

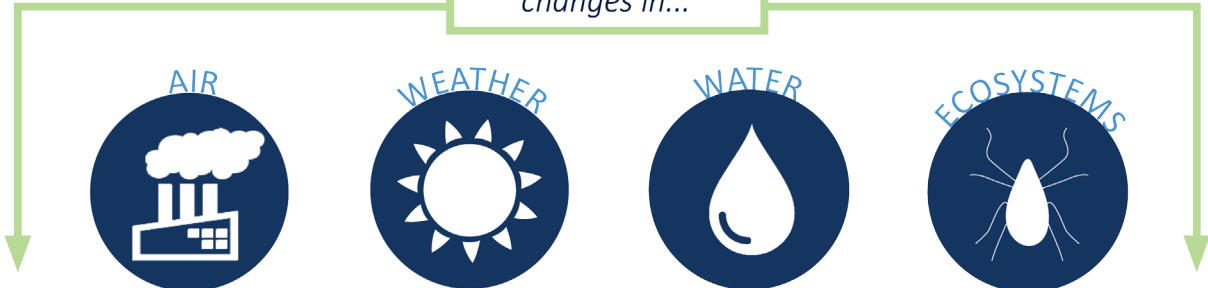
MINNESOTA CLIMATE AND HEALTH PROFILE REPORT

summary

Changes are occurring in Minnesota's climate with serious consequences for human health and well-being. Minnesota has become measurably warmer, particularly in the last few decades, and precipitation patterns have become more erratic, resulting in changes in air, weather, water and ecosystems. The 2015 Minnesota Climate and Health Profile Report provides a comprehensive assessment of climate change impacts and potential health burdens specific to Minnesota.

CHANGES IN OUR ATMOSPHERE LEAD TO HEALTH EFFECTS

What are greenhouse gases?
Greenhouse gases trap heat in the atmosphere, which makes the earth warmer. Major contributors include carbon dioxide and methane.



AIR POLLUTION

- Direct effects**
- » Initiate or worsen respiratory, cardiovascular and other diseases
- Indirect effects**
- » Reduced visibility
 - » Reduced productivity at work or school
 - » Degradation of crops and water bodies

EXTREME HEAT

- Direct effects**
- » Heat stress and illness
 - » Worsening of pre-existing conditions
 - » Heat-related mortality
- Indirect effects**
- » Infrastructure failures
 - » Strain on essential services
 - » Disruption to key social networks

FLOODS & DROUGHT

- Direct effects**
- » Mental stress
 - » Waterborne disease
 - » Drowning and injuries
- Indirect effects**
- » Respiratory ailments
 - » Disruption to economic and social networks
 - » Strain on essential services
 - » Wildfires

ECOSYSTEM THREATS

- Direct effects**
- » West Nile virus
 - » Lyme disease
 - » Liver, respiratory, nervous, skin disorders (from harmful algal blooms)
- Indirect effects**
- » Threats to livelihood
 - » Financial strains

Quick Facts

AIR POLLUTION

Air pollutants of most concern for Minnesotans' health include **particulate matter, ground-level ozone and pollen**.

FRESH AIR

In 2014, Rochester and Duluth were among the **cleanest Minnesota cities** for ozone and particle pollution, respectively.

ACHOO!

The ragweed pollen season has increased by as much as **10-22 days** for areas in and around Minnesota.

EXTREME HEAT

As the average temperature increases, extreme heat events will become **more frequent, longer lasting, and more severe**.

SHIFTING THE AVERAGE

On average, summers in Minneapolis now have nearly **5 more days** of the hottest and most humid weather compared to the mid-1940s.

HEAT HURTS

Between 2000-2011, over **1,000 hospitalizations, 8,000 emergency department visits, and nearly 40 deaths** directly attributable to heat exposure were recorded in Minnesota.

FLOODS & DROUGHTS

Climate change is expected to affect the frequency, intensity, and duration of extreme weather events, such as excessive rainfall, storm surges and drought. This leads to problems with **too much and too little water**.

FEELING THIRSTY

Nearly three-quarters of Minnesotans rely on **groundwater for drinking water**. Recurring drought can lower surface water levels and **reduce recharge to groundwater**.

WATER WORRIES

Floods can threaten the **safety and availability of drinking water** by washing contamination into source water.

ECOSYSTEM THREATS

Warmer, wetter climate trends may support the **spread of tick-borne diseases**. The most common tick-borne diseases in Minnesota are Lyme disease, anaplasmosis and babesiosis. All of these diseases are caused from the bite of an infected backlegged tick (also known as a deer tick).

SMALL BITE, BIG THREAT

Minnesota is **among the top states** for the highest tickborne incidence in the Midwest.

EXPANDING BOUNDARIES

Changes in seasonal temperatures and precipitation **may contribute to a geographic expansion** of Lyme Disease risk.

The Minnesota Climate & Health program is working to understand the health impacts of climate change and prepare local public health and the public for the risks. The Program focuses its work in five main areas: education, tool and product development, research, policy analysis, and providing technical assistance. Learn more at health.mn.gov/climatechange.