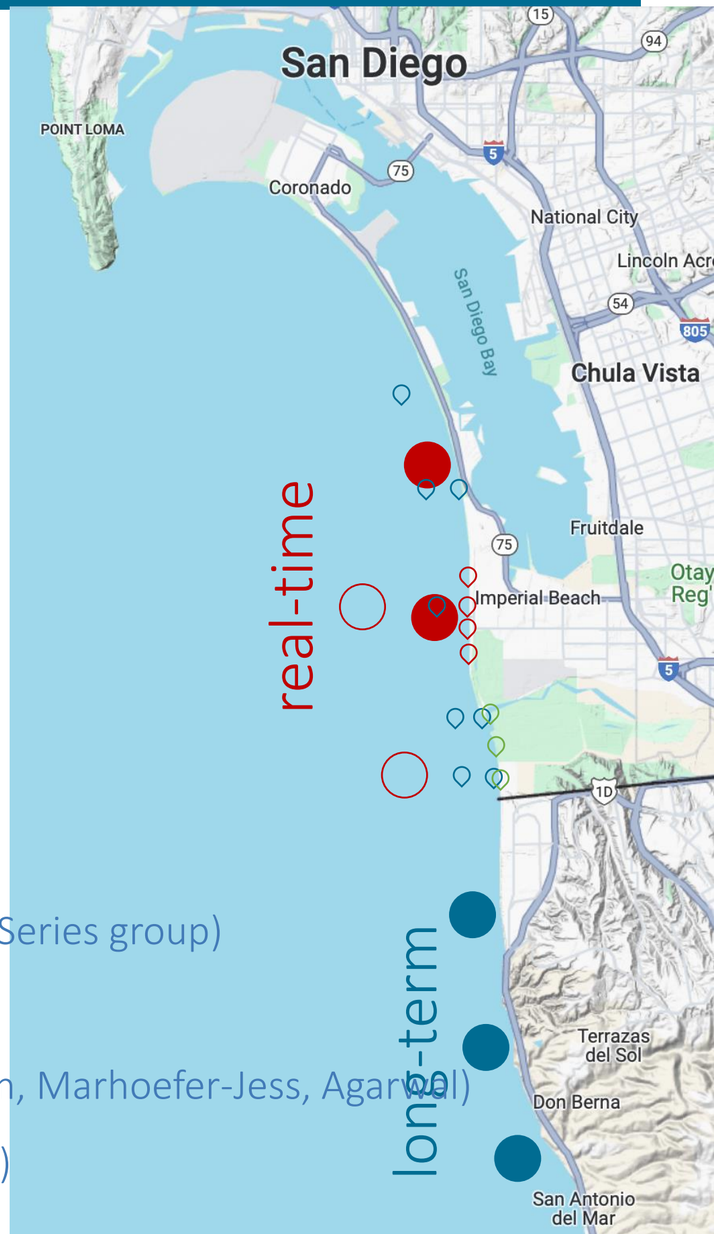

thank you! questions

Please feel free to contact me:
Sarah N Giddings
sgiddings@ucsd.edu
scripps.ucsd.edu/labs/sgiddings/

Acknowledgements

Funding: The Pathogen Forecast Model work is funded by the State of California.
State Senator Steve Padilla led the budget request, with support of the San Diego state delegation (Senators and Assembly members from the region).

Model development builds off prior projects, PiNC and CSIDE, which were supported by NSF. 2017-2019 simulations were supported by a grant from the Border Environment Cooperation Commission. 1D numerical modeling was supported by USCRP. The statements, findings, conclusions, and recommendations are those of the participants/authors and do not reflect the views of NSF, NOAA or the Department of Commerce.

This work would not be possible without: logistical support from the Tijuana River National Estuarine Research Reserve, the Los Peñasquitos Lagoon Foundation, California State Parks, IB lifeguards, Border Patrol, and San Diego County Division of Environmental Health. In-situ data collected through support from NAVFAC Southwest and NAVWAR was used for model validation. Moreover, SIO Coastal Data Information Program, the Southern California Coastal Ocean Observing System, TRNERR, USGS, and NOAA publicly available data was used for model forcing and validation. J Crooks, M Cordrey, J McCullough, M Hastings, J Thomas, C Anderson, the NERR SWMP, C Stafford and other State Parks staff. For prior projects, over 100 volunteers (residents, lifeguards, students, etc.), and many SIO graduate students and staff helped conduct field work.

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CSIDE project, 12 October 2015, photo by N Statom and L Lenain

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TIJUANA RIVER IMPACTS ON SAN DIEGO COUNTY AIR QUALITY
December 11, 2025

Kimberly A. Prather, Ph.D.
Director, Center for Aerosol Impacts on Chemistry of the Environment
Co-Director, Meta-Institute for Airborne Disease Transmission in a Changing Climate

CAICE NSF center for aerosol impacts on chemistry of the environment

UC San Diego | SCRIPPS INSTITUTION OF OCEANOGRAPHY

The Airborne Institute

Extending Health Impacts: Water to Airborne Exposure

THREAD SEWAGE CRISIS

The San Diego Union-Tribune

May 18, 2024

Full coverage: The transborder sewage crisis in San Diego

"You inhale 11,000 liters of air a day, versus two liters of water that you drink," said UC San Diego biochemist Kim Prather, another task force member and principal investigator on the aerosols study. "So, your main exposure route is the air. Our thinking is that a lot of the exposure and a lot of the illness is coming from what people are breathing."

History of UC San Diego South Bay San Diego and Imperial Beach Air and Water Sampling

Air and water sampling in this region since 2017 w/ a focus on bioaerosols aerosolized from polluted coastal ocean (bacteria, viruses, chemicals).

Up to 76% of airborne bacteria linked to the polluted Tijuana River.* Also, detected numerous other aerosolized chemical pollutants in coastal IB air.**

In September 2024, our team began to sample air and water across the South Bay region and along the Tijuana River.

*Pendergraft et al. (2023); **Cooper et al. (2025)

September 2024

Los Angeles Times

CLIMATE & ENVIRONMENT

Some in this California beach town insist the Tijuana River is poisoning them. Officials disagree

Summer 2024: Escalating odor reports (>200 per day)

“Dry season”: 40-80 million gallons/day of wastewater flowing into the Pacific Ocean

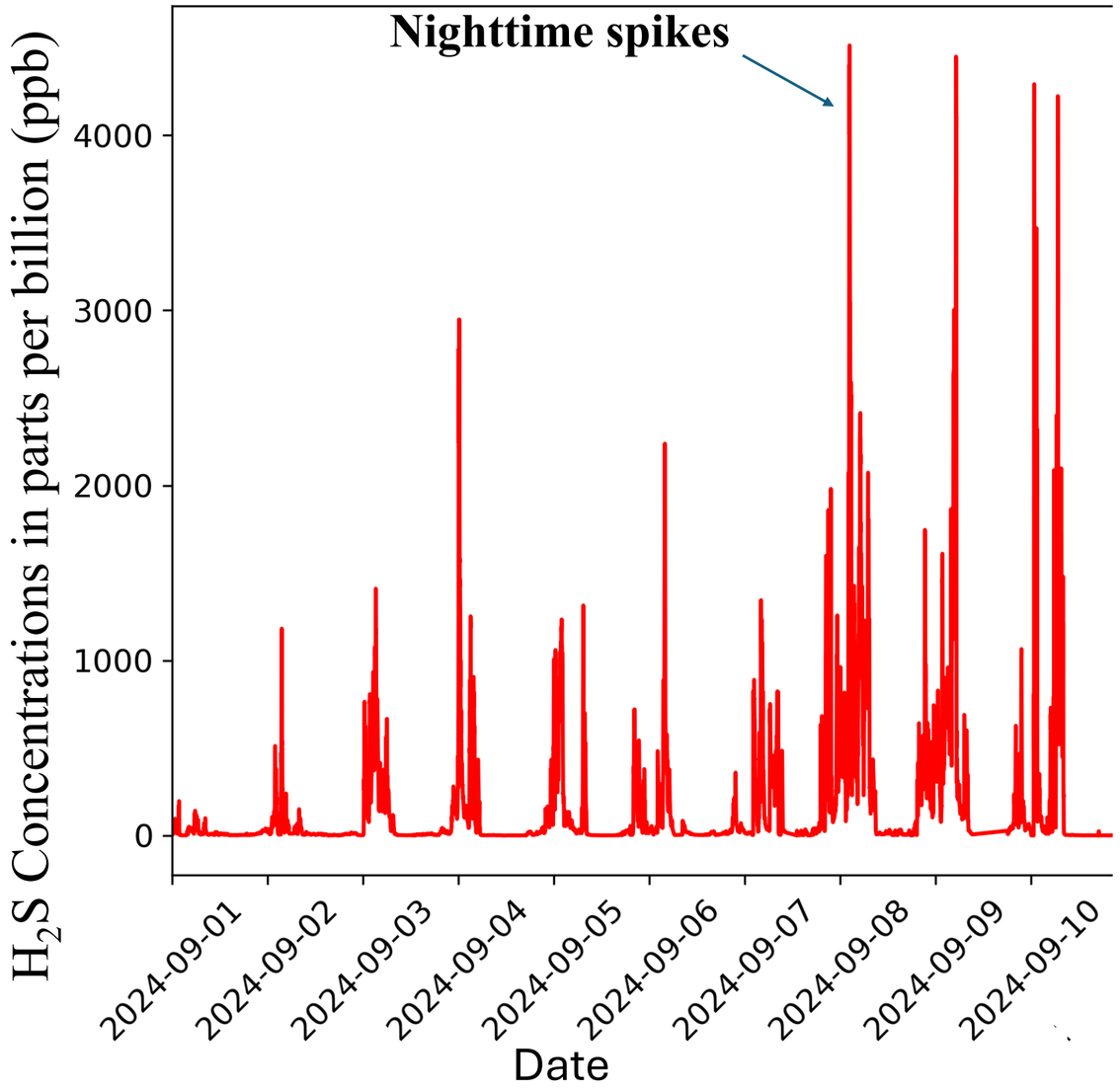
Which gases (= odors) are being released?

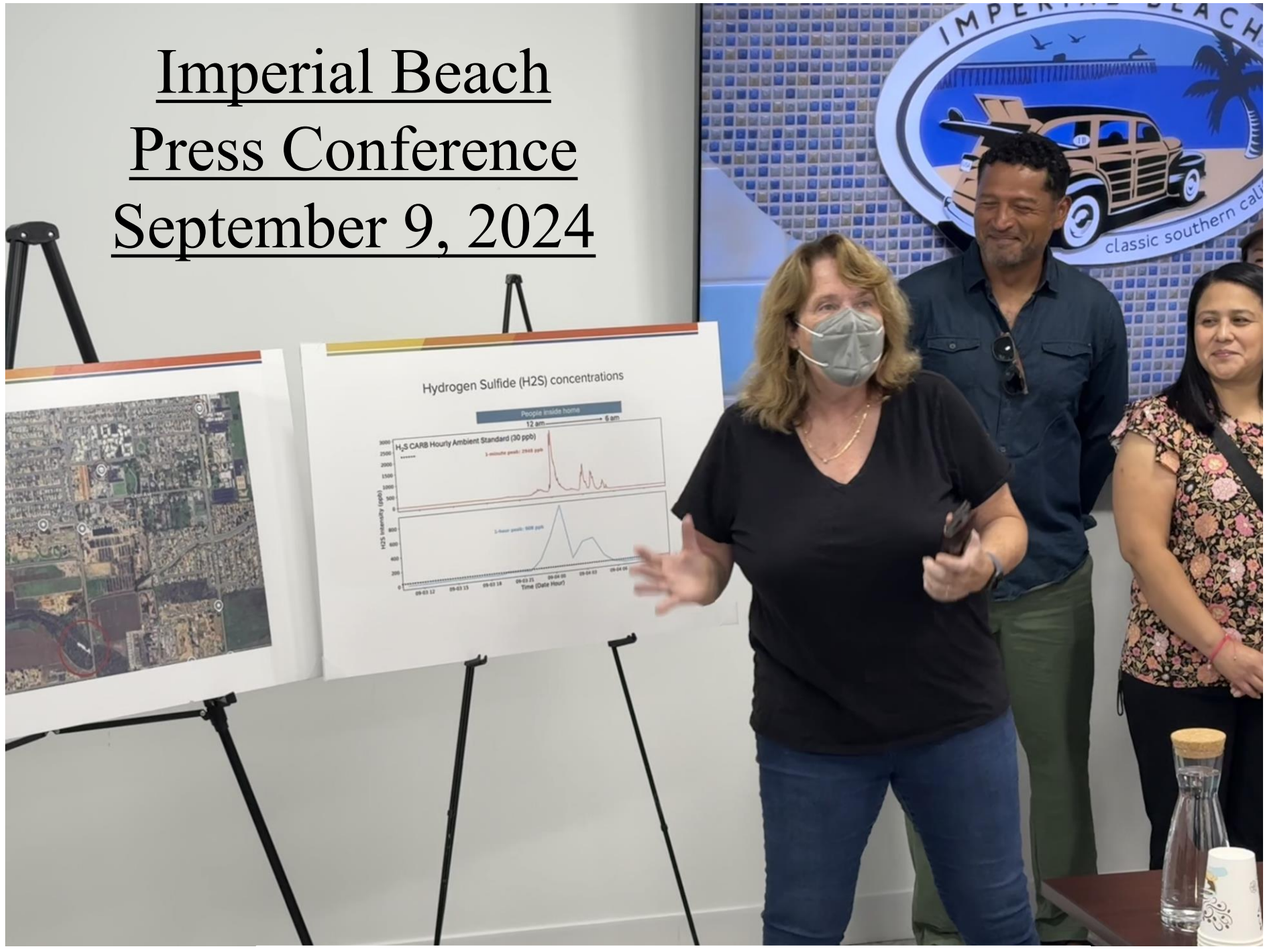
South Bay "Dry Season" Study (September 1-22, 2024)

Hydrogen Sulfide (H_2S, toxic nerve gas) in Nestor (south San Diego community)

For decades: Persistent "rotten egg smell"

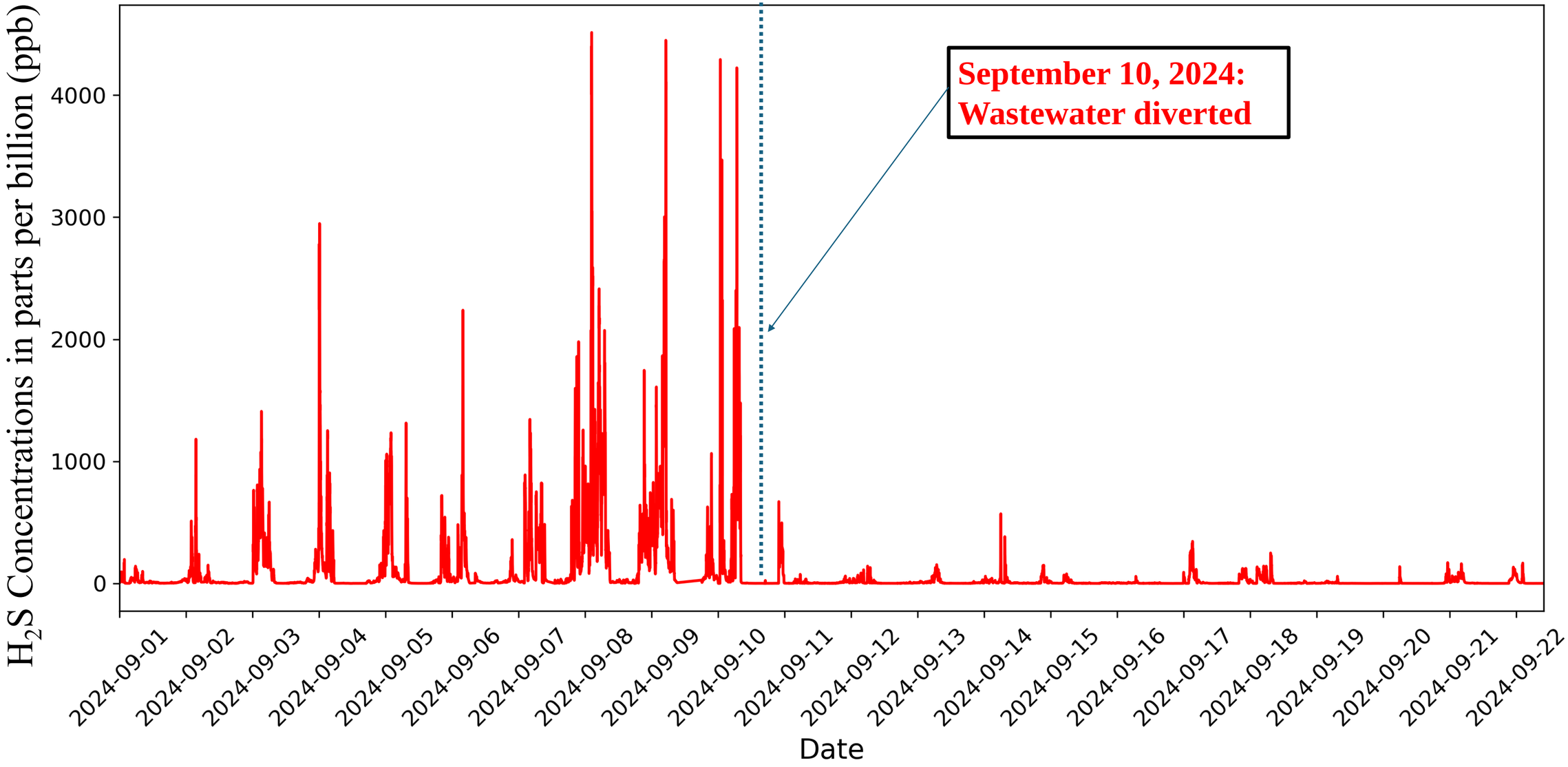
Measurements show nightly H_2S spikes 4,500 times higher than typical urban levels!!





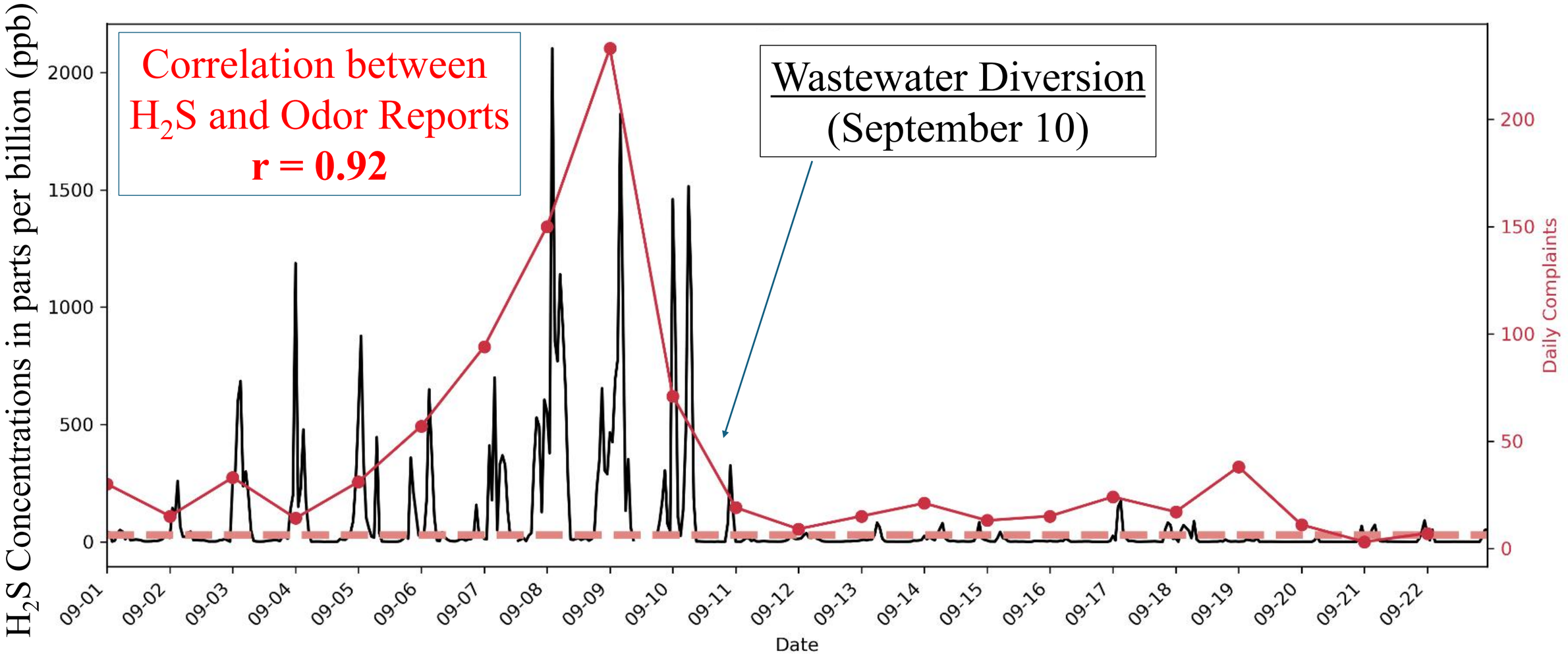
<u>September 10:</u> Wastewater in Tijuana River diverted—
"Tijuana River" flow <u>reduced</u>!!

Immediate Decrease in Hydrogen Sulfide Near River Hotspot
High levels linked to high flow of heavily polluted wastewater



Rico, et al. (2025) "Heavily Polluted Tijuana River Drives Regional Air Quality Crisis", Science.

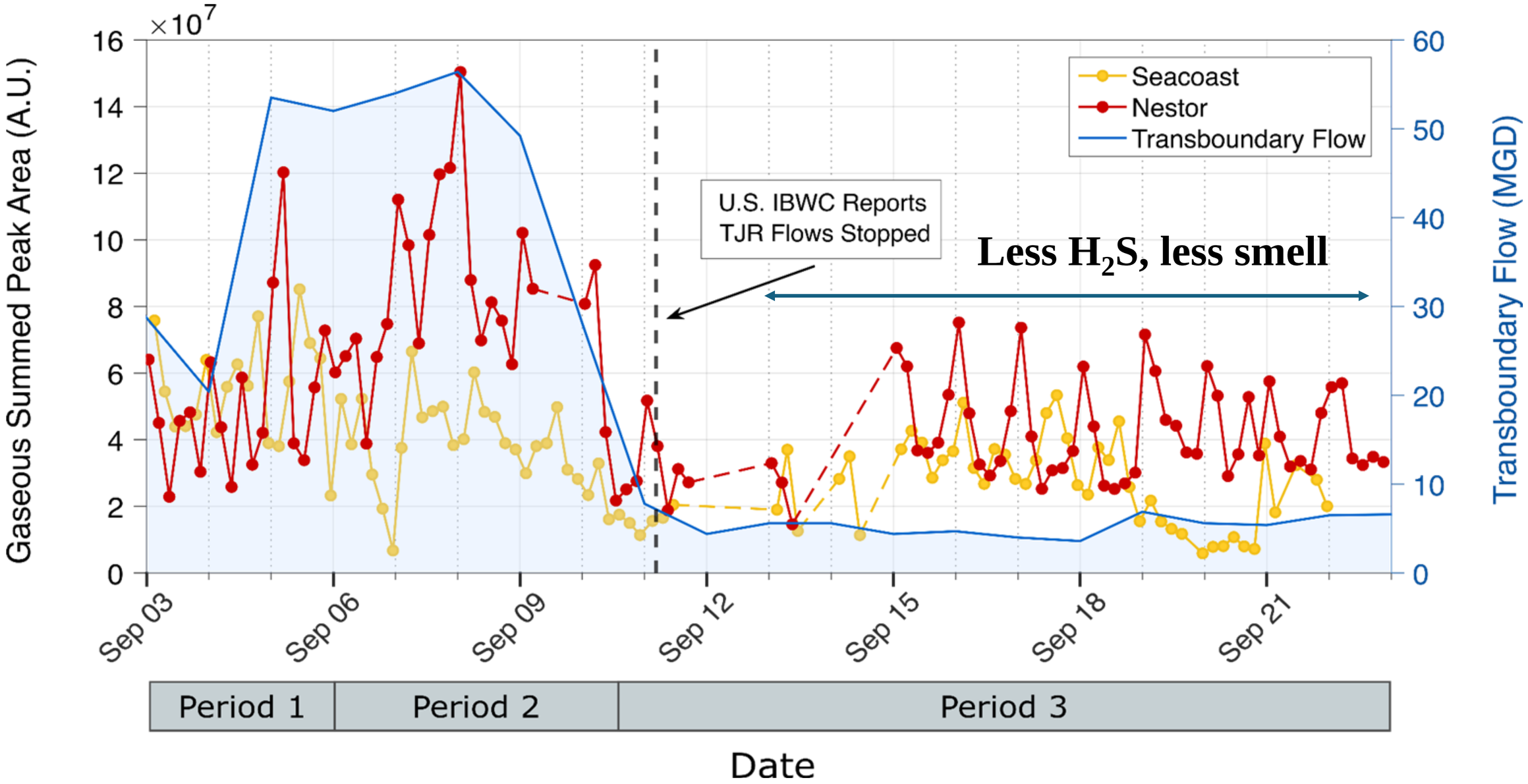
Hydrogen Sulfide vs. Community Odor Reports



H_2S measurements validated long-dismissed community voices!!

Rico, et al. (2025) "Heavily Polluted Tijuana River Drives Regional Air Quality Crisis", Science.

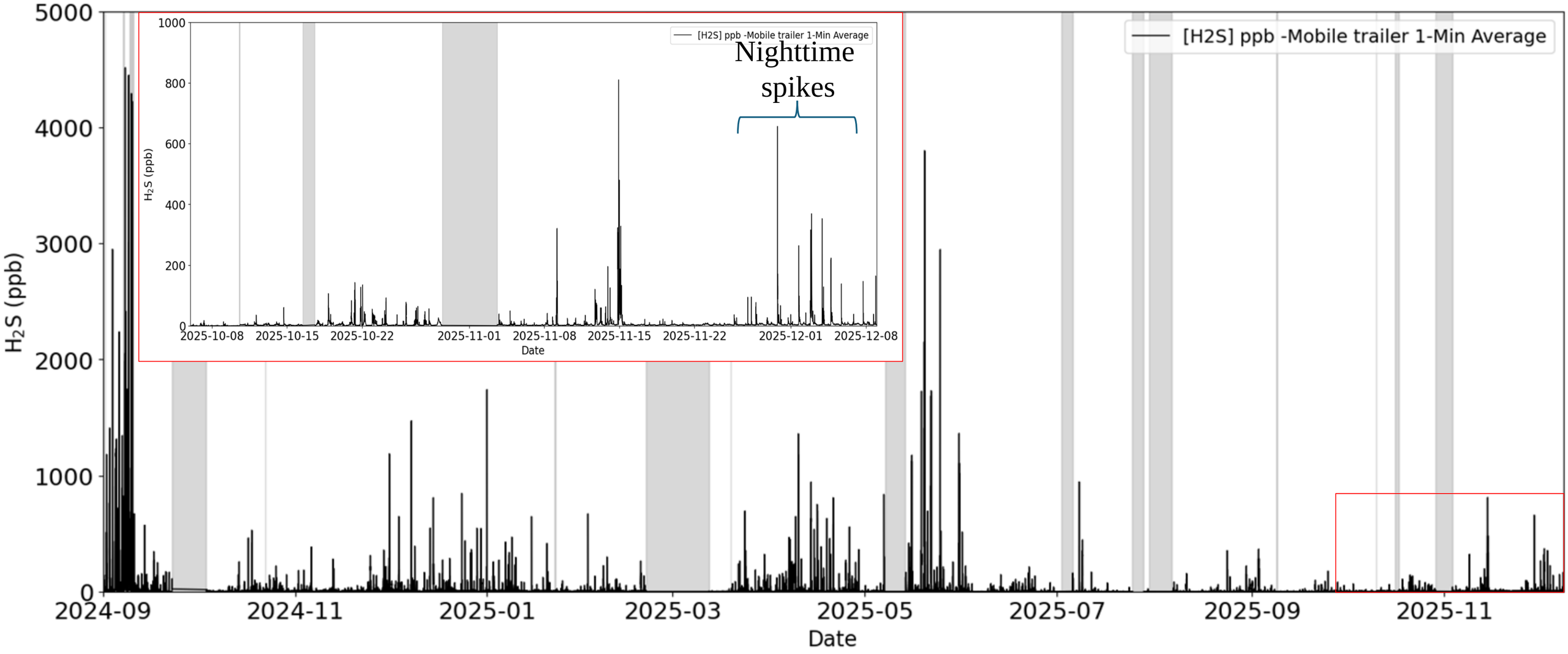
Total VOCs Track Reduction in Wastewater Flow



Frobenius et al., in prep

15 month time series of H_2S (1-minute resolution) in Nestor
Inset shows most recent data (October-December 2025)

Grey shaded regions- No Data



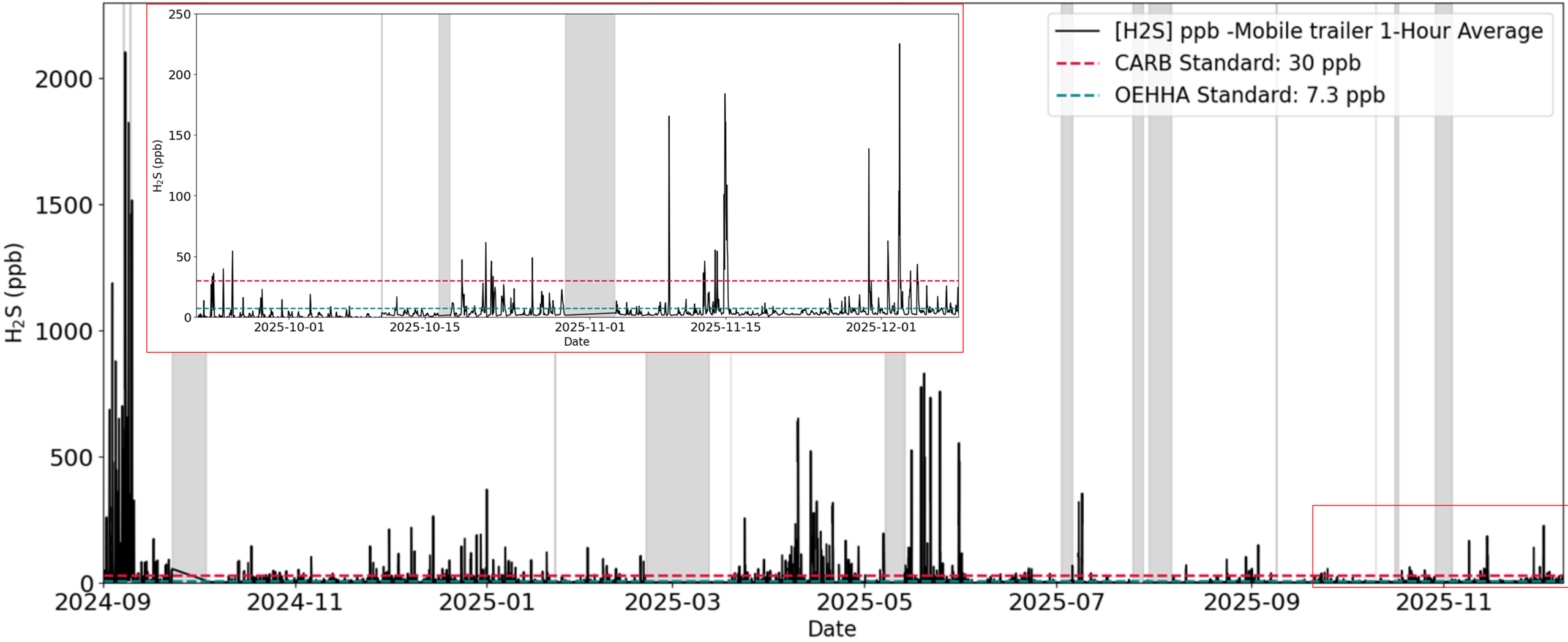
15 month time series of H_2S (1-hour average) in Nestor
Inset shows most recent data (October-December 2025)

Average nighttime H_2S over past year = 20 ppb

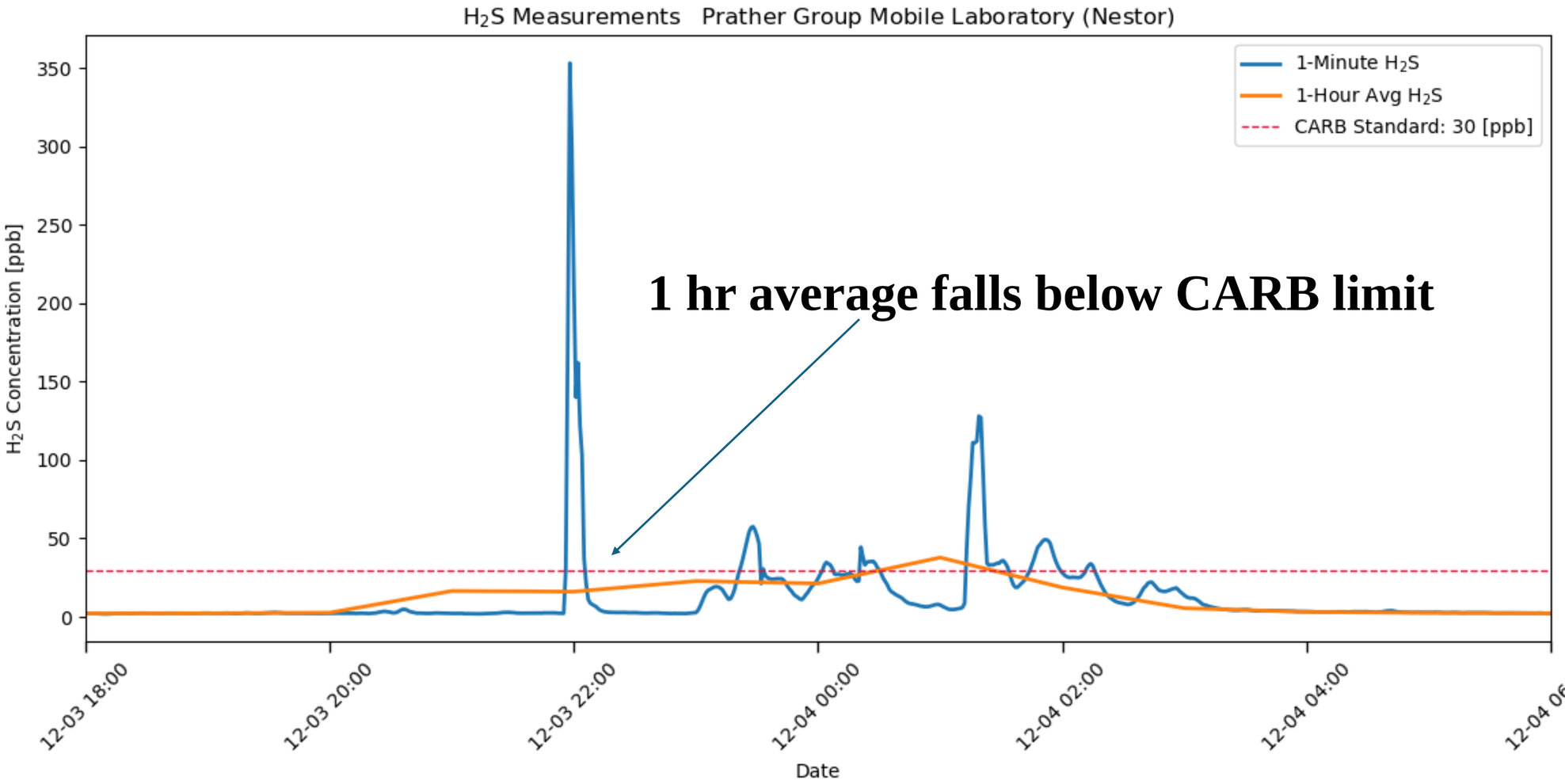
Average daytime H_2S over past year = 2 ppb

24-hr average H_2S over past year = 7.63 ppb

EPA (RfC) = 1.4 ppb



Short term H_2S (+ other gases) exposure can be extremely high at night
1 hour vs. 1 minute Time Resolution (H_2S)



Newly Developed Air Sampler

1 minute of air (now) ~ 12 hours of air sampling (before)

Community Input → Science → Action!

Water quality → Air quality → Health

Science
AAAS

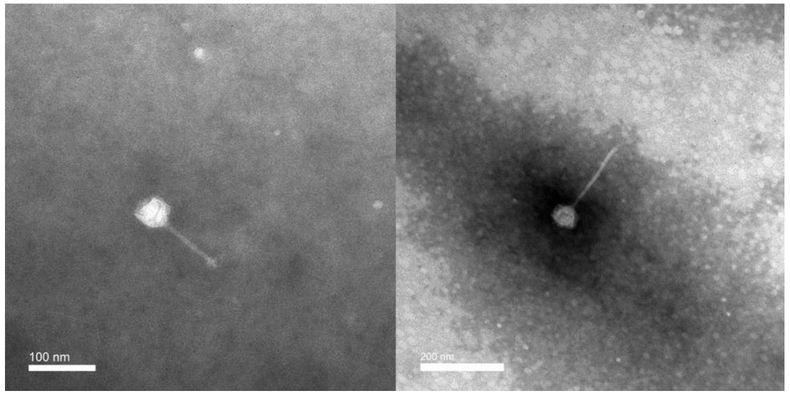
August 28, 2025

AIR POLLUTION

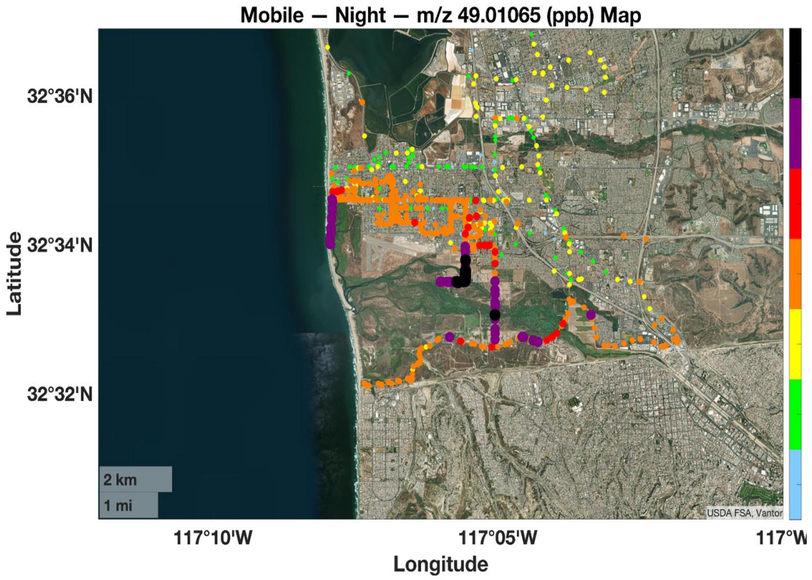
Heavily polluted Tijuana River drives regional air quality crisis

Benjamin Rico[1], Kelley C. Barsanti[2], William C. Porter[3], Karolina Cysneiros de Carvalho[3], Paula Stigler-Granados[4], Kimberly A. Prather[1,5]*

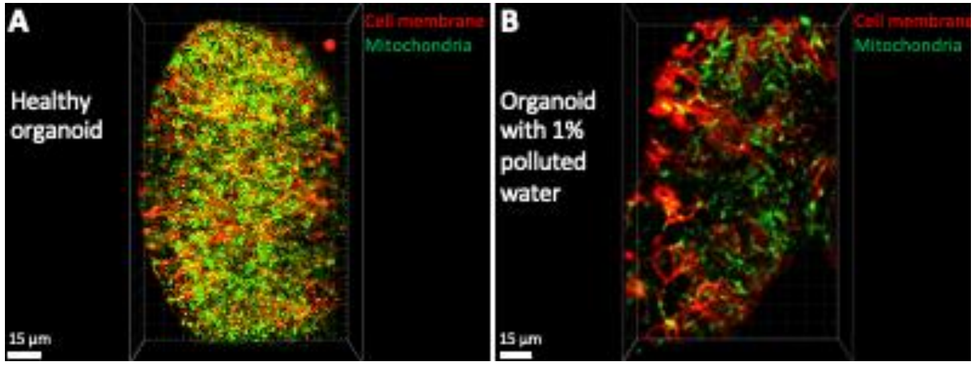
Industrial chemicals and untreated sewage have polluted the Tijuana River for decades, recently causing >1300 consecutive days of California beach closures. In summer 2024, wastewater flows surged to millions of gallons per day despite no rain, enhancing water-to-air transfer of hydrogen sulfide (H_2S) and other toxic gases at a turbulent hotspot. High wastewater flows and low winds led to nighttime H_2S peaks, reaching 4500 parts per billion (ppb)—exceeding typical urban levels of <1 ppb. H_2S levels and community malodor reports were strongly correlated (correlation coefficient $r = 0.92$), validating long-dismissed community voices and highlighting an environmental injustice. This study demonstrates that poor water quality can substantially affect air quality—although rarely included in air quality models and health assessments—with far-reaching implications as polluted waterways increase globally.



Airborne Phage



Mobile measurements (methanethiol)



Remaining key health questions (examples)….

Which air quality measurements are needed to properly assess health impacts? Currently: APCD measuring one gas (H_2S) at 3 locations w/ 1 hour time resolution.

Thousands of other compounds detected in air (~WWTP)

- What are the other gases, aerosols, airborne pathogens? [i.e. forever chemicals, PFAS, metals, and other emerging chemical and biological pollutants]
- How are people living in different regions being affected?
- Industrial sources (Maquiladoras)?
- How far do the impacts of this water and air pollution extend? Smells detected in La Jolla, North County….
- How is water pollution affecting regional PM and ozone levels (Cisneros, 2025, et al.)?
- Solutions: Impacts of air filters in homes and schools?

How is inhaling this complex “cocktail” affecting health? Need blood samples and throat swabs of residents (UCSD community mobile health clinic). What are short vs long term health impacts in different regions?

Residential Dust Sampling

Sampling Locations:

- Aerosol Sense
- Indoor and Outdoor dust
- Petri Dishes
- Soil and Sand (from suspected sources)
- Door Trims

Soil and Sand Source Sample Locations:
Tijuana Estuary Soil
Imperial Beach Sand
Tijuana River Soil

- Indoor and outdoor dust collected at all residences with a vacuum and Indoor Biotechnologies DU-ST-1 thimbles
- Environmental swabs collected from:
  - Interior, exterior, and bathroom door trims
  - Top of TV
  - Top of fridge
- Petri dishes are installed for 2 weeks to collect settling dust in both indoor and outdoor locations.

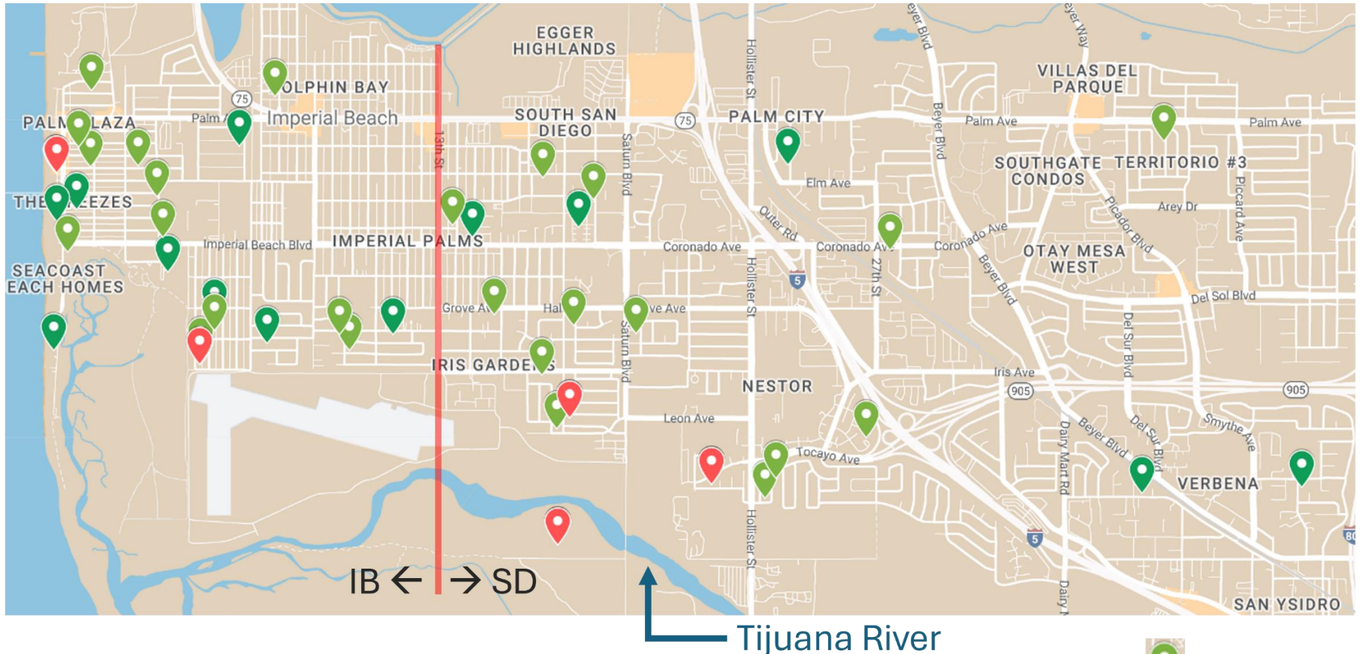
Prof. Kerry Kinney group (UT Austin)

Home Dust Sample Collection Map

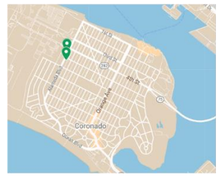
- Environmental samples were collected from 48 residences in Imperial Beach and surrounding cities.
- Samples from suspected sources of microbial contaminants, such as the Tijuana River and the Imperial Beach coastline, were collected for source-tracking analysis.

300+ Total environmental samples collected, including:

- Indoor and outdoor residential dust
- Indoor and outdoor residential surface swabs
- Aerosol Sense air filters
- Tijuana River soil
- Imperial Beach Sand



La Jolla: 1



Coronado: 2

Chula Vista: 1

Imperial Beach: 23, San Diego: 19, San Ysidro: 2
Total: 48

Vacuumed Dust
Vacuumed Dust and Swabs
Vacuumed Dust and Aerosol Sense

Prof. Kerry Kinney group (UT Austin)

Prather Group, UC San Diego

















Dr Kelley Barsanti
(NCAR)


Dr Karolina Cysneiros
(UCR)

Thank you!!

Funding
NSF
NOAA
(Rep. Scott Peters)
Balvi


Dr. Ben Rico, UCSD


Dr. William Porter, UCR

Dr. Pawel Mistal (UT Austin) + Research Team

Imperial Beach and
South Bay Communities!!

The Airborne Institute

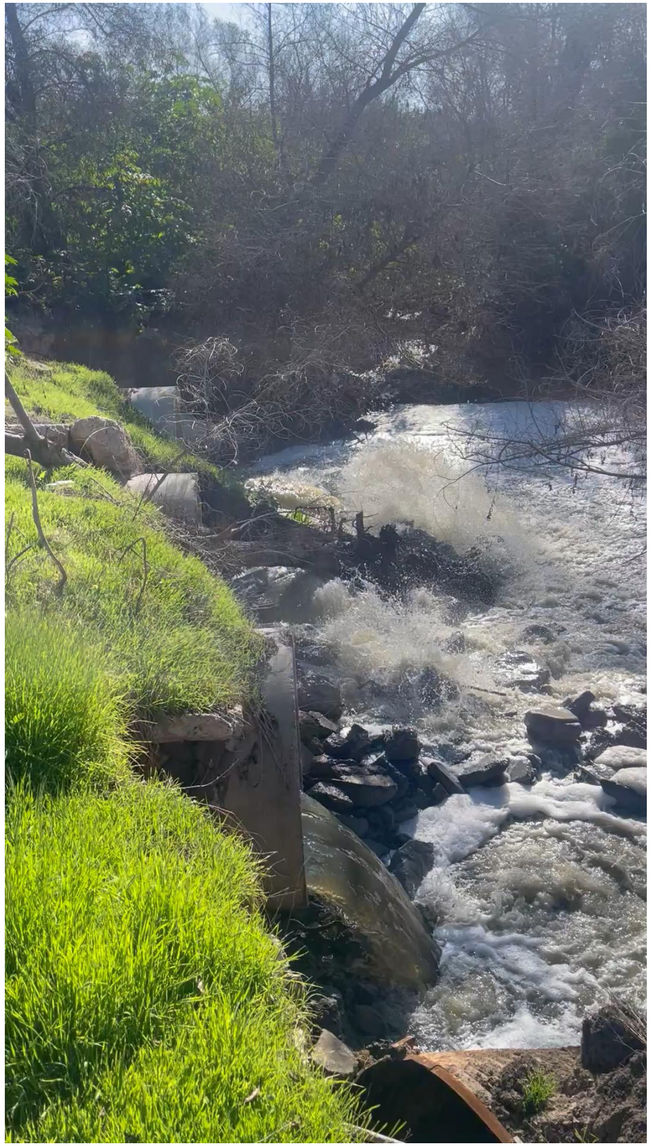
https://airborne.ucsd.edu
kprather@ucsd.edu

CAICE NSF center for aerosol impacts on chemistry of the environment

UC San Diego | SCRIPPS INSTITUTION OF OCEANOGRAPHY

Tijuana River (during dry season, “flowing wastewater”)

High River Flow (December 2025)



Massive Amounts of Foam (PFAS, etc)

Bioaerosol sampling (viruses, bacteria)

River foam sampling

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ASSEMBLYMEMBER

Damon Connolly

Chair, Assembly Environmental Safety and Toxic Materials Committee

Tijuana River Valley Transboundary Pollution:

Public Health Impacts & Research Findings

SDSU School of Public Health

Paula Stigler Granados, PhD

San Diego State University

School of Public Health

Agua Saludable Aire Saludable
SDSU
Healthy Water Healthy Air
TJRIVER.SDSU.EDU

The Public Health Crisis

94% of households smell sewage **inside** their homes

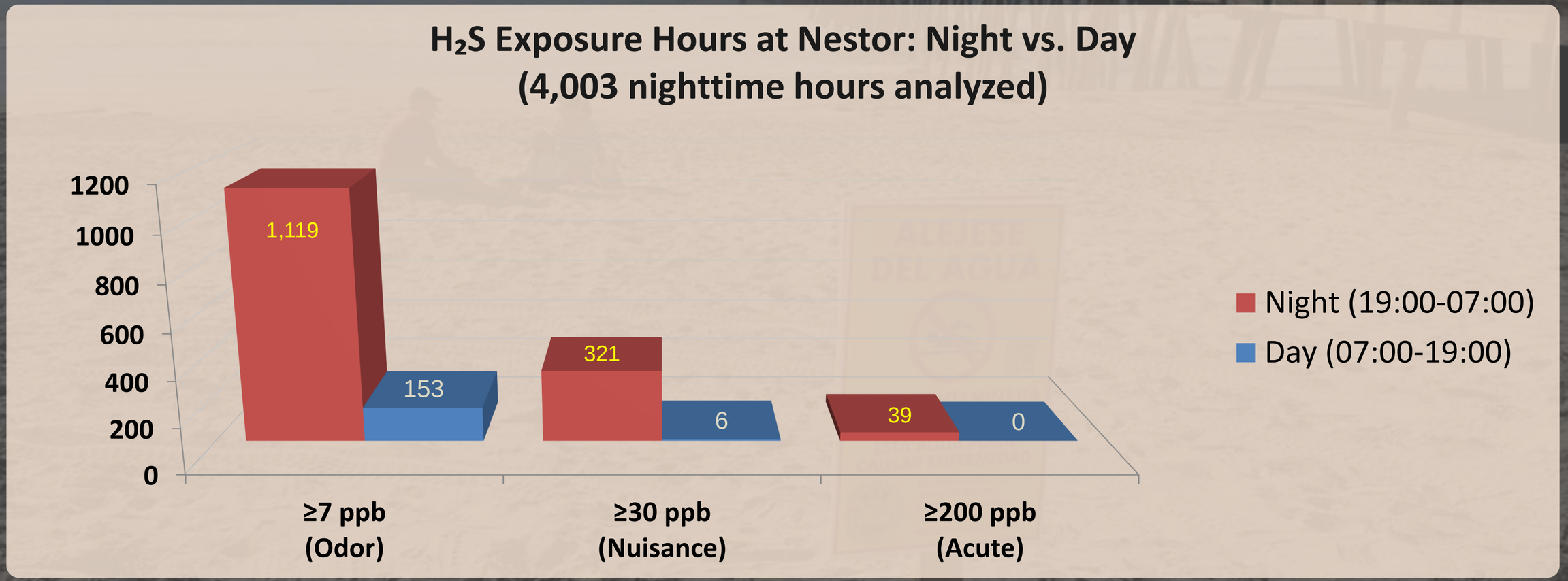
45% report **health problems**

63% **disrupted** work or school

92% believe the area is **unsafe** to work, live or play

*CDC CASPER & ACE studies; SDSU Heath Survey

A Nighttime Crisis



H_2S odors more frequent at night while families sleep

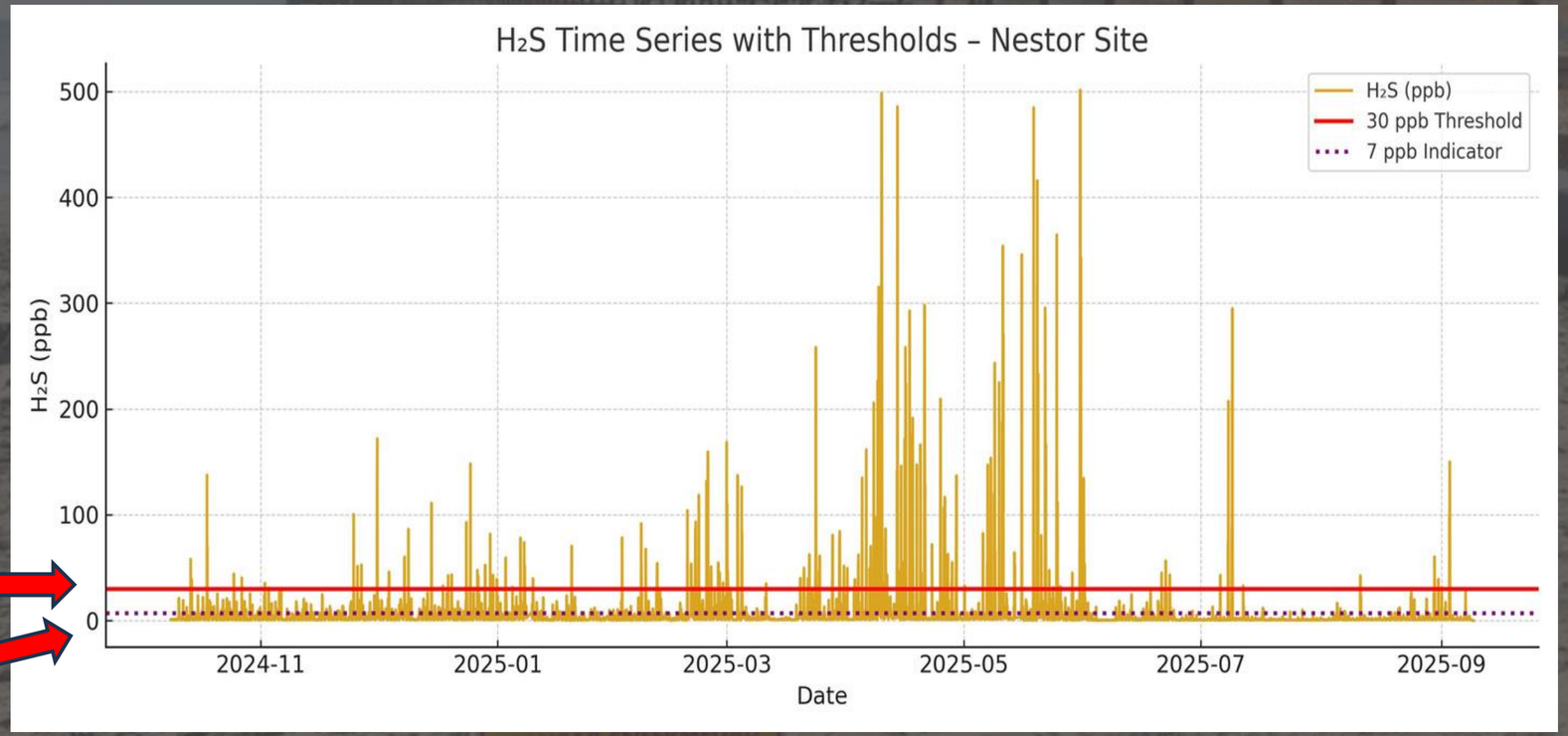
Chronic Exposure: What the Data Shows

Overall exceedances of H_2S at Nestor (near hot spot)

- ≥7 ppb: 1,272 hours
- ≥30 ppb: 327 hours
- ≥200 ppb: 39 hours

30 ppb threshold
CA Standard

7 ppb threshold



Chronic exposure to H2S occurs on average

1 in every 6 hours, often highest at night.

Many harmful chemicals in this mixture may be odorless.


This is an ongoing, chronic exposure, not a one-time event

What else is in the water: Chemical Contaminants

Top Detected Compound Classes

- **Illicit drug metabolites** (meth, fentanyl, cocaine)
- **Industrial chemicals** (corrosion inhibitors, plasticizers)
- **Pesticides** (chlorpyrifos, propoxur, diazinon)
- **Pharmaceuticals** (carbamazepine, propofol)
- **Antimicrobials** (chloroxylenol)
- **Volatile organosulfur compounds** (odor)

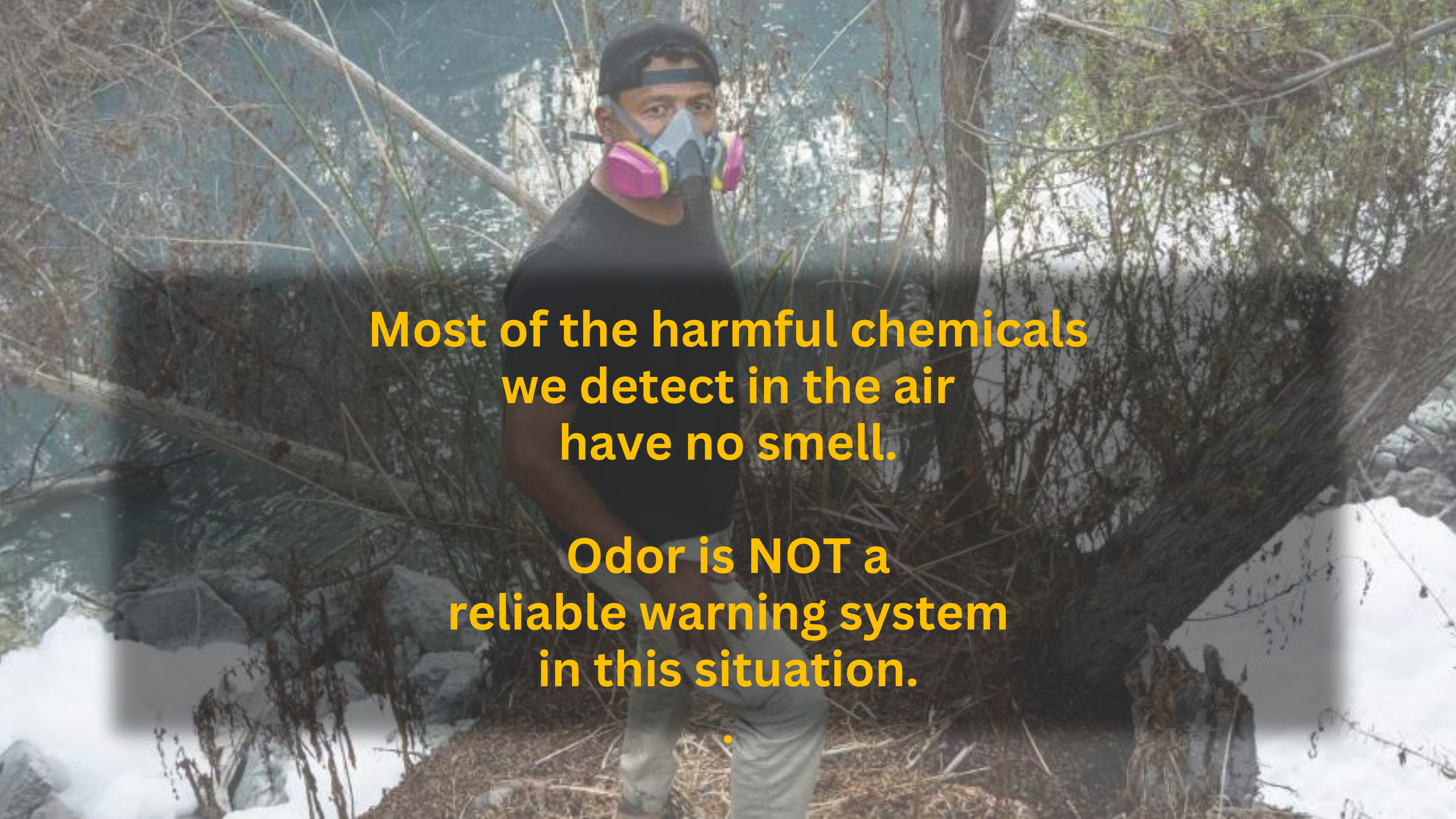
Saturn Blvd = Hot Spot

- **354 chemicals identified, 106 only found at Saturn**
- Located 0.3 miles from homes and schools
- Organosulfur compounds only at Saturn → explains odor complaints
- Chemical fingerprinting confirms this is where sewage becomes airborne

Air Sampling TJR Pollution

Wristband air samplers (7-day deployment)

- Saturn Blvd had highest chemical concentrations
- Home 0.3 mi away = nearly identical chemical fingerprint
- IB Pier shows many same TJR chemical markers
- Control site (Scripps Pier) clean


Most of the harmful chemicals
we detect in the air
have no smell.
Odor is NOT a
reliable warning system
in this situation.

Critical Gaps: What's Missing

Health Surveillance

❌ No comprehensive epidemiological study
❌ No biomonitoring program
❌ Limited toxicology data
❌ Unknown cumulative effects
❌ Unknown pathogens and exposures

Protective Interventions

- Experts recommend purifiers in every room + classroom
- No protective equipment for outdoor workers
- No indoor air quality testing

Environmental Monitoring

- Only H_2S monitored continuously (1 of MANY chemicals)
- Insufficient spatial coverage (3 monitors for entire region)
- No indoor air monitoring despite reported infiltration

Every gap represents a policy choice about how much protection these communities deserve

The Bottom Line

This is a public health emergency, not just an infrastructure problem

1. Exposure is multi-pathway: residents can't avoid contact
2. Health impacts are documented and ongoing and not theoretical
3. Vulnerable populations disproportionately harmed
4. Current protections mismatched to scale - gaps are widening

Action is needed WHILE long-term wastewater solutions are built.


Our communities deserve
protection equal
to any other in CA.

Thank you!

Our Team

- Penelope Jenny Quintana, PhD
- Yu Ni, PhD
- Eunha Hoh, PhD
- Linda Lara Jacobo, PhD
- Nicolas Lopez-Galvez, PhD
- Eyal Oren, PhD
- Kari Sant, PhD
- Matthew Verbyla, PhD
- Miguel Angel Zavala Perez, PhD
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- Saleha Eva, MPH
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- Savannah Shifflett, MPH
- Isabel Roji, BS
- Maryam Fani, MS
- Shannon McBride, DVM, MPH
- Ryan Duffy
- Shahrin Salam
- Eva Azevedo

For more info: tjriver.sdsu.edu

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25
YEARS
WILDCOAST
COSTASALVAJE

Imperial Beach Mayor Brian Bilbray radios police to remove demonstrators trying to stop Tijuana river dikes. Environmentalists (from left) Serge Dedina, Ben Holt and Jack Burns protest city officials' actions. Sewage from Mexico flowing through the Tijuana Valley has been one of the most persistent problems of the region. (*Imperial Beach Star-News* June 22, 1980)


CITY OF IMPERIAL BEACH
MOST SOUTHWESTERLY CITY
IN CONTINENTAL U.S.
IMPERIAL BEACH
CALIFORNIA
INCORPORATED JULY 18, 1956


WILDCOAST
COSTASALVAJE
MISSION: CONSERVE COASTAL AND
MARINE ECOSYSTEMS AND ADDRESS
CLIMATE CHANGE THROUGH
NATURAL SOLUTIONS

WILDCOAST
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BORDER ECOLOGY: TIJUANA RIVER ESTUARY

CA MPA & NAT WILDLIFE REFUGE IMPERIAL BEACH, CA


WILDCOAST
COSTASALVAJE
CORONADO ISLANDS; PACIFIC ISLANDS BIOSPHERE RESERVE, BAJA CALIFORNIA
© Ralph Lee Hopkins - with aerial support by LightHawk


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CALIFORNIA WASTE TIRES EXPORTED TO TIJUANA WASH BACK INTO THE TJ RIVER VALLEY


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SOLUTIONS

WILDCOAST
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TRASH BOOM INSTALLED IN LOS LAURELES, TIJUANA IN 2021


WILDCOAST
COSTASALVAJE
WILDCOAST
COSTASALVAJE
BEFORE


WILDCOAST
COSTASALVAJE
AFTER

REMOVED 60,000 KG (132,277 LBS) OF SOLID WASTE THIS YEAR –93% PLASTIC

TIRES TURNED INTO BUILDING MATERIALS

WILDCOAST
COSTASALVAJE

DEBRIS REPURPOSED TO BUILD A COMMUNITY PARK

¡GRACIAS!

Serge Dedina, Ph.D.
Executive Director
serge@wildcoast.org

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San Diego County Air Pollution Control District

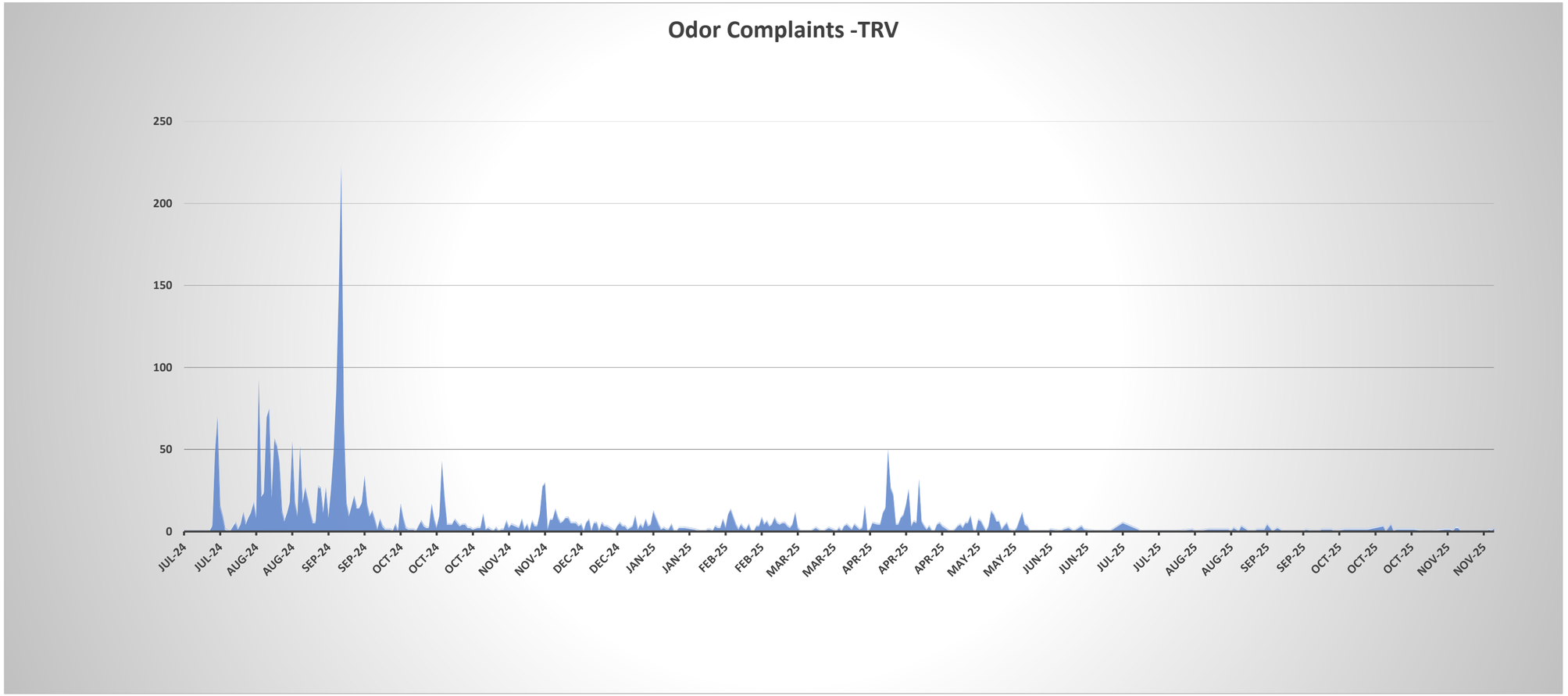
Tijuana River Valley Response

Environmental Quality Committee

2025

San Diego County Air Pollution Control District

Odor Complaints



H2S Air Quality Monitoring

Hydrogen Sulfide (H2S) Monitoring

The graph below shows the hourly hydrogen sulfide readings from our monitoring networks in the Tijuana River Valley as of yesterday.

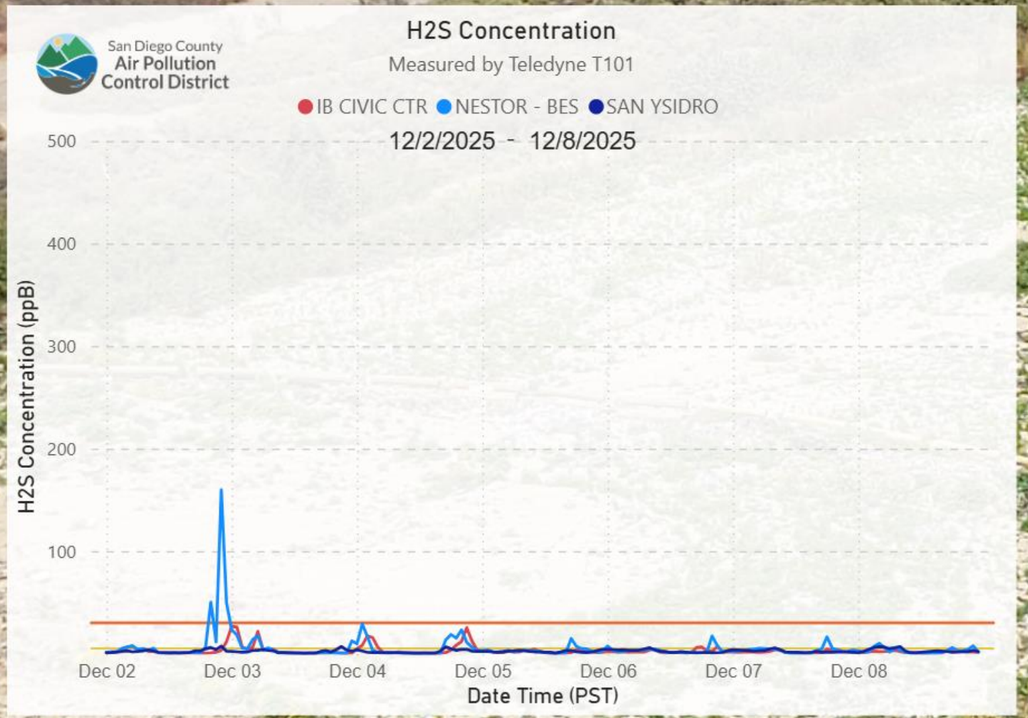
To stay up to date with the latest air quality information at the Tijuana River Valley, sign-up for email updates here.

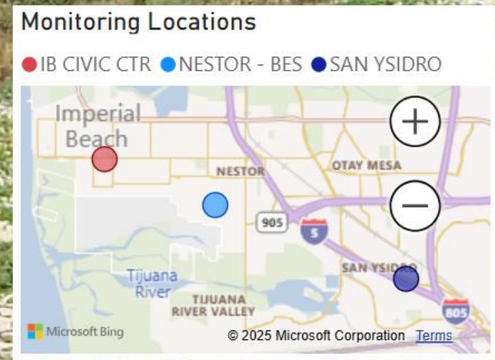
For real-time hourly data, click here.

English | Español

Monitoring Locations
- [x] IB CIVIC CTR
- [x] NESTOR - BES
- [x] SAN YSIDRO

View Last 7 Days | Select By Dates

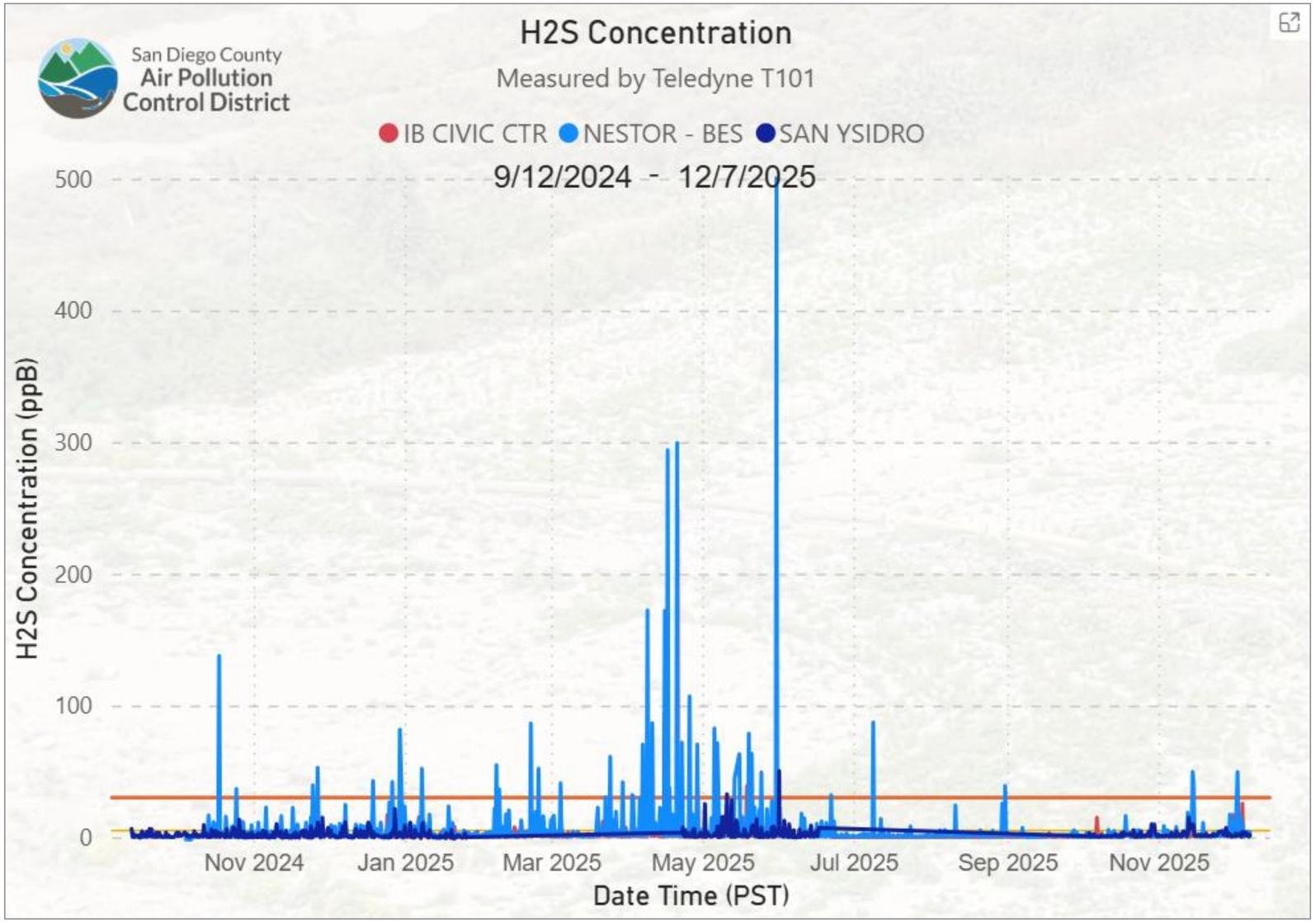




Date	Time	Location	ppB
12/2/2025	12:00:00 AM	IB CIVIC CTR	1.00
12/2/2025	12:00:00 AM	NESTOR - BES	1.30
12/2/2025	12:00:00 AM	SAN YSIDRO	0.80
12/2/2025	1:00:00 AM	IB CIVIC CTR	1.50
12/2/2025	1:00:00 AM	NESTOR - BES	1.60
12/2/2025	1:00:00 AM	SAN YSIDRO	1.00
12/2/2025	2:00:00 AM	IB CIVIC CTR	1.50

Data Refresh Frequency: This report is refreshed once every 24 hours.

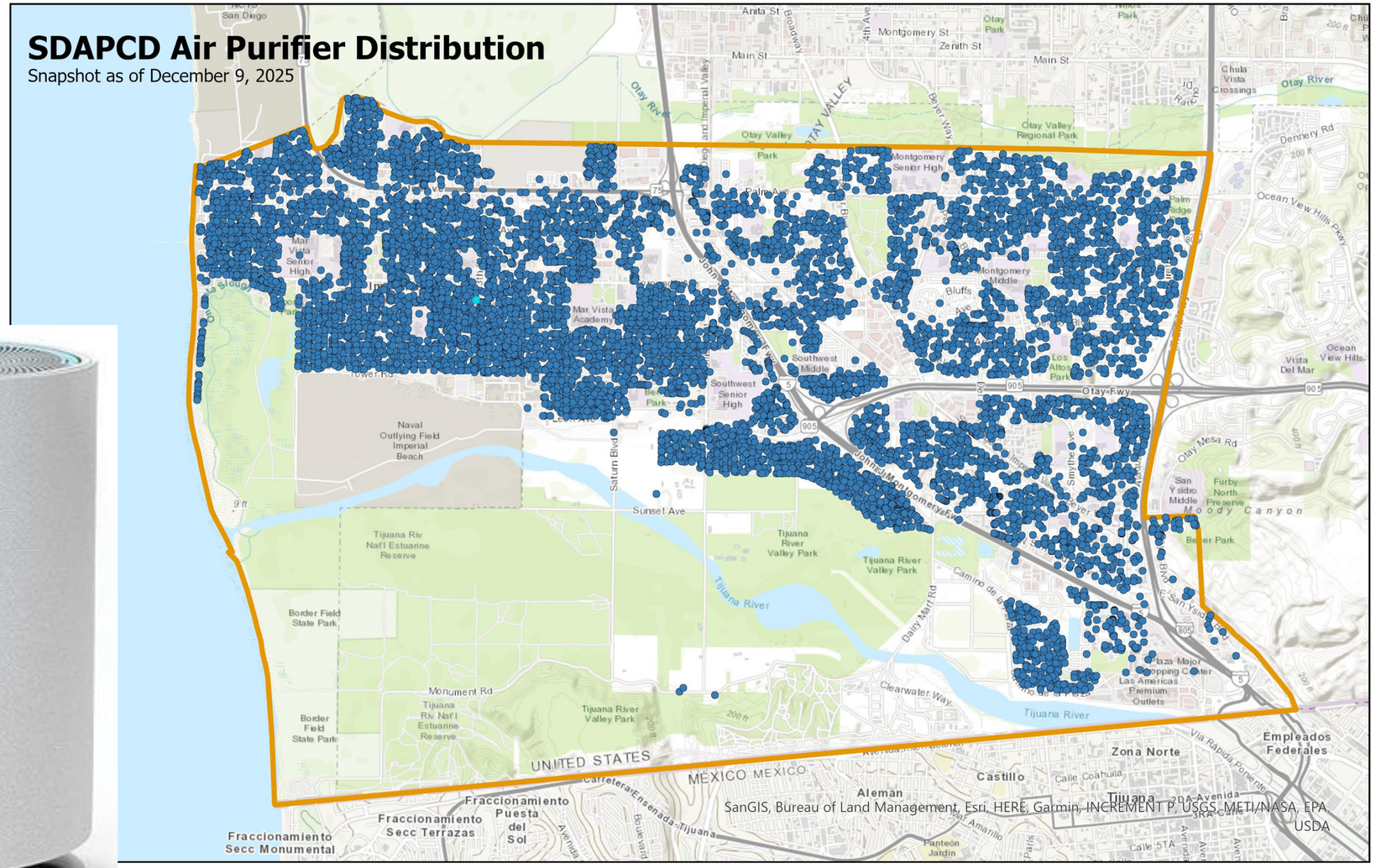
H2S Air Quality Monitoring



H2S Advisories & Updates

Green Less than 5 ppB	Most people will not smell an odor or experience odor-related symptoms.	• No recommendations.
Yellow Between 5 and 30 ppB	Some sensitive groups may smell an odor and experience odor-related symptoms such as headaches, nausea, or respiratory discomfort.	• Limit outdoor activities if you smell odor that is bothersome.
Orange More than 30 ppB	Many people will smell an odor and/or experience odor-related symptoms. SDAPCD will issue an 'Odor Advisory' to inform the public.* *For levels 200 ppB[1] or higher, SDAPCD will activate multiagency review to develop additional public recommendations if needed.*	• Limit outdoor activities if you smell odor that is bothersome. • Keep doors and windows closed to prevent odor from coming indoors. • Air out your home or building when odor is not present (by opening doors and windows, for example). • If symptoms from strong odor persists, are worrisome, or worse, seek medical care.
Purple More than 27,000 ppB[2]	Many people could experience serious, lasting adverse health effects. *First responders will evaluate for safety and potential shelter in place or evacuation order.**	• Await further instructions from First Responders, through Alert San Diego.

Air Purifier Distribution



San Diego County Air Pollution Control District

Tijuana River Valley Response

Environmental Quality Committee

2025

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