

The Power of Partnerships

Improving Air Quality with the Puyallup Tribe of Indians

Tribal PHEP
Conference

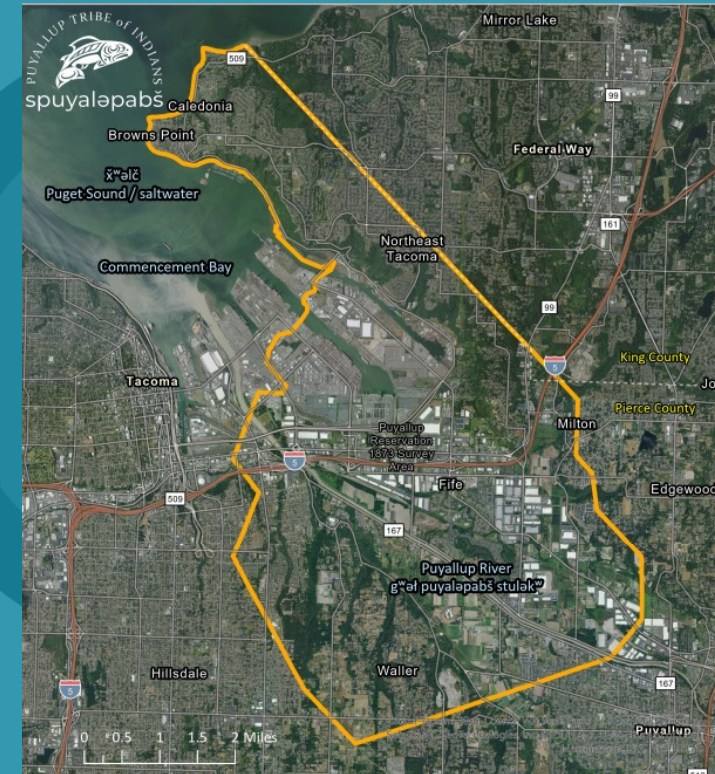
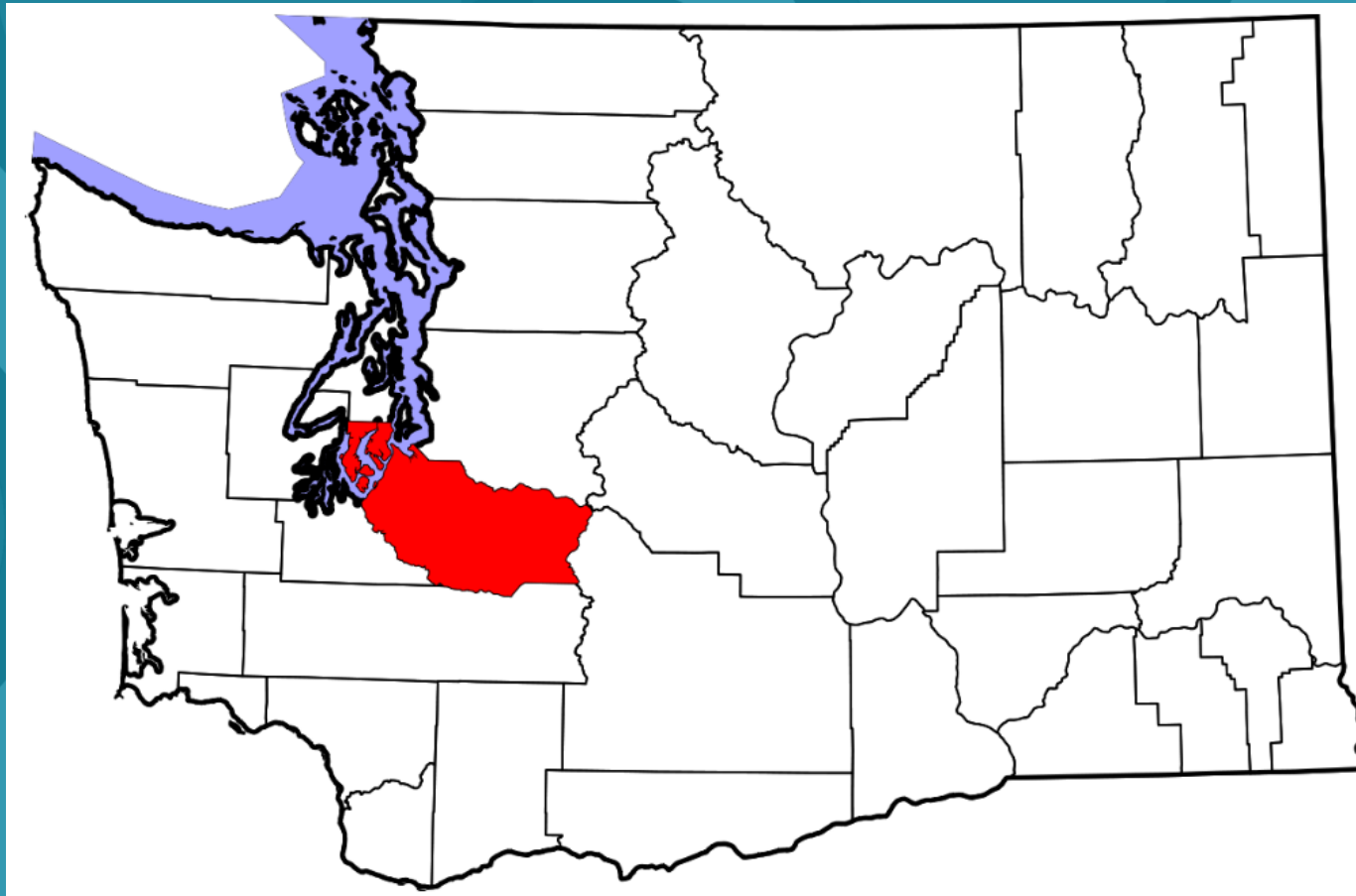
June 10, 2024

Cindy Haverkamp and
Katharine Flug



Tacoma-Pierce County
Health Department
Healthy People in Healthy Communities

Pierce County & Puyallup Tribal area



Source:
[PuyallupReservationMap_Letter.pdf\(puyalluptribe-nsn.gov\)](https://puyalluptribe-nsn.gov/PuyallupReservationMap_Letter.pdf)

Source: Pierce County, Washington - SimpleEnglish Wikipedia, the free encyclopedia



Tacoma-Pierce County
Health Department
Healthy People in Healthy Communities

Air quality challenges



Urban heat islands – The Puyallup Reservation lies in an urban area that experiences higher temps than outlying areas.



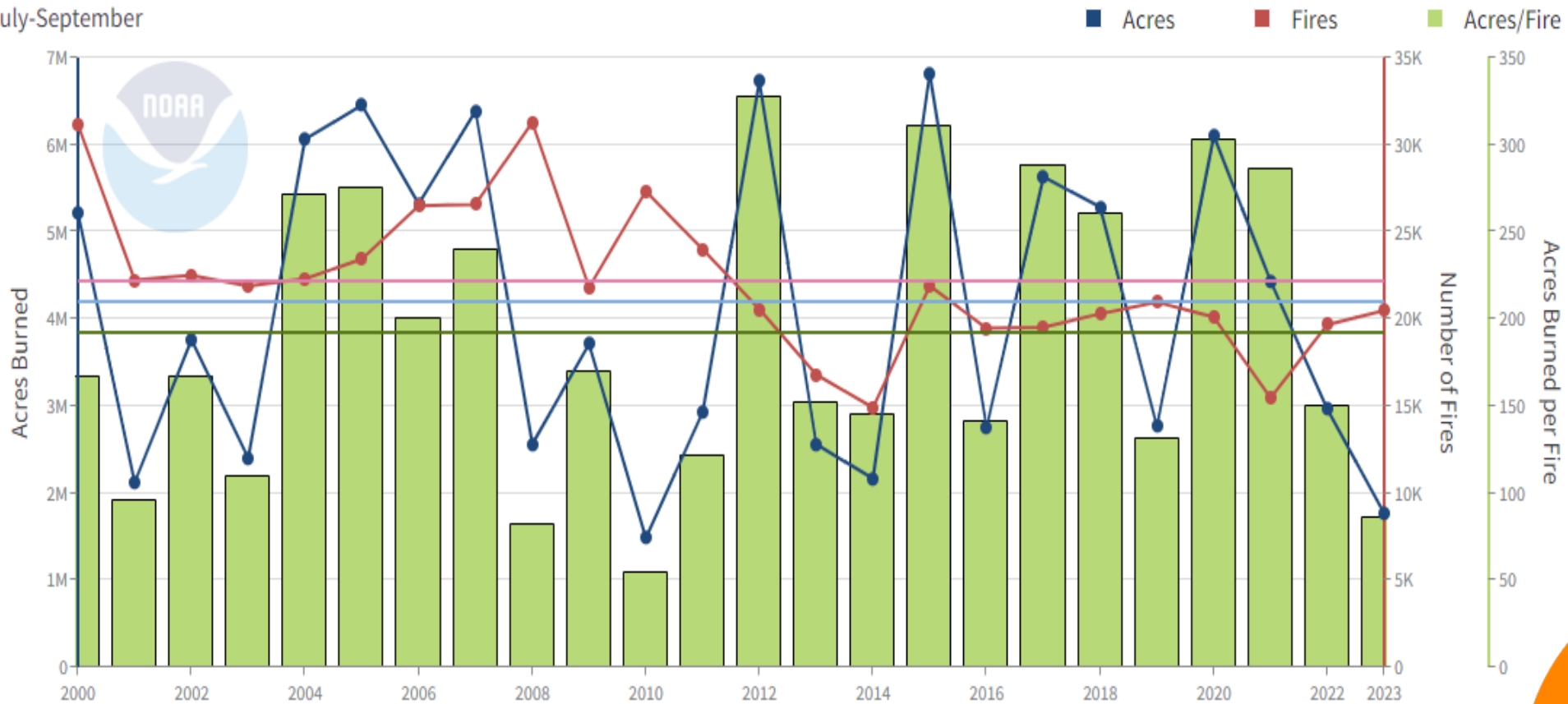
Wildfire smoke events are becoming more common in Pierce County.



U.S. wildfires, 2001-2023

U.S. Wildfires

July-September



2001-2020 Average: 4,201,098.65 Acres 22,220.75 Fires 192.58 Acres/Fire

Source: National Interagency Fire Center (NIFC)

Powered by Zira



Tacoma-Pierce County

Health Department

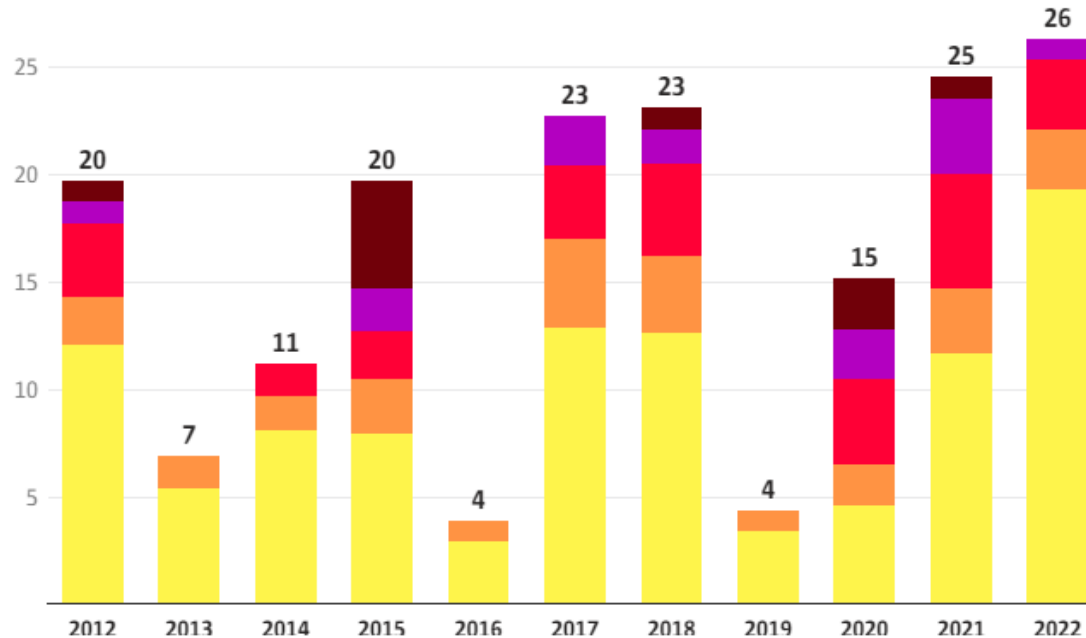
Healthy People in Healthy Communities

Where there's fire there's smoke

Poor AQI readings for Washington summers over the decade

2022 recorded the greatest average of moderate or worse readings on the Air Quality Index, and 2015 had the greatest average of hazardous readings.

■ Moderate ■ Unhealthy for Sensitive Groups ■ Unhealthy ■ Very Unhealthy
■ Hazardous



Note: Counts refer to average number of days per air quality index category across all Washington Network monitoring sites. AQI categories above moderate are generally attributed to wildfire smoke during the summer months. Data from 2012 to 2021 is for the period of June 1 to Sept. 30. Only 2022 includes data stretching into October.

Chart: Alison Saldanha / The Seattle Times • Source: Washington State Department of Ecology, Air Quality Program

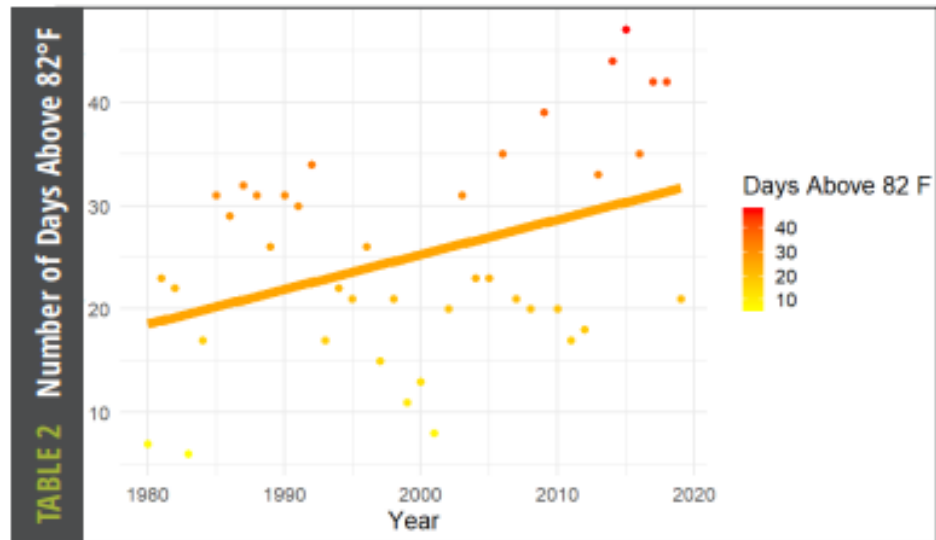


Tacoma-Pierce County

Health Department

Healthy People in Healthy Communities

TEMPERATURES IN THE SEATTLE/TACOMA AREA HAVE INCREASED BY MORE THAN 50% IN THE LAST 20 YEARS.



REFERENCES

¹ Anderson, B. G., & Bell, M. L. (2009). Weather-related mortality: how heat, cold, and heat waves affect mortality in the United States. *Epidemiology* (Cambridge, Mass.), 20(2), 205.

² <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5071163/>

³ <https://trid.trb.org/view/1488373>

Urban heat islands

Heat islands contribute to:

- Higher daytime temperatures.
- Reduced nighttime cooling.
- Increased air-pollution.



Tacoma-Pierce County
Health Department
Healthy People in Healthy Communities

Think, pair, and share – 10 minutes

- **Think**

- Take 1 minute to think of an example of how wildfires, wildfire smoke, or extreme heat has affected your community.

- **Pair**

- Pair with someone near you and share your story.

- **Share**

- Share your story with the larger group, if desired.



Health effects of wildfire smoke

- Shortness of breath.
- Wheezing.
- Chest pain.
- Headaches.
- Asthma attack.
- Tiredness.
- Fast heartbeat.
- Coughing.
- Trouble breathing.
- Stinging eyes.
- Scratchy throat.
- Runny nose.
- Irritated sinuses.
- Pre-term births.
- Stress and anxiety.
- Reduced ability to learn.



Tacoma-Pierce County

Health Department

Healthy People in Healthy Communities



Health effects of urban heat islands

- Heat-related deaths and
- Heat-related illnesses:
 - General discomfort.
 - Respiratory difficulties.
 - Heat cramps.
 - Heat exhaustion.
 - Non-fatal heat stroke.



Especially bad if you're:

- Under 18.
- Over 65.
- Pregnant.
- Living with heart or lung disease or COPD.



Tacoma-Pierce County

Health Department

Healthy People in Healthy Communities



Other vulnerable populations

- People living homeless.
- Outdoor workers.
- People doing outdoor recreation.
- Tribal nations and people of color.
- People with lower incomes.



Tacoma-Pierce County
Health Department
Healthy People in Healthy Communities

What we're doing

- Building strong partnerships.
- Monitoring air quality at schools.
- Box fan/filter outreach and education.
- Urban heat mapping.
- Applying for grants and leveraging existing funds.



Tacoma-Pierce County
Health Department
Healthy People in Healthy Communities

Building Strong Partnerships



Tacoma-Pierce County
Health Department
Healthy People in Healthy Communities



Puyallup Tribe of Indians

- Meet monthly with Kalicia Bean, Sustainability Manager.
 - Job-alike brainstorming.
 - Resource sharing.
 - Event planning.



Tacoma-Pierce County
Health Department
Healthy People in Healthy Communities

Kalicia's work

- Climate resiliency program and policies.
 - Tribe's Climate Emergency Proclamation priorities.
- Identifies measures the tribe takes to reduce climate impacts:
 - Address waste reduction.
 - Energy efficiency.
 - Nature-based solutions.
- Educates tribal community and other agencies:
 - Restore a stable climate.
 - Honor relationships with Mother Earth.



Tacoma-Pierce County

Health Department

Healthy People in Healthy Communities

Puget Sound Asthma Coalition

- Working together to provide:
 - Outreach.
 - Education.
 - Resources.
- Community lunch & learns.
 - Third Thursday each month,
12-1 p.m.



Public Health Emergency Preparedness and Response (PHEPR)

- Climate resilience is an increasing priority for FEMA, CDC, and other federal funders and partners.
- Environmental Health and PHEPR staff work together on climate-related preparedness and response.
 - PHEPR funds support work.
 - Provide data and consult with local emergency management partners.
 - Future opportunities to partner on training.



Discussion – 5 minutes

- What partnerships do you currently have?
- What partnerships would you like to build?



Air Quality Monitoring



Tacoma-Pierce County
Health Department
Healthy People in Healthy Communities

PurpleAir sensors



Low-cost PurpleAir sensor



Regulatory air monitor

- Partnered with 29 agencies to install and maintain low-cost air sensors.
- Focus: youth-centered facilities.
- Goal: equitable access to healthy learning environments.
- All sensor data is online.



Tacoma-Pierce County

Health Department

Healthy People in Healthy Communities



Schools and Childcare

- We share resources from:
 - Washington State Department of Health.
 - Puget Sound Clean Air Association.
 - Environmental Protection Agency's Healthy Schools Program.



Tacoma-Pierce County
Health Department
Healthy People in Healthy Communities

Chief Leschi Ecology Club

- Collaborated with students to install a PurpleAir sensor on school grounds.
- Hands-on engagement with students results in:
 - Learning environmental monitoring skills.
 - Practicing data collection skills.



On May 14th, 2024, 8:01:59 AM PDT

0 Minute Average
US EPA PM2.5 AQI
(US EPA) is now

12

0-50: Air quality is satisfactory, and air pollution poses little or no risk with 24 hours of exposure.

Now	10 Min	30 Min	1 hr	6 hr	1 Day	Week
13	12	12	12	13	18	16

Sensor: Chief leschi tree warriors

A B ✓ 100% PA-II-FLEX 7.04

Get This Widget



Become a community scientist.

Get your own outdoor+flex sensor just like this one.



Outreach and Education



Tacoma-Pierce County
Health Department
Healthy People in Healthy Communities

Box fan filter—Our main tool.

- Easy and affordable solution to poor indoor air quality.
- Filters out:
 - Small particles of wildfire smoke (PM2.5).
 - Dust, pollen, and viruses.
- In a small room, 90% reduction in air pollution within 15 minutes.
 - With windows and doors closed.



Tacoma-Pierce County

Health Department

Healthy People in Healthy Communities

Box fan filter distribution

- 2022:
 - 20 kits to Puyallup Tribe of Indians Tiny Houses and 300 cooling towels.
- 2023:
 - 4 kits to Puyallup Tribe of Indians Tiny Houses.
- 2024:
 - 29 kits to students and families at Chief Leschi Earth Day event.





Other tools

- Educate about Air Quality Index (AQI).
- Websites to follow:
 - [Airnow.gov](https://www.airnow.gov)
 - [Map.purpleair.com](https://www.map.purpleair.com)
 - [Wasmoke.blogspot.com](https://www.wasmoke.blogspot.com)
- Poor air quality infographic
 - tpchd.org/wildfiresmoke



Urban Heat Mapping Campaign



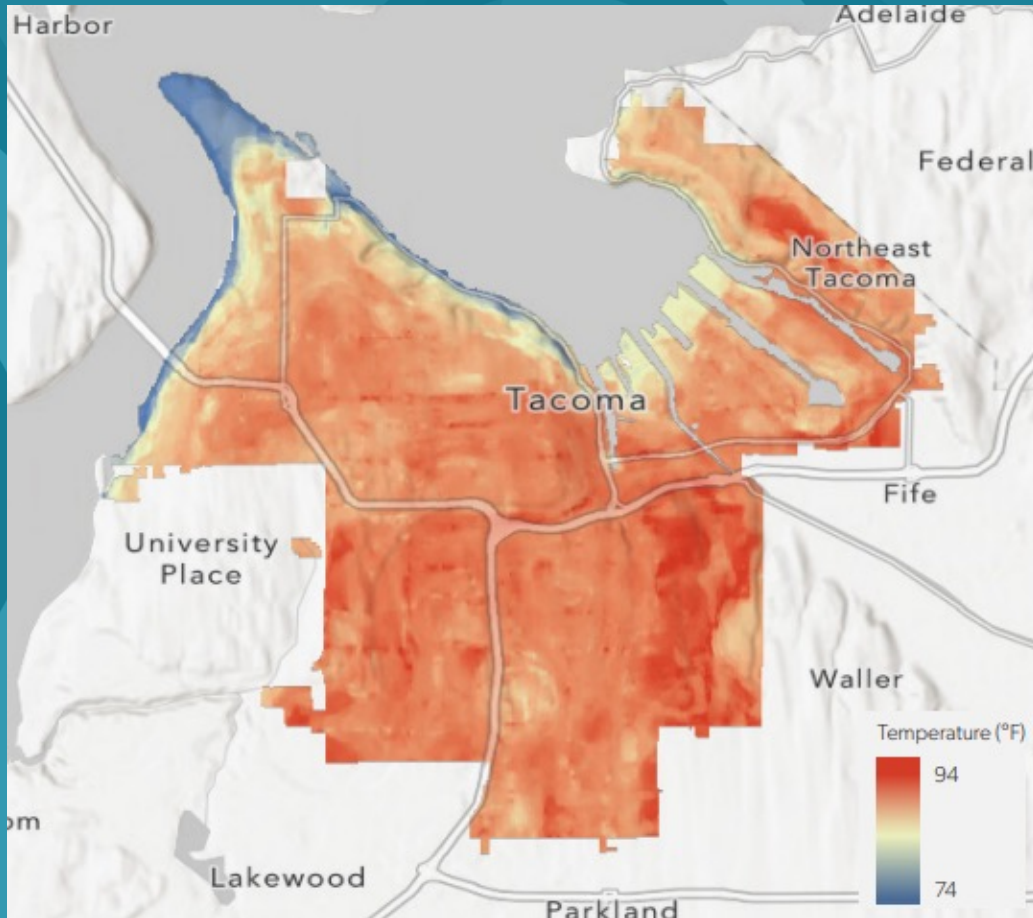
Tacoma-Pierce County
Health Department
Healthy People in Healthy Communities

Urban heat mapping

- Puyallup Tribe participating in 2024 National Integrated Heat Health Information System mapping campaign.
- Providing:
 - Volunteer hub.
 - Snacks and water to volunteers.
 - Volunteer drivers/navigators.



Data usage



- Data will:
 - Inform urban forestry plans.
 - Determine locations for tree planting events.



Funding



Tacoma-Pierce County
Health Department
Healthy People in Healthy Communities

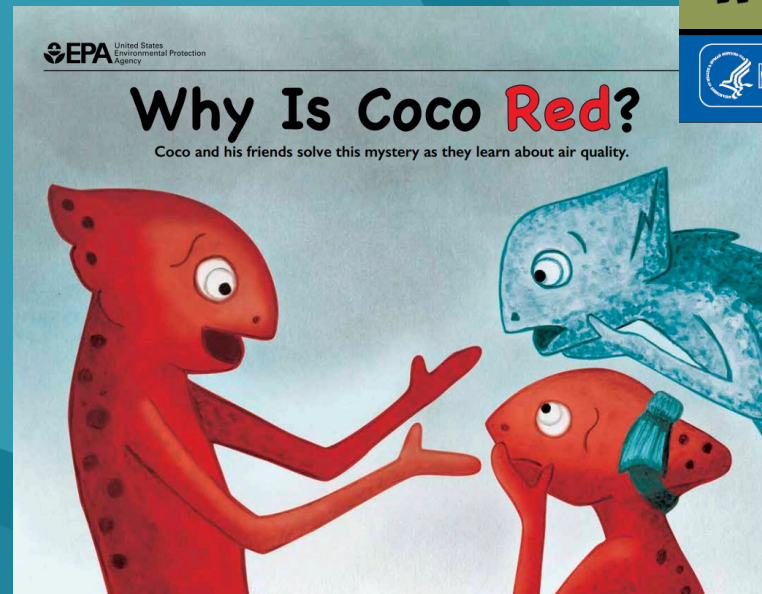
Grant funding

- City of Tacoma box fan and filter outreach.
- Funding through 2025.
- Will distribute to Tacoma zip codes based on:
 - Equity.
 - Topography.
 - Proximity to pollutants.
- Distributed 229 kits last year.
 - 29 given out at the Chief Leschi HS Earth Day Event in April.



Other funding

- PHEPR provides funding for printing outreach materials in 7 languages.
- Our Community Engagement team provides staff for outreach events.
- EPA provides free educational materials.





Next steps

- Box fan/filter giveaways at tribal events:
 - Elder housing monthly lunches.
 - Puyallup Tribal Health Authority wellness fairs.
 - Housing Authority summer barbeques.
- Build relationship with Tribal public safety staff.



Questions?

Cindy Haverkamp

chaverkamp@tpchd.org

(253) 381-2270

Katharine Flug

kflug@tpchd.org

(253) 722-4136



Tacoma-Pierce County

Health Department

Healthy People in Healthy Communities