

Climate Impacts on Health

What people in Oregon need to know:

- Climate change is already affecting health in Oregon and is projected to get worse in the years to come.
- Some communities will be affected more than others and existing health disparities will be made worse.
- Actions to build adaptive capacity within Oregon's communities will result in improved public health and health cost savings for the State of Oregon.

Heat-related illness

Climate Change: Oregon's average temperatures and number of heat waves are increasing.

Health Risks: Heat-related death, heat stroke, birth defects, heat exhaustion, heat syncope, heat cramps, dehydration, heat rash.

Mental health

Climate Change: Displacement, job/income loss, changes to landscape, loss of culture, natural disasters, community-wide stressors.

Health Risks: Suicide, PTSD, anxiety, depression, substance abuse, chronic stress.

Allergies

Climate Change: Pollen counts and potency are increasing due to rising temperatures and CO2. Increased floods lead to more mold exposure.

Health Risks: Rhinitis, anaphylaxis, asthma attacks, hives, itchy eyes.

Respiratory disease and illness

Climate Change: Air pollution from increased wildfire smoke and ozone (smog).

Health Risks: Asthma attacks, heart attacks, stroke, respiratory diseases.

Vector-borne disease

Climate Change: More stagnant water bodies due to drought conditions provide habitat for pests like mosquitoes and ticks.

Health Risks: West Nile virus, Lyme disease, and other vector-borne diseases.

Gastrointestinal disease

Climate Change: Storms, flooding and harmful algal blooms can contaminate water with toxic chemicals, viruses, parasites or bacteria.

Health Risks: GI illness, paralytic shellfish poisoning, liver damage, "blue-baby syndrome", cancer.

Injury

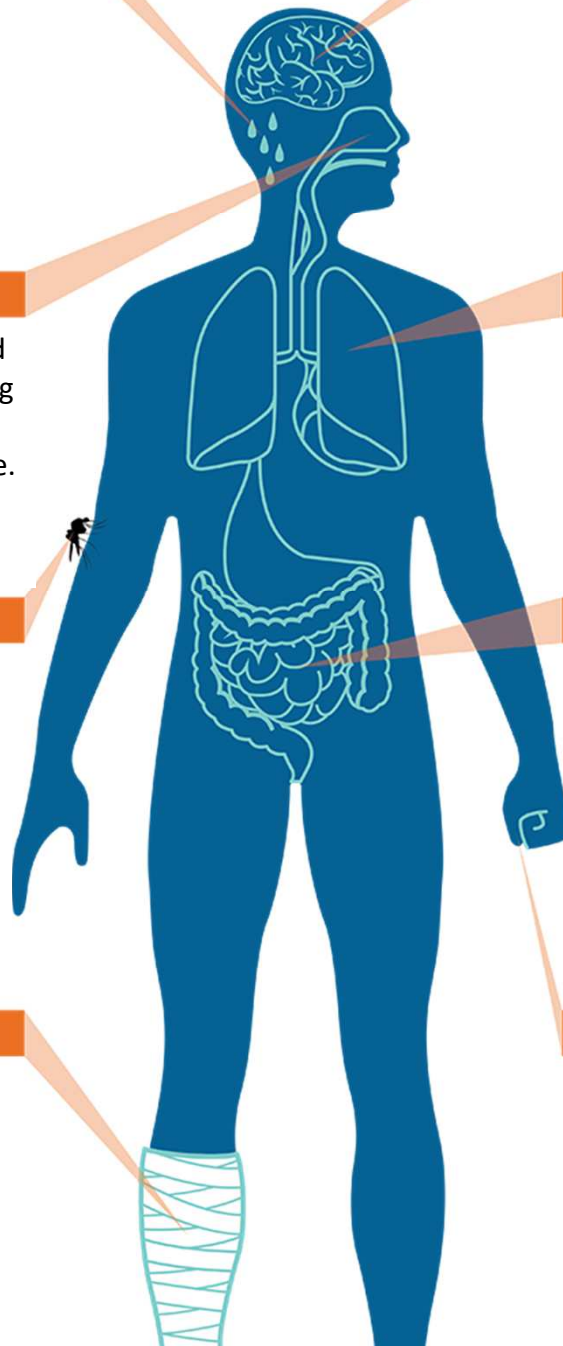
Climate Change: More extreme weather events.

Health Risks: Injuries from falling hazards, unsafe structures, and landslides.

Violence

Climate Change: Heat can increase heart rate, blood pressure, and metabolic changes associated with the sympathetic nervous system.

Health Risks: Violent behavior.



Health Effects, Now and in the Future

What are the current health effects and costs?

The State will be responsible for increased healthcare costs among populations covered by the Oregon Health Plan and is already beginning to pay for them. Below are some examples of climate-related health costs.

Wildfires. Fire seasons are now 105 days longer than they were in the 1970s and longer seasons mean more smoke in Oregon communities. During wildfire events we see more respiratory-related visits:

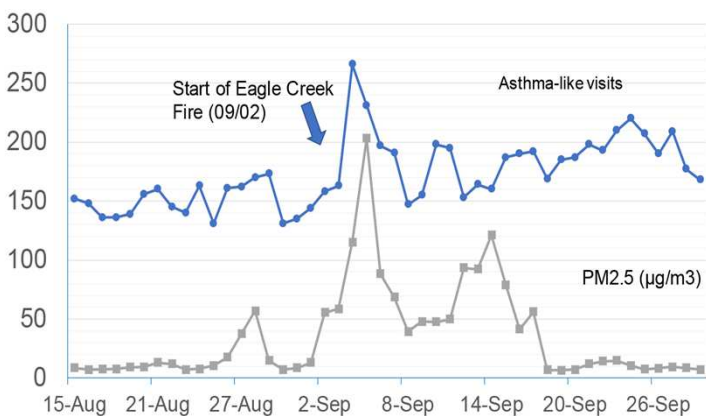


Figure above: Emergency department visits for asthma-like symptoms and PM2.5 maximum daily concentrations in Multnomah, Washington, Clackamas, Yamhill, Wasco, Hood River and Columbia counties before and during the Eagle Creek Fire, 2017.

The cost of air pollution in Oregon...

Airborne particulate levels from wildfires are projected to increase 160% by 2050. Projected increases in ground level ozone (smog) and airborne allergens will further complicate respiratory conditions. There is a well-documented link between exposure to air pollution and risk of heart attack, stroke, some types of cancer, and respiratory diseases, all of which are leading causes of death in Oregon. The portion of each health condition attributed to air pollution is unknown, but the social and economic costs of these diseases are large. In Oregon, the medical costs associated with heart attacks in 2011 alone were over \$1.1 billion, and those associated with stroke were \$254 million.

Lyme disease. Tick populations are expanding their range and habitat, partly due to Oregon's warming temperatures. Oregon is still considered a low-incidence state, however confirmed cases are rising:

Lyme disease by year: Oregon, 1988–2017

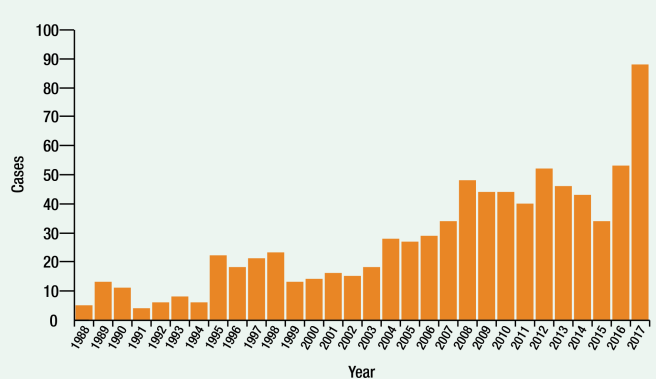


Figure above: Number of confirmed cases of Lyme disease by year in Oregon.

What does this mean for the future?

A growing body of research is helping to estimate the scope of health impacts we can expect under future climate scenarios. A few recent studies include the following estimates:

- The city of Portland can expect 80 additional heat-related deaths annually by 2050.
- Climate change may cause 26,000 more U.S. suicides by 2050.
- US wildfire smoke deaths could double by 2100, from 15,000/year to 40,000.
- More than 7,700 Oregonians live in areas that will be inundated due to sea level rise by 2100.

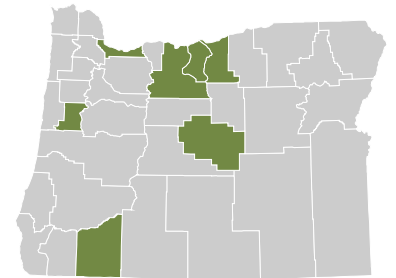
Public Health Action

What is the Oregon Health Authority doing about it?

- Assessing, planning, and building workforce capacity to prepare for the health effects of climate change
- Addressing research gaps
- Informing and engaging with communities
- Providing technical tools and assistance to partners

What are local health departments doing?

- A statewide assessment of Oregon's public health system found that local health departments are not equipped to identify and address existing environmental health hazards, let alone new threats due to climate change.
- Some local health departments have developed local climate and health adaptation plans and have begun to implement priority interventions:



Examples of Local Climate and Health Interventions

Benton County convened county-wide interagency climate adaptation assessment & planning and the County Commissioners adopted a climate adaptation resolution.

Crook County analyzed air quality data with asthma ER visits and co-hosted public workshops on climate and health risks with OSU Extension.

Jackson County improved a countywide alert system to inform public school administrators about wildfire smoke risks and provided health and climate expertise for natural hazard mitigation planning.

Multnomah County informed athletic event organizers of extreme heat risks, incorporated information into the event permitting process, and assessed the health co-benefits of proposed transportation policies.

North Central Health District educated residents reliant on private drinking water wells of drought-related health risks and provided free water quality testing services.



Oregon Climate Adaptation Framework

Currently, the Oregon Health Authority is engaged in the State's Climate Adaptation Framework update and is leading the Equity Subgroup for this interagency planning project. The planning group is proposing a cross-agency leadership structure to make sure that the highest priority adaptation strategies and actions are identified and implemented across the state and incorporated into budget requests and work plans. A supported and coordinated effort across agencies will be key to ensuring equitable and efficient use of existing and future State resources.