

# CLIMATE CHANGE INCREASES THE NUMBER AND GEOGRAPHIC RANGE OF DISEASE-CARRYING INSECTS AND TICKS



Climate change poses many risks to human health. Some health impacts of climate change are already being felt in the United States. We need to safeguard our communities by protecting people's health, wellbeing, and quality of life from climate change impacts. Many communities are already taking steps to address these public health issues and reduce the risk of harm.

## BACKGROUND

When we burn fossil fuels, such as coal and gas, we release carbon dioxide (CO<sub>2</sub>). CO<sub>2</sub> builds up in the atmosphere and causes Earth's temperature to rise, much like a blanket traps in heat. This extra trapped heat disrupts many of the interconnected systems in our environment.

One way climate change might affect human health is by increasing the risk of vector-borne diseases. A vector is any organism – such as fleas, ticks, or mosquitoes – that can transmit a pathogen, or infectious agent, from one host to another. Because warmer average temperatures can mean longer warm seasons, earlier spring seasons, shorter and milder winters, and hotter summers, conditions might become more hospitable for many carriers of vector-borne diseases.



## THE CLIMATE-HEALTH CONNECTION

The potential increase of harmful vectors is related to a number of health risks:

- The development and survival of ticks, their animal hosts (such as deer), and the bacterium that causes Lyme disease are all strongly influenced by climatic factors, especially temperature, precipitation, and humidity. Most occurrences of Lyme disease in the U.S. are in the Northeast, particularly Connecticut. An expansion of the geographic area in which ticks can survive may lead to more people having contact with infected ticks. In regions where Lyme disease already exists, milder winters result in fewer disease-carrying ticks dying during winter. This can increase the overall tick population, which increases the risk of contracting Lyme disease in those areas.
- West Nile virus is another example of a vector-borne disease that may be influenced by climate change. Preventing people from contracting West Nile virus is important, because there are no medications to treat or vaccines to prevent this virus in humans, and recovery from severe disease may take several weeks or months.

# ACTIONS WE CAN TAKE TO PREPARE FOR CLIMATE CHANGE

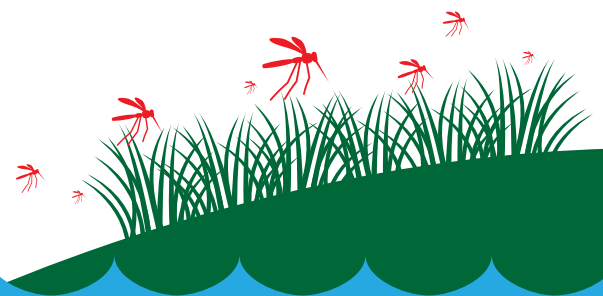
We can responsibly manage the problems facing our environment by taking sensible steps toward protecting human health and safety. Whether measures are meant to reduce future climate change impacts or address the health impacts of climate change that are happening already, early action provides the greatest health benefits. It makes sense to invest in creating the strongest climate-health adaptation and preparedness programs we can.

Reducing the release of heat-trapping gases like CO<sub>2</sub> can help protect our health and wellbeing by decreasing impacts on our climate system. Activities that reduce the amount of heat-trapping CO<sub>2</sub> in the atmosphere are many of the same things we already know prevent health problems. Active modes of transport like biking or walking can help reduce traffic-related air pollution and encourage physical activity, which has public health benefits including reduced rates of obesity, heart disease, and diabetes.

## STEPS TO SAFEGUARD PUBLIC HEALTH

We also need to take actions that make our communities less vulnerable to climate change impacts already in progress. Many communities have programs to address climate-sensitive health issues. When it comes to managing the public health threats associated with vector-borne diseases, sensible steps include:

- Avoiding bug bites by using insect repellent or covering exposed skin with long-sleeved shirts, long pants, and hats.
- Encouraging coordination between federal, state, tribal, and local officials, such as mosquito control program officers, to predict and pinpoint possible hot spots for insect outbreaks, so that the appropriate measures to protect public health can be taken.



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