Chelan-Douglas Health-Focused Climate Vulnerability Assessment

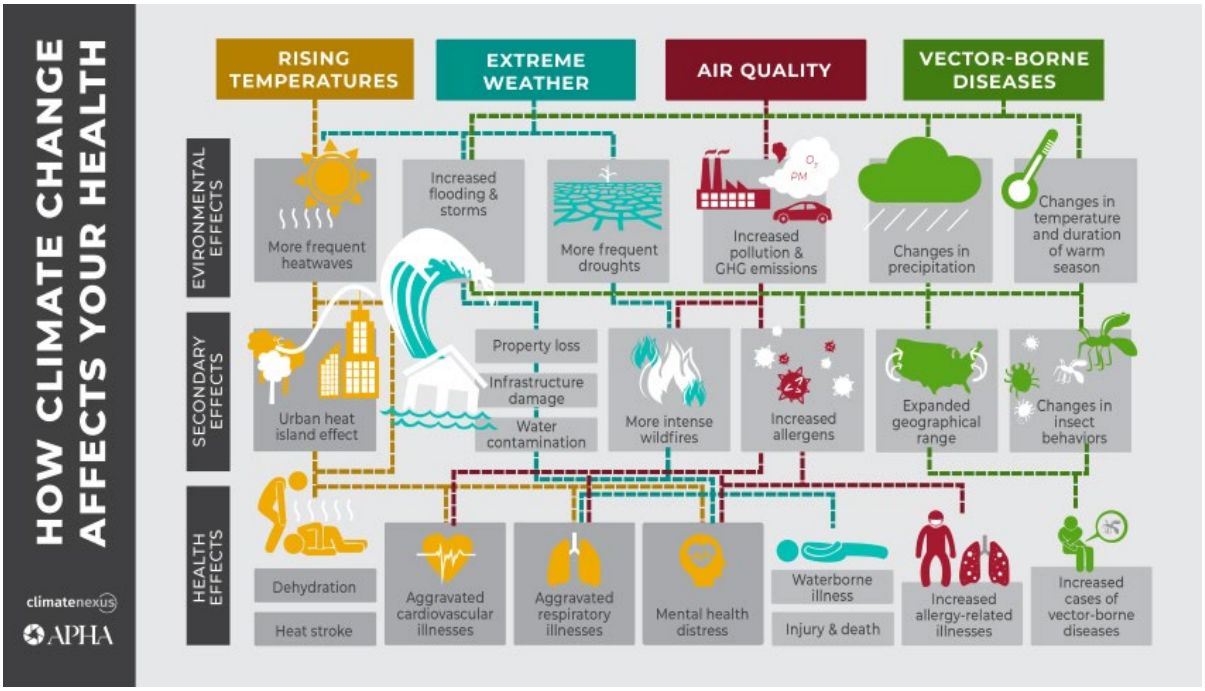
CHELAN AND DOUGLAS COUNTIES,
NORTH CENTRAL WASHINGTON

JUNE 1, 2025

FUNDED BY WASHINGTON'S CLIMATE COMMITMENT ACT

Overview

Climate change can have negative impacts on human health, as shown in the figure below. This Climate Vulnerability Assessment looks at the health impacts anticipated in Chelan and Douglas Counties.



> "Climate impacts are not distributed equally. Who is at risk is a factor of both who is most exposed, and who has the ability to respond, adapt, and decide."
>
> -Washington State Department of Commerce, 2024

Communities and residents with higher rates of social vulnerability and exposure to environmental burden face increased risks for climate impacts and hazards. Both Chelan and Douglas County have high levels of overall social vulnerability compared to other counties in Washington state, as shown in the table below. Another consideration is exposure to environmental burden. One existing burden in the region is air pollution, including high rates of PM2.5 (particulate matter) relative to the rest of the state.

Example Vulnerable Community	Chelan County	Douglas County	Washington state
Senior residents (65 years and older)	21.6%	19%	17.1%
Youth under 18 years (and 5 years and younger)	22.4% (5.4%)	23.9% (5.8%)	21.8% (5.4%)
Persons in poverty	10.2%	8.6%	10.3%
Persons without health insurance (under 65 years)	12.8%	13%	7.4%
Adults with disabilities (under 65 years)	12.5%	12.1.%	9.3%
American Indian/Native American	2.1%	2.5%	2.0%
Hispanic or Latino	29.2%	35.8%	14.6%

Data from U.S. Census Bureau, Quick Facts, 2023.

Public Health and Safety

Focus: Risks to people and critical facilities from wildfire and flooding. This focus area also addresses the overall preparedness of the health system and emergency response system to climate impacts.

Key Climate Risks

- The region has some of the **highest wildfire risk** areas in the state, with high numbers of properties and residents located in the Wildland Urban Interface (WUI).
- **Flooding** is a lower risk, though there are some areas in the counties with flood risk. Land that has been burned by wildfires is also more prone to flooding and landslides.
- **Critical health infrastructure**: Many critical facilities, including hospitals and health services, could be impacted by wildfire, flooding and other climate impacts.
- **Emergency response:** First responders face heightened risks during disasters. Coordination challenges may delay emergency responses. Flooding and landslides complicate evacuations and increase the risk of waterborne diseases.

Adaptive Capacity Strengths

- **Fire risk management**: Local actors, including fire departments, are proactively engaging in vegetation management and controlled burns, creating defensible spaces, and other efforts to reduce wildfire risks.
- **Public health planning:** Local health districts and organizations like Confluence Health are beginning to engage in limited public health planning with adaptive measures for climate risks.

Adaptive Capacity Limitations and Opportunities for Action

- **Many defensible practices against wildfire remain voluntary.** Common local building practices and infrastructure are not well adapted to a high wildfire risk reality.
- **Many health, emergency and other critical facilities are not resilient themselves** to wildfire, heat or prolonged smoke events. Employee burnout is also a concern.

Example Action

The Chumstick Wildfire Stewardship Coalition has been integral to the fire risk management and adaptation process in the greater Leavenworth, Washington area for the past twelve years. The CWSC engages in collaboration, education and outreach, particularly to assist small private forest owners (50-300 acres) actively managing their lands. Their efforts help reduce wildfire risk to everyone in the region.

Physical Health

Focus: Impact of extreme heat and prolonged smoke events, particularly on vulnerable populations including youth and farmworkers.

Key Climate Risks

- **Wildfire smoke & poor air quality**: Increasing wildfire seasons are worsening air quality for everyone and exacerbating respiratory and cardiovascular conditions.
- **Asthma-related hospitalizations** increase dramatically during wildfire events, especially for youth from low-income and Latino households.
- **Extreme heat:** Rising temperatures compound health risks, especially for vulnerable populations including farmworkers.
- **Heat islands:** Some places in the County experience higher temperatures and more extreme heat than other, influenced by the built environment and variable tree canopy.

Adaptive Capacity Strengths

- **Air quality monitoring:** There is some air quality monitoring to track wildfire smoke and provide air quality updates to protect public health.
- **Cooling centers and urban greening**: Ten North Central Washington libraries serve as cooling centers during heat events. There have been efforts to add trees and greenery in built-up areas.
- **Worker protections:** Washington State has new worker protections around heat and smoke. Some employers have changed practices (e.g. to night-time picking) to reduce the impacts to workers. The Community for the Advancement of Family Education (CAFÉ) has organized local events to distribute face masks and informational flyers to farmworkers.

Adaptive Capacity Limitations and Opportunities for Action

- **Asthma prevalence:** In Chelan and Douglas County, 11.3% and 12% of adults have asthma, respectively. Respiratory health is a major concern during wildfire, drought, and heat seasons.
- **Uninsured population:** Nearly 12% of Chelan County residents and 13% of Douglas County residents lack health insurance, with over 75% being of two or more races or Hispanic/Latino origin.
- **Insufficient safety practices and adaptation measures for outdoors workers** are reported by farmworkers themselves.

Example Action

Confluence Health hospital researchers have analyzed patterns in children's ER visits during extended smoke events. They are advocating for Medicaid coverage for in-home visits for patients with asthma and any durable medical equipment interventions, such as air cleaners (also called air purifiers).

Economic Health

Focus: Impacts of climate change on the local economy, including to key sectors like agriculture and tourism. This focus area addresses the economic impacts of climate change to workers and low-income residents.

Key Climate Risks

- **Agricultural production:** Increasing drought, heat and smoke negatively affect crops and livestock. Recent impacts have included lower fruit production and cattle deaths.
- **Tourism**: Wildfire, extended smoke events, and less reliable winter snow are impacting recreation and tourist centers like Lake Chelan and Leavenworth.
- **Climate impacted workers** like agricultural workers and workers in the tourism industry face economic challenges when they lose work days.
- **Low-income residents** face rising costs from increased cooling demand in summer, and face barriers to recovering from economic impacts, like property damage due to fire and flooding.

Adaptive Capacity Strengths

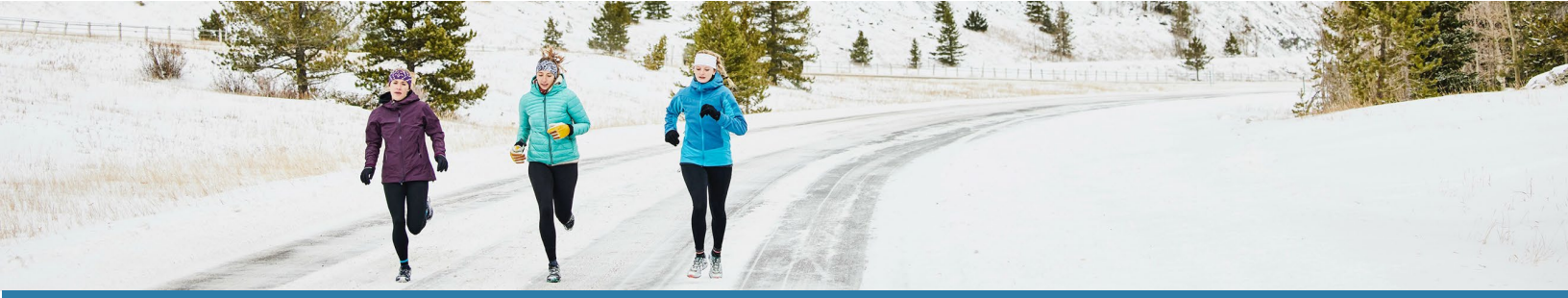
- **Agriculture:** Local producers, including fruit growers, have been adopting new practices to adapt to a changing climate, utilizing and contributing to research from Washington State University.
- **Tourism:** Local recreation facilities are engaged in strategies like snowmaking and shoulder season activities.
- **Low-income residents** may participate in weatherization and energy efficiency programs.

Adaptive Capacity Limitations/Opportunities for Action

- **Agriculture:** Farmers may struggle to afford and implement changing practices.
- **Climate impacted businesses and workers** do not have sufficient options for making up for economic losses due to climate impacts.
- **Program to assist low-income households** are limited.

Example Action

The Chelan-Douglas Action Council (with support from partners) manages Energy Assistance and Weatherization programs that assist low-income and other eligible residents (e.g. those with disabilities) deal with the economic hardships of heating and cooling their homes in a changing climate.



Mental Health and Community Well-Being

Focus: Explores the mental health impacts of climate change, including anxiety and depression. It also investigates the effects on community assets and services, including parks, ecosystems, green spaces, and food access, and the intersection with overall community well-being and social cohesion.

Key Climate Risks

- **Mental health:** Depression, anxiety and increased suicide rates are associated with experiencing climate hazards.
- **Rising costs**: Costs for energy/electricity, fuel and vehicle maintenance, and homeowners insurance are expected to increase- a huge concern for low- and middle-income households.
- **Food insecurity:** Both counties have food insecurity rates above the Washington state average.
- **Transportation barriers:** Most households are **reliant on personal vehicles.** Residents with disabilities, mobility challenges, and low income may struggle to access their needs and to make social connections.

Adaptive Capacity Strengths

- **Park access:** A high percentage of the population lives within a half mile of a park.
- **Transit**: The region has relatively robust transit service for a rural area, mainly concentrated in and connecting the towns.
- **Housing and other assistance:** Chelan Douglas Housing Authority and other local actors like CAFÉ provide benefits and assistance to low-income families and other groups.

Adaptive Capacity Limitations and Opportunities for Action

- Residents have **low access to mental health providers** in the region and report **mixed levels** of social and emotional support.
- **Assistance for low-income residents is insufficient** amid rising costs.
- Impacts to the local food system are likely to **exacerbate both local food insecurity** as well as national and global food supplies, since the region is an agricultural exporter.

Example Action

Trees bring important mental health and community benefits in addition to their environmental benefits. Wenatchee Valley College is a local leader in tree planting and maintenance, with over 460 trees currently on campus. The College is aiming to attain Tree Campus USA Designation. In the last 7 years, the College has led tree planting, tree dedications, tours, poetry readings, carbon measurement workshops, and more.