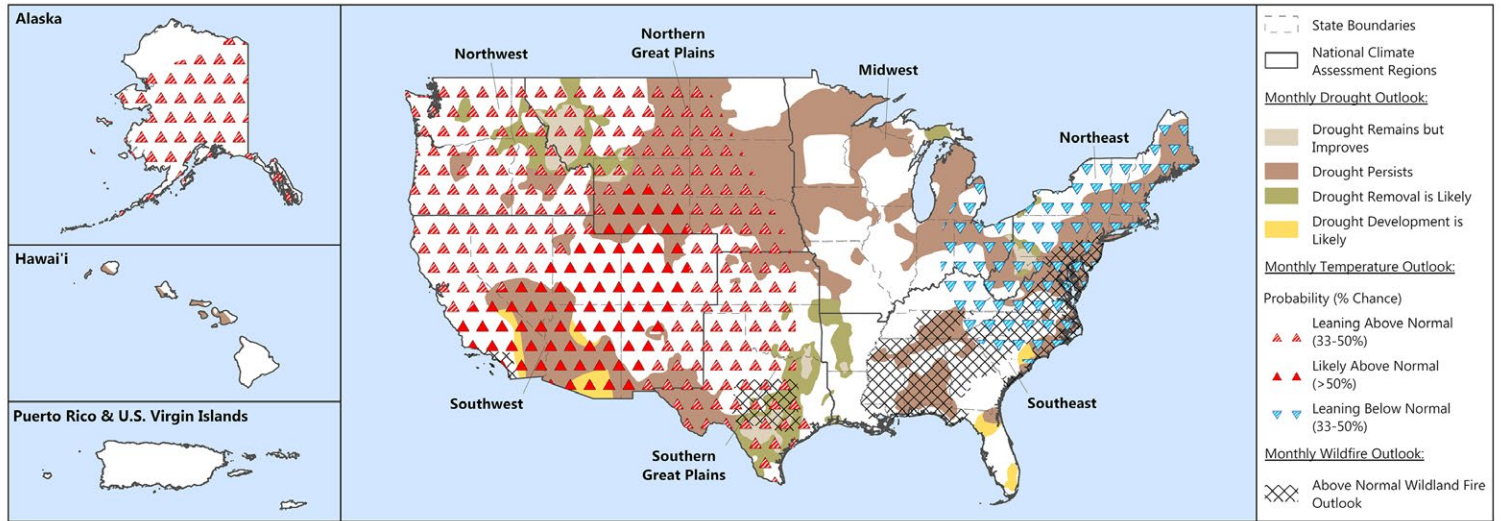


Highlights for this edition:

- Find your area’s forecast climate hazards for December including drought, wildfire, and winter weather.
- Learn about health impacts & populations at risk for health harms from these climate hazards.
- Discover resources to help protect health including a special feature on the Low Income Home Energy Assistance Program.

December Regional Climate Hazard Forecasts:



Southeast: Drought persistence is forecast across TN, AL, GA, FL, northern MS, southern KY, eastern NC and SC, and northern VA. Drought development is forecast in portions of FL and eastern SC. Frost and freeze conditions are expected as far south as the Gulf Coast and central FL early in the month. Above normal significant wildfire* potential is forecast for MS, AL, and NC, plus central TN, eastern LA, the FL panhandle, northern GA, eastern VA, and most of SC.

Northeast: Drought persistence is forecast across CT, RI, and NJ, southern NH and VT, most of MA and ME, eastern NY and PA, much of MD, DE, and DC, and across portions of WV. Heavy lake-effect snow is forecast in areas downwind of the Great Lakes (i.e., in PA and NY). Above normal significant wildfire potential is forecast for DE, large portions of MD and NJ, and southeastern PA.

Midwest: Drought persistence is forecast across MN, WI, MI, IA, IL, IN, OH, and MO. Heavy lake-effect snow is forecast in areas downwind of the Great Lakes (i.e., in OH, MI, and IN).

Northwest: Drought is forecast to persist in parts of OR and ID.

Southwest: Drought persistence is forecast for portions of southern and eastern CA, southern NV, portions of western and northern UT and CO, and across portions of AZ and NM. Drought development is forecast in portions of southern and eastern CA and southern and central AZ. Above normal significant wildfire potential is forecast for portions of southern CA.

Northern Great Plains: Drought persistence is forecast across SD, much of WY, eastern MT, southern and western ND, and northern and eastern NE.

Southern Great Plains: Drought persistence is forecast in northern and central KS and western TX. Above normal significant wildfire potential is forecast for central TX.

Hawai'i: Drought persistence is likely across HI.

*Smoke from wildfires can impact health hundreds of miles from site of the fire.

Wildfire forecasts are derived from the National Interagency Coordination Center's [National Outlook](#), drought forecasts from the National Oceanic and Atmospheric Administration's (NOAA's) [Official Drought Outlook](#), and winter weather forecasts from NOAA's [Official Seasonal Outlooks](#).



Check out additional forecasts on our [website](#).

Discover your county's forecast climate hazards this month:

1. Navigate to the [All Hazards map](#) from the Climate & Health Outlook Portal and click "Okay".
2. Zoom in on your county, either directly or by clicking the search icon on the top left, typing in your location, and hitting "Enter".
3. Click on your county on the map and a box will pop up with climate hazards for the current month and relevant risk factors.

Climate Change & Winter Weather

The frequency, intensity, geographic distribution, and timing of extreme weather events are changing, and for some places, that means an increased risk of winter hazards. These risks can include:

- [Increased lake-effect snow](#) (due to warmer lake temperatures);
- [More intense winter precipitation](#) (including blizzards, snow squalls, freezing rain, and ice storms due to increased atmospheric moisture);
- [More icy conditions](#) (due to more temperature fluctuations around freezing); and
- [More flooding from rapid snowmelt](#).

Climate change is one of many factors influencing winter weather hazards; factors like the [Arctic Oscillation](#) and [polar jet stream](#) patterns can influence specific weather outcomes, leading to some unexpected cold snaps or snow events. According to [NOAA's winter outlook for 2024–25](#), a slowly-developing [La Niña](#) is favored to influence conditions for the upcoming winter across most of the country, including likely increased precipitation for the northern tier of states in the U.S. and likely decreased precipitation for most southern and lower mid-Atlantic states through the winter.

Which Parts of the Country are at High Risk From Winter Hazards?

The Federal Emergency Management Agency (FEMA) provides information on the risk of different climate hazards across the 50 states and Washington, D.C., through the [National Risk Index \(NRI\)](#) platform. The NRI leverages available data for natural hazards and community risk factors to develop a baseline relative risk measurement for each U.S. county and census tract.

The combined NRI for Winter Weather, Ice Storms, and Cold Waves, shown on the map to the right, represents a community's relative risk for winter weather (winter storm events in which the main types of precipitation are snow, sleet, or freezing rain), ice storms (freezing rain events with significant ice accumulations), and cold waves (rapid falls in temperature within 24 hours and extreme low temperatures for an extended period), based on the historical annualized frequency of such weather, when compared to the rest of the U.S.

1505 counties across **49 states** plus D.C. are estimated to have "very high," "relatively high," or "relatively moderate" winter weather risk (all states have at least one county in these risk categories

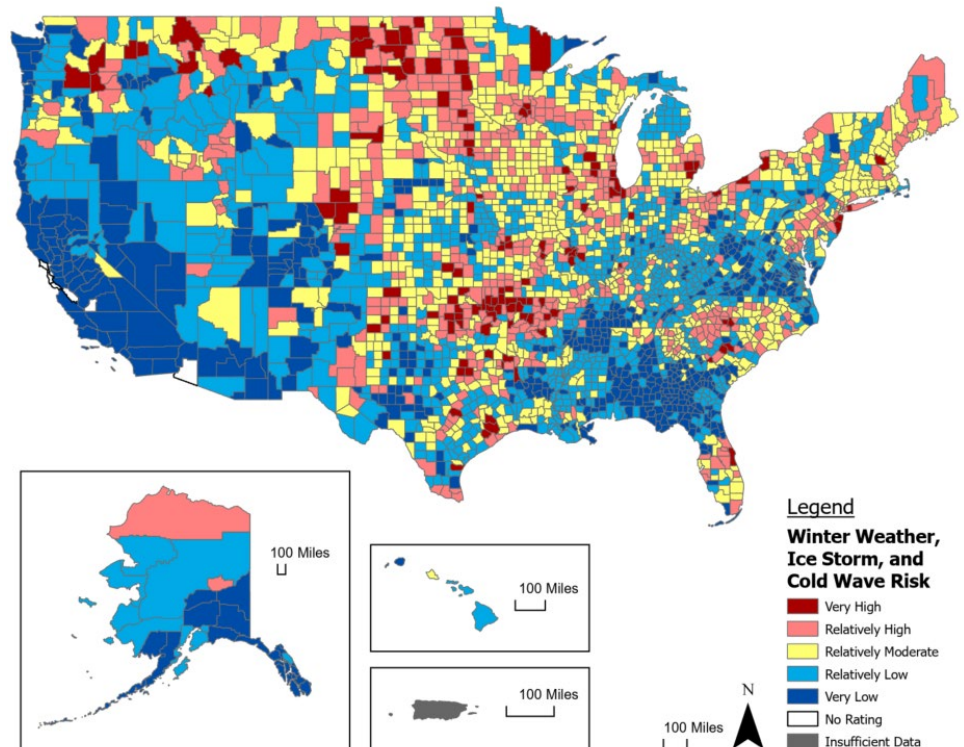


Figure: This map of the U.S. is colored by the combined National Risk Index composite ratings for Winter Weather, Ice Storm, and Cold Wave.

except for Nevada; insufficient data are available for U.S. territories). In these counties, the total population at risk is **223,204,711 people** and, of those, **23,209,898 people** work outdoors.

Winter Weather Affects Health in Many Ways

Winter can bring extreme cold, freezing rain, snow, ice, and high winds which can last a few hours or several days.



Those with inadequate indoor heating or clothing coverage, and those who work outdoors are at greater risk of **hypothermia** and **frostbite** with prolonged exposure to excessive cold.



Winter storms can lead to **outages of power, heating, and communication systems**, which can pose safety hazards, especially for people who critically depend on electricity-dependent medical equipment.



Using space heaters, fireplaces, or appliances that are not meant for heating, such as ovens or stoves, can increase the **risk of fire** and **worsen indoor air quality**.



Running a generator indoors or outdoors without adequate ventilation can cause carbon monoxide (CO) exposure, which can lead to **loss of consciousness** and **death**. Over 400 people die each year from accidental CO poisoning.



Walking or driving on slippery surfaces in the winter can lead to **injuries** and **vehicle accidents**.



Extreme cold can cause pipes to freeze and burst. Standing water from burst pipes can lead to mold growth, which increases risk of respiratory issues, particularly for people with **asthma, allergies, or other breathing conditions**.



The combination of cold temperatures, which can increase blood pressure, and potential overexertion while shoveling snow can increase the risk of **heart attack**.

Populations at Elevated Health Risk From Winter Weather Extremes

According to [NOAA](#), the [National Institutes of Health](#) (NIH), and the [Environmental Protection Agency](#) (EPA), populations at elevated risk include:

- Infants and young children due to more skin surface area compared to the size of their bodies, which causes them to lose heat quicker than older children and adults;
- Older adults due to existing chronic medical conditions and susceptibility to injury with slippery winter surfaces;
- People experiencing homelessness, outdoor workers, and others who remain outside for prolonged periods, due to increased exposure;
- People with inadequate or wet clothing due to faster loss of body heat;
- Individuals with heart disease, high blood pressure, diabetes, asthma, thyroid issues, memory problems, and other conditions due to impacts to circulation, body temperature regulation, breathing in cold air, and/or remembering to take precautions;
- People taking medications that can interfere with the body's ability to regulate temperature;
- Low-income households who may struggle to afford adequate heating; and
- Individuals with disabilities or limited mobility who face increased difficulties in maintaining warmth, accessing essential resources, and/or navigating icy or snowy conditions.

Staying Safe Indoors This Winter: The Low Income Home Energy Assistance Program (LIHEAP)

LIHEAP helps households struggling with their energy bills to stay safe indoors in the winter. LIHEAP benefits provide support to households with low incomes, especially those who are particularly vulnerable to the negative health impacts of unsafe indoor air temperatures including households with older adults, individuals with disabilities, and young children.

LIHEAP funding can be used to:

- ✓ Help with heating bills
- ✓ Restore or prevent disconnection
- ✓ Repair or replace heating equipment
- ✓ Install weatherization measures to help keep homes safe and warm



Reaching households in need of energy assistance is critical to keeping families and individuals safe and healthy in their homes. The user-friendly [LIHEAP eligibility tool](#) allows households across the country to quickly identify if they might be eligible

for LIHEAP assistance by inputting basic information like income and household size. The LIHEAP eligibility tool is available in English, Spanish, traditional Chinese, and simplified Chinese. Individuals interested in applying for energy assistance can also visit [energyhelp.us](#) or call the National Energy Assistance Referral (NEAR) hotline toll free at 866-674-6327.

There are also resources available to assist grant recipients administering LIHEAP and reaching households in their area including a [LIHEAP Heating Assistance Toolkit](#), which includes a variety of outreach materials, spotlight videos including one on [LIHEAP Crisis Assistance](#), and winter safety resources.

Recommendations & Resources to Protect Your Health From Winter Weather Hazards

Before a Storm

- **Prepare your home** with weatherproofing measures to keep out the cold, check your heating system, inspect and clean fireplaces and chimneys, have a safe alternate heating source and alternate fuels available, learn how to keep pipes from freezing, and install and test smoke alarms and carbon monoxide detectors with battery backups. In addition to [LIHEAP](#), the Department of Energy's [Weatherization Assistance Program](#) and local weatherproofing programs available through utility companies may provide assistance to weatherize homes and make them more energy efficient.
- **Find a community winter shelter/ warming center** where you can relocate in case your home is unable to keep you warm during extreme cold events or if you lack access to a house. This information may be available via local government websites or state 2-1-1 resources.



This figure from [NOAA](#) provides recommendations for clothing layers to keep you safe in varying degrees of coldness.

During a Storm

- **Follow best practices for preventing fires while heating your home** in the winter, including [safety measures if you are using a portable heater](#). If you are using a portable generator to power your home during extreme winter weather, [run the generator outside the home](#), in well-ventilated areas, and away from all doors, windows, and vents to reduce the risk of carbon monoxide poisoning.
- **Avoid overexertion when shoveling snow** to reduce the risk of heart attack.

Spot & Treat: Frostbite & Hypothermia



This infographic from [CDC](#) provides guidance on how to spot and treat frostbite and hypothermia.

Drought

Drought Affects Health in Many Ways

Drought increases the risk for a diverse range of health outcomes. For example:



Low crop yields can result in rising food prices and shortages, potentially leading to **malnutrition**.



Dry soil can increase the number of particulates such as **dust and pollen** that are suspended in the air, which can irritate the respiratory system.



If there isn't enough water to flow, waterways may become stagnant breeding grounds for **disease vectors** such as mosquitoes.



Drought's complex economic consequences can increase **mood disorders, domestic violence, and suicide**.



People at Elevated Health Risk From Drought Exposure

According to [NOAA](#) & the Centers for Disease Control & Prevention ([CDC](#)), include those who:

- Have increased exposure to dust (e.g., are experiencing homelessness, work outdoors, or live/work in agricultural communities);
- Rely on water from private wells or small or poorly maintained municipal systems, the quality of which is more susceptible to environmental changes; and/or
- Have increased biologic sensitivity (e.g. are under age 5, are age 65 or over, are pregnant, have chronic health conditions, and/or have special needs in the event of a public health emergency).

Check out your drought forecast for December along with top risk factors of concern in your county with our [Climate and Health Outlook Portal](#) and [learn more about health impacts and how to prevent them](#).

Resources to Reduce Health Risks Associated With Drought

- Learn about the health implications of drought and how to prepare from the [CDC Drought and Health site](#) and [Ready.gov Drought site](#).
- Call or text 1-800-985-5990 to get help and support for any distress that you or someone you care about may be feeling related to any disaster. This Substance Abuse and Mental Health Services Administration (SAMHSA) [Helpline and Text Service](#) is available 24/7, free, and staffed by trained crisis counselors.

Wildfire

People at Elevated Health Risk From Wildfire Smoke Exposure

According to the [EPA](#) include those who:

- Have increased biologic sensitivity (e.g., are under age 5, are age 65 or over, are pregnant, and/or have chronic health conditions such as asthma or another lung disease or a cardiovascular disease); and/or
- Face economic, social, environmental, and/or other burdens that may limit their ability to reduce exposure (e.g., identify as a racial or ethnic minority, have low-income, have one or more disabilities, and/or work outdoors).

Check out your wildfire forecast for December, along with top risk factors of concern in your county with our [Climate and Health Outlook Portal](#) and [learn how to protect people at elevated risk](#).

Resources to Reduce Health Risks Associated With Wildfire

- Learn about how to prepare for wildfires, stay safe during a fire, and return home after a fire with resources from the Federal Emergency Management Agency (FEMA)'s [Ready.gov](#), [CDC](#), and [EPA](#).
- Download the [FEMA App](#) to receive real-time weather and emergency alerts from the National Weather Service and help you find a nearby shelter in case of evacuation.
- Check out [EPA & CDC's Wildfire Smoke and Your Patients' Health course](#) for actions to help patients reduce exposure.
- Discover specific recommendations for [older adults](#), [people experiencing homelessness](#), [people with access and functional needs](#), and [people with disabilities](#).

Wildfires Affect Health in Many Ways

Wildland fire increases the risk for a diverse range of health outcomes from both the fire itself and smoke. For example:



Due to the nature of their work, firefighters are at risk of developing severe heat-related illness (such as **heat stroke**) and rhabdomyolysis (**muscle breakdown**).



Wildfire can cause **burns** through contact with flames and hot surfaces.



Wildfire smoke can lead to disorders including **reduced lung function, bronchitis**, exacerbation of **asthma**, and cardiovascular effects like **heart failure**.



For pregnant people, smoke exposure may increase the risk of **reduced birth weight** and **preterm birth**.



Wildfire smoke may affect the immune system, potentially leading to increased vulnerability to **lung infections**.



Smoke from wildfires can travel downwind and affect air quality hundreds of miles away from the fire.

THANK YOU to the partners who provide invaluable information, expertise, and data for the Climate and Health Outlook series:

