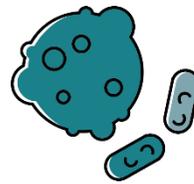
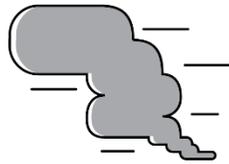
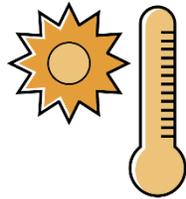
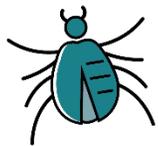


2010-2020

# Regional Climate and Health Monitoring Report



OPHA Annual Conference  
October 12<sup>th</sup>, 2021



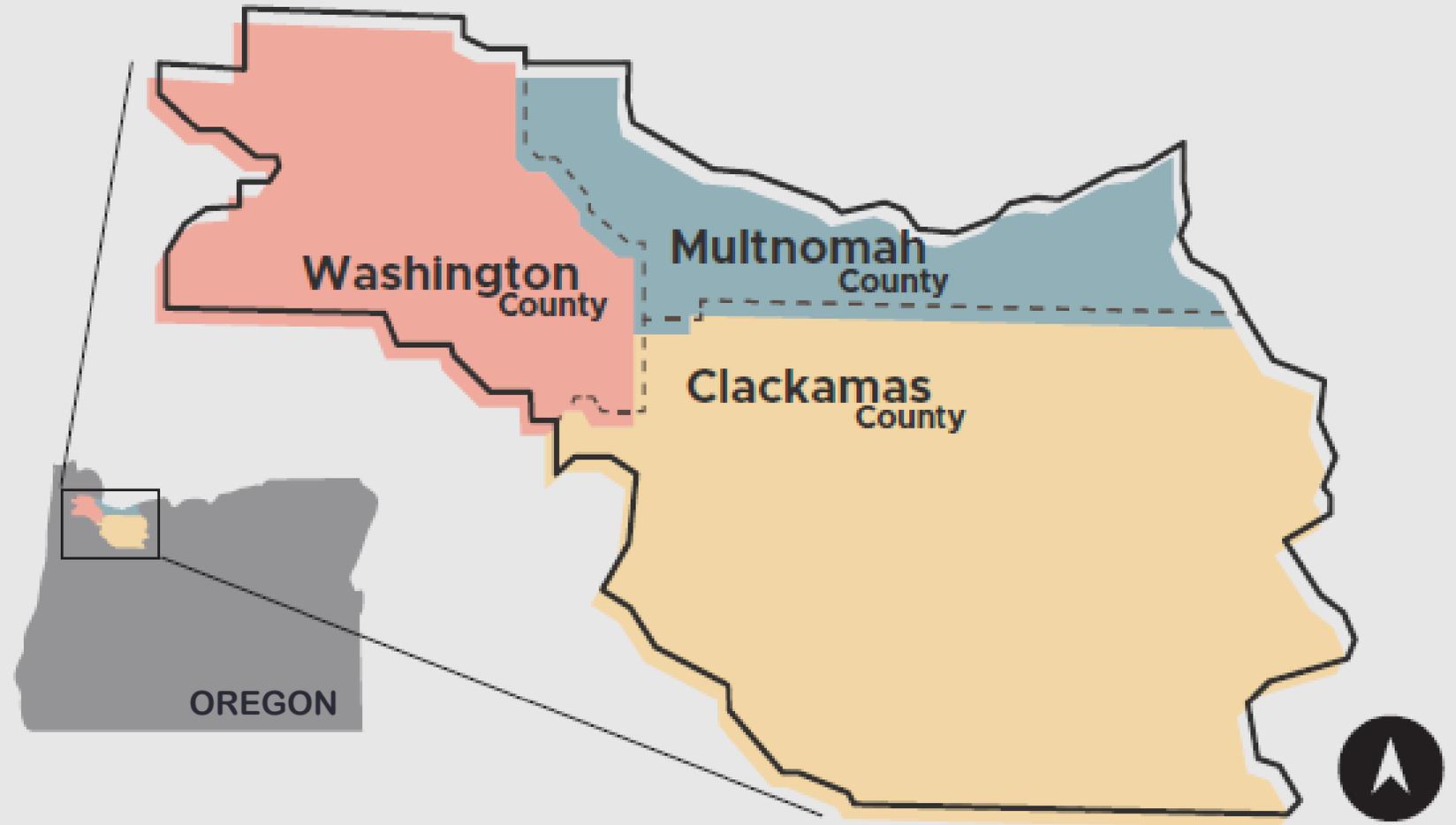
# Overview

- Context
- Report Overview
- Process and Report Findings
- Looking Forward

# Project Area – The Tri-County Region

Clackamas, Multnomah, and Washington Counties are the three most populous counties in Oregon (~1.8 million residents total).

43% of the state's population lives in this region.



# Regional Climate Change Impacts September 2020



## *A Line of Fire South of Portland and a Yearslong Recovery Ahead*

Firefighters continued to battle blazes along the West Coast that have now charred nearly five million acres. At least 17 people are dead, with dozens still missing.

The parking lot of a wildfire evacuation center in Happy Valley, Ore., was filled with R.V.s on Friday. Kristina Barker for The New York Times

### With thick smoke, Portland's air quality ranks worst in world

by Amanda Butts | Friday, September 11th 2020

in downtown Portland photo courtesy Jason Savage

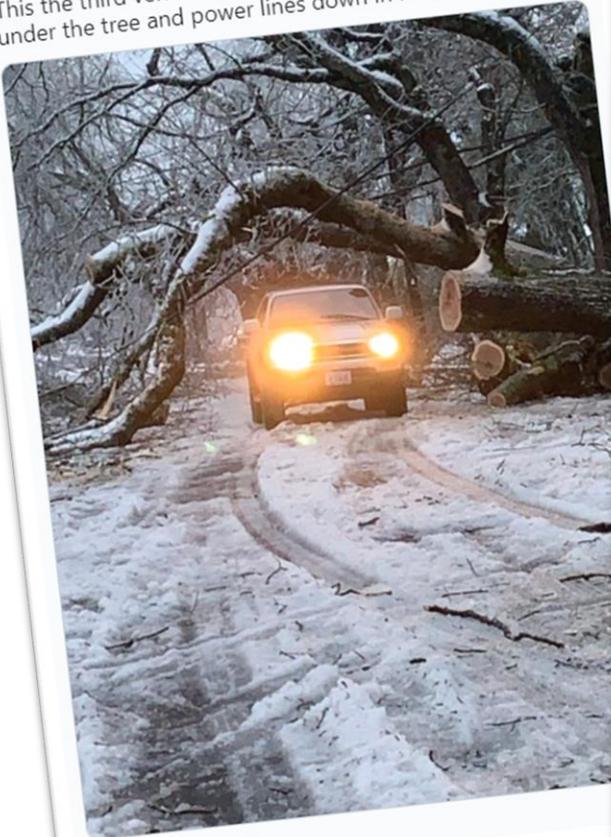
PORTLAND, Ore. — Portland and Vancouver residents are waking up to hazardous air quality levels Friday due to smoke in the air from nearby wildfires. In fact, as of 8:30 a.m., Portland had the worst air quality in the world among major cities, **according to IQAir.**

KATU Meteorologist Rhonda Shelby said the onshore flow of air that returned to the region is too weak to break the valley inversion holding the smoke in. The thick smoke is causing low visibility in some areas.

# Regional Climate Change Impacts February 2021

Devon Haskins  
@devonhaskins

This the third vehicle in the last hour we've seen drive under the tree and power lines down in Milwaukie.



7:19 AM · Feb 15, 2021

## Snow and ice blanket US north-west, leaving hundreds of thousands without power

- Travel disrupted in region and treacherous driving conditions
- Oregon governor Kate Brown declares state of emergency

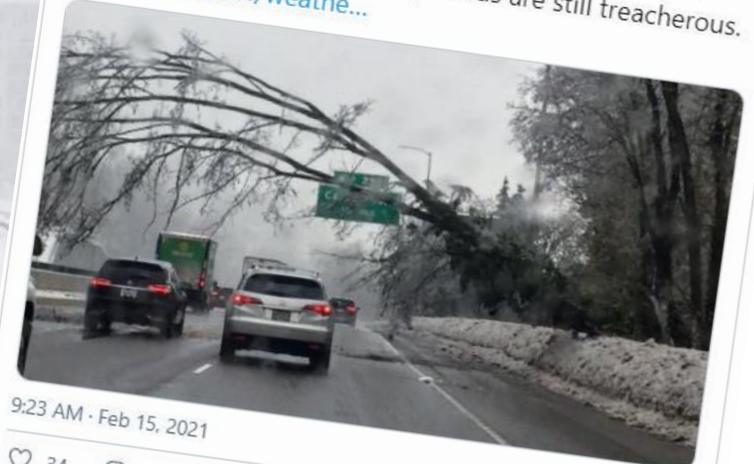


▲ Cars drive along Interstate 705 in Tacoma, Washington state, on Saturday. Photograph: Joshua Bessex/AP

Hundreds of thousands of people remained without power in the Pacific north-west after a winter storm blanketed the region with ice and snow and made travel treacherous.

8 KGW News  
@KGWNews

Check out this photo from Ann Loeffler of a tree hanging perilously over I-5 just before Exit 298 in south Portland. The active part of the winter storm may be over in the Portland metro area, but many roads are still treacherous. [kgw.com/article/weathe...](https://kgw.com/article/weathe...)



9:23 AM · Feb 15, 2021

34

3



Share this Tweet



# Regional Climate Change Impacts June 2021



Weather

## Oregon death toll from historic heat waves rises to 107

Updated Jul 07, 1:49 PM; Posted Jul 06, 12:30 PM



It was the first time the Oregon Medical Examiner's Office has updated the statewide death toll since the long Independence Day weekend. The previous death toll was 94. During the historic heat wave, people made use of a cooling center at the Oregon Convention Center during Portland's unprecedented heat wave. The building's air conditioning provided relief from temperatures that

Advertisement

 **Frontier Charter Academy**

Please welcome our new Kindergarten teacher, Mrs. Mackel  
-Lives in Gresham with her husband and two daughters, ages 5 and 9 months.  
-Moved to Oregon in 2013 after living in Arizona for 6 years, but grew up in Minnesota (sometimes you can still hear her accent with certain words).  
-Has both... See More



## Climate Change Drove Western Heat Wave's Extreme Records, Analysis Finds

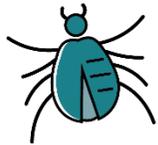
A rapid analysis of last week's record-breaking heat found that it would have been virtually impossible without the influence of human-caused climate change.



and Derrickson Lake wildfires burning in British Columbia on June 30. BC Wildfire  
e France-Press — Getty Images

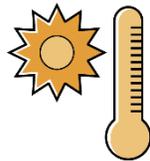
# Report Overview

The Regional Climate and Health Monitoring report is a collection of baseline data for **Clackamas**, **Multnomah**, and **Washington** Counties on **12 health indicators** influenced by climate change.



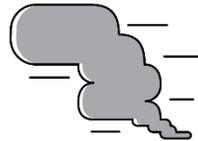
## Vector-Borne Disease

Lyme Disease  
West Nile Virus



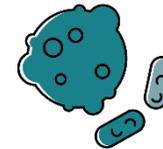
## Extreme Heat

Heat-related Emergency  
Department Visits  
  
Heat-related  
Hospitalizations  
  
Heat-related Deaths



## Air Quality

Asthma-like Emergency  
Department Visits  
  
Allergic Disease Emergency  
Department Visits



## Communicable Disease

Salmonella  
  
Campylobacteriosis  
  
Tuberculosis



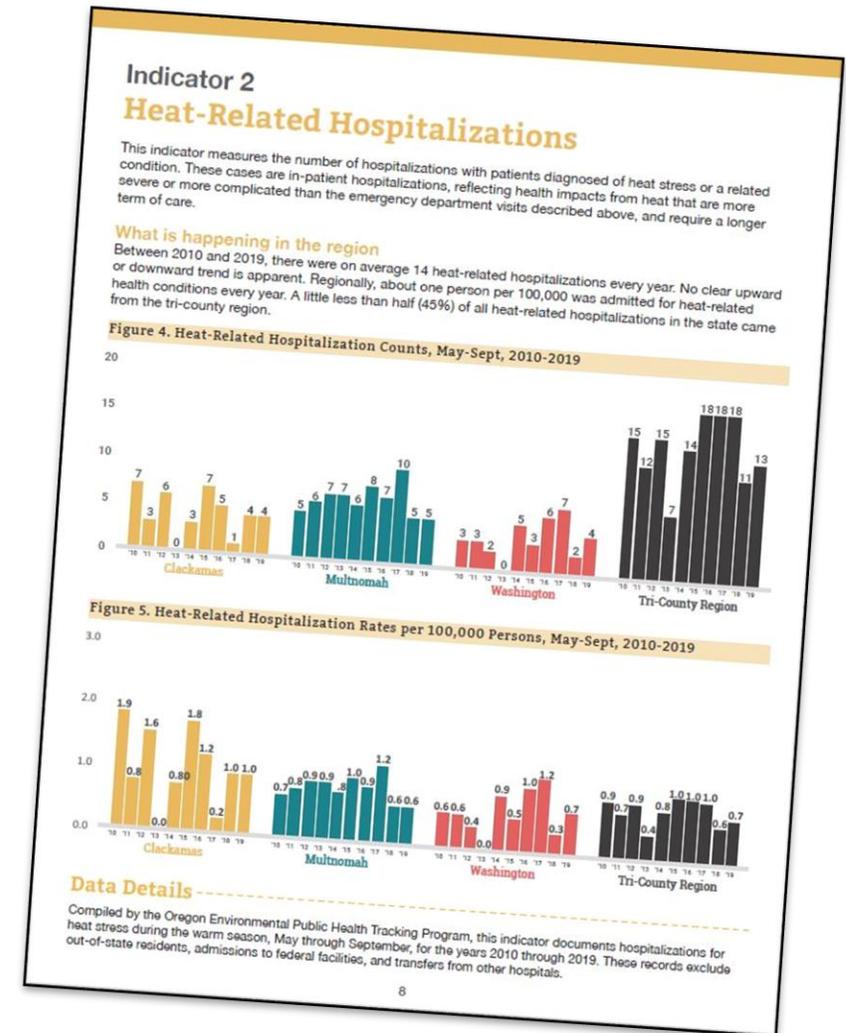
## Extreme Weather

Extreme Weather-  
related injuries  
  
Extreme Weather-  
related Deaths

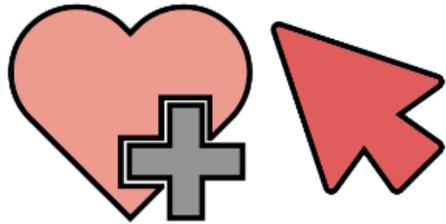
# Report Overview 2021 Update

The second edition includes:

- Data available for indicators from 2018-2020
- Discussion on mental health impacts
- Spotlight on 2020 wildfire season impacts on asthma-like ED admissions



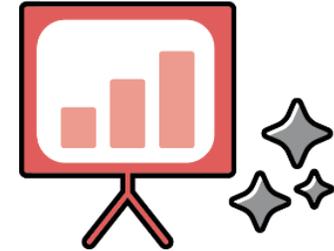
# Report Overview **Methods**



**Indicator Selection**



**Benchmark Period**

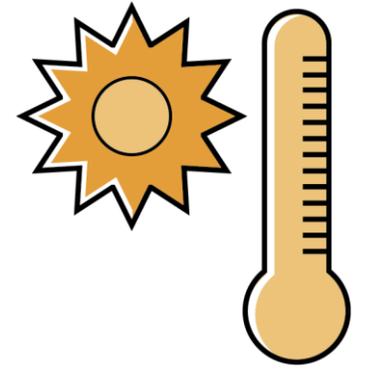


**Data Presentation**

# Key Takeaways

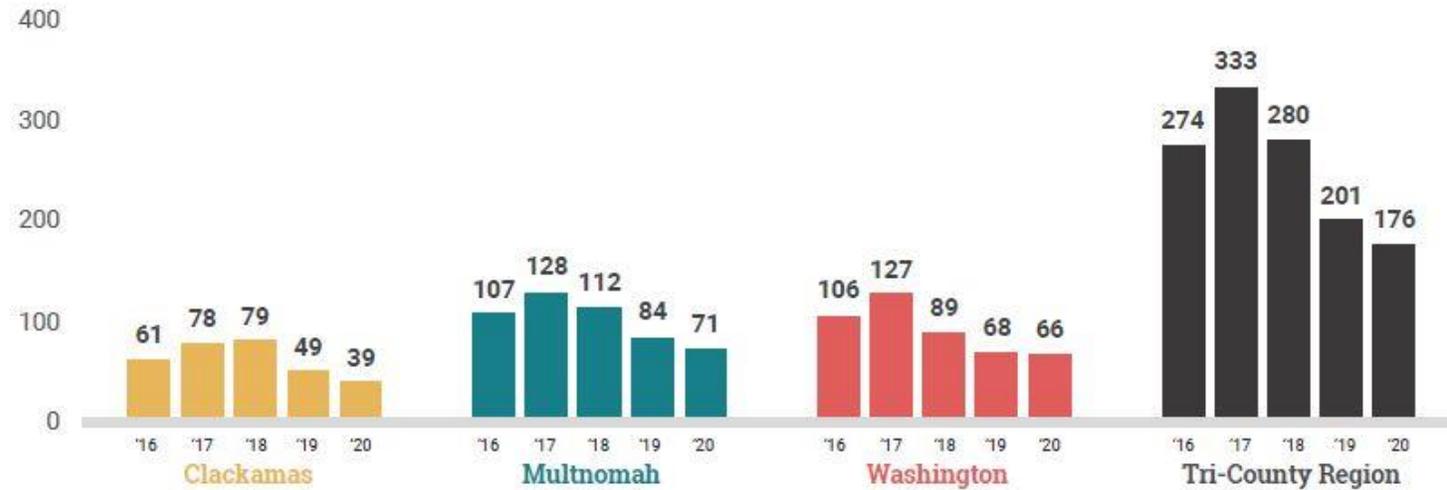
- **Few apparent long term trends.** In 2020 was unusual. Coinciding with the COVID-19 pandemic, several heat, air quality, and foodborne communicable disease health outcomes decreased in counts.
- **Acute events lead to major impacts.** Specific climate-related events caused spikes in health outcomes.
- **We need ways to measure mental health impacts.** There is a need for more robust and consistent tracking systems for mental health related impacts.

# Data Observations



## Heat-related ED Visit Counts

May-Sept  
2016-2020

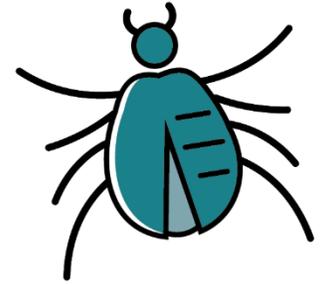


## Heat-related ED Visit Rates per 100,000

May-Sept  
2016-2020

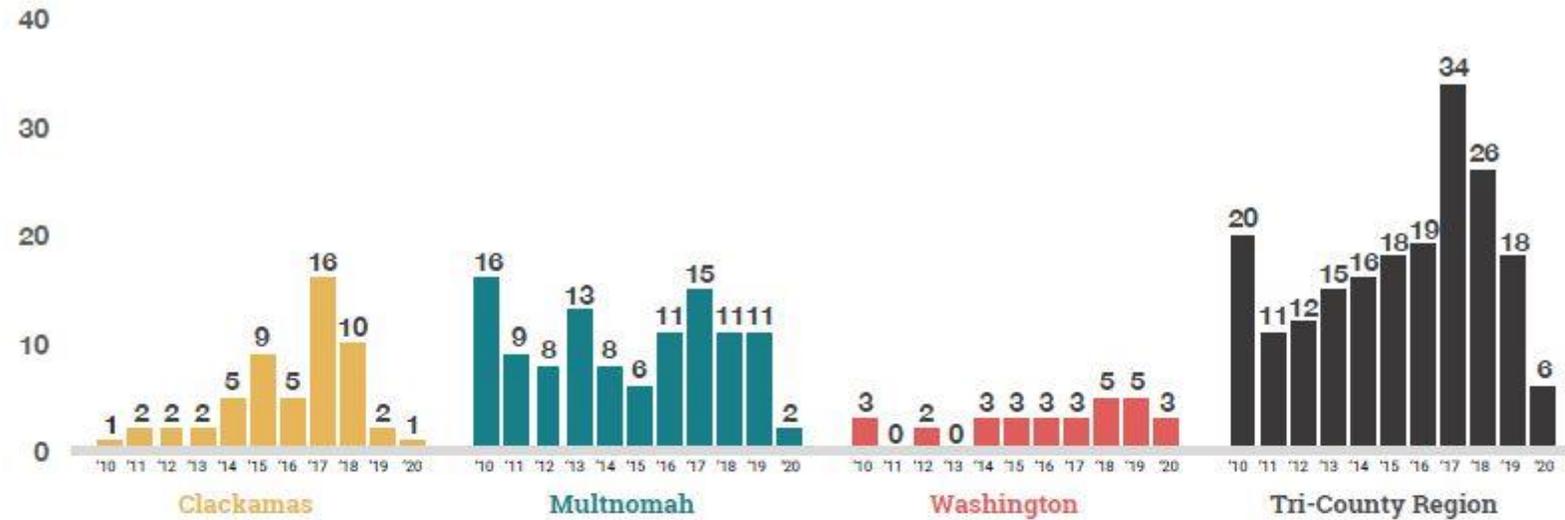


# Data Observations



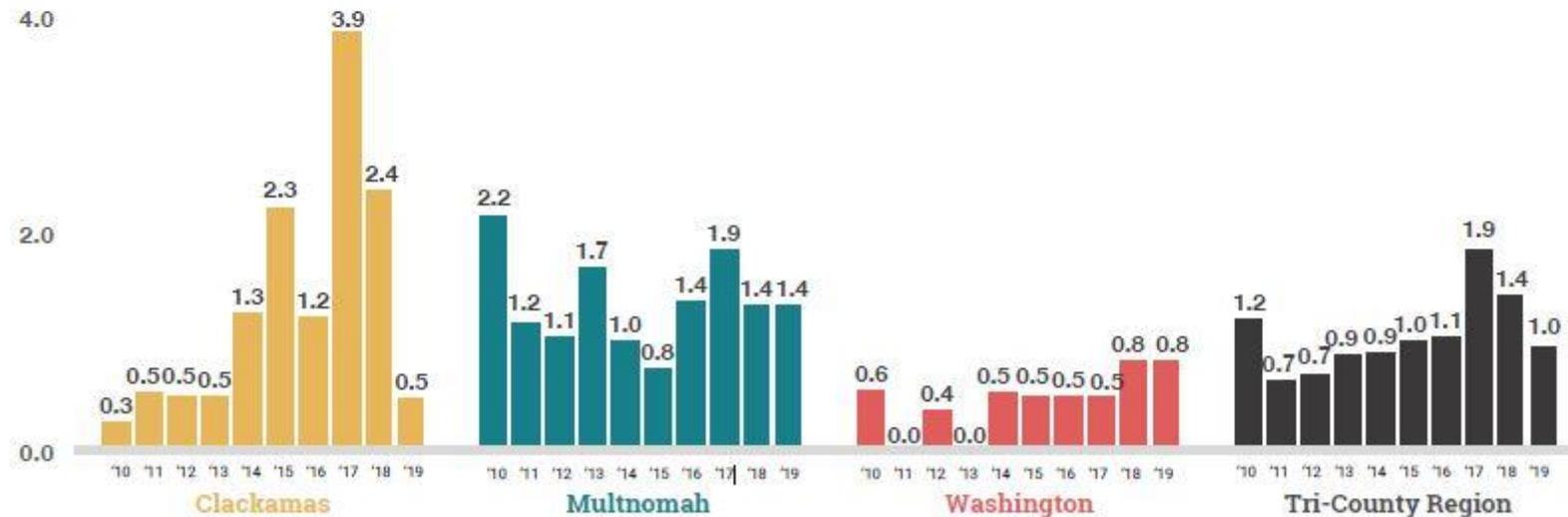
## Lyme Disease Counts

2010-2020

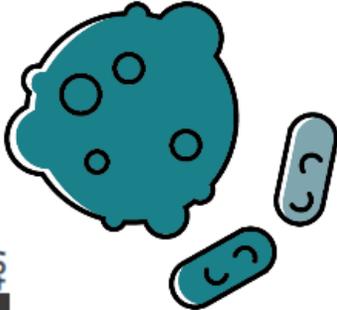


## Lyme Disease Rates per 100,000

2010-2019

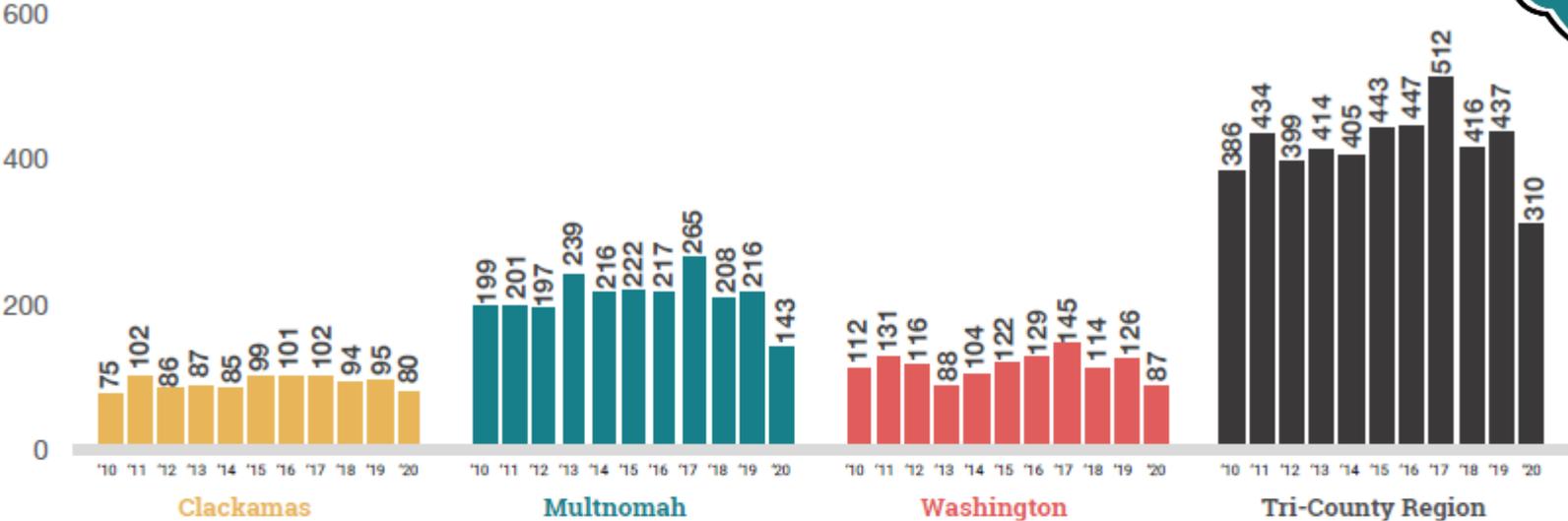


# Data Observations



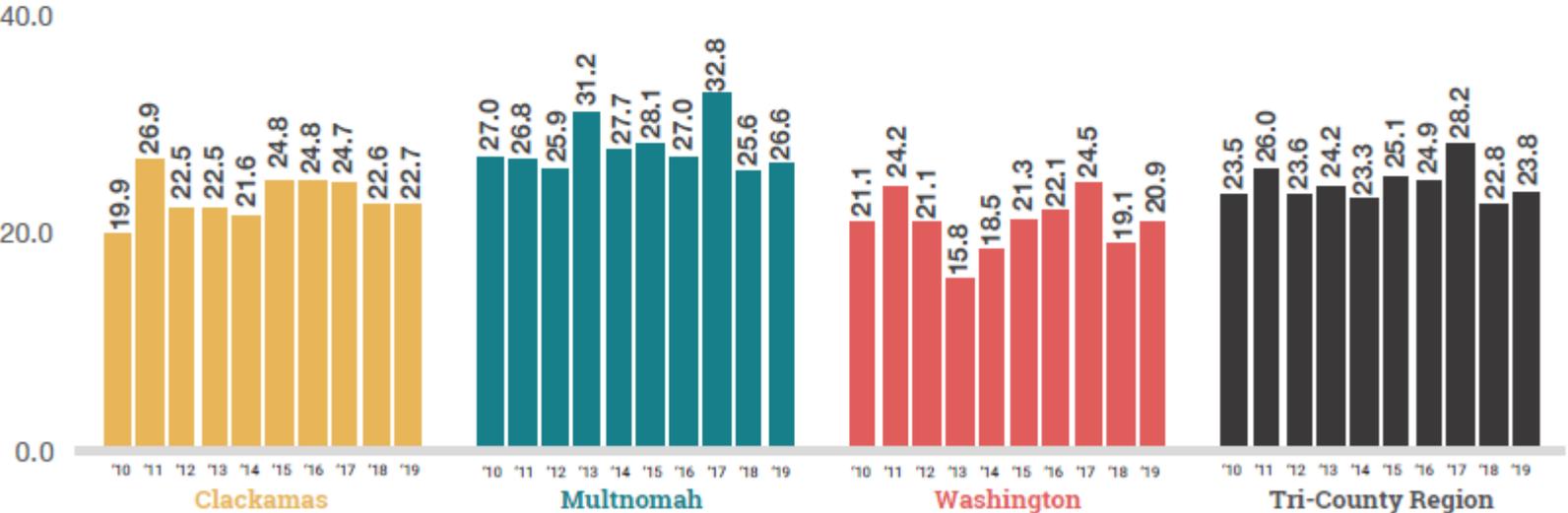
## Campylobacteriosis Counts

2010-2020

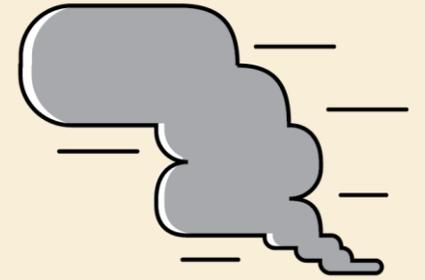


## Campylobacteriosis Rates per 100,000

2010-2019



# Climate Event Impacts 2020 Wildfire Season



Despite an overall decrease of asthma-like symptoms visits for the year of 2020, there were direct increases in ED visits in response to the September wildfires.

Average daily visits increased by **29%** the four weeks during/after the wildfire in comparison to the four weeks before.



# Mental Health and Climate Change

Different types and lengths of climate change events can create a range of mental health impacts:

- **Short and acute events** that last a few hours to a few weeks like heatwaves, extreme storms, or wildfires
- **Long periods of extended climate change events** like drought or recovery periods from acute events
- **Ongoing direct or indirect exposure** to the hazards of climate change like rising temperatures, rising sea levels, and other global and regional threats

# Mental Health and Climate Change **Indicator Review**

Factors in indicator evaluation:

- **Readiness**
- **Comparability**
- **Long-run baseline**
- **Geographic Specificity**
- **Causal Linkage**
- **Justice Lens**

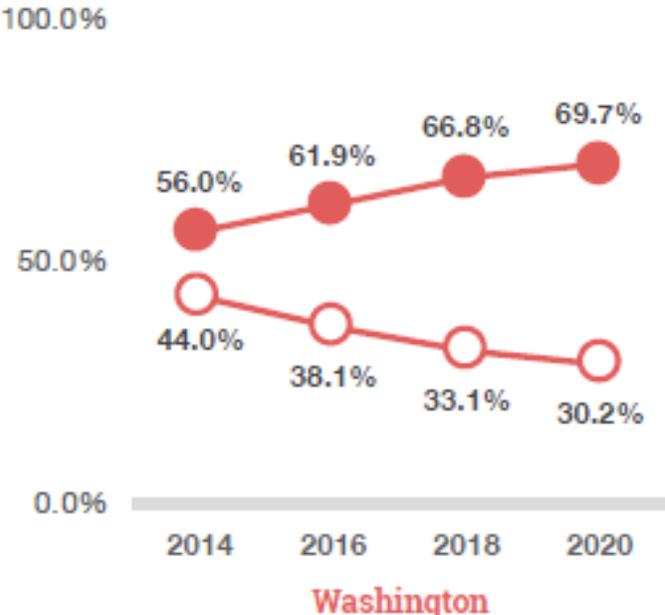
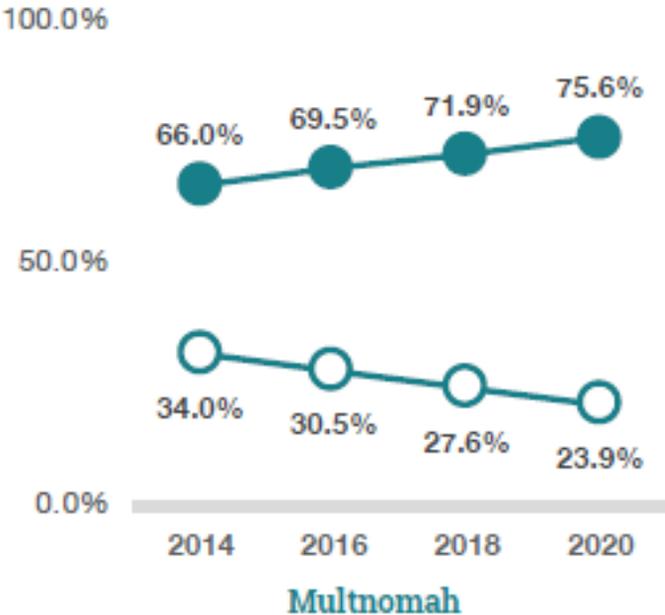
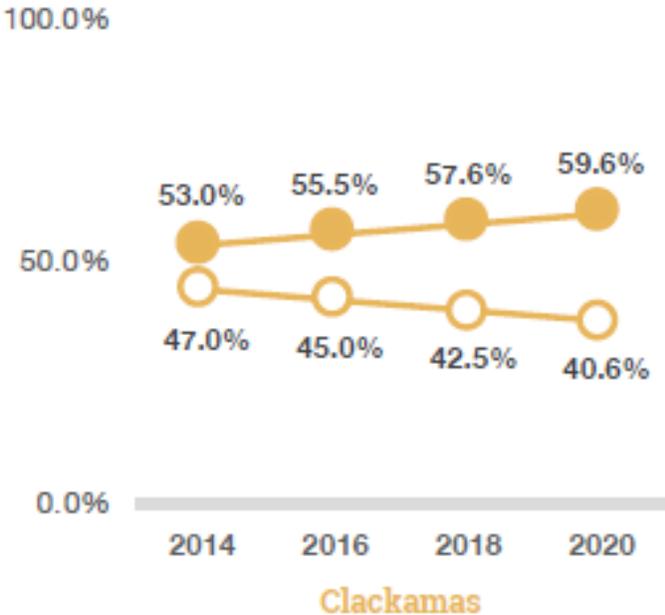
## Data sources and indicators:

- **Yale Climate Opinion Survey**
  - *Estimated percentage who are somewhat/very worried about global warming*
  - *Estimated percentage who think global warming will harm future generations a moderate amount/a great deal*
  - *Estimated percentage who think global warming will harm them personally a moderate amount/a great deal*
- **Oregon Healthy Teen Survey**
  - *Percentage of students that say that in general their emotional and mental health is poor*
  - *Percentage of students with mental health care needs that were not met in last 12 months*
  - *Percentage of students that meet Positive Youth Development benchmark*
- **211**
  - *# of disaster related calls*

# Mental Health and Climate Change Landscape

## Estimated Percentage of People Worried about Global Warming

*Yale Climate Opinion Survey*



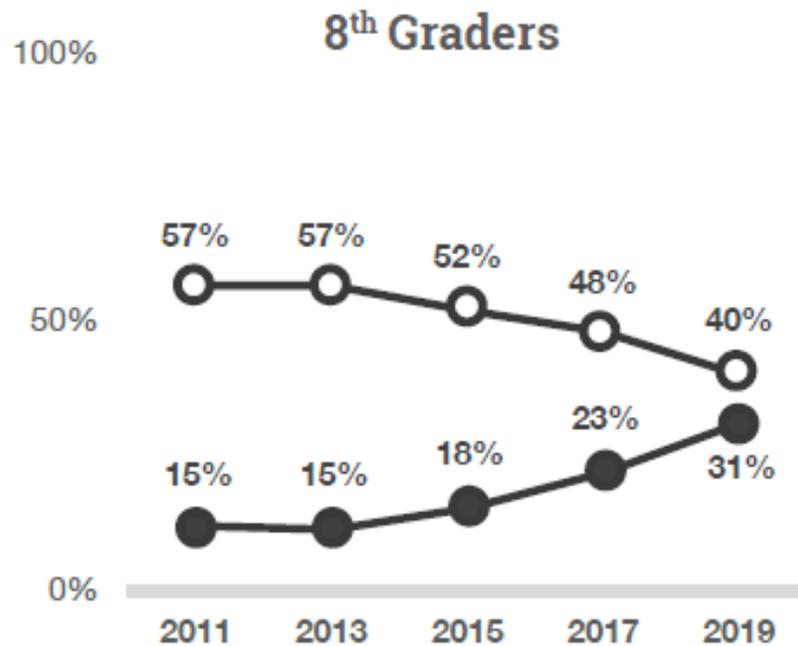
● Somewhat/Very Worried about global warming

○ Not Very/Not at all Worried about global warming

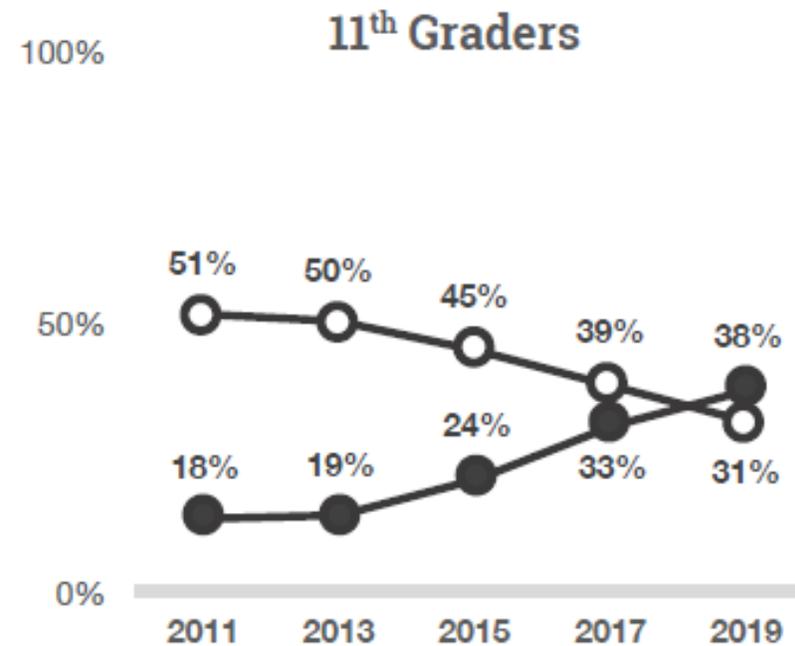
# Mental Health and Climate Change Landscape

## Student Self-Rating of General Emotional and Mental Health

*Oregon Healthy Teen Survey*



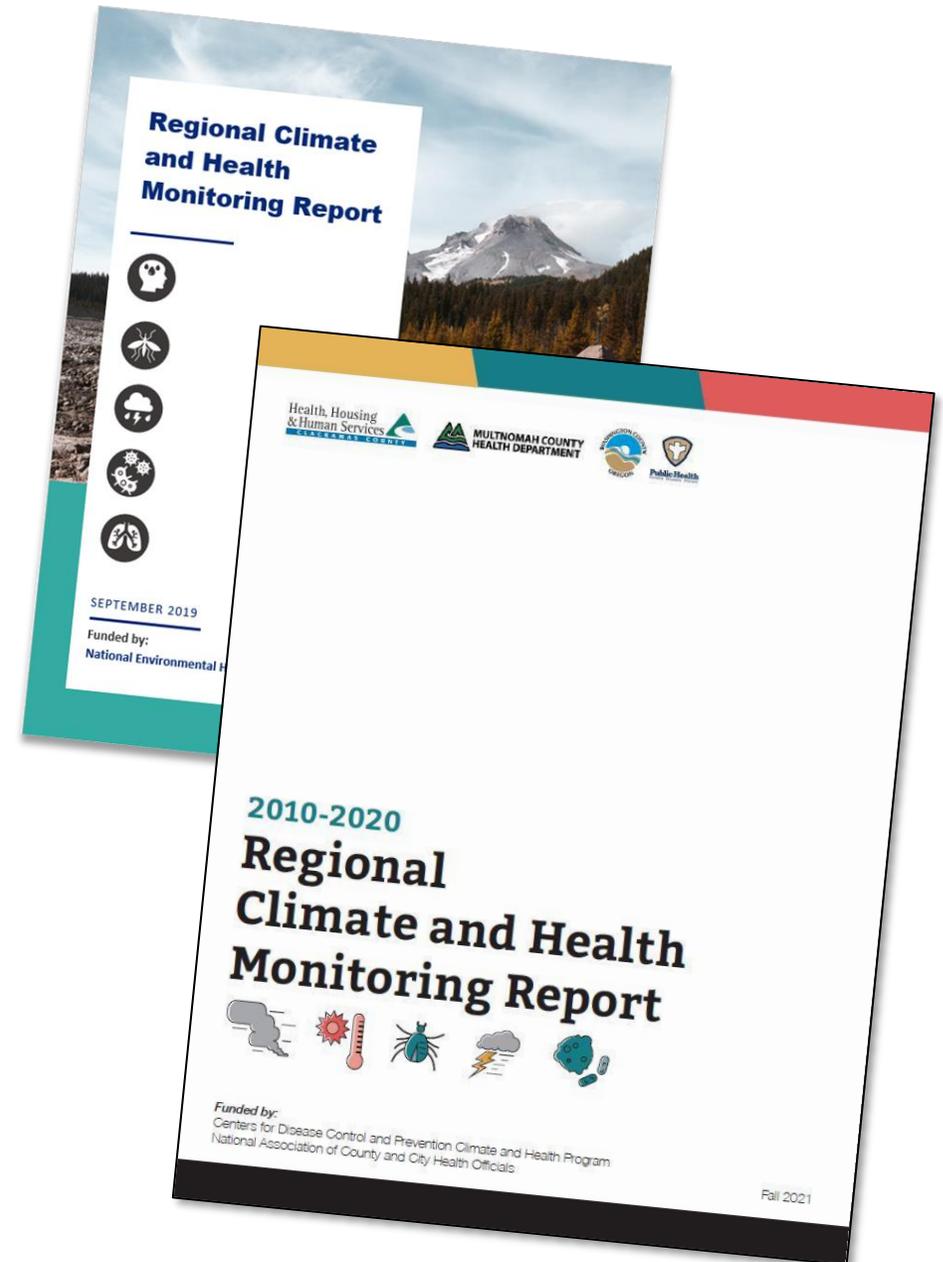
● Reported **fair or poor** emotional and mental health



○ Reported **excellent or very good** emotional and mental health

# Key Takeaways

- Few apparent long term trends.
- Acute events lead to major impacts.
- We need ways to measure climate-related mental health impacts.



Comments? Questions?

