

# Nebraska Environmental Public Health Tracking

Better data for better health.

Rachael Birn, MPH

3/1/2024



DIVISION OF  
PUBLIC HEALTH



WATER, CLIMATE &  
HEALTH PROGRAM

Jesse Bell, PhD



Rachael Birn, MPH



Summer Woolsey, MPH



Chris Allmon



Derry Stover, MPH



Sue Dempsey, MS



Siddhi Munde, MS



Babak Fard, PhD



# National Environmental Public Health Tracking



# Turning Data Into Action



**Target  
prevention  
activities**



**Monitor  
community  
health**



**Identify  
communities  
at risk**



**Support  
epidemiologic  
studies**



**Educate  
residents**



**Inform city or  
state planning**



**Inform health  
policies**

# Data Into Action: Across the Nation



## California

- Created traffic tool to identify air pollution risks for city planning



## Maine

- Expanded surveillance prevention of CO poisoning



## Missouri

- Cooling Center Map

# Nebraska Environmental Public Health Tracking



**5-Year Grant (2022-2027)**

**Partners and Stakeholders:**

UNMC WCHP

Data Stewards (ex: NDEE)

Local Health Departments

Community Organizations

Nebraska Residents

# Data Surveillance Areas

## Air Quality

- Ozone, PM 2.5

## Asthma

- ED and Hospitalizations

## Birth Defects

- Prevalence

## Cancer

- Incidence (Registry)
- Mesothelioma, melanoma, breast cancer, bladder cancer, leukemia, others

## CO Poisoning

- Mortality (death cert)
- ED Visits & Hosp (HDD)

## Childhood Lead Poisoning

- BLL data (NEDSS)

## COPD

- ED and Hospitalizations

## Drinking Water Quality

- Nitrates, DBPs, arsenic, others

## Heat Illness

- ED and Hospitalizations

## Heart Attacks

- Hospitalizations (HDD)

## Radon

- Testing data

## Reproductive & Birth Outcomes

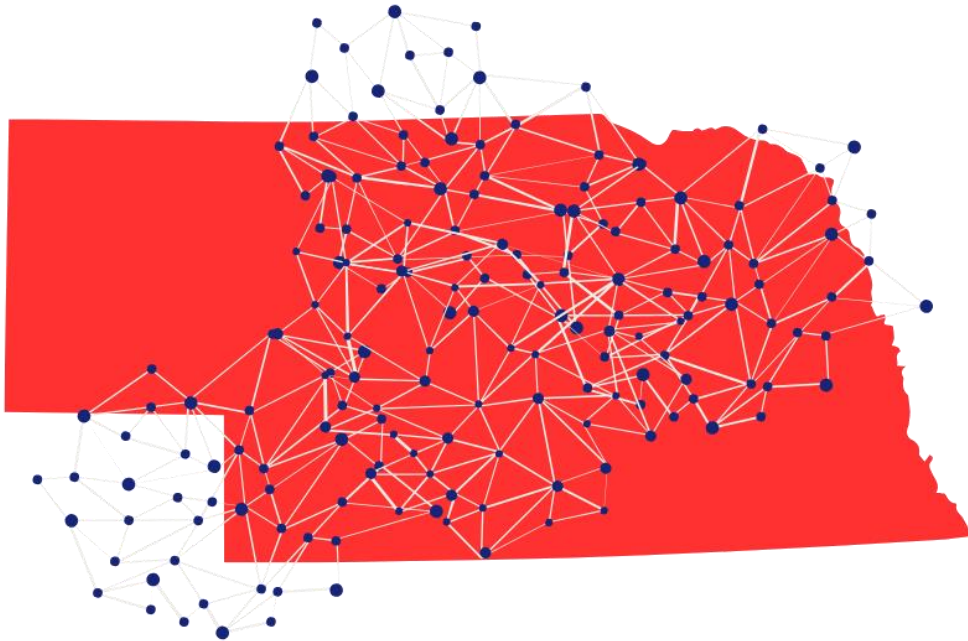
- Mortality (birth registry)

**\*Plus, priority topics as defined by partners, stakeholders, & communities**



# How will these data be shared?

## State Data Portal



## National Data Portal





# Developing Nebraska's Data Portal

## Kansas Tracking's Data Portal

**Data Explorer** | Search for a measure or indicator

**Content Area**  
 Air Quality  
 Geography  
 County  
 indicator ⓘ  
 Annual PM2.5 Level (Monitor + Modeled)  
 Measure ⓘ  
 Annual average ambient concentrations of PM 2.5 in microgr...  
 Filter  
 None  
 Filter Options  
 None  
 Year  
 2016

**Legend** | Map Layers

**AirQuality - County**

Data Availability

- Available
- Modeled

Annual average ambient concentrations of PM 2.5 in micrograms per cubic meter, based on seasonal averages and daily measurement (monitor and modeled data)

- > 8.7
- 6.39
- < 4.1

**Data Messages**

- Data set consists of PM2.5 concentration estimates calculated using the EPA Downscaler (DS) model for counties and days without monitoring data and Air Quality System (AQS) data for counties and days with monitoring data. DS modeled data is generated through the statistical fusion of AQS monitor data and Community Multiscale Air Quality (CMAQ) model-predicted concentration values.
- The primary annual National Ambient Air Quality Standard (NAAQS) for PM2.5 is 12.0 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). Primary

**Color Scheme Changer**  
Blue

**Geo Comparison** | Time Comparison

Annual average ambient concentrations of PM 2.5 in micrograms per cubic meter

County	Value
Allen	7.6
Anderson	7.2
Atchison	7.6
Barber	6.7
Barton	6.1
Bourbon	7.6
Brown	7.4

CSV Download

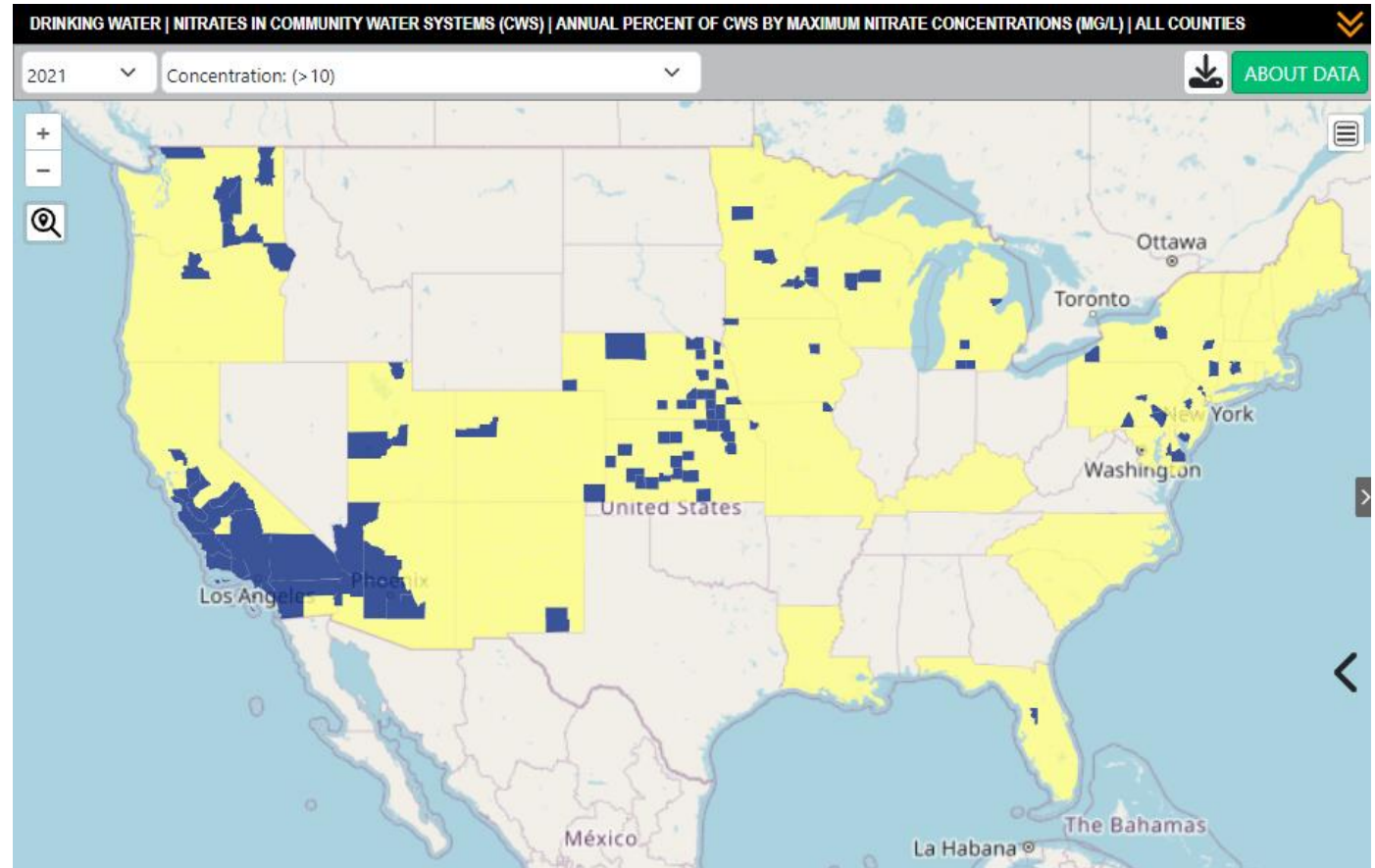
Print | Advanced Download

# Nebraska's Data in the CDC Data Portal

<https://ephtracking.cdc.gov/>

**DRINKING WATER |  
NITRATES IN COMMUNITY  
WATER SYSTEMS (CWS)**

**ANNUAL PERCENT OF CWS  
BY MAXIMUM NITRATE  
CONCENTRATIONS (MG/L)**



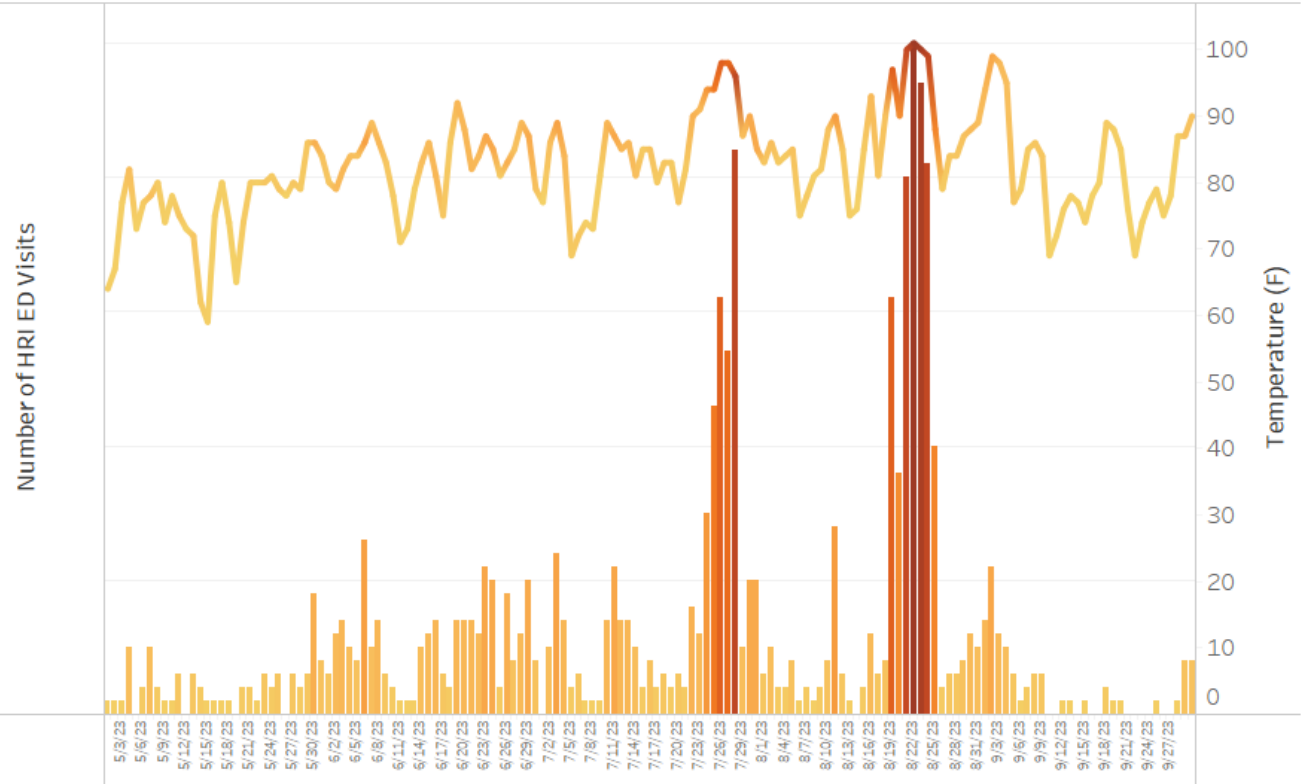
# Current Projects



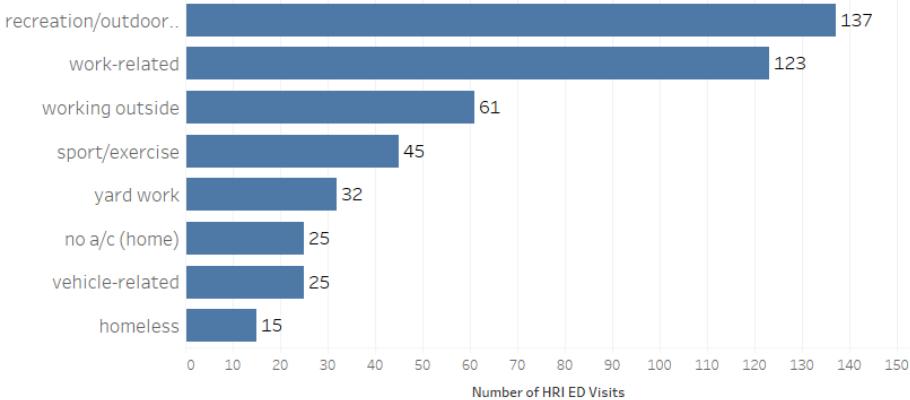
# Heat-Related Illness



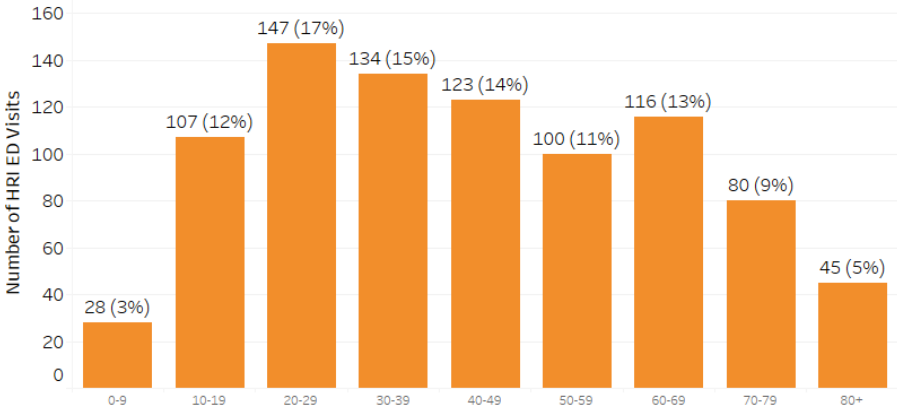
Heat-related Illness ED Visits, Nebraska, May-September, 2023 (N=880)



Heat-related Illness ED Visits by Reported Activity, May-September, 2023 (N=463)



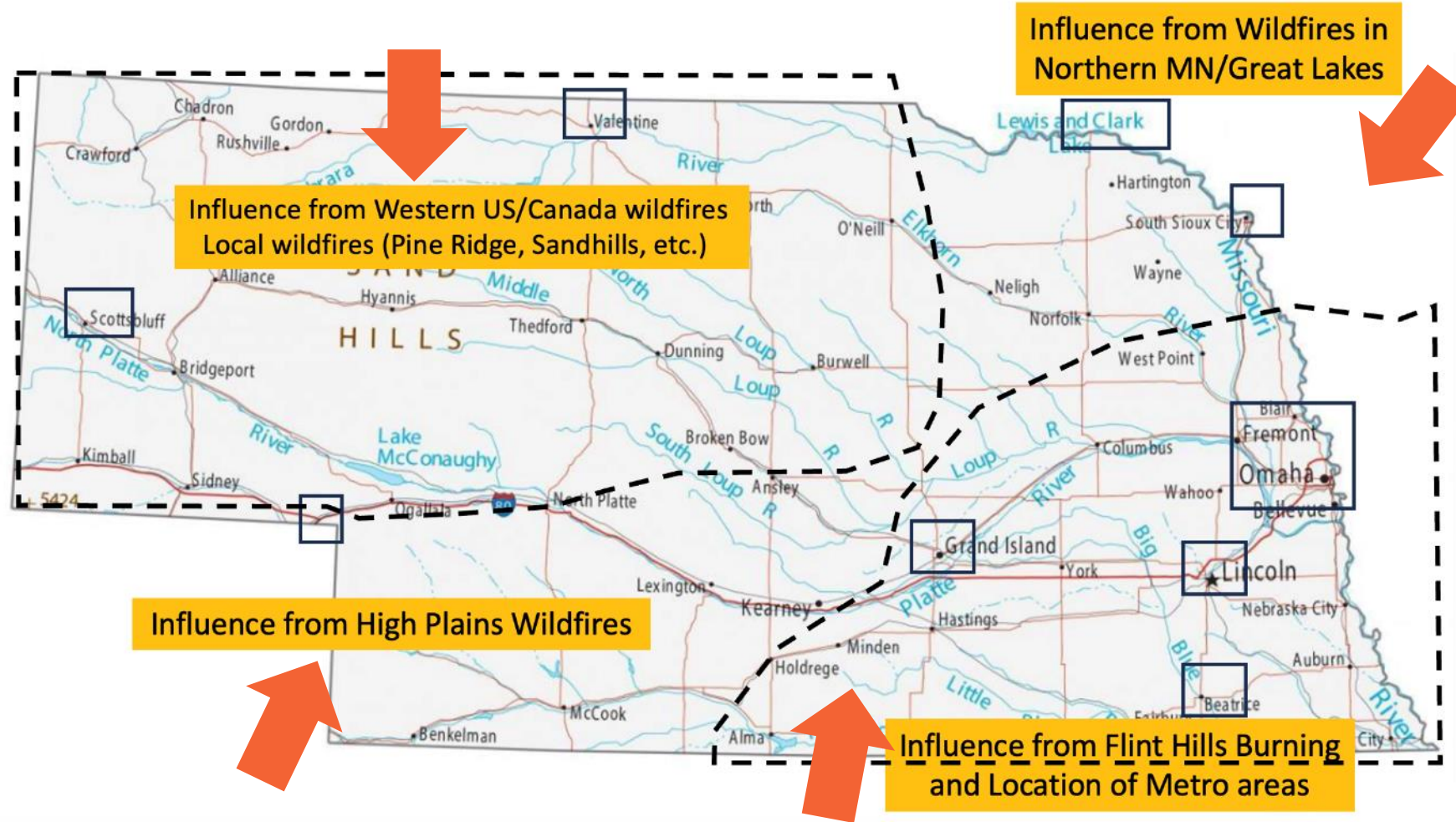
Heat-related illness ED visit by age group, Nebraska, May-September, 2023 (N=880)



WATER, CLIMATE & HEALTH PROGRAM

# Increasing Air Quality Sensors in the State

29 new Purple Air Sensors



# Next Steps and Opportunities

- Air quality curriculum for youth
- Communication products
- Drought and health dashboard
- Air quality and prescribed burns
- Health outcomes from the 2019 floods
- Endless opportunities for utilizing Earth Observations



# Let's Continue the Conversation!

**Rachael Birn**  
[rachael.birn@nebraska.gov](mailto:rachael.birn@nebraska.gov)

**Summer Woosley**  
[summer.woolsey@unmc.edu](mailto:summer.woolsey@unmc.edu)



## Stay up to date with Nebraska Tracking!