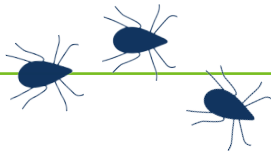


MINNESOTA CLIMATE CHANGE VULNERABILITY ASSESSMENT

summary

In 2014, the Minnesota Department of Health (MDH) established a team of experts to review scientific literature and evaluate existing datasets to conduct a climate change vulnerability assessment for the state of Minnesota. The Minnesota Climate Change Vulnerability Assessment advances our understanding of five climate hazards (i.e., vector-borne disease, drought, extreme heat events, air pollution, and flooding) and the populations that are most vulnerable to the hazards. The vulnerability maps show the percentage of vulnerable populations in a county. Vulnerability means the characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impact of a natural hazard or other climate hazard. The climate hazard maps show the historic occurrence of the hazard. A hazard can be defined as a natural disaster or an environmental condition that can cause harm.

VECTOR-BORNE DISEASE



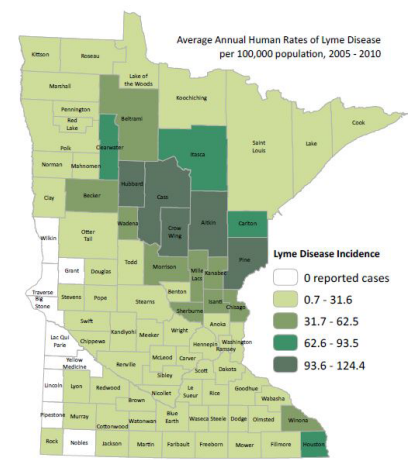
Impact

- Ticks may carry pathogens that can cause Lyme disease, human anaplasmosis or babesiosis. Mosquitoes may carry pathogens that can cause West Nile fever, La Crosse encephalitis, or Jamestown Canyon disease

Vulnerable Populations

- Tick-borne diseases: Those who live, work or travel in wooded areas that have blacklegged ticks, from May through mid-July
- Mosquito-borne diseases: Outdoor activity from mid-July to mid-September in open, agricultural areas of central and western MN at dawn and dusk for West Nile fever, or in wooded areas during the day for La Crosse encephalitis

Lyme Disease Incidence 2005-2010



DROUGHT

Impact

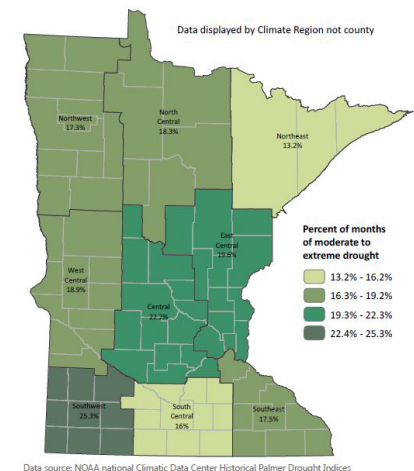
- Drought may affect agricultural crops, livestock, dairy production, water quantity and quality, risk of wildfire, and can impact air quality that can affect respiratory health

Vulnerable Populations

- Young children, older adults, persons with respiratory conditions



Months of Moderate Drought 1895-2012



DEVELOPING A BASELINE OF UNDERSTANDING

through mapping composite vulnerability scores

County-level composite vulnerability scores combine population vulnerability indicators and historic occurrences of the climate hazard. MDH developed three composite vulnerability scores. The value of conducting a vulnerability assessment and the composite vulnerability score is to understand that planning for climate change is more than just identifying where the risk of climate hazards exists, but also addressing how vulnerable populations will affect planning needs and community resources in the event of a climate hazard. See the document for more details.



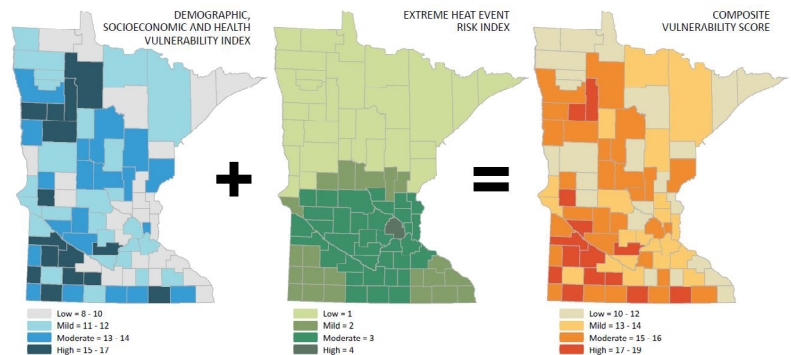
EXTREME HEAT EVENTS

Impact

- Extreme heat events can cause heat-related illnesses and exacerbate existing illnesses and health conditions

Vulnerable Populations

- Older adults, young children, babies, persons experiencing homelessness, persons living in poverty, persons of color, persons with pre-existing health conditions, persons living alone, persons working or playing outdoors



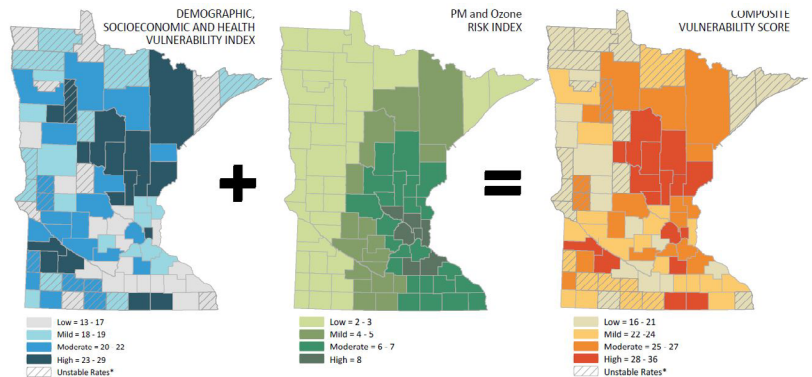
AIR POLLUTION

Impact

- Air pollution can aggravate chronic cough, bronchitis, chest illness, and increase risk for other respiratory and cardiovascular conditions

Vulnerable Populations

- Young children, older adults, persons of color, and persons with cardiovascular or respiratory diseases



FLOODING

Impact

- Flooding can damage public infrastructure and electric utilities, cause mold growth, and reduce tourism

Vulnerable Populations

- Households with no vehicle, persons living in mobile houses, older adults living alone, families living in poverty, persons of color and persons with limited English proficiency

