



PUBLIC HEALTH

Heat and Wildfire Preparedness

July 2, 2024



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Agenda

- Health impacts of exposure to heat and wildfire smoke
- Smoke and heat outlook for the summer
- Related KPHD activities



Health and
medical impacts:

Extreme Heat

Prolonged
exposure to heat
impedes our
ability to regulate
internal
temperature

- Heat-related illnesses
- Chronic conditions
- Medications increase effects
- Occupational injuries
- Mental health and psychological stress

Health and
medical impacts:

Wildfire Smoke

Exposure to
smoke can cause
or worsen health
problems

- Eye, nose, and throat irritation
- Fatigue, headaches, and coughing
- Triggering and exacerbation of cardiac and respiratory diseases
- Endocrine, brain, and reproductive health
- Mental health and psychological stress

THE RELATIVE SIZE OF PARTICLES

From the COVID-19 pandemic to the U.S. West Coast wildfires, some of the biggest threats now are also the most microscopic.

A particle needs to be 10 microns (μm) or less before it can be inhaled into your respiratory tract. But just how small are these specks?

Here's a look at the relative sizes of some familiar particles \blacktriangleright

HUMAN HAIR 50-180 μm \blacktriangleright
FOR SCALE

FINE BEACH SAND 90 μm \blacktriangleright

GRAIN OF SALT 60 μm \blacktriangleright

WHITE BLOOD CELL 25 μm \blacktriangleright

GRAIN OF POLLEN 15 μm \blacktriangleright

DUST PARTICLE (PM₁₀) <10 μm \blacktriangleright

RED BLOOD CELL 7-8 μm \blacktriangleright

RESPIRATORY DROPLETS 5-10 μm \blacktriangleright

DUST PARTICLE (PM_{2.5}) 2.5 μm \blacktriangleright

BACTERIUM 1-3 μm \blacktriangleright

WILDFIRE SMOKE 0.4-0.7 μm \blacktriangleright

CORONAVIRUS 0.1-0.5 μm \blacktriangleright

T4 BACTERIOPHAGE 0.225 μm \blacktriangleright

ZIKA VIRUS 0.045 μm \blacktriangleright



Pollen can trigger allergic reactions and hay fever—which 1 in 5 Americans experience every year.
Source: Harvard Health

The visibility limits for what the naked eye can see hovers around 10-40 μm .



Respiratory droplets have the potential to carry smaller particles within them, such as dust or coronavirus.



Wildfire smoke can persist in the air for several days, and even months.

SOURCES Caverre.com, Dorcel Loverbey, EPA, Financial Times, News Medical, Science Direct, SCMP, Susan Sokolowski, Petroclear, U.S. Dept. of Energy
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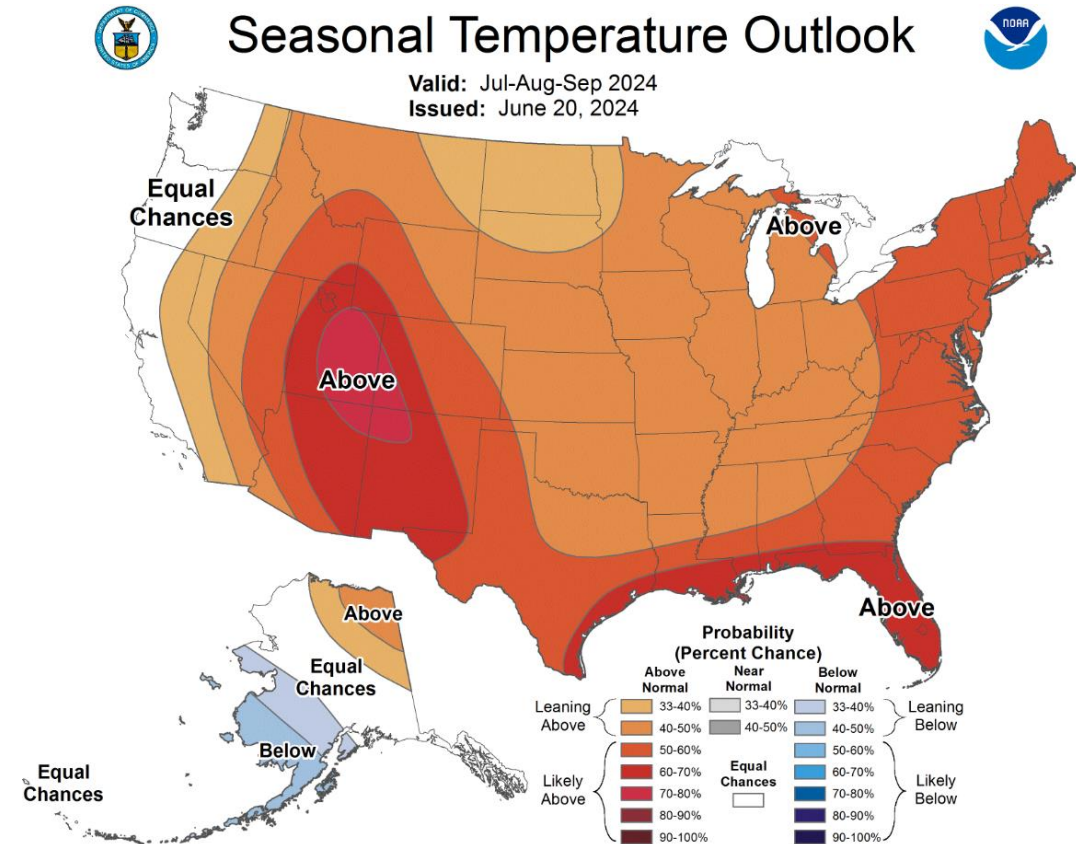
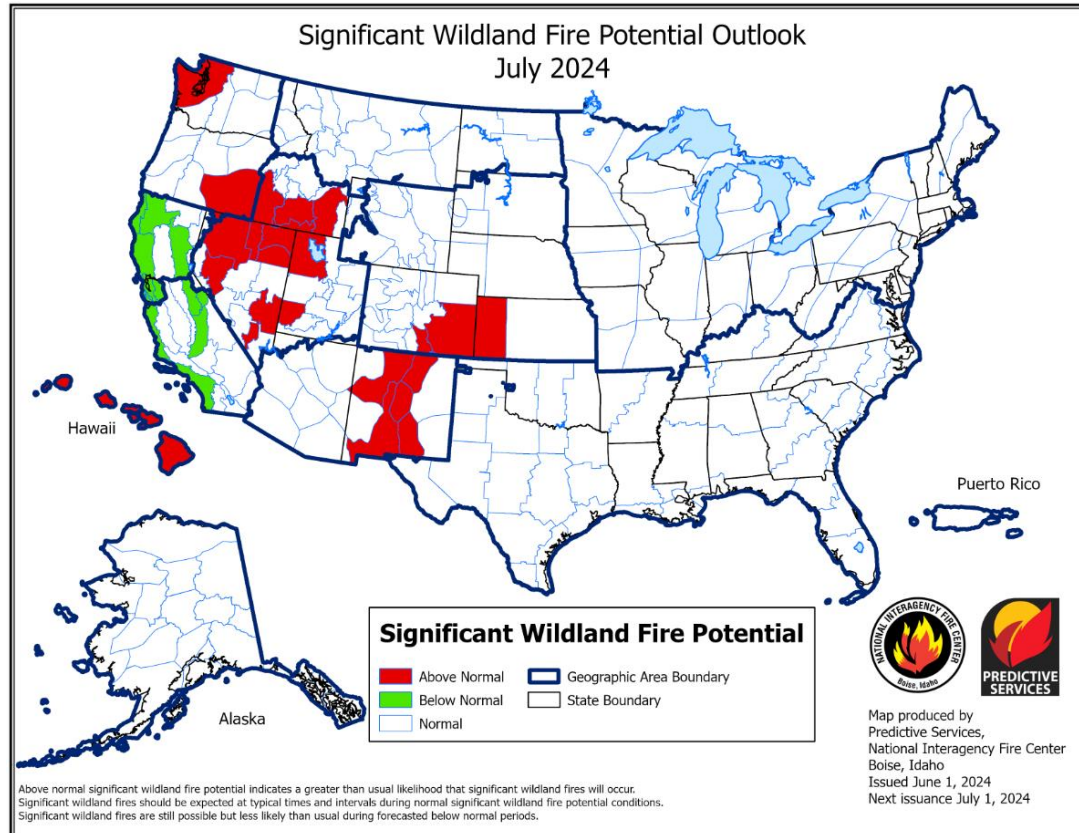
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Climate outlook

Heat and smoke forecasts for the summer



What is KPHD doing?

Messaging on how to protect your health



Smoke from fires is unhealthy



Tiny particles from wood smoke can get into your eyes and lungs and cause serious health problems.

Some people are at higher risk from smoke, including:



Babies and children



Older adults (65 and older)



People who are pregnant



People with health conditions, such as heart or breathing problems

Prepare for wildfire smoke

Plan ahead! Supplies such as fans and filters can be harder to purchase during the summer.

- Create a space in your home where you can keep air cleaner and cooler.
- Seal gaps around doors and windows.
- Consider getting an air purifier for your home and/or work.
- Talk to your healthcare provider if someone in your household is at higher risk. If you have a breathing condition such as asthma, make sure you have an inhaler and any medications you might need.
- Plan indoor activities for smoky days.

MAKING A BOX FAN FILTER



You can make a filter to clean air in your home by attaching a furnace filter to the back of a box fan. For instructions, scan the code at left using a smartphone camera, or go to:

ecology.wa.gov/Air-Climate/Air-quality/Smoke-fire

How to check air quality

The Puget Sound Clean Air agency monitors air quality in our region. Go to:

pscleanair.gov

- Air quality reports and forecasts for Kitsap County.
- Health recommendations based on current air quality and risk factors.

When the air is smoky

Health risks from wildfire smoke vary depending on how much smoke is in the air and your personal risk factors. In general, you can protect your health by:

- Staying indoors as much as possible.
- Avoiding vigorous outdoor activities, such as running or biking.
- Keeping air in your home as clean as possible:
 - Close windows and doors as much as possible.
 - Use an air cleaner with HEPA filter if available.
 - Use fans or an air conditioner (AC) to cool your home. Set AC to recirculate.
 - Avoid activities that make air quality worse, such as vacuuming or frying foods.

MASKS AND SMOKE



- Staying indoors is the best way to protect your health from smoke.
- If you have to be outside, consider wearing a high-quality respirator such as an N95 or KN95.
- Make sure the mask fits snugly over your mouth and nose. Loose-fitting masks, surgical masks, and cloth masks will not filter smoke.

- Contact your healthcare provider if you experience concerning symptoms related to smoke. Call 911 if you experience severe symptoms.
- If you do not have a safe place to stay indoors, go to a public indoor space.
- Cleaner air and/or cooling stations may be opened in Kitsap County when unhealthy air quality or extreme heat is expected. For information or to sign up for notifications, go to kitsapdem.com or call 2-1-1.

LEARN MORE: wasmoke.blogspot.com | pscleanair.gov | kitsappublichealth.org | 360-728-2235



Getting too hot can make you sick. Take steps to stay cool when the weather is hot and know the warning signs of heat-related illness. People at higher risk for getting sick from heat include:



Babies and children



Pregnant people



Older adults (65 and older)



People who work or exercise outdoors



People with chronic health conditions



Households that do not have air conditioning

Know the warning signs

Signs of HEAT EXHAUSTION can include:

- Heavy sweating
- Cold, clammy skin
- Fast, weak pulse
- Nausea or vomiting
- Muscle cramps
- Tiredness/weakness
- Dizziness
- Headache
- Loss of consciousness (passing out)

Seek medical help for heat exhaustion if the person is throwing up, their symptoms are getting worse, or symptoms last longer than an hour.

Signs of HEAT STROKE can include:

- High body temperature (103° or higher)
- Hot, red skin
- Fast, strong pulse
- Headache
- Dizziness or nausea
- Confusion
- Loss of consciousness (passing out)

CALL 911 if you think someone has heat stroke. Heat stroke is a medical emergency.

Tips to cool off when it's hot

- Stay in cool, indoor spaces as much as you can. If you are not able to stay cool in your home, go to a public space with air conditioning.
- Drink plenty of water. Limit caffeine, alcohol, and sugary drinks.
- Wear loose, lightweight, light-colored clothing. Cool yourself with wet clothing. Use sunscreen.
- Pace yourself when working or exercising outside. Try to plan activities in the mornings. Take breaks.
- Take cool showers or baths, or visit a pool, lake or swimming beach. For current beach advisories, go to kitsappublichealth.org/beaches or call 360-728-2235.
- Check on neighbors and loved ones. Visit or call at least twice a day, and encourage them to follow these tips.


Watch the weather forecast

Check your favorite local news source or the National Weather Service:

 weather.gov
 206-526-6087

Learn about cooling centers

Cooling centers may be open when the weather is extremely hot. Learn more:

 kitsapdem.com  211

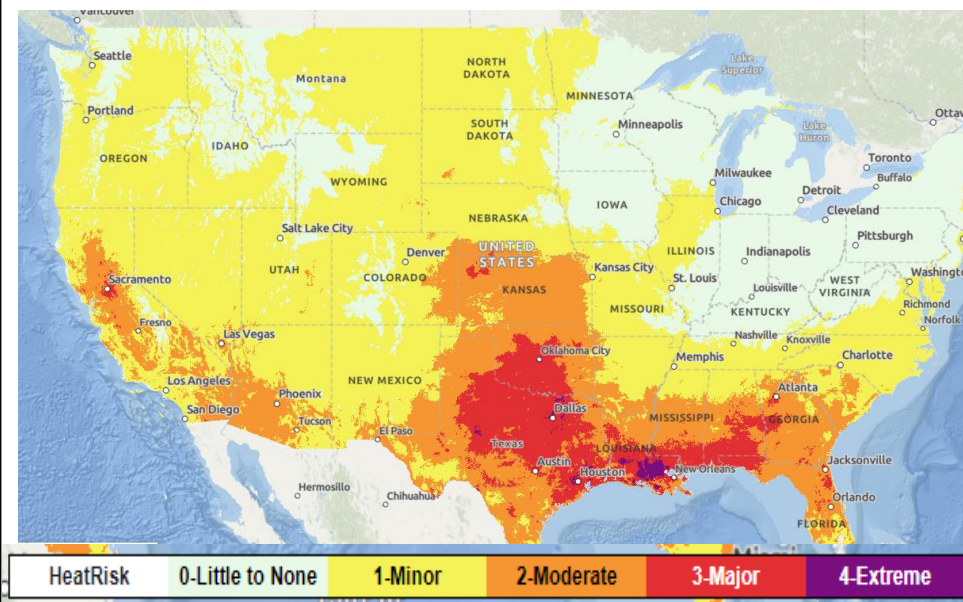
LEARN MORE: cdc.gov/extreme-heat | weather.gov | kitsapdem.com | kitsappublichealth.org | 360-728-2235

What is KPHD doing?

Monitoring heat conditions and sharing recommended public health actions

NWS HeatRisk Values	Public Health Recommendations
<p>2 Moderate</p>	<p>INITIATE EARLY WARNING, PUBLIC MESSAGING, AND RESPONSE ACTIVITIES</p> <ul style="list-style-type: none"> • Recommend sharing information about publicly available cooling locations where general population can go to access air conditioning or cooling features such as water recreation facilities or other public <u>places</u> • Recommend sharing key public health heat safety messaging and risk communications to at-risk populations, including those experiencing homelessness, older adults, children, and outdoor <u>workers</u> • Consider reductions in strenuous outdoor activities during the hottest part of the <u>day</u> • Consider cancelation and/or rescheduling of outdoor children’s activities, day-camps, athletic practice, and games or moving them indoors during the hottest part of the <u>day</u> • Promote people going to public spaces that are air <u>conditioned</u> • Monitor NWS HeatRisk forecast and alerts until forecast conditions become more favorable (e.g., HeatRisk Value of 1 - yellow - or lower).
<p>3 High</p>	<p>ACTIVATION OF COOLING CENTERS & REDUCTION IN OUTDOOR ACTIVITIES</p> <ul style="list-style-type: none"> • Recommend cancelation of outdoor activities and events during hottest times of the day • Recommend cancelation and/or rescheduling of outdoor children’s activities, day-camps, athletic practice, and games • If school is in session, consider capabilities of schools to maintain cooler indoor air temperatures; Public Health will recommend closure if indoor temperatures cannot be maintained reasonably free of excessive heat (WAC § 246-366-080)
<p>4 Very High to Extreme</p>	<p>RECOMMEND CANCELATION OF OUTDOOR EVENTS AND ACTIVITIES</p> <ul style="list-style-type: none"> • KCDEM – Consider expanding hours of operation for cooling centers and/or opening overnight cooling <u>shelters</u> • KPHD - Emphasize cancelation and/or rescheduling of outdoor children’s activities, day-camps, athletic practice, and <u>games</u> • KPHD – Consider declaring a public health emergency after notification and discussion with the Health Board • KCDEM – Consider making an emergency proclamation due to KPHD’s emergency <u>declaration</u>

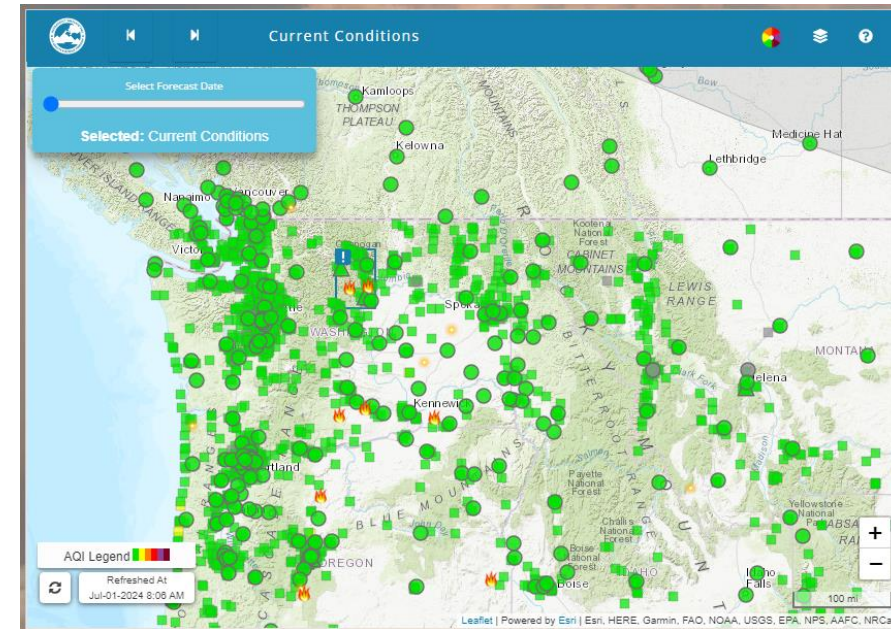
Local heat risk as of July 1, 2024



What is KPHD doing?

Monitoring air quality conditions and sharing recommended public health actions

Levels of Health Concern	Meaning	Colors
Good	Air quality is considered satisfactory. Air pollution poses little or no risk	Green
Moderate	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.	Yellow
Unhealthy for Sensitive Groups	People with heart and lung disease, older adults, and children are at greater risk from air pollution.	Orange
Unhealthy	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects	Red
Very Unhealthy	Health Alert: everyone may experience more serious health effects.	Purple
Hazardous	Health warnings of emergency conditions. The entire population is more likely to be affected.	Maroon



What is KPHD doing?

Coordinating with Kitsap Department of Emergency Management

- Providing public-facing and population-focused messaging.
- Supporting the activation of cooling / clean air sites.
 - Recommend the activation of centers based on Air Quality Indicators and HeatRisk values.
 - Provide personal protective equipment (PPE) as necessary.
 - Communicate with site staff related to usage and PPE needs.
- Evaluating effectiveness of sites for future response locations.

What is KPHD doing?

Coordinating and distributing materials to protect health

- Portable air cleaners (PAC) from Washington DOH
 - Distribution to communities most vulnerable to smoke where HVAC is inadequate.
 - PHEPR collaborates with regional partners in Jefferson and Clallam counties and Local Tribes to coordinate logistics.
- N95 masks
 - Organizations can request N95 masks from KPHD.
 - Email: prepare@kitsappublichealth.org

THANK YOU!

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